EXPLORING A UNIVERSITY TEACHER’S APPROACH
TO INCORPORATING
MUSIC IN A COGNITION PSYCHOLOGY COURSE

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Abstract

This qualitative study explored a university teacher’s approach to incorporating music in a Cognition psychology course. Data sources included participant interviews, professor interviews, and field notes. The study was guided by three main research questions: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does?

Constant comparison analysis of the participant interviews revealed three major themes, each comprising patterns that ran through the data. Under the theme “Connecting With Students,” the patterns were: establishing a personable atmosphere; showing empathy to students; facilitating student involvement; and tapping into student culture with music. The patterns under the “Optimizing Learning” theme were: enticing students with passion; reducing exam tension; and clarifying concepts dynamically. The “Creating Salient Moments” theme contained two patterns: holding attention (with music and humour) and triggering memory (with music and humour). Data analysis also involved the writing of musical memos, a musical way to represent data that served to highlight the essence of a pattern, create holistic representations that drew from the different data sources, and represent the data in an embodied way. To contextualize the participant themes, the analysis of the field notes produced vignettes, which were detailed aggregated descriptions of typical classroom events.

Using the analogy of “Teaching as Improvisational Performance,” this study explores the notion that a constructivist teacher is essentially an improvisational performer. Although the research site was a large university classroom with almost 600 students, the analysis of the data revealed that the professor was able to implement constructivist principles in his teaching. The study concluded that teachers need preparation and support to develop improvisation skills to deliver a constructivist teaching approach, particularly in large classrooms. Future research should explore the links between constructivist teaching, performing, and improvising as well as the implications for pedagogy and teacher preparation.
Résumé

Cette étude qualitative explore l’approche d’un professeur d’université qui a incorporé la musique dans un cours de psychologie cognitive. Les sources incluent des entretiens avec des participants, des professeurs et des notes d’observations sur le terrain. L’étude a été alimentée par trois questions de recherche principales: comment la musique s’intègre-t-elle dans un cours de psychologie cognitive? Comment les étudiants perçoivent-ils le rôle que la musique joue dans le cours? Qu’est-ce que le professeur fait dans la classe et comment l’explique-t-il?

Une analyse constante et comparative des entretiens des participants a révélé trois thèmes majeurs qui comprennent chacun des éléments saillants qui ont été identifiés à travers les données compilées. Sous le thème « entrer en relation avec les étudiants », les éléments saillants étaient: établir une atmosphère personnalisée; démontrer de l’empathie pour les étudiants; faciliter l’implication des étudiants et entrer dans leur culture à l’aide de la musique. Les éléments saillants sous le thème « Apprentissage optimisé » étaient: captiver les étudiants avec passion; réduire la tension des examens et clarifier les concepts de façon dynamique. Le thème « créer des moments marquants » comprend deux éléments saillants: soutenir l’attention (avec la musique et l’humour) et déclencher la mémoire (avec la musique et l’humour). L’analyse des données a également impliqué l’écriture de « mémos musicaux » dans le but de représenter les données qui ont servi à exposer la composition d’un élément saillant de manière concrète et à créer des représentations holistiques issues de différentes sources. Afin de contextualiser les thèmes des participants, l’analyse des notes d’observation a produit des fiches qui sont en fait des descriptions détaillées d’événements typiques qui peuvent se produire en classe.

En utilisant l’analogie « enseigner à la manière d’une performance improvisée », cette étude explore la notion qu’un enseignant constructiviste est essentiellement un improvisateur. Même si le site où s’est conduite la recherche était une grande salle d’université de 600 élèves, l’analyse des données a révélé que le professeur demeure en mesure d’implanter des principes constructivistes dans son enseignement. L’étude conclut que les enseignants nécessitent de la formation et du soutien pour développer des
notions d’improvisation afin d’utiliser une approche constructiviste, et ce, particulièrement dans une grande classe. De futures recherches devraient explorer les liens entre l’enseignement constructiviste, l’enseignement-spectacle, l’improvisation ainsi que leurs implications dans la pédagogie et dans la formation des maîtres.
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CHAPTER ONE: INTRODUCTION

I entered McGill University’s undergraduate psychology program in fall 1998. Cognition was, and still is, a required course in the program. I registered for the course in my first year but the subject matter seemed distant from my interests in the social sciences and arts. I was really not enjoying the course, and after a couple of weeks, just before the deadline to add or drop courses, I removed Cognition from my course schedule. The following year, I registered again, and once again I had a negative reaction to the course. I remember meeting with an academic advisor to discuss if Cognition was a prerequisite for any another course I would need to take. It was not, so I again opted to avoid taking Cognition and I withdrew from the course. In my third and final year, and final semester in the program, I had to complete the course to graduate. This was the first time Dr. Daniel Levitin taught Cognition at McGill University. Just minutes into the first lecture, I knew this course would be different from previous Cognition courses. Professor Levitin was funny, engaging, spontaneous, and dynamic, and I found myself literally sitting up straight in my chair to pay attention. Professor Levitin also encouraged student interaction, comments and suggestions. He stressed that he did not have “the answers,” and it was up to the students themselves to work with the information, and develop their own personal understandings. I was impressed and I was hooked. Being a professional musician and songwriter with expertise in folk and blues music, I was even more engaged when it became clear that one of the major aspects of Professor Levitin’s approach to teaching was his use of music to demonstrate and explain cognitive concepts. When he discussed cognitive subjects such as memory, he provided examples and readings that addressed people’s memory for musical attributes (pitch, tempo, etcetera). When he taught about human perception and cognitive processing, he illustrated through musical perception how people code and process musical information. In discussing the topic of expertise, Professor Levitin presented case studies of musicians and composers, such as Mozart. Professor Levitin drew upon a wide variety of music-related examples, and when he made reference to artists and music that were familiar to me, the course that previously seemed so distant from anything in my life suddenly became relevant. The way he linked cognition to music was the motivation I needed to do well in the course and the key to my
ultimate success and enjoyment of the course. I was not aware of it at the time, but being a student in Professor Levitin’s Cognition course set the stage for the direction of my graduate studies. My experience in the Cognition course helped me to critically reflect on my education up to that point. For one thing, it got me thinking about how my interest in music was, for the most part, not supported during much of my education, particularly in high school. Although I obtained permission from the school authorities to put on an occasional noon-hour musical performance, there were no opportunities to study music in the same way as other academic subjects were studied. In my high school experience, I felt that music ranked pretty low in importance on the educational scale. Music was treated as separate from academics and I had accepted that as a given.

After graduating from high school I spent six years in the work force before returning to school to further my education. It was in college that I had the opportunity to explore a couple of music courses: an African-American music appreciation course and a language course called *Lyrical Magic*. For the first time, I realized that music could be a part of my academic education, and while music was worthy of study in its own right, it could serve as a lens through which to explore a number of other disciplines such as history, sociology, and humanities. After college, I entered McGill University’s undergraduate arts program, majoring in Psychology. Most courses in my undergraduate psychology program did not integrate music to any significant degree, if at all. In order to make the course material more relevant to me, I integrated music into my class projects and assignments. For example, in a Sociology course on mental illness, I completed a term paper on the life and eventual mental breakdown of Fleetwood Mac’s guitarist and songwriter Peter Green. In another course, *Human Motivation*, I wrote a paper on the practice regime and work ethic of rock guitarist Steve Vai to illustrate motivational theories. However, in Professor Levitin’s Cognition course, music was built into its very design.

By the time I completed my undergraduate studies, I was convinced that music should play a greater role in classrooms, and across disciplines. I decided to continue my education at the graduate level at McGill University in the field of education. That is when I first learned about constructivism and constructivist approaches to teaching and
learning. Generally speaking, a constructivist approach to teaching builds upon the experiences, interests, and prior knowledge that students bring to the classroom. In other words, constructivist classrooms are student-oriented and knowledge is co-constructed with the teacher and students. The idea of connecting with students by making course material relate to their lives resonated with me. In essence, this is what I was doing when I wrote the sociology paper on Peter Green and the psychology paper on Steve Vai. I was connecting the course material to my life and interests. Constructivism served as a means for me to understand what I wanted in my education, and it provided support for my growing belief that music, and the arts in general, should play a greater role in schools and classrooms.

Music became the center of my graduate work. In my Master of Education project, I explored further how music could serve as a teaching tool across non-music disciplines and subjects. For the two-semester long project I designed a course entitled, “Teaching African American History Through Music.” In developing the course I became increasingly aware that music provides a unique means to voice the experiences of the marginalized; Aretha Franklin’s song “Respect” and James Brown’s, “I’m Black and I’m Proud” are among many musical examples that reflect perspectives that otherwise might not have been heard. By the end of my Master of Education project, I was certain that I wanted to explore further the potential of music as a cross-disciplinary teaching approach.

The Research Site

For my PhD research, I returned to the Cognition course that I had taken as an undergraduate student at McGill University five years earlier, this time, to explore more deeply the nuances and role that music plays in Professor Levitin’s teaching and the students’ learning. I chose to situate my research in Professor Levitin’s undergraduate Cognition psychology course for three main reasons: first, music plays a prominent role in lectures and readings in the course; second, I was familiar with the research site; and third, as a former student, I appreciated and was inspired by the way Professor Levitin integrated music in the Cognition course, and I felt there was something pedagogically
unique occurring in his classroom. In my study I aimed to explore this overarching question: How is music integrated into a higher education Cognition psychology course? And more specifically, I posed the following research questions: How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does?

**Cognition Course Overview**

At the time of this study, Cognition (PSYC 213) was a required course in the Bachelor of Science and Bachelor of Arts programs offered in McGill University’s Department of Psychology. The course syllabus states that the prerequisites for the course are an introductory psychology or perception course. Students without these prerequisites could still register for the course, though it was highlighted in the course syllabus that students with the prerequisites tend to do much better in the Cognition course.

As for the course content and focus, Professor Levitin’s Cognition course outline (See Appendix A) stated that:

Cognition is the study of human information processing and includes the topics of memory, attention, perception, language acquisition and use, problem solving, decision making, categorization, and expertise. What is the nature of thought and how does it arise in the mind and brain? How can empirical research inform these questions? This course presents a survey of major topics and controversies in the study of cognition. Research findings will be considered from the perspectives of philosophy, anthropology, linguistics, psychology, computer science, and physiology; a theme will be consideration of the mind as an information processing device. (Levitin, p. 2)

The course syllabus also stated that by the end of the course, students “should have a better understanding of current models and controversies about the nature of

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1 For reasons of participant confidentiality, the year is omitted from the above quote.
human thought, and should have developed . . . skills in critical thinking and evaluation of scientific findings” (p. 2).

The course in which I conducted my study involved twenty-six class lectures over the thirteen-week semester. The course was scheduled twice a week (Tuesdays and Thursdays) from 2:30 to 4:00 p.m. While weekly conferences (discussion sections), led by the graduate student teaching assistants were offered in previous years, conferences were not offered in the course during the period of this study. Students were encouraged to attend class regularly and to visit WebCT, an online virtual learning environment where students could receive course updates and lecture notes as well as communicate with the professor and other students through discussion boards and live chat rooms.

The required textbook for the course was *Foundations of Cognitive Psychology: Core Readings* (Levitin, 2002). To keep up to date with the course readings, Professor Levitin encouraged students to read between ten to fifteen pages every day. Students were also advised to read the assigned readings before the lecture in which the subject matter was discussed. Moreover, in both the classroom and in the course outline, Levitin stressed that there were a large number of readings, some of which were difficult. He suggested that students read everything twice and form study groups to discuss the readings with other students.

Students’ grades were based on two mid-term exams, each worth 30% of the final grade, plus one final exam that tested students on material covered throughout the course, which was worth 40% of the final grade.

*The Classroom*

To accommodate the approximately 600 students enrolled in this McGill University undergraduate Cognition psychology course, it was offered in Leacock 132, a large amphitheatre located in the Stephen Leacock Building, named after a McGill Professor of Economics (from 1901 to 1944) and Canadian humorist and author, Stephen Leacock (*Stephen Leacock Building*, 2010). The lecture room spans two floors, and students can enter from the basement level, as well as from two entrances on the ground
level floor. The chairs are fixed and include a small folding tablet-arm with a small writing surface, about the size of a sheet of paper. The room has two large, overhead projection screens. Professor Levitin used PowerPoint presentations throughout the course, and these large screens were easily seen from all vantage points in the room.

The following pictures of Leacock 132 show vantage points from the rear and front of the room.

*Figure 1.* Rear view of Leacock 132.

*Figure 2.* Front view of Leacock 132.
The large size of the room and large number of students mandated that Professor Levitin use a microphone in order to be heard. At the first class of the semester, the microphone was fixed to a podium. For subsequent lectures, Professor Levitin brought a cordless microphone which allowed him to move around the classroom. Leacock 132 has no windows, in order “to provide fewer distractions” according to the McGill University website. The result is a rather dark room even when the lights are on, and it is especially dark when the lights are lowered to make the overheads clearly visible.

Throughout this study I make reference to the size of the classroom. As will be discussed later, in light of Professor Levitin’s teaching approach, the context of Leacock 132 emerged as unique.

The Professor

The following brief profile of Professor Levitin provides a sense of his work in the field of music, cognition, and humour. As will be shown later in Chapters Four through Six, Professor Levitin’s non-academic background and interests in music and humour played a significant role in his teaching approach. This information was derived from Professor Levitin’s website (Levitin, 2010).

Dr. Daniel Levitin is a cognitive scientist, researcher and cognition professor at McGill University. The work in his research laboratory at McGill University focuses on areas such as the science of musical sound, the acquisition of musical expertise, and the perception of musical emotion. Outside of the academic setting, Professor Levitin has a long history in the music field. In various forms, such as producing, engineering, customizing guitar sounds, consulting, and writing liner notes, he has worked on records released by Stevie Wonder, The Carpenters, Steely Dan, Blue Öyster Cult, Joe Satriani, and Chris Isaak. For his work, Daniel Levitin has received 17 gold and platinum records. He has worked also as a stand-up comedian, winning the National Lampoon Stand-up Comedy Competition Regional Finals in 1989. He has written comedic material for Jay Leno and Arsenio Hall, and worked with cartoonist Dan Piraro, co-authoring the cartoon comedy strip, Bizarro.
Dr. Levitin has written over 40 peer-reviewed scientific articles, and contributed over 300 articles to magazines such as *Billboard, Electronic Musician, Mix* and *Audio*. He has interviewed a number of music artists including Stevie Wonder, Joni Mitchell, Alex Van Halen, Paul Simon, and kd lang. In 2006, Levitin released his first book, “This is Your Brain on Music: The Science of a Human Obsession,” which became an international bestseller. In 2008 he released his second book, “The World in Six Songs: How the Musical Brain Created Human Nature.”

**Situating the Researcher**

Considering that music is central to this research, here I present an overview of my work as a music instructor and musician to better situate myself in this study and to provide the reader with a sense of my background and interests.

As mentioned earlier, I first began to explore cross-disciplinary uses of music in the classroom when completing my Master of Education project where I designed a course entitled, “Teaching African American History Through Music.” As well, during the process of completing this study, I taught two education courses for McGill University’s Department of Integrated Studies in Education: “Music Listening for Education” and “Listening for Learning.” I taught these courses to First Nations and Inuit students enrolled in a teacher education program and I designed both of these courses to explore how music could serve as a teaching tool across academic disciplines.

Outside of academia, I am a singer/songwriter, guitarist, and recording artist in folk, blues, and country genres. Since 2004, I have independently released four albums. Most recently, with the band, the *Kitchen Shakers*, I released *Deep Fried and Countrified* (Kitchen Shakers, 2009). On my previous three music recordings Professor Levitin has worked as a producer, mixing engineer, and consultant. These recordings are: *A Dog Day For The Purists* (Dale Boyle and the Barbunbers, 2004); *In My Rearview Mirror: A Story From a Small Gaspé Town* (Dale Boyle, 2004); and *Small Town van Gogh* (Dale Boyle, 2007). It should also be pointed out that while my previous experiences in Professor Levitin’s course and previous business relations with him did inform this research study,
methodological strategies (outlined in Chapter Three) were used to arrive at findings that emerged from the data.

As an music artist, I have performed at a number of venues and festivals, and appeared performing my song, “The Wilbert Coffin Story” in the CBC ENJEUX documentary, *Le Mystère Coffin*. Since releasing my debut in 2004, I have won an International Narrative Song Competition award, Lys Blues “Songwriter of the Year” and “Folk/Blues Artist of the Year” awards. I have also placed in the finals of the USA Songwriting Competition and the International Songwriting Competition.

In addition to being a songwriter and recording/performing artist, I have also occasionally dabbled in freelance music journalism. I co-founded an online blues music webzine called “Crossroads Blues” (which ran from April-December 2006) which featured interviews that I conducted with musicians such as Tommy Shannon (bassist for the late Texas blues artist, Stevie Ray Vaughan), and Juno award winners Kenny “Blues Boss” Wayne and Jack de Keyzer. As well, I am the founder of “Song Routes,” an interview-based online website that explores the art of songwriting.

Given that music plays a significant role in my life, both within and outside of academia, I entered into this research with a philosophical stance and assumptions. I feel that, educationally, music deserves focus and space in schools. As well, I believe that music has great potential as a teaching tool to illuminate other subjects and connect course material to students’ lives and interests. Although I believe that music has educational value, as mentioned and as outlined in Chapter Three on methodology, I used rigorous research strategies to analyze my data and ensure that my findings were grounded in the data and that I took care to address and explain my assumptions and biases.

**Summary**

For much of my formal education, music was not a part of my learning. It took me a number of years to realize that music does not have to be disconnected from education. I have also come to see that music has pedagogical potential as a tool to explore other
academic subjects. Actually, realizing this inspired me to stay in school, and to study the role music can play in teaching. As an undergraduate student in Professor Levitin’s Cognition course I was struck by the way he used music to explore cognition principles, while connecting the course material to my life and interests.

Five years after being a student in Professor Levitin’s course, I chose it to be my research site and I aimed to answer the following questions: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does? By conducting this research, and working to answer these questions, not only have I gained a greater understanding of the impact of Professor Levitin’s use of music in the classroom, but also I have discovered that music was one of a number of pedagogical resources that Professor Levitin had at his disposal that together, made his approach to teaching unique, as well as an engaging learning experience for his students. This, and a number of other discoveries and insights that emerged from this study, will be addressed in the following chapters. The upcoming discussions include: a review of the relevant literature to my study (Chapter Two); an overview of the methodological approach (Chapter Three); a discussion of the themes and patterns that emerged from my analysis of the participant data (Chapter Four); a presentation of vignettes, which are vivid descriptions of events that typically occurred in the classroom which helped give depth and contextualize my findings (Chapter Five); a rationale for developing the metaphor of a constructivist teacher as an improvisational performer (Chapter Six); and finally, a discussion of the contributions and implications of this study (Chapter Seven).
CHAPTER TWO: LITERATURE REVIEW

Introduction

The purpose of my research was to explore a university teacher's approach to incorporating music into the curriculum to help elucidate various topics in a Cognition psychology course. Furthermore, I wanted to understand how this use of music to teach cognition was perceived and experienced by the students. To provide a theoretical basis for my research, I conducted a review of the relevant literature that helped to inform my study. This chapter provides an overview of the literature on: 1) Theories of learning (behaviourism, constructivism and adult learning); 2) The potential role of music in education; and 3) Concerns with integrating music across the curriculum (maintaining music integrity, moving from connections to correlations, and engaging in curricular integration with music). I discuss qualitative inquiry, and explain my personal connection to this type of research, and why it has been the most appropriate approach for answering my research questions: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does? I also introduce arts-based inquiry, which played a role in the musical memos I developed and used as a way to analyze and represent my data.

Theories of Learning

In the following sections I discuss theories of learning that are pertinent to this study. Specifically, I provide an overview of behaviourism, constructivism, and adult learning.

Behaviourism

Behaviourism is a learning theory that has had considerable impact on educational practices. Behavioural psychologists such as Skinner and Pavlov offered a model of learning that demonstrated that a stimulus results in a response, in a cause-and-effect fashion. From a behaviourist perspective, “learning refers to a change in behaviour” and
“if a behaviourist is interested in anything beyond observable behaviour itself, it is the principles of operation of the device producing the behaviour” (Hintzman, 1978, p. 8).

The more a stimulus is paired with a desired action, the stronger the connection.

Beginning in the 1960s, behaviourism was the dominant theory of learning that was reflected in schools. The premise was that if teachers deliver the appropriate stimuli, students will learn, and as well, display their learning through observable behaviour (Jones & Brader-Araje, 2002). It was believed at the time that positive or desired behaviours if promoted and reinforced would be appropriated, and unwanted behaviours that received negative reinforcement would be eliminated. According to this model, “teachers are said to deposit knowledge into the heads of their students so that it will be available for use in the future” (Bingham, 2004, p. 411). Behaviourism resulted in a rote approach to learning, or one where students were treated as blank slates and empty sponges that would absorb and regurgitate information provided by the teacher. Students’ perspectives, understandings, and prior knowledge were not valued within behaviourist classrooms. Consequently, while students were taught to memorize and recite facts, a deeper understanding of the subject matter was not achieved. Ultimately, the teacher-directed and behaviourist approach to teaching and learning was widely criticized because it fell short of producing meaningful understandings for students that they could then apply in varying situations (Jones & Brader-Araje, 2002).

**Constructivism**

In contrast to behaviourism, constructivist theories embrace the idea that knowledge is constructed. Constructivist teachers realize that students bring with them a vast repertoire of knowledge, beliefs, and prior experiences. The knowledge base and experiences students bring into the classroom in turn have an impact on how students construct and interpret new knowledge. In other words, students do not arrive in class as blank slates, but rather, with a lens through which they will view and construct knowledge. Thus, in contrast to behaviourism, constructivism emphasizes knowledge as a process, rather than a product.
Two key and influential cognitive theorists that have had great impact in the area of education are Jean Piaget and Lev Vygotsky. Piaget developed a cognitive constructivist perspective with four stages of cognitive development: 1) Sensorimotor (0-2 years), Preoperational (2-7 years), Concrete Operational (7-11 years), and Formal Operational (11-adult). Piaget argued that learning occurs through a process of assimilation and accommodation where: 1) An individual’s prior knowledge and experiences impacts on one’s understanding and interpretation of new information; and 2) There is a modification of the information to meet the demands on the environment. Thus, an individual plays an active role in constructing knowledge. According to Piaget (1967), “all knowledge is tied to action, and knowing an object or an event is to use it by assimilating it to an action scheme” (pp. 14-15).

While Piaget focused primarily on the individual and not the social context, Vygotsky’s constructivist theory of learning took into account social influences. This social constructivist perspective affirms that learning is embedded in cultural settings and is inherently social. Vygotsky described the interplay between the learner and the environment as the zone of proximal development (ZPD) (Vygotsky, 1978). He defined ZPD as “the intellectual potential of an individual when provided with assistance” and is “other regulated” by a knowledgeable adult or peer who provides “cues and scaffolding” resulting in intellectual growth (Jones & Brader-Araje, 2002, n. p.). Vygotsky focused on an individual’s potential rather than end products, and this perspective caused educators to realize the extent to which learning was a social process, rather than strictly an individual one (Jones & Brader-Araje, 2002).

Thus, while Piaget stressed the “biological/psychological mechanisms” in the individual learner, Vygotsky “focused on the social factors that influenced learning” (Phillips, 2007, p. 401). However, both theorists were “concerned with how the individual learner goes about constructing knowledge” (p. 401), a concern that lies at the heart of constructivist principles.

Constructivist teaching embraces the view that there is not an objective reality, but rather, subjective realities. “What we call knowledge does not and cannot have the purpose of producing representations of an independent reality, but instead has an
adaptive function” (von Glasersfeld, 1996, p. 3). In other words, as we continuously engage with our surroundings, we compare our new experiences with our previous knowledge and develop new impressions and understandings. This is different from a positivist perspective which views knowledge as objective, and not constructed by the learner. Constructivism is “fundamentally nonpositivist” with its focus on “concept development and deep understanding” (Fosnot, 1996, p. 10). The constructivist teacher embraces the belief that information and perceptions are not “there” and “ready-made” for students to take in and accept (p. 5). Educators “cannot afford to forget that knowledge does not exist outside a person’s mind” (p. 5), and therefore, “the task of the educator is not to dispense knowledge but to provide students with opportunities and incentives to build it up” (p. 7).

Although “there are several interpretations of what [constructivist] theory means, most agree that it involves a dramatic change in the focus of teaching, putting the students’ own efforts to understand at the center of the educational enterprise” (Prawat, 1992, p. 357). The underlying premise of constructivist teaching is that learning is an active process, in which new ideas or concepts are shaped and constructed by students’ current/past knowledge. In other words, cognitive and constructivist perspectives of learning “emphasize the importance of understanding the process of learning from the learners’ perspective” (p. 78). Constructivist teachers embrace the notion that prior knowledge is the key to learning and must be activated so learners can construct their own understanding of new content (Arseneau & Rodenburg, 1998). In a constructivist classroom, learning is not a stimulus-response phenomenon” and “problems are not solved by the retrieval of rote-learned ‘right’ answers” (von Glasersfeld, 1995, p. 14). As well, “all students should take part” in their learning and “the instructor should not talk much save to act as a catalyst” (Monaham, 2000, p. 13). In so doing, a constructivist instructor moves beyond the lecture format to “transform lecture from formal monologue into discussion, which moves students from passive to active learning” (Pennell, 2000, p. 25). Ultimately, in a constructivist environment, the instructor facilitates learning which draws from and responds to the students in the classroom.
There are various ways in which teachers can incorporate and integrate a constructivist approach in their classrooms. For example, constructivist teachers encourage and accept student autonomy and initiative . . . use raw data and primary sources, along with manipulative, interactive, and physical materials, . . . allow student responses to drive lessons, shift instruction strategies, and alter content . . . inquire about students’ understandings of concepts, . . . encourage students to engage in dialogue . . . [and] encourage student inquiry by asking thoughtful, open ended questions. (Brooks & Brooks, 1993, pp. 103-110)

When a constructivist approach to teaching and learning is implemented in a classroom, students’ learning and confidence are promoted when their prior knowledge is acknowledged and validated (Toynton, 2005). “[S]tudents are not only appreciative of the opportunity to use their own ideas and knowledge, but are also aware of the changing roles and responsibilities required of them within the classroom” (Hand, Treagust, & Vance, 1997, p. 561). Ultimately, “through constructivist teaching, students can tap into their natural learning potential because their experiences, their prior knowledge, and their personal interpretations become essential components of all classroom activities” (Manges & Wigle, 1997, p. 45). Thus, constructivist teaching embraces that “students’ prior knowledge in a subject area, including erroneous knowledge, is particularly important in shaping what they ‘learn’” (Woolfolk, 1995, p. 478).

It has been argued that an “experienced teacher’s knowledge is organized from the learners’ perspective and is used as a basis for helping students to understand specific concepts” (Kinchin & Hay, 2007, p. 48). Novice teachers tend to use a linear teaching approach which can be represented by a chain-type framework. The chain thinker is content-centered, and delivers a “surface approach” that supports “rote learning and memorization of information” (p. 49). In contrast, the expert teacher applies a spoke-type framework which represents a student-oriented approach, where student engagement and connection of ideas are facilitated, resulting in meaningful understanding. The “change from novice to expert transformations is likely to parallel an epistemological development within the teacher, from objectivist to constructivist” (p. 49).
I present this discussion because I adopt a constructivist paradigm, and in turn hold ontological and epistemological perspectives. The ontological question asks “What is the form and nature of reality and, therefore, what is there that can be known about it?” (Guba & Lincoln, 1994, p. 108). Personally, I assume a “relativist” stance, one that assumes that there isn’t an objective and absolute reality, but rather, a reality constructed from the experiences of individuals and groups of individuals. The epistemological question asks, “What is the nature of the relationship between the knower or would-be-knower and what can be known?” (p. 108). In my case, I embrace a “subjectivist” view and understand that as a qualitative researcher, I am naturally linked to the investigation of study and implied in the “findings” which are “literally created as the investigation proceeds” (p. 111).

In an educational situation, a teacher working within a constructivist paradigm similarly embraces that students’ prior knowledge has an impact on how they interpret and understand new information. When students enter the classroom, they are not sponges that simply absorb new information, but rather, they bring with them a vast number of experiences and beliefs that shape how they interpret this new information. Thus, the constructivist teacher aims to create an open, engaged learning environment, where knowledge is cumulatively built, rather than delivered to students. Students learn content by learning how to learn. They are able to transfer how to learn to other situations, they take risks, and become critical learners rather than passive, accepting learners (Lunenburg, 2011). As will be shown later, particularly in the Vignettes (Chapter Five) and Teaching as Improvisational Performance (Chapter Six) chapters, constructivism provides a basis for understanding what occurred in Professor Levitin’s classroom and what emerged from the data analysis.

**Adult Learning**

While there is no consensus on what is particularly unique about how adults learn, some researchers feel that adults’ ability to think critically makes them unique students (Vaske, 2001) and for others it is the wealth of experience that adults bring to the learning environment that distinguishes them from younger students (Taylor, Marienau,
and Fiddler, 2000). Others (Draper, 1998; Sipe, 2001; Tice, 1997; Titmus, 1999) state that:

…adults need learning to be meaningful; they are autonomous, independent, and self-directed; prior experiences are a rich learning resource; their readiness to learn is associated with a transition point or a need to perform a task; their orientation is centered on problems, not content; they are intrinsically motivated; their participation in learning is voluntary. (Kerka, 2002, n. p.)

There is a tendency in the literature to present a “generic” view of the adult learner, ignoring the individual differences that exist among adults (Kerka, 2002). However, research shows that “there are many different learning styles or characteristic ways that adults prefer to learn” (Collins, 2004, p. 1487). Even the “father” of adult learning theory, Malcolm Knowles, who once distinguished adult learning (which he called andragogy) from how children learn, has modified his position: “what he once envisioned as unique characteristics of adult learners, he now sees as innate tendencies of all human beings, tendencies that emerge as people mature” (p. 1484). While there may not be a clear distinction between how to teach the adult and child learner, “all theories of adult education are based on valuing the prior learning and experience of adults” (p. 1489). Teaching adults requires building on this prior learning, using methods that treat learners with respect, and recognizing that people have different learning styles and have a variety of responsibilities and time commitments (p. 1489). Therefore, it is important to acknowledge that “adult learners always bring their unique learning characteristics to the learning situation” (Huang, 2002, p. 27). Moreover, students should have the opportunity to “share ideas and learn from each other” in the classroom (Collins, 2004, p. 1486). As well, instructors of adult students can “motivate learners by establishing a friendly, open atmosphere of helpfulness and by setting the degree of difficulty of the learning experience high enough to challenge participants, but not so high that they become frustrated by information overload” (p. 1487). Thus, the evolution in the field of adult learning mirrors that of learning generally in that it reflects active, experientially constructed learning rather than passive and individual rote learning.
It is widely accepted that engagement in in-class discussions promotes learning (Carini, Kuh, & Klein, 2006). Teachers can increase student participation in class by creating a supportive climate by doing things like making “eye contact and smiling” and showing “interest and support” (Rocca, 2010, p. 205). Knowing student names can also help create a climate of support (Fritschner, 2000) and showing empathy towards students facilitates participation in the classroom (Merwin, 2002). As well, teachers can encourage student participation by showing a sincere interest in the students and by responding to questions in a manner that invites further interaction (Schrodt, Turman, & Soliz, 2006). Establishing a friendly, open, and helpful atmosphere also contributes to a perception that the instructor is authentic. An authentic teacher is “seen as a flesh-and-blood human being with passions, enthusiasm, frailties, and emotions, not as someone who hides behind a collection of learned role behaviours appropriate to the title of professor” (Brookfield, 2006, p. 5). An authentic teacher is perceived as an “ally,” someone who will “walk the talk” and be “trustworthy, open, and honest in dealing with students” (p. 6). It has been argued that self-disclosure on the part of the professor is related to promoting student participation in the classroom (Cayanus, Martin, & Goodboy, 2009) and “when teachers are relevant in their self-disclosures, students seemingly are more motivated to play an active role in the learning process” (p. 111).

Similarly, based on questionnaires completed by adult students in his own courses, Brookfield (2006) identified four common indicators of authenticity: 1) congruence (where the teacher’s words match his/her actions; 2) full disclosure (where the teacher openly expresses his/her expectations, assumptions, and standpoints; 3) responsiveness (where the teacher demonstrates that his or her teaching is student oriented, and helpful to students; and 4) personhood (where the teacher is seen as someone as having a life outside the classroom). These are “appropriately evident when teachers use autobiographical examples to illustrate concepts and theories they are trying to explain” (p. 10). A teacher that reflects congruence, full disclosure, responsiveness, and personhood in his or her teaching will connect with students because he/she is perceived as an authentic person. As well, research has shown that when students perceive that a professor has a similar background and attitudes, they are more likely to engage in class activities and discussions (Schrodt, Turman, & Witt, 2007). Such findings suggest that
“when students consider their instructors to be similar to them” they are “likely to perceive the instructor favourably” (Myers et al., 2009).

For the adult educator, there are various adult learning principles and questions to consider. The following table from Collins (2004, p. 1488) provides an overview of principles of adult learning and questions educators should consider when teaching adults and highlights questions that can guide educators in applying adult learning principles.

Table 1
Questions for Educators Seeking to Apply Adult Learning Principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning is enhanced when it is immediately applicable to real-life contents</td>
<td>What are some of the ways you can make training relevant to the learners’ practices?</td>
</tr>
<tr>
<td>Learning is enhanced when adults have control or influence over the educational experience</td>
<td>What are some of the ways you can give participants control over their learning?</td>
</tr>
<tr>
<td>Learning depends on past and current experiences</td>
<td>What are some of the ways you can use learners’ experiences as a resource for learning?</td>
</tr>
<tr>
<td>Learning depends on active involvement of the learner</td>
<td>What are some of the ways you can keep learners stimulated and involved?</td>
</tr>
<tr>
<td>Learning depends on a climate of respect and comfort</td>
<td>What are some of the ways you can create a safe, respectful, comfortable learning atmosphere?</td>
</tr>
<tr>
<td>Learning is enhanced when learners achieve self-direction</td>
<td>What are some of the ways you can encourage learners to be more self-directed? And to continue learning on the job?</td>
</tr>
<tr>
<td>Learning is enhanced when connections are created</td>
<td>How can you create connections among participants and the workplace?</td>
</tr>
<tr>
<td>Learning is enhanced when learners are successful</td>
<td>What are some of the ways you can ensure that learners are successful?</td>
</tr>
<tr>
<td>Learning is facilitated when learners receive feedback</td>
<td>What are some of the ways you can reinforce learners and facilitate self, peer, or instructor feedback?</td>
</tr>
</tbody>
</table>

This literature suggests that instructors should aim to connect course material to students’ lives, encourage independent study, develop course content that is practical,
vary the instructional methods to reflect a range of learning styles, and include in the
teaching as many activities as possible that require using all of the intelligences
(linguistic, logical/mathematical, spatial, kinesthetic, interpersonal, intrapersonal,
musical, and naturalistic) (p. 1487). As well, a student-oriented approach that actively
involves the learner in classroom activities should be practiced. As noted in discussions
on theories of adult education, adapting a cognitive and constructivist perspective entails
that “educators must be able to help their learners ‘build bridges’ by linking new ideas to
the learners’ prior knowledge and experience” (Magro, 2007, p. 78). As discussed in the
following section, music serves as one means to link adult learners’ prior knowledge to
new information.

The Potential Role of Music in Education

Howard Gardner (2007), best known for his theory of multiple intelligences,
changed the long-held notion that humans are born with a single intelligence. Initially his
innovative work postulated that there were seven intelligences made up of linguistic,
logical-mathematical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and
musical intelligence. Later, Gardner added a naturalist intelligence to the list (2007).
Gardner has noted that “of all the gifts which individuals may be endowed, none emerges
earlier than musical talent” (Gardner, 1993a, p. 99). Despite this, “[e]xcept among
children with unusual musical talent or exceptional opportunities, there is little further
musical development after the school years begin” (p. 109).

In line with constructivist principles of teaching, it is well accepted now that
educators need to build on students’ strengths by tapping into their multiple intelligences
(Gardner, 1993b) and that musical intelligence “deserves to be considered as an
autonomous intellectual realm” (Gardner, 1993a, p. 126). Also, it has been demonstrated
that different modes of representations evoke different kinds of understandings (Eisner,
1991). Thus, the astute educator can leverage this pre-existing musical interest for
pedagogical purposes.

It is important to stress that music and the arts should be an essential component
of education, it should not have to be justified by citing its “extra-musical benefits” in
schools (Weinberger, 1998, p. 36). Unfortunately, this has often been the case. It has been argued that music has a ripple effect that improves student grades and performance (Simon, 2002; Kupferberg, 1999) and that music education has “positive, measurable, and lasting academic and social benefits” (Jensen, 1998, p. 3). However, such claims have been challenged. In a review of the claims made about the extra benefits of music education, Russell and Zembylas (2007) found that “there are serious concerns about the benefits and effectiveness of arts-integrated curricula, and about the lack of strong empirical research to support claims that arts-integrated curricula are actually effective in terms of student achievement” (p. 290). Hetland and Winner (2000), cited in Russell and Zembylas, found that “while arts-integrated approaches to teaching academic subjects sometimes led to improvement in an academic subject, the improvement was not significant when compared to traditional approaches to teaching the same subject” (p. 290). Although there is no consensus on whether or not the integration of the arts does promote improvement in other academic areas, it would be useful to know if integrating music does result in improvements in other academic subjects. Still, I maintain that regardless of what is found, if one accepts the premise of constructivism, then music should be integrated across the school curriculum because students have musical interests, strengths, and “intelligences,” and these can serve as a means to connect material to students’ lives. School should be a place where students are exposed to a variety of subjects and a range of ways of exploring these subjects. As well, I believe that music should not be treated as merely a tool to serve other subjects. This is echoed by Levitin (2006) in his critique of a study that claimed that listening to ten minutes of Mozart a day makes people more intelligent (i.e., “the Mozart Effect”). The study convinced policy makers to promote music in schools based on the effect music would have on other subjects; however, as pointed out by Levitin,

The actual study that claimed this has many flaws. The study was claiming some of the right things but for the wrong reasons. Personally, I found all the hubbub a bit offensive because the implication was that music should not be studied in and of itself, or for its own right, but only if it could help people to do better on other ‘more important’ things. Think how absurd this would sound if we turned it inside out. If I claimed that studying mathematics helped musical ability, would policy
makers start pumping money into math for that reason? Music has often been the poor stepchild of public schools, and people frequently try to justify it in terms of its collateral benefits, rather than letting music exist for its own rewards. (pp. 219-220)

Music does indeed have its own rewards, and one of its virtues is that it is a window through which we can understand our world (Campbell, 2005). With music, educators can “find relationships with historical events, diverse cultures, and the humanities in general” (Rogers, 2004, p. 25). Like a written document, photograph or videotape, music is reflective of a time and place and the larger social context in which it is created. Music is a part of our culture, and in conjunction with Vygotsky’s social constructivist theory, “it is important that every classroom’s curriculum reflect the culture” (Greata, 2006, p. 13). As it happens, because music is so prevalent in our society, it mirrors cultural traditions and values (Kelly & Van Weelden, 2004), and this can be utilized by instructors to connect course material to students’ lives and interests. As well, the incorporation of music into the classroom is an effective way of grabbing and stimulating student interest (Nielsen, 2001). Music can also serve to “clarify concepts, inspire discussions, motivate the sharing of life experiences, and generate broader understanding as a result” (Martinez, 1994, p. 264). Ultimately, “our world is filled with music” and there is “no reason to exclude it from the classroom” (Nielsen, 2001, p. 89). Moreover, for these reasons discussed, music has considerable pedagogical potential for the constructivist teacher.

Marshall (2005) suggests that the integration of the music across the curriculum promotes students’ creativity. If creativity is to be fostered in higher education, curriculum must “reflect upon the realities of its students” (Donnelly, 2004, p. 162). As presented earlier in the section on constructivism, “learner construction of knowledge is an important element for the development of creativity, and creating the right motivational climate for learning is part and parcel of this” (p. 157). Furthermore, in his work on creativity, Csikszentmihalyi (1996) asserts that a person must be exposed to a domain in order to be creative in that domain, and creativity is more likely to occur in environments where there is an openness to new ideas. Thus teachers must be aware of
and receptive to the realities and ideas of their students. This awareness and receptivity represents a big step towards creating a motivational climate that fosters creativity.

Cultural studies researchers are “explicitly opposed to the celebration of high or elite culture” (Edgar & Sedgwick, 1999, p. 101), and thus, have embraced and explored various popular musical genres and styles as worthy of study. Certainly, music is all around us, in the “shopping malls, the supermarket, on the streets, at work, in parks, in pubs, in clubs, in restaurants and cafés, on the television, at the cinema, on the radio, and downloaded from the internet” (Storey, 2003, p. 110). As a result of the significance of popular music in society, it has become a topic of interest within cultural studies (Storey, 2003) and is seen as another form of literacy. Cultural Studies provides a framework for “educators committed to understanding and engaging, rather than reifying, adolescents’ out-of-school literacies” (Low, 2005, p. 107). Cultural Studies “widens the gaze to include the influence of mass media popular culture” (p. 115). Popular music culture “helps to establish a sense of identity among youth” (Storey, 2003, p. 117) and music, like other cultural phenomenon, “produces text of a sort, which in turn evoke different responses from different people” (Alvermann, Moon, & Hagwood, 1999, p. 3). In other words, “Music is more than an object of study” and is “a way of perceiving the world” and a “tool of understanding” (Attali, 1985, p. 4). Music is a way to perceive and understand the world, and like other forms of popular culture, can be recognized and integrated into the classroom. Thus, a “cultural studies approach to curriculum takes youth culture seriously as a resource of creative, provocative literate practices” (Low, 2005, p. 121) and since students can learn and express themselves differently through a medium such as music, the “challenge for educators becomes learning how to listen differently” (p. 121). It is important for teachers to understand that, “Regardless of their backgrounds, many students prefer popular musical styles or what is currently playing on the radio or MTV” (Kelly & Van Weelden, 2004, p. 37) rather than other forms of music. In its application, teachers need to move beyond mere classical music references, and look to music that speaks to most students and to “tap into student fandom, using student enthusiasm for ‘their’ music” in teaching (deVries, 2004, p. 26).
For example, in an economics classroom where music was integrated as a teaching tool, students tended to choose contemporary music when asked to select songs that they felt reflected topics covered in the course (Tinari & Khandke, 2000). Some of the songs that students selected were Billy Joel’s “Allentown,” which related to supply and demand, and structural unemployment, and Tracy Chapman’s “Fast Car,” which addresses disparities in income and issues about poverty. Fostering a classroom environment where students play a role in shaping the curriculum substantiates my earlier discussion on student motivation, creativity, and student-oriented, constructivist teaching.

Indeed, “because pop music constantly changes and fuses together different forms to create new and unique variations, teachers must realize that their knowledge of such music must also continue to evolve” (Kelly & Van Weelden, 2004, p. 38). Depending on the teacher’s personal disposition and preferred musical style(s), this may require actively seeking materials to gain an understanding of students’ musical preferences, which can in turn reflect students’ culture and beliefs. This can be done by consulting contemporary music magazines, doing Internet searches, or simply asking students to share their musical preferences.

In practice, teachers need to adapt the musical content to match student interests. An example of this occurred when a sixth-grade teacher integrated Joni Mitchell’s environmentally conscious song, “Big Yellow Taxi,” into an ecology course and it failed to serve as a means to promote discussion on issues of pollution (deVries, 2004). Rather, the students laughed at Mitchell’s voice, and the original folk-based version of the song did not resonate with these sixth-grade students. However, when the teacher then presented the class with a contemporary version of the song from the rock group “Counting Crows,” the students were engaged, and clapped and sang along. The “Counting Crows” version connected with the students and they readily explored the song structure and lyrics as it related to environmental issues. As simple as it sounds, to better inform their musical selections in the classroom, teachers can “talk to their students” and “find out what they are listening to” instead of relying on their own experiences and musical tastes (p. 27).
Teachers of students of all ages, including adults are well served if they draw upon the interest of their students. In a mixed-methods study on the consumption of entertainment conducted with 215 adult educators (professors and graduate students), Tisdell and Thompson (2007) found that the participants were “large consumers of popular culture as a source of pleasure” (Tisdell, 2007, p. 7). Levitin (2001) has similarly found that most university students listen to music every day, and are passionate about their musical favourites. This has valuable implications for curriculum development since students are more engaged and tend to perform better when the approach to curriculum is geared to their interests (Grundy, 1987; Dewey, 1938). Moreover, this is equally important for college or university students who have difficulty learning course material that does not touch upon their interests (McKeachie, 1994). Ultimately, using popular culture in adult education can serve as a “bridge by drawing on everyday experiences of the pleasures and influences of media and connecting those experiences to theory” (Tisdell, 2007, p. 12). In so doing, teachers can enhance the learning experience by drawing upon music, which in turn will evoke different responses and understandings from students.

**Concerns With Integrating Music**

While there is considerable potential for music in the classroom, there are concerns about how educators use and apply music in their teaching. It has been my experience when teaching music to pre-service, elementary school teachers that there is a barrier to overcome because many do not feel comfortable with music. Research has consistently shown that teachers lack the confidence in their ability to incorporate music into their teaching (Russell & Zembylas, 2007). An “important issue in arts integration relates to teacher self-efficacy and preparation to teach using integrated approaches” (p. 297). For teachers at the secondary level who are typically educated in a specific subject area, it is not surprising that they “feel uncomfortable when asked to teach in an integrated manner, unless they have had opportunities to develop deeper knowledge in the subjects they are trying to integrate” (p. 297). While I fully support the view that music has incredible educational value, it is apparent that most teachers will likely require preparation before applying music across the curriculum. Thus, it is necessary to
provide teachers with professional development opportunities and support to enable them to develop the skills and knowledge to integrate music across the curriculum.

Another concern for educators relates to maintaining the integrity of music when it is applied across the curriculum. Music should not merely function to the degree in which it can serve another subject. Rather, teachers should aim to integrate music in a way that students learn something about music, and not just the subject in which music is being integrated. This is important because without a concern for musical integrity, the value of music has often been relegated to a subservient position; a means to teach another subject, but not valued as a subject in and of itself. The issue of maintaining the integrity of music is not a new one. For example, the Tanglewood Symposium in 1967, a conference with the purpose of discussing the role of music education and making recommendations to improve music instruction, called for music to be placed in the core of the school curriculum. Among the initiatives of the Tanglewood Declaration was that the integrity of music should be maintained (Goldberg & Scott-Kassner, 2002). Musical integrity is still of concern and relevant for music educators and teachers today.

While the integration of music in the classroom and across academic disciplines is valuable, the concern over integrity stems from situations where music is treated as an “add-on” or “hook,” and thus trivialized when used as a teaching tool in other non-music subject areas (Rosenbloom, 2004). It has been argued that it “is important to identify legitimate connections that focus on common learning processes so that each discipline can maintain its own integrity” (Burrack & McKenzie, 2005, p. 46). There is a need for educators to move beyond a “utilitarian philosophy,” which holds that the study of music should only function to illuminate other subjects, to an “organic philosophy” which aims to retain each subject’s integrity. The integration of music into a discipline should involve using music in an authentic manner and not solely as background “noise” when students are studying, for example. Rather, it is by maintaining musical integrity that students learn about and explore music in a cross-disciplinary situation.
Maintaining Music Integrity

Barrett (2001) stresses in her article entitled, *Interdisciplinary Work and Musical Integrity*, that music should be integrated and applied to other disciplines in a manner, as the title suggests, that maintains its (musical) integrity. Barrett proposes that teachers should use the Facets Model, which is an “interdisciplinary perspective on music education that preserves the integrity of music while making valid connections to disciplines outside music” (Barrett, 2001, p. 28). The Facets Model encompasses contextual, structural/elemental facets, and expressive facets. Contextual facets “encourage consideration of the origins of the work – the imprints of time and place that often influence stylistic performance and interpretation” (Barrett, 2001, p. 29). This can take the form of placing music in its historical context to demonstrate how the music is representative of a particular time or place. On the other hand, “structural and elemental facets draw attention to the building blocks of music and the way they are organized in larger forms” (Barrett, 2001, p. 30). For example, students can learn how the great depression of the 1930s had an effect on musical instrumentation and style. Finally, expressive facets “emphasize the range of meanings that a work may embody” (Barrett, 2001, p. 30). This facet can take the form of presenting students with songs that are about a particular time, incident, etcetera. Barrett’s work suggests that by applying the contextual, structural/elemental facets, and expressive facets of music these can serve to guide teachers in integrating music across the curriculum in an artistically legitimate and authentic manner.

Connections, Correlations, and Integration

When integrating music into other disciplines, a teacher should aim to move beyond simply making a “connection,” to achieving “correlations,” and ultimately, “integration” (Snyder, 2001). A “connection” is the “the most popular, most used, and least meaningful way of linking disciplines” (p. 34). A teacher makes a connection when materials or concepts from one discipline are used to help teach or reinforce a concept in another curricular area. When music is used as a “connection,” it functions merely to serve the other discipline. An example of this is seen when elementary teachers have students sing “Old MacDonald” if the theme in class is on farm animals. Such
“connections,” according to Snyder, “are rarely intended to develop musical concepts and skills” (p. 34). A “correlation,” on the other hand, “is made between two or more disciplines through shared materials or activities” (p. 35). Thus, a correlation occurs when two or more teachers plan to teach the same topic at the same time. For example, a history teacher and a language teacher might decide to correlate their curriculum so they are both covering the civil rights movement, for example, during the same time period. “Correlations” allow students to see relationships between disciplines, and are preferable to a “connection.” However, in order to achieve “integration,” “a broad theme is chosen that cuts across disciplines, so that each content area or intelligence can explore the central idea in a meaningful way” (Snyder, 2001, p. 35). The main ingredient to “integration” is that a theme or idea is explored through more than one discipline. In a situation where an attempt is to be made to achieve the “integration” of two disciplines, teachers may begin by asking themselves two basic “integration-based” questions: 1) “What is there about this theme or central idea that can be explained or explored through music?” 2) “What is there about music that can be explained, explored, or elaborated through this theme or central idea?” (Snyder, 2001, p. 36). These questions can guide teachers when integrating music into their courses, and can help ensure that the integrity of music is maintained, and that simultaneously students learn about the course material (mathematics, English, etcetera) and elements of music.

**Curricular Integration With Music**

Wiggins (2001) outlines five ways in which teachers can approach and engage in curricular integration. The first is to use “teaching-tool connections” such as using the alphabet song to help children remember the alphabet. However, Wiggins corroborates the previous discussion by suggesting that such an approach should not be construed as a true integration of disciplines because music merely functions to serve other disciplines (p. 3). Another means of integrating different subjects is to use “topic connections” where “one subject area serves to clarify or enrich another” such as “reading a play about Abraham Lincoln in history class” (pp. 3-4). In such a case, the activity may enrich students’ understanding of Lincoln, but it is not likely that it will provide students with an understanding of drama. Thematic or content connections, on the other hand, often take
the form of “integrated thematic units” in which “too many of the themes chosen have little to do with either the content or concepts which need to be taught” (p. 4). Wiggins point out, that although a “Renaissance unit in a high school humanities course may provide excellent opportunities for students to make legitimate content connections,” the use of “dinosaurs as a unifying theme in an elementary classroom provides little more than motivation” (p. 4). Wiggins suggests that while these three approaches represent the typical manner in which music is integrated across disciplines, instruction needs to move into two more unchartered areas. He suggests that the first of these is to establish “conceptual connections” where, as the name suggests, “concepts are the focus” (p. 4). For example, “the concept of story structure in literature can be compared to form in music” (p. 4). Finally, teachers can aim to achieve “process connections,” which is to say that just as “reading, writing, and listening help students to formulate an understanding and to develop skills in verbal literacy,” “performing, creating, and listening help students to formulate an understanding and to develop skills in music literacy” (p. 4).

In cross-disciplinary teaching, two or more academic disciplines are integrated to inform one another. In the case of music, other disciplines would “inform the study of music and, in turn, the association with music enhances study of the other disciplines” (Burrack & McKenzie, 2005, p. 45). For teachers, the goal is to respect the contributions of each discipline in order to create an effective cross-disciplinary curriculum (Jacobs, 1989). Bresler (1995) outlines four styles that teachers generally use in integrating the arts: 1) subservient integration; 2) affective style; 3) social integration; and 4) co-equal cognitive integration style. The most used style is “subservient integration,” which involves low-cognitive skills such as having children sing songs about a subject. The “affective style” involves using music in the background to relax students, set a mood, stimulate creativity, or demonstrate a certain musical style. The “social integration” style is to promote community links and events. The approach advocated by most researchers, yet least commonly used approach is the “co-equal cognitive integration style.” This involves higher order cognitive skills and is used by those with an artistic background or done in collaboration with an arts specialist (i.e., musician, painter, etcetera). Research suggests that this is the approach the teachers should aim to achieve, where music plays an integral role while its integrity is maintained.
Ultimately, “In developing a cross-disciplinary activity, it is essential to know and understand the underlying concepts basic to each discipline when finding instructional connections” (Burrack & McKenzie, 2005, p. 49). Just as the “architect who understands how a building might resemble a Beethoven Symphony understands more about what architecture is,” the “musician who understands how a Beethoven Symphony might resemble architecture understands more about symphonic works” and therefore, “one who understands both disciplines deeply enough, the whole is greater than the sum of the parts” (Scripp, 2000, p. 4). Educators can certainly use one discipline to inform another and vice versa, though respecting the “integrity of both disciplines should be the goal” (Burrack & McKenzie, 2005, p. 49).

Although integrating music into the curriculum can be a challenge, especially for teachers without a background in music, it is essential that, whenever possible, efforts are made to ensure that music is utilized in a manner that maintains musical integrity. As presented, music has inherit value and should not be treated as a tool to merely serve another discipline. Rather, teachers who achieve a true integration of music with other disciplines will enrich the learning environment by providing students with a greater understanding of the subject matter.

However as a student, I have rarely experienced the integration of music as a means to explore other subjects. Rather, in my experience it seemed that music, and the arts in general, were not valued in the educational setting. As shown in the following sections, these school experiences are key to my personal connection with qualitative research, which is the methodological approach used in this study.

**Qualitative Research**

In this section I present the characteristics of qualitative research and show how qualitative work is positioned in the field of research. I discuss how qualitative inquiry, and arts-based approaches in particular, resonate with my research stance and were most appropriate for my study.
While qualitative research should not have to be defined by what it is not, that is quantitative research, in order to set the stage for what follows, I feel it is important to give a brief overview of how qualitative research emerged during a time when quantitative, positivist ideologies were dominant.

“Educational sociology officially began as a field in 1915 when the first ‘Sociology of education’ course was offered” (Bogdan & Biklen, 1992, p. 13). The following years, through the 1920s, was a period that highlighted “natural sciences and measurement,” (p. 13) and it reflected a tendency to support quantitative research. Believed by many that quantification implied good science, a distinction was made between the “hard” quantifiable sciences and the so-called “soft” social sciences. Although qualitative research was not popular, particularly during the 1930s through the 1950s, it did gain some acceptance during this period (Bogdan & Biklen, 1998). However, by the 1960s this trend had “eroded” as “quantitative methods gained dominance and beliefs in scientific logic, objectivity, and truth supported and legitimized reducing qualities of human experience to quantifiable variables” (Charmaz, 2004, p. 498). The acceptance of qualitative research was slow in coming, and research in music education was no exception: “Greatly influenced by research trends of the time and dominated by the need to achieve mainstream stature, music education researchers of the late 1950s and 1960s engaged in studies that produced quantifiable outcomes exemplified in the work of psychologists” (Flinders & Richardson, 2002, p. 1167).

Increasingly, more and more researchers have accepted that qualitative inquiry is a legitimate and powerful means of conducting research. In the following section I situate myself and show how my connection to music informed and influenced my interest in qualitative inquiry.

**My Connection With Qualitative Inquiry**

I include this brief overview of the context in which qualitative research emerged because it ties in with my experiences as a student and is a fundamental rationale for my research. For one, “qualitative research can be seen as marginalized in both its participants (subjects as defined by traditional science) and by its methodology” (Maykut
& Morehouse, 1994, p. 7). In my formal education, up to and including my college years, I most frequently encountered the ideology that reflected the view that hard science, objectivity, and scientific rigor must be divorced from the messy data of soft science (Macedo, 2006). In such a schooling system, “sciences, such as physics and chemistry, that lend themselves especially well to quantification are generally known as ‘hard’” whereas the “social sciences are referred to as ‘soft’” (Guba & Lincoln, 2001, p. 57). The result is that the social sciences and the arts, including music, were frequently downplayed in my educational experience. In turn, students who possessed an interest and passion for the arts were marginalized. As discussed in Chapter One, although I had a profound interest in music, for the most part, music was not encouraged or explored in the classroom. I did not feel any connection to my education, and after graduating from high school, I opted to leave schooling behind. For two years, I trained as a welder, and then for three years I worked in a fish processing plant before I decided to continue my academic education. On the first day of class of my college economics course I was reminded of what I know now was the dominance of the positivist perspective when the teacher proudly introduced the course by saying, “this is a real course, this isn’t a sit-around-and-talk-about-your-feelings humanities course, this is a real course.” Attitudes such as this one left me, for most of my years as a student, wondering if, when, and where music, and I, could fit into an educational context.

Although I did not know it at the time, my personal experiences as a student set the stage for what eventually led to an interest in qualitative research. There are two main reasons why I became interested in qualitative inquiry. First, a qualitative research approach enabled me to gain an in-depth understanding of the lived experiences of the participants in my study, while allowing me to place my feelings, experiences, and perspectives, along with those of the participants, at the core of the research. Second, it enabled me to study the arts in a manner that I felt was fitting with the arts, as opposed to through a positivistic lens. Specifically, as outlined in greater detail in Chapter Three on methodology, through qualitative inquiry I was able to explore music and reflect research findings in a musical way (i.e., musical memos).
Characteristics of Qualitative Research

The essence of qualitative research falls within at least three interpretative levels: method, technique, and paradigm. Qualitative research is often viewed as strictly a method, which means the “procedures for designing, conducting, and reporting research” (Lancy, 1993, p. 7). Qualitative research as method encompasses such things as selecting the research setting/participants and the type of qualitative research (grounded theory, ethnography, and so on) to be used. Qualitative research as technique would include ways to collect data such as through open-ended interviews, focus groups, and observation as means, or techniques, to gather data (p. 8). However, at the level of paradigm, qualitative research differs from quantitative research in its “basic assumptions . . . about how one derives truth, the purpose of inquiry, the role of the scientist/investigator, what constitutes evidence” and “how one evaluates the quality of a given study” (p. 8). For example, qualitative research holds that “there are multiple realities,” “The knower and the known are interdependent,” “values mediate and shape what is understood,” relationships are “multidirectional,” “only tentative explanations for one time and place are possible,” and generally it “seeks to discover or uncover propositions” (Maykut & Morehouse, 1994, p. 12). In other words, qualitative researchers embrace the view that there is no single reality. Even if people are in similar situations, each person will have a different perspective, a different reality. Individuals’ prior experiences, beliefs, and values provide lenses which influence and shape their understanding of new information, and thus, the knower and the known are closely interconnected. Moreover, the qualitative researcher believes that relationships are non-linear and multidirectional.

Qualitative researchers do not aim as positivist researchers do to establish a “true” set of findings, that under the “same” set of circumstances can be generalized elsewhere. Because “only tentative explanations for one time and place are possible” (Maykut & Morehouse, 1994, p. 12), qualitative researchers aim to gain an in-depth understanding of a particular event or phenomenon. However, the rich detail of qualitative work allows others to make comparisons and inferences about similar situations. As well, qualitative researchers do not set out to prove a hypothesis in their research, but rather, their aim is
to gain an understanding of the situation of a particular context and to develop an interpretation that emerges from and is grounded in the data.

Some qualitative theorists such as Maxwell (2004) support a “realist, process-oriented approach” that “relies fundamentally on an understanding of the processes by which an event or situation occurs” (p. 9) and work to develop causal explanations in their research. Traditionally, however, qualitative researchers do not seek to discover causal relationships. This stands as a point of departure from quantitative research. As Eisner (1991) points out, “in our efforts to understand the world, objectivity is surely among the most cherished ideals” (p. 43); but our world is not something we simply ingest, but rather, “we make our experience, not simply have it” (p. 60). Thus, qualitative research is concerned with “capturing and describing how people experience some phenomenon – how they perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others” (Patton, 2002, p. 104). Ultimately, in qualitative research, “what is important to know is what people experience and how they interpret the world” and the “only way for us to really know what another person experiences is to experience the phenomenon as directly as possible for ourselves” (p. 106). To achieve this, qualitative research is carried out in naturalistic, real-life, settings; produces rich descriptive data; is concerned with process over products; is inductive rather than deductive; and is concerned with meaning and how participants make sense of their world (Bogdan & Biklen, 1998). Qualitative researchers believe that “there is an essence or essences to shared experience” and that these “essences are the core meanings mutually understood through a phenomenon commonly experienced” (Patton, 2002, p. 106).

Given the nature of the inquiry and the purpose of my research, I carried out a qualitative study with a “focus on exploring how human beings make sense of experience and transform experience into consciousness, both individually and as shared meaning” (Patton, 2002, p. 104). By conducting a qualitative study I was able to explore and answer my research questions: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does?
Arts-Based Inquiry

Arts-based qualitative inquiry emerged as qualitative researchers “embraced new practices that redefined the roles of researchers and the research participants”; the focus turned to ethical issues surrounding the researcher-participant relationship (Finley, 2005, p. 682). As this occurred, participants were not viewed as subjects, but rather, as “collaborators, even co-researchers” (p. 682). Finley highlights the turn to activist social science that led to arts-based inquiry:

Postmodern foundational shifts brought about new conceptualizations of how research works, how meanings are made, and what social purposes research might serve. Social scientists began to act on their realization that traditional techniques of research were not adequate to handle the many questions that needed to be asked when the frame was shifted to take on new and diverse populations. (p. 682)

As well, Denzin and Lincoln (2005) have discussed a crisis of representation that prompted questions about how research can be reported, written up, and what forms the research can take. These issues created a space for arts-based inquiry (Finley, 2005). Within the research reform, theorists such as Eisner (1991) encouraged exploring the arts in research:

One of Eisner’s important contributions was his insistence on the power of form to inform that included a call to use many different art forms (e.g., dance, film, plastic arts) as well as the various narrative forms that have proliferated in the new social science paradigm. (Finley, 2005, p. 684)

Arts-based inquiry is built upon seven premises according to Eisner (1991) as cited in Finley (2005, p. 685). These are:

1. There are multiple ways in which the world can be known. Artists, writers, and dancers, as well as scientists, have important things to tell us about the world.
2. Human knowledge is a constructed form of experience and, therefore, is a reflection of mind as well as of nature. Knowledge is made and not simply discovered.

3. The terms through which humans represent their conception of the world have a major influence on what they are able to say about it.

4. The effective use of any form through which the world is known and represented requires intelligence.

5. The selection of a form through which the world is to be represented not only influences what humans can say but also influences what they are likely to experience.

6. Educational inquiry will be more complete and informative as humans increase the range of ways in which they describe, interpret, and evaluate the educational world.

7. The particular forms of representation that become acceptable in the educational research community are as much a political matter as they are an epistemological one. New forms of representation, when acceptable, will require new competencies.

Arts-based qualitative inquiry provides a means to explore people’s interests and talents that otherwise may go unnoticed. Butler-Kisber (2002), in her first involvement with an arts-based teaching approach, found that “it not only engaged all children, but it tapped into talents that were otherwise not apparent” (p. 231). My realization that arts-based inquiry could serve to open up, extend, and realize the value of the skills, talents and interests of students was central to my interest in conducting research on the potential role of music in the classroom.

Arts-based inquiry involves integrating art forms such as poetry performance, visual forms, and more specifically music, which is at the heart of my research interests.
In the following chapter I introduce my own arts-based methodological contribution, a musical way of analyzing and representing data that I have called musical memos.

**Summary**

The arts, whether they take the form of a painting, a sculpture, a poem, or as presented in this thesis, a piece of music, can be “read” just as a standard textbook can be read, and are legitimate means of exploring/understanding a phenomenon or subject. Yet, either as subjects in and of themselves or as pedagogical teaching tools in an interdisciplinary context, music is often marginalized in our schools. In turn, students who possess skills and interests in music, by default, are likewise marginalized. The integration of music (particularly contemporary music) across disciplines is in line with a constructivist approach to teaching and learning. This approach acknowledges that students’ prior knowledge, experiences and values shape how they learn. Thus, the constructivist teacher aims to build upon the prior learning and experience that learners have. This is particularly important with adult learners who bring with them a vast repertoire of prior experiences to the classroom. The research indicates that when teaching adults, instructors should aim to promote active involvement and establish a respectful atmosphere where self direction and connections to their students’ lives are created. I have discussed how music is one means to connect material to students’ lives and promote learning and that it is important when music is used as a teaching tool, it is used in a manner that is respectful of musical integrity.

This review of the literature on constructivism, adult learning, and issues/concerns of cross-disciplinary uses of music provided a conceptual foundation for my research, and helped me to better understand and frame what emerged in my study. I introduced qualitative inquiry, and showed how this type of research was appropriate to meet my research goals. As well, I provided a brief overview of arts-based inquiry. The tenets of arts-based work resonate with my research stance and led me to develop a musical way to analyze and represent data, in what I have called “musical memos.” Before delving into the research findings, the following chapter details the methodological approaches I used in this study.
CHAPTER THREE: METHODOLOGY

Introduction

In this chapter I discuss the methodological approaches that I used in this study. I explain how I gained access to Professor Levitin’s Cognition classroom as my research site, outline how I recruited participants for the study, and obtained consent to carry out my research. Central to this chapter is an overview of the types of data I gathered (participant interview data, professor interview data, and field notes) and how I used constant comparison inquiry to analyze the participant data. I also provide an introduction to my arts-based methodological contribution to this study, and the use of “musical memos,” as a way of interpreting and representing data. The constant comparison analysis of the participant data, as well at the formation of musical memos, served to answer the research question, “How do students perceive the role music plays in the course?”

This chapter also includes an overview of how I drew from my field notes to write vignettes; detailed descriptions of typical classroom events that provide context to the participant interview findings. Each vignette is followed by a discussion that draws insight from the professor interview data. Ultimately, the vignettes addressed the research questions, “How is music integrated into a higher education Cognition psychology course?,” and “What does the professor do in the classroom?” The discussion following each vignette sheds light on the question, “How does the professor explain what he does?”

Finally, in this chapter I discuss how four major ethical considerations and issues were addressed in my research: credibility (the degree to which the findings reflect a plausible interpretation of the study); transferability (the degree to which the findings can be transferred to another situation); dependability (the degree to which a similar study can be carried out); and confirmability (the degree to which others can confirm or corroborate the results).
Access and Consent

Careful ethical consideration was taken to gain access to the research setting, and to obtain consent from the research participants. In compliance with the McGill Research Ethics Board (REB) rules, regulations, and processes regarding research with human subjects, I obtained access to the research site and consent from the participants. A research proposal, containing informed consent forms, were officially reviewed and approved by REB (See Appendix B for the Certificate of Ethics).

Choice of Site

As discussed in Chapter One, my research site was a required undergraduate Cognition psychology course at McGill University in Quebec, Canada. In Professor Levitin’s Cognition course, music played a prominent role in a number of lectures and readings for a number of the topics covered throughout the course. As a former student of Professor Levitin, I was familiar with the Cognition course and his teaching style, and so I was able to choose my research site from an informed position. Prior to carrying out my study, I contacted Professor Levitin and informed him about my research idea, and I obtained his permission to attend the 26 Cognition classes and collect field notes over the 13 weeks of the winter semester.

Participants

In qualitative research the “closer relationships between the researcher and the researched” (Blaxter, Hughes, & Tight, 2001, p. 158) necessitate considerable attention to relationships and have produced as a result much more of a focus on ethical dimensions involved in the work. My research, and qualitative research in general, attend to issues such as confidentiality, anonymity, access and informed consent. Although researchers aim to “act virtuously and to secure informed consent from those we study,” it is nevertheless clear that ultimately, “we cannot always inform others about the course of our research” (Eisner, 1991, p. 225). I attempted to conduct my research in a manner that was sensitive to ethical issues before, during, and after the study.
As mentioned above, I used overt and ethical means in order to gain access to the research site (Maykut & Morehouse, 1994, p. 70). Prior to the semester when the cognition course was offered, I contacted the professor and received permission to introduce my research during class time in order to recruit participants for the study. At the beginning of the third class of the semester, I introduced my research to the students and told them how they could find out more information and participate if they should want to do so. Specifically, I explained that I was conducting a qualitative study to explore the role that music played in this particular course, and that I was looking for participants who would be interested in being interviewed at three different times during the semester. I informed the students that I had posted a notice online on Web-CT (the interactive course website) and that interested students could contact me through the website for further information. I explained to the participants that the interviews would be audiotaped, and the audiotapes and interview transcripts would be secured throughout the duration of the study. I also indicated that the participants had the right to withdraw from the study at any time, and that their identities would remain confidential. To achieve this I assigned pseudonyms to all participants and altered any details that might reveal their identity. As an extra precaution to protect identities, I do not cite the year in which I collected the data in Professor Levitin’s Cognition course. All participants signed a consent form prior to the interview sessions (see Appendix C). Also, I interviewed Professor Levitin and like the student participants, he gave me formal permission by signing a consent form. An overview of the study and the consent process was reviewed and approved by the McGill Research Ethics Board.

Within two weeks of introducing my study in Professor Levitin’s Cognition class, 14 students volunteered to participate in the study. Due to scheduling conflicts and difficulties in contacting four of those students, in the end, a group of ten participants, consisting of eight women and two men, participated in the study. Table 2 provides a brief overview of the participant profiles, indicating whether the Cognition course was an elective choice or required course, what the participants had heard about the course before registering, how often they attended class lectures, and information about their musical backgrounds and interests. With a greater awareness of the participants’ unique
situations, motivations, and backgrounds, the information outlined in the table below provided context and helped guide my understanding of the participants’ responses.

Table 2

*Participant Profiles*

<table>
<thead>
<tr>
<th>Participant (Pseudonyms)</th>
<th>Required or elective</th>
<th>Prior knowledge about the course</th>
<th>Participant’s class attendance</th>
<th>Musical backgrounds and interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flora</td>
<td>Required</td>
<td>Heard positive feedback about the course</td>
<td>Attended 75% (missed 25% due to schedule conflict)</td>
<td>Studied saxophone for 7 years at a music conservatory</td>
</tr>
<tr>
<td>Lacy</td>
<td>Elective (personal interest)</td>
<td>Heard that the cognition course was difficult, but that Professor Levitin was a good teacher</td>
<td>Attended all classes</td>
<td>Had formal training in piano at a music conservatory</td>
</tr>
<tr>
<td>James</td>
<td>Requirement for another course (also personal interest)</td>
<td>Heard that the course was more philosophical than biological, which he personally found appealing</td>
<td>Attended all classes</td>
<td>Avid music fan and listener</td>
</tr>
<tr>
<td>Chelsea</td>
<td>Elective</td>
<td>Heard positive things about the cognition course</td>
<td>Attended class regularly (missed one or two classes)</td>
<td>Sings and plays guitar, but not professionally</td>
</tr>
<tr>
<td>Randy</td>
<td>Elective (interested in the cognitive science field)</td>
<td>Someone told him that there were a lot of readings, but he/she still recommended the class.</td>
<td>Due to scheduling conflict he came to class only occasionally and relied on the class recordings</td>
<td>Loves listening to music and had just begun to learn the cello</td>
</tr>
<tr>
<td>Carla</td>
<td>Required</td>
<td>Did not hear anything about the course</td>
<td>Attended class regularly (only missed one class)</td>
<td>Listens to a lot of music but does not feel musically inclined</td>
</tr>
<tr>
<td>Sylvie</td>
<td>Required</td>
<td>Had checked and found Professor Levitin had high ratings on ratemyprofessors.com</td>
<td>Attended all classes</td>
<td>Played flute and guitar in high school, and had taken piano lessons for two years</td>
</tr>
<tr>
<td>Anne</td>
<td>Required (also personal interest)</td>
<td>Heard “really good” things about the course</td>
<td>Attended regularly and only missed a couple of classes</td>
<td>Plays clarinet, sang in choirs, and studied piano for 10 years</td>
</tr>
<tr>
<td>Marie</td>
<td>Required</td>
<td>Did not hear anything other than Professor Levitin’s “musical credits”</td>
<td>Attended class regularly</td>
<td>Sang and played piano as a child, and she played guitar and harmonica with friends at home</td>
</tr>
<tr>
<td>Julie</td>
<td>Elective (based on personal interest)</td>
<td>Heard positive feedback about the course</td>
<td>Attended class regularly</td>
<td>Had taken violin, guitar, and piano lessons in her childhood, and later performed professionally</td>
</tr>
</tbody>
</table>
**Required or Elective/Prior Knowledge About the Course**

I asked the participants if the cognition course was an elective choice or a required course and what they had heard about the course to get a sense of why the participants had registered for Professor Levitin’s Cognition course. This information was collected because I believed it was possible that the reasons for taking the course may have been related to the participants’ prior impressions of the course. As it happens, this did not appear to be the case for any of the participants.

**Attendance**

I also asked the participants how often they attended class, as this could have had an impact on the participants’ opinions about Professor Levitin’s teaching. The majority of the participants reported attending class regularly. However, due to scheduling conflicts with another course, one participant was only able to attend 75% of the classes, and another participant rarely attended class and for the most part followed the course lectures by listening to audio recordings of each class which were posted online at the Cognition WebCT website. These were interesting differences among the participants that I had to be aware of during my analysis.

**Musical Background**

Since music is both key to the Cognition course and my study, I felt it was important to inquire about the participants’ musical backgrounds and interests to have a sense of their personal connections with, and knowledge about, music. Of the ten participants, five were formally trained musicians, two were amateur musicians, and another was a beginner. The remaining two participants reported being fans of music but not musicians. When I introduced the study to the students in the Cognition course, I explained that I was interested in how music can be used as a teaching tool across academic disciplines. This is perhaps the reason why the study attracted those involved in music and/or those with strong musical interests. It would have been interesting to have interviewed more students who were music listeners as opposed to musicians, to get more diversity across the participants. However, as will be discussed later, after analyzing the
participant data, I did examine the course evaluations which provided a sense of the
general views and impressions of the students overall.

**Types of Data**

The primary data in my study consisted of three types: 1) interview transcripts
collected from interviews with the participants at three different points in the study; 2)
interview transcripts collected in two interviews with Professor Levitin (one midway
through the course and another when the course ended); and 3) field notes taken when I
observed in the classroom each week of the course.

In order to obtain thick, rich description in the participant interviews, I applied an
interview protocol advocated by Seidman (1991). To gain in-depth and thorough
understandings, Seidman suggests that researchers should conduct three separate
interviews with each participant (p. 10). The first round of interviews in my research
addressed the participant’s life history, while the second round concentrated on “the
details of experience” (pp. 11-12). The final interviews assessed the meaning of each
participant’s experience. An in-depth, three-part interview procedure produced robust
data that strengthened the overall persuasiveness of the findings and conclusions.

Moreover, using an open-ended interview protocol with participants (Appendix D) and
with Professor Levitin (Appendix E) ensured that “basically the same information is
obtained from a number of people by covering the same material” (Patton, 1982, p. 162).
This approach made the best use of my time and made interviewing across a number of
participants systematic (p. 163). However, during the interviews I remained open to
spontaneous comments and questions that fell outside of the protocol and was able to
probe more deeply when needed and to get at differences across the participants. The
challenge of such an approach was to explore spontaneous comments, yet still address
key questions and topics across all participants. Despite this challenge, the interview
approach allowed me to be “highly responsive to individual differences and situational
changes” (Patton, 1982, p. 162) and to obtain contextualizing information that otherwise
might not have emerged.
Initially, I had intended to conduct all interviews face to face. Due to students’ busy schedules and difficulty securing times to meet in person, I had to adapt and integrate other means to interview the participants. The first round of participant interviews were face to face, the second by e-mail, and the last set of interviews was done by telephone. It can be difficult to retain participants for the duration of a study, and my study was no different. I believe the need to commit to three separate interviews over a three-month period had an effect on participant retention. In the end, ten participants took part in the first in-person interview, eight in a following e-mail interview, and six completed the final telephone interview. It should be noted that my use of the term participants refers to the students who took part in this study. In actual fact, by virtue of being an interviewee in this study, as well as the professor of the course, Professor Levitin was a participant as well.

I conducted two interviews with Professor Levitin. These were done in person, and helped to explore his perspective about the issues and points that emerged in the participant interviews. For example, as will be presented in greater detail later, one of the patterns that emerged in the participant interview data revealed that the participants felt that Professor Levitin’s use of music in the course tapped into student culture and connected with students. In my interviews with Professor Levitin I discovered that he was conscious that his references and use of contemporary music examples in the classroom and examinations helped connect with students by establishing a “common ground” (Levitin/I/3/June). As with this example, the interviews with Professor Levitin served to broaden my understanding of what was transpiring in the participant data by providing a perspective on pivotal points. In order to facilitate the data analysis, the in-person interviews with the participants and Professor Levitin were audiotaped, then transcribed verbatim using a word-processing program, and later coded for analysis.

I also attended the 26 Cognition classes (two 1.5-hour classes a week) from January to April of the winter semester in which the course was offered. In each class I

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2 See page 55 for details of the interview data coding system.
collected field notes as I observed Professor Levitin’s teaching and noted the students’
reactions, the classroom interactions, and my initial impressions/reflections. The field
notes were handwritten during class time, and to ensure that I had clear and legible
documents for my analysis, I typed the field notes into a word-processing program as
soon as possible following each class. As well, audiotaped recordings of the class lectures
were available online. While I had not anticipated it, this proved to be a valuable resource
as I was able to return to these recordings to cross-check my field notes and elaborate on
things that were emerging in my data analysis. For example, I had written in my field
notes that Professor Levitin had integrated humour in the first class of the semester.
However, when I returned to the audio recordings, I realized that he had integrated
humour much sooner than I remembered and I realized that the first time he made
students laugh was literally 20 seconds into the course. This is the type of detailed
information I was able to gain from cross-referencing my field notes with the classroom
audio recordings.

The use of multiple sources of data, also called “triangulation” (Rossman &
Rallis, 2003), helped to ensure credibility and provide rigor in my data collection and
study overall. The multiple sources of data acted as a means to keep my impressions in
check and helped me to avoid jumping to conclusions prematurely. They served as a way
to verify if the feelings, events, and perceptions expressed by the participants were
corroborated by the other sources of data. Typically, the three primary sources of data
supported one another. For example, one point expressed by the participants throughout
the interviews was that the use of classroom musical demonstrations helped to make the
required course readings easier to grasp. Similarly, the interview data with Professor
Levitin showed that he had increased the number of classroom demonstrations and that
he believed this played a key role in improving students’ performance on examinations.
As well, when I examined my field notes I realized I had made frequent reference to the
musical demonstrations and how they seemed to sum up and bring to life the material
being covered at the time. As one student told me in an interview, “In the classroom,
music can actually be demonstrated, whereas in the readings, it can only be explained.
Hearing it gives a more ‘hands-on’ understanding of the concepts” (Flora/E/2/April).
Different data sources can help the researcher to reconsider what is emerging from the data if one data source refutes another. As it happens, the different data collected in this study mostly served to corroborate each other. However, when discussing humour in the classroom, one participant shared an insight that stood in contrast to the general consensus. While this participant appreciated the use of humour in the classroom, she did note that humour can be a deterrent for some students. She felt that students who do not need to be engaged through the use of humour, might “wish that he’d stop telling jokes and get on with teaching” (Anne/I/8/March). Although the data overwhelmingly showed that humour served a positive function in this classroom, as will be shown later, this bit of divergent data is a reminder that students do have different learning styles, and some may not like an approach to teaching that others find engaging. The main point is that the triangulation of data, regardless of whether it serves to support or refute emerging interpretations, is essential for gaining a more holistic understanding of the phenomenon under study.

A secondary source of data were the anonymous course evaluations that all McGill students are encouraged to complete after every course. I examined these after analyzing the primary research data. Professor Levitin granted me permission to review a copy of the students’ course evaluations from the semester in which this study was carried out. Although the goal of this qualitative study was to gain an understanding in some depth from a small group of participants, it was exciting and helpful to have access to a survey of the general impressions of the students overall. As will be shown in the next chapter, the course evaluations proved to be useful secondary data to juxtapose with the themes that emerged in the participant interviews.

Data Analysis

As mentioned in the introduction of this chapter, the use of constant comparison analysis of the participant data, and the creation of musical memos, served to answer the research question, “How do students perceive the role music plays in the course?” The vignettes drew from the field notes and addressed the research questions, “How is music integrated into a higher education Cognition psychology course?” and “What does the
professor do in the classroom?” The discussion following each vignette draws upon the interview data with Professor Levitin, and responds to the question, “How does the professor explain what he does?” Constant comparison inquiry, musical memos, and vignettes will be discussed in the following sections.

**The Constant Comparison Approach**

In qualitative work, it is artificial to separate the analysis from other parts of the inquiry. In reality, analysis begins from the onset of the study and continues well after the written product/thesis is completed. It is an iterative process rather than a linear one. However, for the purposes of discussion and to make the process as transparent as possible, it is customary to spend some time talking about the processes used in working with the data from its “raw” form into a more conceptual interpretation. In my study, I opted to use a well-established approach known as, “constant comparison inquiry.” It is a rigorous means of coding, unitizing, and categorizing qualitative data in order to ultimately produce themes that are grounded in the data and that provide a plausible explanation of what is being studied.

I began the analysis of the participant data by first doing several close readings to get a good general understanding of what had been assembled. I then coded each page of the participant interview data to indicate the name (pseudonym) of the participant; if the document was from an in-person (I), e-mail (EM), or phone (P) interview; the page number of the document; and the month the interview was conducted. For example, Andy/I/3/March would indicate page three from an in-person interview with Andy that took place in March. The coding enabled me to easily return to the original interviews, which was useful when I needed to revisit the context in which a section of data was removed.

The next step was to unitize the data. Using a ruler, I drew lines to separate the data into units of meaning while adding a code name for each category and a word or phrase that captured the essence of what I thought was in the unit of data. Initially, I used very descriptive code names for each of the categories. My first list of codes included, for example, “current program”; “background”; “reasons for taking cognition”;
“expectations”; “attendance”; “enjoyment/entertaining”; “reading critique”; “memory”; and so on. This first step in unitizing the data produced a large number of units. However, this was just a starting point.

After unitizing the data, I intended to separate the units of meaning from each other and tape them to index cards. Right up until engaging in this process, I had envisioned cutting and pasting the units in a literal sense, with scissors and tape. I soon realized that this was going to be very time consuming and logistically constraining so I abandoned this approach in favour of virtually cutting and pasting the data using the Microsoft word-processing program. It proved to be a good decision. Working with a laptop computer allowed me to be mobile, so I was able to continue the data analysis process at home, at school, or while traveling. However, the greatest advantage of using a word-processing program was that I was able to make adjustments and amendments more easily as I categorized my data. Cutting and pasting virtually was less messy and it facilitated the data analysis process as the categories expanded and contracted and I moved from descriptive to conceptual codes. For example, a descriptive code like “Music in Exams,” evolved into the conceptual category “Tapping Into Student Culture With Music.” Working in a word-processing program facilitated this process as I was able to easily shift the data in a systematic and efficient way.

As suggested by Maykut & Morehouse (1994), once I had between six to eight segments of data in a category, I wrote a “rule of inclusion” for that category. This served as a guide for the addition of further units or the need to create a new category. For example, for the category, “Reducing Exam Tension,” I wrote the rule of inclusion: The data excerpts reflect how humour helped reduce anxiety and tension in exams. As will be discussed in the following chapter, this category would include segments of data such as, “It (humour) definitely eases the stress” (Sylvie/I/6/March) and humour “defuses the anxiety” when writing an exam (Marie/I/6/March).

The analysis of the participant data ultimately produced nine categories. Subsequently, I was able to work with these and place them into three broader and more conceptual themes that I called: Connecting With Students, Optimizing Learning, and
Creating Salient Moments. Table 3 provides an overview of the themes, patterns, and rules of inclusion.

Table 3

*Themes, Patterns, and Rules of Inclusion*

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Rule of Inclusion: The data excerpts…</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a Personable Atmosphere</td>
<td>… reflect how Professor Levitin was perceived as friendly, and how he created a personable/welcoming classroom environment</td>
<td>Connecting With Students</td>
</tr>
<tr>
<td>Showing Empathy to Students</td>
<td>…reflect how Professor Levitin demonstrated a sensitivity and understanding of student experiences and perspectives</td>
<td></td>
</tr>
<tr>
<td>Facilitating Student Involvement</td>
<td>…highlight examples and/or reflections on student involvement and participation in the classroom</td>
<td></td>
</tr>
<tr>
<td>Tapping Into Student Culture With Music</td>
<td>…show how Professor Levitin’s use of music in the course served to connect to the culture of the participants</td>
<td></td>
</tr>
<tr>
<td>Enticing Students With Passion</td>
<td>…reflect examples of and/or feelings about the professor drawing upon subjects he knows well</td>
<td>Optimizing Learning</td>
</tr>
<tr>
<td>Reducing Exam Tension</td>
<td>…reflect how humour helped reduce anxiety and tension in exams</td>
<td></td>
</tr>
<tr>
<td>Clarifying Concepts Dynamically</td>
<td>…reflect that diverse teaching strategies helped clarify difficult course concepts</td>
<td></td>
</tr>
<tr>
<td>Holding Attention</td>
<td>…provide examples/insight on how music or humour helped grab and hold students’ attention in the classroom</td>
<td>Creating Salient Moments</td>
</tr>
<tr>
<td>Triggering Memory</td>
<td>…makes reference to how music or humour helped trigger memory of the course material</td>
<td></td>
</tr>
</tbody>
</table>

Constant comparison inquiry is a “multi-faceted approach” that involves “systematic data collection, coding, and analysis” (Conrad, 2001, p. 256). What is lost in unitizing the data are contextual aspects, but what is gained is the ability to look at similarities and differences across cases, in this instance, across various interviews with
the participants. The use of the constant comparison approach in data analysis is inductive, which is to say, “what becomes important to analyse emerges from the data itself” (Maykut & Morehouse, 1994, p. 127). The categories and themes discussed above are the end result of an emergent process that occurred as I examined and re-evaluated the participant data using constant comparison inquiry.

**Musical Memos**

Memoing is a practice that allows the researcher to record his or her impressions, reflections, questions and ideas as they evolve throughout the study. A memo is the “theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding” (Glaser, 1978, p. 83). Memos reflect an outflow of ideas and reflective notes to oneself as the data analysis progresses, which can help the researcher to discover relationships among the data and to tease out a more conceptual understanding from the “raw” data. Memos also “tie together different pieces of data into a recognizable cluster, often to show that those data are instances of a general concept” (Miles & Huberman, 1994, p. 72). When memoing, an “intense relationship is established with the data, enabling the researcher to feel a heightened sensitivity to the meanings contained within” (Birks, Chapman, & Francis, 2008, p. 69). There is no definitive way to write memos, rather, the researcher has creative freedom to develop his or her own personalized approach. Ultimately, the method of memo writing is to “do what works for you” (Charmaz, 2006, p. 80), and what worked for me as a songwriter was to create musical memos which I wrote at times during the analysis when I felt it would help to flesh out and highlight the essences of what was emerging from the data.

Musical memos were inspired by arts-based qualitative inquiry which I first learned about when I took “Interpretative Inquiry,” a McGill University course taught by my thesis supervisor, Dr. Lynn Butler-Kisber. In particular, two types of arts-based inquiry informed and influenced the formation of musical memos: Found poetry and ghostwriting.

Found poetry resonated with me because I saw it as closely linked to music, at least on a lyrical level. Found poetry “takes the words of others and transforms them into
poetic form‖ (Butler-Kisber, 2002, p. 233). It is a means of “representing holistically what otherwise might go unnoticed” and a way to “yield new and important insights” (pp. 234-235). The non-linear process of creating found poetry involves first establishing the storyline then “playing with the number of words, the word sequence, line breaks, pauses, breath-points, and emphasis to get at the essence of what is being recounted” from the data (Butler-Kisber, 2005, p. 97). Although found poetry allows for the voice of the researcher to be present in his/her interpretation and presentation of the poem, the essence of the original speaker is retained. Thus, “poetic representation, when combined with more conventional techniques of qualitative research, may enrich and deepen understanding for the writer as well as the reader” (Feldman, 2004, p. 11).

The other form of arts-based inquiry that influenced my musical memos is ghostwriting, a “practice where a researcher engages with a research participant and, as a result, creates a new text that tells a story of the participant and implies the involvement of the researcher” (Rhodes, 2000, p. 514). In composing musical memos, I often used ghostwriting to represent the participants’ perspectives in my own words, which enabled me to modify the text to establish a musical flow and rhyme. As well, by engaging with and reflecting on the data as a ghostwriter, my interpretations and impressions were naturally reflected in the memos. Thus, ghostwriting provided an outlet that enabled me to simultaneously represent the participants’ views while acknowledging my role in the production of the text.

Together, ghostwriting and found poetry influenced the development of musical memos, and since music can reflect emotions with a “power that goes beyond that of the written word” (Nielsen, 2001, p. 89), musical memos helped me represent my data differently and as a result gave me a deeper understanding of what I was seeing. Below I discuss how musical memos: 1) Helped me highlight the essence of a pattern, 2) Enabled me to create holistic representations of the data, and 3) Provided a means through which I could acquire a more embodied understanding of my data. Following the discussion, I provide excerpts from a musical memo to illustrate more concretely how writing musical memos enhanced my understanding of the data.
Highlighting the Essence

When writing my musical memos I drew upon my skills and experience as a songwriter. For one thing, as my songwriting skills have evolved I have become very economical. I have come to understand that the message in a song is enhanced if it is delivered with a minimal number of words. This minimalist lyrical approach carried into my musical memo writing and I was very selective in choosing key lines and phrases from the data that best represented the patterns that had emerged. Basically, my writing of musical memos was an extension of my songwriting approach, and in my analysis, it helped me pinpoint lines and phrases that reflected the essence of the patterns that I may not have detected otherwise. We know that “music-based methods can help researchers access, illuminate, describe, and explain that which is often rendered invisible by traditional research practices” (Leavy, 2009, p. 101), and ultimately, writing musical memos helped me gain a stronger sense of what the data reflected.

Holistic Representations

Musical memos provided a means by which I was able to draw upon various data sources to create a unified musical piece. To do this I drew from and integrated participant interview data, professor interview data, and field notes. In addition, the writing of musical memos enabled me to be present in the text as I paraphrased lines, and wrote lines in my own words that reflected my understandings. In a sense, these musical memos served as a means to create a dialogue among the data sources, allowing me to produce succinct, yet holistic representations of the data.

Embodied Performances

In “musical” memos, such things as the tone of my voice, the cadence of the words, the pauses, and the pitch of the notes, and the tempo of the memo, all came together to deliver the theme and feel in the recorded performance of the musical memo (Appendix F). As well, I wrote musical memos while accompanying myself on guitar, and I used major chords to produce a brighter, uplifting sound and sometimes darker sounding minor chords to emphasize more serious parts of the memos. These are all
aspects of music that I use in my work as a songwriter and performer in order to convey both a message and a certain feeling. Similarly, by drawing upon these musical aspects in my memo writing, I was able to create a very embodied representation of the data, and as will be demonstrated, this resulted in a more nuanced understanding of the data.

**Writing Musical Memos**

The first step in the process of writing musical memos involved examining the participant interview data within a particular pattern, scanning for words and phrases that best summed up the essence of what the participants had expressed. For the next step, with my guitar in hand, I began by singing these selected “pieces” of data over various rhythm and chord patterns. As I engaged in this process, a phrase or two would emerge as being both representative of the entire cluster of data, as well as having a rhythmic and musical quality from which I would build the musical memo. As I strummed the guitar, I hummed and sang lines to explore potential melodic ideas. Then I selected the best single phrase, a direct quote from the data, and this served as the opening line in the musical memo. Next I selected the most representative of the other lines from the participant data to develop verses. I did this while humming words and phrases, strumming the guitar, and exploring melodic ideas for the memo. In writing the memo I frequently quoted the participants directly, though in order to establish and maintain both a melody and rhyme scheme, I sometimes paraphrased what the participants had said and wrote new lines in my own words. Next, I explored my field notes and Professor Levitin’s interview data for lines and phrases that could be integrated to further conceptualize the memo and make it reflective of the data overall. In a sense, the analytic memos can be viewed as a conversation among the participants, Professor, and researcher, as I mediated the three data sources into one succinct musical piece.

The role of musical memos in the data analysis will be discussed further in Chapter Four, but to provide some insight at this stage, I now present an overview of one of the musical memos I composed entitled, “It’s a Tough Course.” This particular memo was inspired by data that reflected that the participants felt that Professor Levitin’s Cognition course had a demanding workload. One of the insights that I gained from
writing the memo is how students have to maintain a busy schedule to keep up with the course requirements. Although the heavy course workload was evident in the interview excerpts, the process of turning the “raw” data into a musical memo helped me to connect with and understand what was being expressed in the data. In this particular case, in an intuitive and unconscious way I represented the feeling of being busy in a musical way with an upbeat tempo and a rushed delivery of the lyrics. It was in writing the memo that I was able to feel what was being reflected in the excerpts, and musically convey that feeling to others.

Also, as mentioned, musical memos served to pull together various data sources into a succinct piece. The following excerpts from “It’s a Tough Course” illustrate how I integrated three data sources. In this memo, the opening phrase, “It’s a tough course, you have to stay on top” is a direct quote from a participant. I added the words “I tell ya” to the last line in order to establish a rhythmic flow, while “it’s like 80 pages a week” is a direct quote from another participant.

It’s a tough course
You have to stay on top
I tell ya, it’s like 80 pages a week

Here is another verse from “It’s a Tough Course” which was inspired by my field notes. In this excerpt, the first two lines are paraphrased from the field notes, whereas the last line, “I don’t get more money for giving bad grades,” is a direct quote from Professor Levitin that I had recorded in my field notes.

Don’t be overconfident
Read it twice, time well spent
I don’t get more money for giving bad grades

The final lines of this musical memo emerged from my first interview with Professor Levitin. In this excerpt, the first three lines were paraphrased, and for the final line, I reiterated the phrase that opened the memo.

If they don’t think that I am out of touch
Maybe this won’t seem like too much
And I know it can feel like a lot
It’s a tough course, you have to stay on top
While the upbeat tempo and lively melody of this memo suggests an air of excitement, the final lines indicate that while there is a lot of work to do, it will be okay if the students stay on top of it.

Ultimately, writing musical memos allowed me to work creatively, reflectively and often quite intuitively. This, in turn, increased my understanding of my data and often revealed unconscious interpretations or emphases that might not have emerged in the more linear thinking involved in the constant comparison process. For example, as mentioned, this particular memo was unconsciously written in an upbeat tempo and with a rushed delivery. It was only as the memo began to develop that I realized that it musically reflected the words in an embodied way. When I perform “It’s a Tough Course,” I do not just sing about being busy, I sing the words in a vigorous manner that feels busy. The lively delivery of the memo helped me connect with the data and musically reflect how students need to stay active to keep on top of the course requirements.

It is important to consider that although musical memos worked well for me, this process may not be suited to all researchers. It is certainly key that I am a songwriter and musician, and since I applied a similar approach to compose musical memos as I do in my typical songwriting, it was familiar territory for me. Just as I would not feel comfortable drawing upon drama, painting, or dance in my memo writing, some researchers may not have the skills, or comfort level, to write musical memos. Ultimately, writing musical memos not only enabled me to represent the data in an artistic manner in which I am comfortable, but also served as a means to methodologically bring forth, highlight, and represent the essences in the data.

Vignettes

In an attempt to rigorously analyze the participant data, I used the constant comparison approach. This approach gave rise to conceptual themes to help me interpret and understand what was occurring in this course. However, this process also removes data from its context and in so doing, precludes a more holistic understanding of what is transpiring (Maxwell & Miller, 2008). To contextualize the themes and patterns that
emerged from the analysis by connecting them more holistically (Maxwell & Miller, 2008), I wrote four vignettes that reflected the patterns of activity that were emblematic of what occurred in class time of the Cognition course. Vignettes are chronological descriptions, usually of a short duration, that are representative of typical events (Miles & Huberman, 1994). In addition to being a vivid representation of a natural sequence of events, an attempt should be made to make vignettes reflect the “sights and sounds” of the typical occurrence (Erickson, 1986). To write vignettes, I began by identifying recurring patterns in my field notes to generate a time line of the events that typically took place in the Cognition classroom. To complement and sometimes verify my field notes, I also listened to segments of the Cognition classroom audio recordings. The audio recordings captured sounds, like ruffling jackets, bursts of laughter, and so on, all of which helped me remember the feeling of being in the class. Based on my field notes and the audio recordings, I produced vivid, aggregated vignettes, which are descriptions of classroom events that are characteristic of the research setting. To illustrate, the following is an excerpt from one of the vignettes, “Cognition in a New Key,” that describes the first and typical few minutes that took place at the beginning of a Cognition class period.

It is almost 2:30 on a Thursday afternoon and throngs of students steadily arrive through two different entrances to the dim auditorium. A rustling sound fills the classroom as hundreds of jackets are removed. The volume of chatter rises to a din as Professor Levitin tests his cordless microphone and tinkers with his PowerPoint screen. Suddenly, he flicks the lights off and on and a hush permeates the room. As he adjusts his microphone he asks, “Did everyone have a good weekend?” There is a chorus reply, “Yes!” “Did anyone go skiing?” A few hands shoot up. “Great! Who did the readings?” Glancing around the room at all the raised hands, Professor Levitin, without missing a beat, follows with, “Who raised their hand to impress me?” Some students keep their hands up and the class erupts into laughter. Professor Levitin smiles knowingly and quickly gets back to the lecture material.

As demonstrated in this excerpt, the vignettes are detailed accounts of the sights, sounds, and events that typically occurred in the classroom. The following excerpt from
the “Cognition in a New Key” vignette provides an example of how Professor Levitin integrated music into the classroom.

Professor Levitin announces, “OK. Let’s try a few interactive musical illustrations.” Over the classroom speaker system, he plays a jumbled, odd piece of music. He explains that the music is actually two interconnecting melodies. “Can you identify the melodies?” he asks. The students giggle as they try to decipher them. Professor Levitin assures the students that they know the two melodies. As the two interconnected melodies grow apart in pitch, they slowly become distinguishable from one another and the students excitedly begin to yell, “Twinkle Twinkle Little Star! Mary Had a Little Lamb!”

My goal in writing vignettes was to create rich detailed descriptions that provide a sense of what it was like to be sitting in Professor Levitin’s Cognition classroom. As a methodological tool, the vignettes help to contextualize the participant themes and patterns. As well, writing vignettes symbolically brought the research data full circle by showcasing what I had witnessed and experienced as I initially collected field notes in Professor Levitin’s classroom. The process of writing such descriptions of typical classroom events was a confirmation that the patterns and themes that emerged in the data were in line with what occurred in the classroom.

The discussions that follow each vignette draw from the interview data with Professor Levitin. These discussions serve to provide insight on aspects of the vignette. For example, this next excerpt (a quote from a Professor Levitin interview) is included in the discussion on the “Cognition in a New Key” vignette and shows Professor Levitin’s reasoning for integrating music into the classroom.

“I’m using what’s familiar to me and I’m making a link that I can. The fact is a lot of people in the classroom listen to music, even if they don’t know any music theory, it’s a way to find some common ground between the concepts which can be really abstract and things that are a part of everybody’s daily life. I think any teacher tries to find some common ground.” (Levitin/1/3/June)
Together, the rich detailed vignettes and discussions address the research questions: How is music integrated into a higher education Cognition psychology course? What does the professor do in the classroom and how does the professor explain what he does?

Throughout the study, the metaphor of performance had come to mind as a way of thinking about what Professor Levitin did to teach his course. This was not surprising given my background as a musician and my experience as a performer. However, it was only after completing the vignettes using the process described above and turning to the literature on teaching as performance (discussed more fully in Chapter Six) that I had an “eureka moment” and was able to understand what Professor Levitin did in his classroom using the following, unanticipated analysis as my process.

To recap, as I wrote the descriptions of classroom events for the vignettes, the details of how Professor Levitin addressed and interacted with the students connected with me as a musical performer. I was struck by how aspects of his teaching reflected a keen understanding of the nuances of performance. Once I had made this connection, I scanned the vignettes and noted examples of Professor Levitin’s approaches that reminded me of my experiences as a musical performer. For example, the following excerpt from the vignette “Cognition in a New Key” is an illustration of how Professor Levitin moved around the room and facilitated student participation, which resonated with me as a performer.

Professor Levitin pauses briefly, and then, turns to the crowd and seeks a volunteer from the audience, “Anyone trained in singing?” Professor Levitin walks up and down the aisle scanning the classroom. He spots a volunteer and asks for her name.

Next I pared down the list by asking what aspect of performance each of these excerpts represented. I was able to collapse the list and label each as facets of performance, such as, “speaking loudly,” “walking up and down the aisles,” and “pacing in front of the class,” and then was able to cluster these metaphorically. I called this particular cluster “Owning the room.” Ultimately, I was able to delineate four facets of
his teaching that were related to performance which are discussed more fully in Chapter Six. This analytic exercise made me realize that if I pushed these analogies further, I could think more aptly and specifically as his teaching as a “blues performance” which provided insight about how I could interpret more fully, how Professor Levitin was able to teach the way he did in this Cognition course.

**Credibility, Transferability, Dependability and Confirmability**

Other issues and concerns surrounding research are validity, generalizability, reliability, and objectivity. However, many qualitative researchers prefer to use different, non-positivist terminology when talking about research rigor. Rather than adopt the constructs of validity, generalizability, reliability, and objectivity, Guba (1981) suggests four criteria to ensure the “trustworthiness” of qualitative research. These four criteria correspond to those employed by positivist researchers: credibility (rather than validity), transferability (rather than generalizability/external validity), dependability (rather than reliability), and confirmability (rather than objectivity). In what follows, I discuss how these criteria relate to my study.

**Credibility**

Validity is a major research concern and has long been a key issue in debates over the legitimacy of qualitative research. One perspective on the issue is, “if qualitative studies consistently cannot produce valid results, then policies, programs, or predictions based on these studies cannot be relied on” (Maxwell, 2001, p. 301). As Guba and Lincoln (2005) state, there is no final answer to the question:

How do we know when we have specific social inquiries that are faithful enough to some human construction that we feel safe in acting on them, or, more important, that members of the community in which the research is conducted may act on them? (p. 207)

However, as Kvale (1995) points out, there are both narrow and broad definitions of validity. “In a narrow positivist approach, validity came to mean whether a method measures what it is intended to measure” whereas as a “broader concept, validity pertains
to whether a method investigates what it is intended to investigate” (Kvale, 1995, p. 22). Thus, for qualitative research, the goal is to use sound transparent methodological strategies to ensure that the researcher is indeed studying what he or she intended to study. Within a “more extensive conception of validity, qualitative research may, in principle, lead to valid scientific knowledge” (p. 22).

The qualitative equivalent to validity is credibility, which is the degree to which the findings reflect a particular “reality.” To ensure credibility, researchers can apply strategies such as: becoming familiar with the culture of the research site prior to data collection; triangulating the data; adopting well-established research methods and using member checking (Shenton, 2004) to confirm or disconfirm results. Below I have addressed each of these in turn as they relate to my research.

Knowing the Research Site

My familiarity with the research site stems back to the winter semester of 2001 when I was an undergraduate student in Professor Levitin’s Cognition course. Cognition was, and still is, a required course for a Bachelor of Arts degree in psychology at McGill University, and in my final semester when I took the course, Professor Levitin was the professor. It was Professor Levitin’s first time teaching the course at McGill University, and although he has made modifications to the course over the years to update the readings and audio/visual demonstrations, much of the course content at the time of the study was the same or similar to what I had experienced as a student. So, prior to data collection, I was quite familiar with the course requirements, readings, topics covered, and the professor’s teaching style. Also, when I was a student in the course, the room in which the course was offered during my data collection was the same: a large amphitheatre that can accommodate approximately 680 students, which is a unique classroom context. Having been a former student in Professor Levitin’s cognition course helped to give me a more emic (insider) perspective and an interesting position from which to reflect upon and interpret the data since I shared experiences similar to the participants in the study (Corbin Dwyer, 2009). It could be argued that having an inside perspective might influence the study, however, as discussed in the following sections, I
countered this by triangulating my data and by discussing my interpretations with my supervisor.

As well, prolonged engagement in the research setting or with the research participants also helps to establish credibility and rigor because it helps to avoid an impressionistic interpretation that can result from infrequent or a short duration for observations and/or interviews. For this study, I not only attended and collected field notes for all 26 classes during the entire semester, but also I interviewed my participants over time to ensure I did not jump to conclusions prematurely.

**Triangulation of Data**

The primary data collected in this research were participant interview transcripts, professor interview transcripts, and field notes. The triangulation of these data sources helped establish credibility and rigor in my research. For example, as will be discussed in the following chapter, the participant data reflected that music functioned in the classroom to connect to their lives and interests. In this case, the data from interviews with Professor Levitin revealed that he was conscious of using music to establish a common ground with students. And finally, the field notes showed that the students were highly engaged when music was integrated into the classroom. Together, the three sources of data provided different vantage points and provided both confirmation and a more holistic understanding of what occurred in this classroom.

In addition to triangulating the data, I made frequent use of a “peer debriefer,” which is a critical friend and an “intellectual watchdog to help modify design decisions, develop possible analytic categories, and build an explanation for the phenomenon of interest” (Rossman & Rallis, 2003, p. 69). This, paired with debriefing sessions with my supervisor, helped me to clarify and question my thinking and, as a result, informed my research. And finally, while the course evaluations were not the primary data for this research, they did provide an extra data source that reflected the general views of a greater number of students. With this data source I was able to get a sense if the feelings and opinions expressed by the participants were comparable to those expressed by other students in the course.
Adopting Well-Established Research Methods

Earlier in this chapter I outlined how constant comparison inquiry was used to code, unitize, and analyze the data. This well-established analytical method is inductive, grounded in the data, and it served as a means to find similarities across cases. I would argue that the rigorous process of constant comparison inquiry has helped to ensure the credibility of my research findings and implications.

Member Checking

Member checking refers to the process where participants are consulted in order to determine that the researcher has fairly and accurately represented their experiences (Maykut & Morehouse, 1994). By including member checking in this study, I wanted to highlight the importance of sharing with participants any material that concerned them and to ensure that I accurately represented the interview data (Seidman, 2006). I used member checking as a means of participant validation which serves to ensure credibility and rigour (Rossman & Rallis, 2003).

In this study, the participants were given the opportunity to provide feedback on the themes that emerged from the data along with my interpretations of those themes. However, by the end of the study, the contact information I had for two participants was no longer valid, though the remaining eight participants each received an e-mail with an overview of the themes that emerged from the data. In the end, I did not receive feedback. While this was less than optimal, presumably, the participants’ views were not at odds with my interpretations of the data. In any case, the triangulation with the three data sets (participant interviews, professor interviews, field notes) helped to offset the lack of member checking. As well, throughout the process of analyzing interview data, I also shared the emerging themes and my interpretations of them with my supervisor. Her ongoing feedback also helped me refine the themes and consider alternate possibilities and ultimately rationalize what was emerging. While not a “member check” per se, it did incorporate another element of reflexivity into the work (see also p. 74). As well, Professor Levitin reviewed a draft of my thesis and was satisfied that my interpretations were trustworthy and persuasive.
**Transferability**

Transferability is the term qualitative researchers use that is equivalent to generalizability. Generalizability is a quantitative term that refers to whether the findings in a study, given the same conditions in another context, would be the same (Bogdan & Biklen, 1992, p. 44). Generalizability is rooted in positivism and qualitative researchers are not concerned with producing results that can be generalized in the positivist sense because they believe that it is impossible to replicate the same conditions in a different context. Transferability refers to the degree in which the findings can be transferred to another situation. This can be difficult since qualitative research is specific to a particular situation, context, or group. However, as cited in Shenton (2004), Bassey (1981) proposes, “if practitioners believe their situations to be similar to that described in the study, they may relate the findings to their own positions” (Shenton, 2004, p. 69). Researchers can increase the transferability of their research by providing “background data to establish context of study and detailed description of the phenomenon in question to allow comparisons to be made” (p. 73). To achieve transferability, I have provided information on my theoretical and methodological orientations. To situate myself in my work I outlined a clear and transparent description of my research process and provided both a categorizing/thematic interpretation of the work and a contextual rendering of it in the form of vignettes in an attempt to give rich descriptions of what emerged in the study. I believe these dimensions will help others to pick out what resonates for them in this study and apply it in another context, and/or to use or adapt the methodology for a similar study in another context. With such information, others can judge if the findings from one study provide insight for another setting (Rossman & Rallis, 2003).

**Dependability**

The rich detail of this interview approach also addresses dependability, which corresponds to the positivist construct of reliability, the degree to which similar results can be obtained if a study is replicated. Dependability in qualitative research can be “achieved through the use of ‘overlapping methods’” and through reporting the processes within the study in detail, thus allowing another researcher to “repeat the work, if not
necessarily to gain the same results” (Shenton, 2004, p. 71). In addition to providing details on the data collection, I believe the dependability of this study has been enhanced by overlapping methods of data collection, namely interviews with students and professor, and the prolonged observations that took place throughout the Cognition course.

**Confirmability**

A key concern of quantitative inquiry is objectivity. Quantitative researchers aim to draw conclusions and produce results that are free from human subjectivity. The underlying belief is that if the research design can be free from subjectivity, the objective results can be better trusted, and duplicated. Of course, no research is completely free from subjectivity. For example, the quantitative analysis of participant questionnaires may be objective, but the design of the questionnaire itself may reflect the subjectivity of the designer. Still, objectivity is central to quantitative research, whereas confirmability is the qualitative investigator’s comparable concern. Confirmability refers to the degree to which others can confirm or corroborate the results. Confirmability in qualitative research can be addressed through the use of “building an audit trail, admitting one’s biases, beliefs and assumptions, and triangulation of data” (p. 72). As mentioned, I have triangulated the data in my research, and in writing field notes, I have built an audit trail (an account of the classroom activities) along with my observations and impressions. To address the issue of confirmability, it is imperative that researchers acknowledge their views, assumptions and overall theoretical orientation throughout the research process (Merrian, 1998, pp. 204-205). As my supervisor, Lynn Butler-Kisber, reminded me throughout this study, qualitative researchers do not apologize for their subjectivity, rather they account for it. I entered this study with the ontological stance that there is no objective or absolute reality, but rather, knowledge is built up and constructed from one’s personal experiences. I also hold the epistemological perspective that as a qualitative researcher, I am inherently implied in the creation of the findings for this study. Thus, with this research I did not aim to discover or prove a single truth or reality, but instead, my goal was to search for meaning through an interpretative process using qualitative inquiry. As evident in chapter one, I have biases regarding music. I certainly believe that
there should be a greater focus on music in schools, and I feel that music can serve as a powerful pedagogical tool to teach non-music subjects and relate subject matter to students’ interests and cultures outside the classroom. As well, I openly acknowledge that I am a singer/songwriter, guitarist, recording artist, and freelance music journalist. Moreover, I was a former student in Professor Levitin’s Cognition course and I appreciated the manner in which music was integrated into the course. While I have entered the research with certain biases, my personal connection with music and the Cognition course gave me an insider perspective that did inform my understanding of what occurred in the classroom. Simultaneously, as a researcher, I brought an outsider perspective as I engaged and analyzed the data in a systematic manner. Having three primary sources of data helped ensure that my conclusions were cross-referenced, and by sharing and discussing my findings with my supervisor, I was better ensured that my interpretations did not just mirror my personal views, but rather, were grounded in the data.

Still, as all researchers do, I entered my research with biases and assumptions: “values come with the turf” (Maykut & Morehouse, 1994, p. 13). However, subjectivity can be viewed as a virtue, a means to explore multiple perspectives (Eisner, 1991). Eisner (1991) illustrates this point in the following story:

A group of college students was told that in the state in which they lived, a state blessed with lush green forests, hunting season was about to begin. They were also told that in the hunting season ahead it was certain that many deer were going to die. The question posed to them was: Why were the deer to die? (p. 49)

One student attributed the killing of deer to the skills of the hunters, another said it was due to loss of blood and lack of oxygen, yet another said the deer would die because hunting was a legal means for humans to exert their innate aggressive tendencies, and one student said the deer would die because the National Rifle Association influenced state legislature on hunting. As Eisner states, “Each of these explanations is in some way plausible. No one of them is necessarily truer than another” and it is really a
“matter of being able to handle several ways of seeing as a series of different views rather than reducing all views to a single correct one” (p. 49).

As a researcher, I expected that the participants in my study would also bring their values, assumptions, and unique perspectives, and this is indeed an asset as it adds to a better overall understanding of a phenomenon. I would argue that the subjectivity that I brought to my study was also an asset. It allowed me to bring insight and content knowledge in the area of music and education. This knowledge helped me to conduct my research with confidence, provided insights and helped me to see connections that might have been missed if I did not have a musical background. While some might view subjectivity as a disadvantage, the flipside of my subjectivity in this study is a background and interest that informs and inspires my research, so it is a balancing act of sorts, and this is discussed openly in the research.

Reflexivity, “is a package of reciprocal reactions between the researcher and the participants in the setting” (Rossman & Rallis, 2003, p. 51). “Reflexivity is the process of reflecting critically on the self as researcher” and “coming to know the self within the process of research itself” (Guba & Lincoln, 2005, p. 210). In other words, to be reflexive is to reflect upon ourselves, our chosen research, our participants, our multiple identities and how we influence the research process: Doing so increases the integrity and trustworthiness of research (Finlay, 2002).

Guba and Lincoln, referring to work of Reinharz (1997), explain that researchers each have a distinct “voice” which are contained within three categories: “research based selves, brought selves (the selves that historically, socially, and personally create our standpoints), and situationally created selves” (p. 210). Research should reflect the researcher’s voice, in addition to the voices of participants as they speak for themselves (Guba & Lincoln, 2005, p. 209). Our voices as researchers, who we were and have become must be acknowledged and embraced, as it is simply the nature of all research. I include “all” research because both qualitative and quantitative researchers alike enter into their respective studies with perspectives, biases, and assumptions. Thus, acknowledging one’s values and assumptions and their function in the research process
should be a concern for all researchers. As mentioned, it is important to stress that qualitative researchers do not ignore or hide their biases, but rather, acknowledge and account for them.

**Summary**

This chapter addressed the methodological approach used in my study. “It is an increasingly accepted view that work becomes scientific by adopting methods of study appropriate to its subject matter” (Silverman, 2001, p. 224). As outlined in this chapter, I conducted a qualitative study because it was the most appropriate approach to gain insight into how the participants made sense of Professor Levitin’s approach to teaching. With a qualitative design I was able to answer my research questions: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does?

I chose Professor Levitin’s Cognition course/classroom as my research site because it was/is an context where music is used to teach in a cross-disciplinary manner, and therefore a unique teaching/learning situation. Careful attention was placed on ethical issues related to gaining access to the research site. Similarly, ethical considerations such as confidentiality, anonymity, and informed consent for the participant and professor interviews were addressed. Formal procedures were followed and were approved by the McGill Research Ethics Board (REB).

The primary data collected in this study were via the three-part in-depth interviews with the participants. Using constant comparison inquiry, the participant interview data was rigorously coded, unitized, and categorized and I was able to reduce the work to nine basic patterns and three overall themes in this emergent process. I also collected field notes and interviewed Professor Levitin, which enabled me to triangulate these data.

This chapter also included an overview of arts-based inquiry and an introduction to my own arts-based methodological contribution to this study: Musical memos. Inspired
by found poetry and ghostwriting, musical memos enabled me to engage with and represent the data in a musical way, thus drawing upon my skills as a songwriter and musician. Musical memos helped me highlight the essence of a pattern, create holistic representations of the data, and represent data in an embodied way.

Based on my field notes (and audio recordings of the Cognition class), I produced vignettes, which are aggregated chronological accounts of what typically occurred in the Cognition classroom. The reflections that follow each vignette include insight from the interviews with Professor Levitin. Thus, the professor interview data, as well as the field notes, served to flesh out and contextualize the themes and patterns that emerged from the participant data. Writing the vignettes also helped me highlight four facets of Professor Levitin’s teaching that I connected to performance, which I present in Chapter Six.

As well, as a secondary source of data, I reviewed the student course evaluations completed by 330 students. The course evaluations were examined after I had analyzed the data from the ten research participants. This enabled me to get a sense of how the views and opinions expressed by the participants compared to those expressed by the larger number of students who completed the course evaluations.

This chapter concludes with a discussion about how the trustworthiness of my research was increased by addressing issues of credibility (the degree to which the findings reflect reality); transferability (the degree in which the findings can be transferred to another situation); dependability (the degree to which similar results can be obtained if a study is replicated); and confirmability (the degree to which others can confirm or corroborate the results). These research concerns were addressed by triangulating the data; knowing the researching site; working closely with my supervisor; member checking; providing my methodological orientation; acknowledging biases; beliefs, and assumptions; providing rich description; reporting the research process in detail; overlapping methods; providing an audit trail; and adopting well-established research methods, in particular, constant comparison inquiry.
In the following chapter, I explore the heart of the research, that is, the themes and patterns that emerged from constant comparison analysis of the student participant interviews.
CHAPTER FOUR: PARTICIPANT THEMES

Introduction

This chapter provides an overview of the themes and patterns that emerged from the analysis of the participant interview data. Through the use of constant comparison inquiry I was able to identify reoccurring patterns in the data. After rigorous analysis of the data, three overarching themes emerged: 1) Connecting with students; 2) Optimizing learning; and 3) Creating salient moments. Each of these themes, and the patterns that comprise each theme, provide a number of insights on Professor Levitin’s teaching. While the participant data is the primary source for this chapter, I occasionally draw from my field notes to provide additional information and contextualize the patterns. Also, in this chapter I include and discuss the musical memos I wrote during the data analysis, which enabled me to analyze and represent the essence of the data in a musical, holistic, and I believe, an embodied way.

Together, the participant themes and musical memos address the research question, “How do students perceive the role music plays in the course?” As will be shown in this chapter, the analysis answered this question, and also revealed a number of other aspects of Professor Levitin’s teaching. In particular, both music and humour played significant roles in the course, and there were different nuances as to how they each functioned. These nuances are teased out in this chapter.

This chapter concludes with a review of the student course evaluations for Professor Levitin’s Cognition course, which served as a secondary data source. I reviewed the evaluations several months after completing my analysis of the participant data, and interestingly, the responses by the 330 students who completed the evaluations closely mirrored the views shared by the participants.

Emerging Themes

As mentioned, the themes discussed in this chapter emerged from the in-person, e-mail, and telephone interviews conducted with the participants. I arrived at these
themes through the process of unitizing, categorizing, and coding the data using constant comparison inquiry described in the methodology chapter (Chapter Three). The advice I received from my supervisor to “trust the process” was valuable, and it was through a slow process of carefully analyzing the data that the patterns went from being high in number and descriptive, to fewer and increasingly more conceptual ones. For example, my initial list of 26 descriptive patterns included “Music in Exams” and “Music in the Classroom.” In this case, I had assembled clusters of data from the participant interviews that related to music in exams and the classroom, and while it was a beginning point, my understanding of the data within the patterns was initially superficial. However, the patterns evolved from descriptive to conceptual and provided a deeper understanding of what was transpiring when I asked questions such as: What did the participants say about music in the exam/classroom? What did it mean to the participants? What did the participants say about the function it served? When I started asking these types of questions my data shifted, moved around, and I arrived at conceptual patterns/understandings. Ultimately, the descriptive patterns, “Music in Exams” and “Music in the Classroom,” evolved and merged into the conceptual pattern that I called “Tapping Into Student Culture With Music” which provided a deeper understanding of the role music played in this course.

As I continued to analyze all the data, the number of themes similarly shifted, expanded and contracted throughout the process until I was able to reduce the material into nine conceptual patterns, contained within three main themes that explain much about Professor Levitin’s teaching: 1) Connecting with students, 2) Optimizing learning, and 3) Creating salient moments.

This chapter draws directly from the participant interview data, and for clarity, all quotations are indented and italicized. All quotes are followed by a code that indicates the participant name (pseudonym), the type of interview (I = In Person, E = E-mail, P = Phone), the page number of the original transcript, and the month in which the interview took place. For example, James/I/9/March indicates that the quote is from page 9 of an in-person interview with James that occurred in March. As mentioned in the introduction, I also draw upon my field notes. Excerpts from field notes are followed by the code FN
and the date of the lecture in which the quote occurred. For example, FN-6/01 indicates that the excerpt is from my field notes taken on January 6.

**Theme 1: Connecting With Students**

The first theme to emerge from the constant comparison analysis was “Connecting With Students.” This theme is comprised of patterns that reflect that Professor Levitin was able to establish a connection and common ground with the students. As outlined in Table 4 below, connecting with students encompassed establishing a personable atmosphere, showing empathy to students, facilitating student involvement, and tapping into student culture with music. Table 4 also provides the rules of inclusions I wrote to help me determine which units of data should be included in each of the categories.

Table 4

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Rule of Inclusion: The data excerpts…</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a Personable Atmosphere</td>
<td>… reflect how Professor Levitin was perceived as friendly, and how he created a personable/welcoming classroom environment</td>
<td>Connecting With Students</td>
</tr>
<tr>
<td>Showing Empathy</td>
<td>…reflect how Professor Levitin demonstrated a sensitivity and understanding of student experiences and perspectives</td>
<td>Connecting With Students</td>
</tr>
<tr>
<td>Facilitating Involvement</td>
<td>…highlight examples and/or reflections on student involvement and participation in the classroom</td>
<td>Connecting With Students</td>
</tr>
<tr>
<td>Tapping Into Student Culture With Music</td>
<td>…show how Professor Levitin’s use of music in the course served to connect to the culture of the participants</td>
<td>Connecting With Students</td>
</tr>
</tbody>
</table>

**Establishing a Personable Atmosphere**

As I analyzed the participant data, one of the first and more evident patterns that emerged was that the participants felt that Professor Levitin established an inviting,
personable atmosphere in the Cognition classroom. Throughout the data the participants shared that Professor Levitin’s sense of humour and casual conversational style of communicating with students were among the factors that helped set a welcoming tone in the classroom. When I went back to my field notes I found that they corroborated that Professor Levitin created a friendly tone very quickly, within minutes in the first class, and this comfortable atmosphere remained throughout the course. In order to guide the formation of the “Establishing a Personal Atmosphere” pattern, I wrote the rule of inclusion, “the data excerpts reflect how Professor Levitin was perceived as friendly, and how he created a personable/welcoming classroom environment.”

As the participants noted, one of the ways that Professor Levitin created a welcoming atmosphere was by making an effort to learn students’ names. In my field notes, I recorded that each time a student asked a question or shared a comment, Professor Levitin asked for his or her name. I also noted that at the end of the first class of the semester, Professor Levitin was able to point out and name all the students that had contributed in the class.

“Getting to know people’s names, and making jokes with them has brought it to an even more personal level.” (Sylvie/P/3/May)

It is “a lot more engaging” than most classes and “I didn’t expect quite so much energy and I was really, really pleasantly surprised when it became clear really, really early on that it wasn’t so long ago that this guy was a student and that’s really obvious. And the whole name-learning thing, he made a very welcoming atmosphere.” (Lacy/I/3/March)

The data reflect that learning students’ names functioned in at least two ways. First, it served a basic purpose. As I witnessed numerous times throughout the course, and as was noted in the interviews, Professor Levitin’s efforts to learn students’ names enabled him to call upon students to contribute to class discussions, which is particularly effective in a large class.
“Fishing for comments from the audience, he can just call out a name and that person feels compelled to say something.” (Marie/I/3/March)

Secondly, as mentioned above, the learning of students’ names helped to foster a personable classroom atmosphere. As Professor Levitin told the students, he would try to learn as many of their names as possible because he wanted to make the students feel more than “just a number in a vast sea of student numbers” (FN-6/01). Of course, Professor Levitin did not actually learn the names of every student in the classroom (there were nearly 600 students in the course). Still, the data reflect that the participants definitely took note of his efforts to learn students’ names, and this contributed to a friendly tone in the classroom.

Another important aspect of Professor Levitin’s teaching that emerged from the data was the use of humour. As will be discussed in the following themes in this chapter, different types of humour functioned in diverse ways, from reducing exam anxiety (intended written humour) to helping students stay alert during class (in person and partially improvised humour). However, the participant data also revealed that Professor Levitin’s use of humour overall helped establish a friendly learning environment.

Humour “usually goes with the professor being more lively” and “overall, more pleasant.” It makes the class “very friendly” and “personal.” (Flora/I/5/March)

“Profs who use humour and seem personable and approachable always make students want to do well in the class.” (Lacy/E/2/April)

Overall, the participants shared very positive views about the use of humour in the classroom. However, two participants did suggest that humour may not have been appreciated by all students in the Cognition course.

“I think humour is what either turns people on or off to him (Professor Levitin). I think some people have a hard time with the fact that he’s really charming and sometimes people are really bitter about things like that [laughs]. They don’t like funny professors, which I think it stupid because, whatever. I think there are some people that wish that he’d stop telling jokes and get on with teaching, but the
thing is that a lot of the times, that’s kind of how he’s won over a lot of the other students who wouldn’t...these people who don’t like humour, don’t really need to be engaged in the same way.” (Anne/I/8/March)

“Humour is nice, it makes it more interesting. I think he does it too much at times and some of his jokes aren’t as funny as some of his other ones. I’d edit it down to about half, or at least 1/3 out, but, other than that, yeah, some humour is great.” (Randy/I/5/March)

It is important to note that Randy was the participant who had a scheduling conflict with the Cognition course and he kept up with the course by listening to the posted audio recordings of each class. As one participant suggested, listening to the audio recordings rather than attending class can diminish the effect of the humour.

“I missed two lectures in a row. Listening to three hours of recorded lectures made me realize how great the humour is in person. It's not that funny in mp3 format.” (Carol/E/2/April)

This may explain why Randy did not find the humour as engaging as the participants who attended class regularly. Still, it is important to recognize that students do have a wide range of learning styles and prefer to learn in different ways, and therefore, humour may not function in the same way for all students. Nonetheless, the data overwhelmingly shows that humour played a positive role for the participants, and as shown, Professor Levitin’s easy conversational style, sense of humour, and efforts to learn students’ names, were key to establishing a personable atmosphere in the classroom.

**Showing Empathy to Students**

Another pattern that ran through the participant interview data was that Professor Levitin was empathetic to students. Initially, I had assembled clusters of data that reflected that Professor Levitin taught in a way that the participants appreciated. This cluster of data was very general, and initially it just seemed like examples of good pedagogical practice. However, after reflecting carefully and looking for the essence of
what the participants were saying, I realized that ultimately, the participants were sharing that they felt understood by Professor Levitin, and that they appreciated that he showed a sensitivity and understanding for what it is like to be a student. Once I reached this realization, I wrote the rule of inclusion to represent these data for “Showing Empathy to Students.” These units of data included how Professor Levitin demonstrated a sensitivity and understanding of student experiences and perspectives.

For a specific example of Professor Levitin’s student-friendly teaching approach, I noted that Professor Levitin would sometimes ask for student input on whether to finish up a topic or to continue it the next class. At other times, without consulting the students, Professor Levitin would decide to return to a subject the following class rather than rush through it. These are simple examples of how he was considerate to the students, and were noted by the participants in our interviews.

“He’s very sensitive to the students. . . like OK, you’re toasted now, good, we’ll leave it there and we’ll start it five minutes early next time or something like that.” (Marie/I/2/March)

“It’s really unnerving when there are five minutes left and a professor tries to cram in fifteen minutes worth of stuff in that five minutes ... if there is something that’s not a big deal he’s not going to rush through it. He’ll bring it up next class instead.” (Lacy/I/4/March)

The participants also discussed how Professor Levitin also showed empathy for students in the area of grades and evaluation. The following examples illustrate how Professor Levitin chose not to lower the class average on the exam when the grade average was high, and how he took time to discuss the results of examinations with his students.

“It’s nice to have a Prof who sort of takes it from a student’s standpoint. Like we were all talking Oh my God he’s probably going to scale it down if it gets too high, and then he said he wasn’t, well that’s nice. How many profs would actually do that?” (Lacy/I/7/March)
“A lot of times you’ll get a test back with a grade that you weren’t very happy with and be disappointed. But with Levitin, after the test, he would bring up the average and say, this is what the class average was, this is how people did, if it was bad, it was like, guys, it’s ok. He took the time to give a pep talk and congratulate. That extra contact in discussing the test is really, really key I find.”

(Anne/P/4/May)

I recorded in my field notes that Professor Levitin also made it explicit that he was available for those who need extra help to get their grades higher: “You all did very well. Come and see me if your grades are not too high and we’ll discuss how to get you in shape” (FN-15/02/05). Of course, examples like these are things that all teachers should do to support their students, but as noted, Professor Levitin seemed to make a conscious effort to be sensitive to students’ perspectives. For example, in one class he told the students:

“You probably noticed that professors often forget what it was like to not know something. So, when they teach stuff they tend to go really fast and they think it should be obvious and that you should be able to pick it up. So, in the spirit of trying to remember what it was like when I didn’t know this stuff, I went back and checked my notes from my first cognitive psychology class and I had written this down.” (FN-13/01)

Professor Levitin’s efforts to teach with his students’ perspectives in mind certainly made an impact on the participants, and ultimately, this seems to have helped create a connection between the professor and the students.

Facilitating and Promoting Student Involvement

Another pattern that emerged during the data analysis was related to Professor Levitin’s propensity for facilitating and promoting student involvement in the classroom. As I began to cluster data that, as stated in the rule of inclusion, highlighted examples and/or reflections on student involvement and participation in the classroom, I could see that student participation played a significant role in the course. As the participants noted,
the level of student involvement in the Cognition course was especially unusual, particularly when considering the large number of students in the classroom.

“The lectures are more interesting than I would expect. What I like about them is that sometimes there is class participation, which I find is incredible in a class of 700” . . . “As for the classes with huge numbers of students, it’s the most participation. I think it’s the only class where the professor asks the questions to the students to get them to answer...or opinion questions. The only communication in my other classes are the students asking the questions. It goes back and forth in Cognition...who’s asking, who’s answering.” (Julie/I/3/March)

The cognition lectures were “not rigid”, and unlike some other classes, “people can interject with questions.” (Lacy/I/4/March)

“Professor Levitin is very hands on, interactive . . . he’s not afraid to be at our level, in that sense . . . he’s not on his high horse and saying this is right, this is right, and this is right.” (Anne/I/5/March)

“The classroom interaction made the class feel homier and gave it a better atmosphere.” (Sylvie/I/4/March)

I collected field notes during every class throughout the semester, and the data corroborated that Professor Levitin actively promoted student involvement in his classroom. My notes revealed there were frequent classroom discussions, which were often quite lively and interactive. As the participants highlighted, Professor Levitin involved the students frequently in a manner that facilitated their engagement with the course material, particularly through classroom experiments and demonstrations. This first-hand experience in the classroom helped the participants feel included and connected with the material.

“You get to know both sides, like it’s not just the professor’s telling you this and this is a fact ... like you actually get to experience it.” (Carla/I/3/March)
“Being involved in what’s going on and not just sitting there. They are fun” . . .
“Psychology doesn’t exclude you, we’re not just studying other people.”
(Flora/P/2/May)

“Anytime when I can get involved, and not just sitting there listening and writing, it’s more fun. It can happen when there are things you are trying to get involved in but really you’re bored out of your mind. But, for the most part, anything that involves involvement helps.” (Julie/I/6/March)

The classroom demonstrations, especially those that directly involved students, made for an enjoyable experience. As I frequently cited in my field notes, the demonstrations produced a very noticeable reaction in the classroom. The students literally cheered, laughed, and began chatting amongst themselves when engaged by an interactive cognition demonstration.

Whereas showing empathy served to help Professor Levitin personally connect with the students, facilitating and promoting student involvement in the classroom functioned to connect the students with the course subject matter. The data suggest that what was considered obscure and dissociated from students’ lives suddenly became tangible and relatable when the students were involved in cognitive demonstrations.

**Tapping Into Student Culture With Music**

My primary goal in this study was to explore how music was integrated into the Cognition course and how the students perceived the role that music played in the course. The data analysis revealed that music functioned in a number of ways. In order to highlight the nuanced differences I wrestled with the music data throughout the analyses. Ultimately, it became apparent that music served as a key means to connect with students by tapping into their culture. This was an important discovery, and to guide the formation of the “Tapping Into Student Culture With Music” pattern, I wrote the rule of inclusion that data excerpts show how Professor Levitin’s use of music in the course served to connect to the cultures of the participants. As the pattern grew, I found that it was through his references to contemporary music artists in classroom discussions, illustrations, and
examination questions that Professor Levitin tapped into student culture. The participant data included numerous references to Professor Levitin’s use of contemporary music, and it was apparent that connecting the course to music was very much appreciated by the students.

“All of us love rock music, whatever genre that is for each and every one of us. Music is something that takes us all somewhere else, in some way, shape or form. By using something that is typically a private and/or social domain, he’s taking education outside a boring classroom and linking it to personal experiences...And positive personal experiences. Everyone has positive attachments, on some level, to music.” (Marie/I/5/March)

“We listen to music everyday” and “we’re surrounded by it all the time you know, so you might as well incorporate it in the classroom.” (Carla/I/3/March)

“It also just seems really significant and because music seems a large part of so many people’s lives, and mine too, I think it had a good effect.” (Randy/I/4/March)

“It’s prevalent. It’s everywhere, there’s music everywhere you go. Most students probably listen to music on a regular basis, couple of hours a day, especially with the I-pods now. But, it seems like it’s really a good medium to get people interested in the class because everyone knows something about music and they all have preferences.” (Chelsea/I/4/March)

“Music, like language, is an extremely fundamental part of our society. It’s something that we all relate to. Everybody knows something about music, even if they don’t know it. It’s everywhere, you know, and that’s really great because it takes the professor off his high horse and it really makes him apply it to something we all know.” (Anne/I/6/March)

“It sort of helps me tie it (the course material) in with my own experience” . . .

“Like he’ll give an example with rock music and ties it in to your own culture.” (James/I/4/March)
As reflected above, the data showed that music functioned to connect and relate the course material to the participants’ lives and interests. In the participant interviews I learned that Professor Levitin also made musical references in the multiple choice examinations. The participants told me that in one particular examination question, a reference was made to a musical group called *The Postal Service*. Later, this reference became a topic of discussion among students on Web-CT, the online course forum.

“In the first midterm, he talked about this group, the Postal Service, and I didn’t know them but then I saw on Web-CT, like probably 50 people were going “Oh, Levitin is so cool, he talked about the Postal Service in the exam!” . . . “I think a lot of people are, I guess I am too, impressed by how hip he is. That he was a music producer, that he keeps up with today’s music and today’s television movies or whatever, that he’s not some crusty old guy.” (James/I/6/March)

In showing empathy, and creating a friendly, welcoming classroom atmosphere, Professor Levitin connected with the students. As demonstrated here, music was a key way in which Professor Levitin connected by tapping into student culture and relating the course material and classroom activities to students’ lives and interests.

*Promoting Engagement With Difficult Material*

After the data analysis revealed the four patterns contained within the “Connecting With Students” theme, there remained portions of data with which I grappled for some time. It was only toward the end of the analysis that I began to see beyond a descriptive understanding of these data, which initially, I had placed under a code name entitled, “difficult course.” Later I realized that this cluster of data did not really fit within the “Connecting With Students” theme, but rather, it represented the outcome of connecting with students. More specifically, by establishing a personal atmosphere, showing empathy, facilitating involvement, and tapping into student culture with music, Professor Levitin promoted student engagement with difficult material.

As mentioned, initially, it was very apparent that the participants found the course to be quite challenging. In particular, the participants felt that there were a lot of required
readings for the Cognition course, and that many of these were dense, research-based articles.

“There’s a lot of readings, that’s for sure, and it piles up.” (Lacy/I/3/March)

“It is a lot of reading, and definitely you have to keep up to date with it. It’s like 80 pages a week, sometimes, and it’s really intense stuff.” (Sylvie/I/2-3/March)

“There’s a lot more reading than I expected.” (Carla/I/2/March)

“I think the text is completely unexpected in that it’s complex, it’s not colourful, it’s real.” (Marie/I//3/March)

These are just a few examples of what the participants shared with me, but I was most struck and puzzled by what was not reflected in the data. While the participants were forthcoming with their criticism about the course readings, I was surprised that they did not criticize Professor Levitin for assigning such a heavy reading workload. At first I considered that perhaps the participants may have been reluctant to share their criticism of Professor Levitin with me, yet, they demonstrated an openness to share constructive criticism on other topics. What did emerge as I analyzed the data further was that it seemed that by connecting and relating to students, Professor Levitin promoted student engagement with difficult material. In other words, the data suggested that the participants viewed Professor Levitin as a friendly, approachable professor who is in tune with their experiences and perspectives, and this in turn, appears to have had an impact on how the participants engaged with and accepted the difficult course requirements.

Actually, before entering the course, some participants had received feedback from former Cognition students who similarly criticized the heavy workload, but nonetheless, recommended taking the course.

“I spoke to someone who took it last semester, and they said, “The class is horrible, almost failed, but Professor Levitin was great and made it a lot easier.”” (Sylvie/I/2/March)
“I knew someone in cognitive science, not in cognitive science exactly, in psychology, but doing cognitive science work, some research with some other professors. Umm. And she showed me an article about Dr. Levitin a while ago, just talking about him as a professor and as a person, she also recommended the class, said the readings were a lot, but recommended the class.”
(Randy/I/1/March)

Again, the heavy course demands and workload were critiqued, but not the professor. The data suggest that because Professor Levitin connected with students, they had a positive association with the course material.

“A cheerful attitude with a class always makes a huge difference when it comes to hitting the books. I was motivated to read for the class because I had a positive association with the class/material” (Anne/E/3/April). . .“I know I can do well in this class…this professor did reach me.” (Anne/P/3/May)

“If you don’t like the lecturer, you are not gonna go to class, and that’s gonna compound the fact that you’re not gonna do so well.” (Lacy/P/2/May)

The analysis pulled out and highlighted key points in the data that were not initially apparent. As discussed above, one of the patterns that was particularly noteworthy was how by establishing a personal atmosphere and connection with students, they were more accepting of a heavy workload. This pattern piqued my interest and I was inspired to write a musical memo. The following memo, “It’s a Tough Course,” includes quotes and paraphrased lines from interviews with Professor Levitin, as well as the participants.

It’s a Tough Course

It’s a tough course
You have to stay on top
I tell ya, it’s like 80 pages a week
And it really is intense stuff
And at times you can say it’s rough
But in the end, it makes me think
About categories, techniques, and studies
There’s more to know and that ain’t funny
You really have to be on the ball
There’s a lot more reading than I expected
Don’t drag your heels. Don’t neglect it
You’ll find yourself back here come next fall
Don’t be overconfident
Read it twice, time well spent
I don’t get more money for giving bad grades
I’ll find us some common ground
That we can learn upon
Ain’t no need for anyone to be afraid
If they don’t think that I am out of touch
Maybe this won’t seem like too much
And I know it can feel like a lot
It’s a tough course, you have to stay on top

As outlined in the methodology chapter (Chapter Three), writing musical memos served my analysis in three distinct ways. First, drawing upon my minimalist approach as a songwriter, writing musical memos helped me narrow in on and select phrases and lines that best reflected the essence of a pattern overall. Second, the process I developed to write musical memos allowed me to pull together my impressions, the words of my participants, and the words of Professor Levitin into a succinct yet holistic representation of the data. Third, such things as the tone of my voice, the cadence of the words, the pauses, the pitch of the notes, the chords I played on the guitar, and the tempo of the memo enabled me to create an embodied musical piece that helped provide me with a nuanced understanding of the data. Intuitively, I wrote “It’s a Tough Course” with a very fast and lively tempo and a rushed vocal delivery, which produced a feeling of movement and excitement. In hindsight, the tempo and delivery of this memo reflects musically the busy pace of students working through the course requirements. The memo has a light playful delivery, reminiscent of Johnny Cash’s song, “A Boy Named Sue.” Like “A Boy Named Sue,” I used only major chords to produce a brighter feeling, which is emphasized particularly when combined with a lively tempo. The first half of the memo contains lines and phrases from the participant data, and beginning at the line, “don’t be overconfident,” I switch to Professor Levitin’s perspective by drawing from my field notes as well as my interview data with Professor Levitin. Ultimately, in writing the “It’s a Tough Course” musical memo, I was able to pull together the different data sources and highlight the fundamental underpinning of how Professor Levitin helped promote student engagement
with difficult material. As will be shown later in this chapter, my examination of the course evaluations revealed a very similar trend with students rating the course and professor very high, though also stating that it was a difficult course with a demanding set of readings.

**Theme 2: Optimizing Learning**

My analysis of the participant data revealed that Professor Levitin taught in a manner that: 1) enticed students with his passion for the course material; 2) reduced examination tension; and 3) clarified concepts dynamically. I worked with these three patterns and ultimately decided that the theme “Optimizing Learning” encapsulated them. These are shown in Table 5 that includes the rules of inclusion for each of these patterns.

Table 5

*Optimizing Learning*

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Rule of Inclusion: The data excerpts…</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enticing Students With Passion</td>
<td>…reflect examples of and/or feelings about the professor drawing upon subjects he knows well</td>
<td>Optimizing Learning</td>
</tr>
<tr>
<td>Reducing Exam Tension</td>
<td>…reflect how humour helped reduce anxiety and tension in exams</td>
<td></td>
</tr>
<tr>
<td>Clarifying Concepts Dynamically</td>
<td>…reflect that diverse teaching strategies helped clarify difficult course concepts</td>
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</tbody>
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*Enticing Students with Passion*

Professor Levitin frequently drew upon his personal experiences and knowledge in the classroom. In my analysis of the participant data, it became apparent that by teaching and drawing upon what he knew, Professor Levitin taught in a very impassioned way. It appears that the participants could sense the passion and personal attachment Professor Levitin had to humour or music when he integrated these areas into his teaching.
“He’s trying harder than most to get our interest, and he kind of includes his experiences, and I don’t know much about his background, but it seem like he’s very experienced in life, comedy, and music, the industry...he knows a lot about these things so it’s good for him to incorporate things he’s interested in. When a professor teaches what they like, you can really tell. It really changes the class.” (Chelsea/I/4/March)

“The level of energy and personal attachment to the material was something that I hadn’t been expecting” (Lacy/I/3/March). . . “If a Prof has the ability to pull on other experiences and other fields of expertise, you may as well exploit that...I don’t know how long he’s taught the class for, but everyone I’ve talked to has enjoyed it and found it helpful” (Lacy/I/5/March). . . “It’s nice to be taught by someone who’s more worldly.” (Lacy/I/6/March)

As these excerpts suggest, by drawing upon his background knowledge and experiences in his teaching, Professor Levitin improved the learning environment and cultivated the students’ interest in the course material. In particular, Professor Levitin drew upon music in his teaching, and with his years of work in the music industry, he had a wealth of musical analogies and personal connections with music which he applied in the classroom. One other student shared,

“If you take what you know and apply it to the field you are teaching and you are going to be able to give people better examples.” (Anne/I/4/March)

As will be shown later in the vignette reflections in Chapter Five, Professor Levitin similarly expressed that by drawing upon areas he knows well (humour and music), he was able to provide better analogies in his teaching. I was inspired by this pattern and I wrote a musical memo which I entitled, “Take What You Know.”

Take What You Know
Take what you know
Apply it to the field
Better examples you will give I feel
Life, comedy, music, the industry
He knows a lot about these things
When a professor teaches what he likes  
   You can really tell  
Take what you know and teach it well  
Take what you know and teach it well  
Yes life, comedy, music, the industry  
These are things that I do know well  
   I'm using what's familiar to me  
   I'm making a link that I can  
I take what I know and what's at hand  
I take what I know and what's at hand

As I indicated about the previous memo, “Take What You Know” features direct quotes and paraphrased lines from interviews with both Professor Levitin and the participants. To write the memo I scanned the participant data searching for a line that best summed up the theme of the entire cluster of data. The line I selected was “Take what you know, apply it to the field.” This direct quote served as the opening line in the musical memo, which I followed with, “Better examples you will give I feel,” a line I paraphrased from the data. Paraphrasing in this context allowed me to express what a participant had said while still controlling the choice of words. This enabled me to build on the rhythmic and rhyming pattern of the quoted first line. The next lines are again, direct quotes from a student’s interviews, “Life, comedy, music, the industry, He knows a lot about these things. When a professor teaches what he likes, you can really tell. Take what you know.” To complete the phrase, and to rhyme with “tell,” to the line “Take what you know” I added “and teach it well.” I then repeated the line “life, comedy, music, the industry” but then flipped the voice from that of student to professor with the line “These are things that I do know well.” I then quoted from the professor interview with the line, “I’m using what’s familiar to me, I’m making a link that I can.” The last line, which I repeat twice to stress the point, is paraphrased from the interview with Professor Levitin, “I take what I know and what’s at hand.”

The “Take What You Know” musical memo is performed at a moderately fast tempo and the words are delivered in an unhurried way, allowing for the words to breathe and the message to be clear. While the memo is based on a major key and primarily uses major chords (which tend to be brighter sounding), at two points in the memo I incorporate a minor chord (which produces a darker sound). For example, the first time I
sing, “Take what you know and teach it well,” I end on a minor chord, reflecting that importance of the lyric. When I repeat the line, I substitute the minor chord for the major, home key of the memo, which provides a sense of resolution. I did the same for the final line of the memo, “I take what I know and what’s at hand.”

Earlier I outlined in the methodology chapter (Chapter Three), how composing this musical memo helped me in my analysis. Specifically, the musical memoing process helped me highlight simultaneously the essence and nuances of what it meant to be “Enticing Students With Passion.” I did this by selectively narrowing in on phrases and lines that reflected the pattern overall. As well, I was able to weave together the different data sources to create a holistic, yet succinct representation of the pattern. The message of this musical memo is, that if teachers integrate what they know and are passionate about in their teaching, they will be able to give better examples and make more meaningful analogies. While this may seem obvious, it is not a strategy that is applied by all teachers. Ultimately, as I stated in the memo, students can sense when a teacher has an authentic connection to the material, and this enhances the learning experience.

Reducing Exam Tension

Before collecting field notes and interviewing the participants, I had not considered that humour might have played a significant role in Professor Levitin’s teaching. However, after my observations in the first few classes it seemed quite apparent from the students’ reactions that they enjoyed humour in the classroom, and as shown, this was supported throughout the participant data. What I was not able to see at first was that humour also served to reduce tension in the examination process. Typically this took the form of a comical option in a multiple-choice examination question. Whereas humour in the classroom was delivered in person and often improvised, the humour in the examinations was predetermined and written, and therefore students read and experienced it individually.

It is important to reiterate that the multiple choice examinations were the only form of assessment in the Cognition course. As will be demonstrated in the vignettes in Chapter Five, Professor Levitin recognized that students learn and express their
knowledge differently, and ideally, there would have been a variety of assessment options. Professor Levitin stated to the students in the second class of the semester, “You should have the choice in the way you demonstrate your knowledge and you should have multiple opportunities to do it” (FN-11/01). He added,

I’m totally against the idea that we have two midterms and a final and those are your only opportunities. So, to that end I want to make the best of it, so I’m going to try not to have any tricky questions and the questions will probably be multiple choice…but if I can convince the Faculty of Science to give us enough money to hire graders, I will try to get some short-answer questions in there (FN-11/01).

In the end, multiple choice examinations were the only form of assessment used in the Cognition course, which, as Professor Levitin shared in class, was a probable and feasible option considering the large number of students.

The role that humour played to reduce examination tension emerged throughout the participant interviews. The rule of inclusion that I wrote for the pattern “Reducing Exam Tension” was that the data in these segments reflect how humour helped reduce anxiety and tension in exams. The pattern contained insight from the participants such as:

“Having a few of those questions with something funny in them…I don’t know, maybe having this sort of reference to culture or something, the outside world, sort of probably helps bring you back to, not to the exam, but to yourself also when your feeling like you’re out of it, in a sort of weird world of molecules and things you don’t really understand, you don’t know what’s going on and feeling woo hoo…but then all of a sudden, hey, I’m here, here I am, I know who I am.” (James/I/6/March)

“Humour helps keep your brain in a creative, active, a more natural state, so you don’t stress out too much” . . . “I just found that putting humour in makes the test a more interesting experience and it keeps me, I don’t know, it puts me in a better frame of mind for dealing with the questions and thinking about things.” (Randy/I/5/March)
“It links the private, the personal, the social, the fun side of the learning, the downtime side of the self into the learning. The humour was really good at defusing the tension of the exam” . . . “As a device, it’s pretty clever. It defuses the anxiety and reminds you that’s it ok, it’s just a freakin’ exam, and in the grand scheme of things, you won’t remember it. I think it was a really good tool.”

(Marie/I/6/March)

“It (humour) definitely eases the stress, personally… It makes me think, ok well, it’s not going to be so bad … it eases the tension (in exams).” (Sylvie/I/6/March)

The idea that humour could serve to reduce examination tension really struck me as having considerable pedagogical value. Although this study did not focus on humour in examinations, it is possible that students who do not feel as stressed will perform better as a result. As one participant expressed,

Professor Levitin is “getting better results and the kids are doing better on the tests, because they’re more relaxed.” (Anne/I/9/March)

Although I do not have the results to show if this was indeed the case in the context of this study, the data overwhelmingly showed that humour in the examinations did relieve tension. Whether or not this resulted in higher scores, the participants clearly felt that humour made the examinations a less stressful experience.

As part of my analysis of the participant interview data on “Reducing Exam Tension,” I wrote the following musical memo which I called, “It’s Just a State of Mind.”

It’s Just a State of Mind
If anything it’s just a state of mind
I felt more comfortable this time
Bring me back to myself and who I am
I’m here and I know who I am
It eases the stress, it makes me think
It’s not gonna be so bad in a week
A funny question takes the pressure off
It eases the tension that I brought
A little humour never hurt no one
It links the private, the personal, the social and the fun
To write the memo I began by examining the participant data under the “Reducing Exam Tension” pattern. For each chunk of data I selected a line or phrase that I felt delineated the essence of what that particular participant was expressing. I then examined the list of statements and looked for the quote that best summarized the theme that runs throughout the list. The line I selected is, “If anything, it’s just a state of mind. I felt more comfortable...” To establish a rhythmic and rhyming pattern in the musical memo, I added the words “this time.” Then I sang these two lines and developed a simple melody. Although this memo has a moderately fast tempo, the words are delivered in a calm, conversational manner that, like the actual words, reflect musically the feeling of being relaxed and comfortable. Only major chords are used in the memo, producing a happier or brighter feel. As I selected additional quotes, the process highlighted the function of humour in examinations (i.e., it brings me back, it eases stress, etcetera), As with adding “this time” to the opening line, for rhythmic and rhyming purposes I occasionally wove in a short phrase written in my own words. I ended the musical memo by repeating the opening line “If anything, it’s just a state of mind” twice, reaffirming that this is the umbrella line that sums up the function of humour in examinations. It was in writing this musical memo that I grasped the significance of the line “It’s just a state of mind.” After all, humour in a few multiple choice questions did not change the fact that examinations covered a vast amount of reading material and that a large portion of a student’s grade was based on the examination. Those stress-producing aspects remained. However, humour helped reduce anxiety by changing students’ state of mind during the process of writing the examination.

**Clarifying Concepts Dynamically**

As I observed and recorded field notes in each Cognition class of the semester, it became apparent that Professor Levitin integrated a variety of diverse teaching approaches in his classroom. In a typical classroom period, Professor Levitin lectured, played videotaped and audiotaped clips, shared personal stories, and engaged student in
interactive demonstrations. On one occasion he recited poetry and performed music in the classroom. As a participant expressed,

“It would be silly to just limit ourselves to visual or audio. It’s just another field we have to consider, another sense.” (Randy/I/4/March)

After I had assembled the data to be subsumed under the pattern labelled as “Clarifying Concepts Dynamically,” I wrote the rule of inclusion indicating that these data reflect the diverse teaching strategies that helped clarify difficult course concepts. This patterns contains excerpts such as,

*It was a lot easier to understand the concept when you had an example tied in with it, especially when the example is, as in a musical example.”* (Lacy/I/6/March)

*“In cognition you can see the examples, like when we did visual perception, auditory perception, it was really interesting, with the examples, games you get to play...”* (Flora/I/2/March) “It’s easier if you have an example and you saw it at work it definitely will stick with you better. It’s like going out and doing something, you remember things better by doing it rather than hearing it.”* (Flora/E/2/April)

Specifically, the participant data suggest that the classroom illustrations and examples served as a way to simplify the required course readings. As shown earlier in the pattern, “Promoting Student Engagement With Difficult Material,” the readings were often dense research-based articles which required a deeper understanding of terminology and greater content knowledge to fully understand them. The classroom demonstrations provided a more “hands-on” understanding of concepts covered in the readings:

“I learn much better by being there, by experiencing a demonstration, as opposed to reading about it. The experience makes it easier to make a memory about it, once you’ve gone through the motions. There is only so much you can explain with words, and you can’t really believe it until you see it, you know. It’s much more than what I can get from other classes where the professor is reiterating
something very similar to what’s on the page and not putting a visual or audio cue to it or anything like that.” (Anne/P/1/May)

“With the auditory and visual demonstrations, Professor Levitin is great at explaining things in the book so you get a better understanding of it…it’s not like he’s going on for a long time about the same things. Let’s talk for a while, show a demonstration, talk again, show a demonstration. He engages the classroom. He’ll call people and say like OK, what’s the answer to this. It’s just that constant kind of movement.” (Carla/I/2-3/March)

“I think with any type of example, when he puts on the screen it makes it easier to understand, at least for people who are more visual. Because if you just read it on paper and you have to imagine it, you could get something wrong, and you could totally miss the interpretation.” (Sylvie/I/4/March) “Professor Levitin knows how to balance out different teaching techniques in order to maximize learning in an environment that makes it rather difficult.” (Sylvie/E/2/April)

As I discussed earlier in the “Connecting With Students” theme, classroom demonstrations and illustrations promoted student involvement, and as shown here, they also helped the participants grasp the course material by bringing course readings to life in the classroom and making the abstract concrete. In Chapter Five, the vignettes provide a sense of what a typical classroom period looked and felt like, and they demonstrate how Professor Levitin navigated through the course material while applying a dynamic teaching approach that filled the learning environment with auditory sounds, visual illustrations, interactive demonstrations and illusions, and classroom discussions.

**Theme 3: Creating Salient Moments**

Music and humour have played a key role in the previous themes, “Connecting With Students” and “Strategies to Optimize Learning,” functioning in the Cognition course to do such things as connecting course material with students’ lives (with contemporary music) and reducing exam tension (with written humour). During the data analysis, I had to continuously work to tease out the data that related to music and
humour to get a sense of the various functions they served in the class. As I analyzed the clusters of data, I realized that both music and humour also served to create salient moments that held students’ attention in the classroom and triggered their memory of material. I struggled with the data because it could be argued that holding attention and triggering memory are examples of the previous theme, Optimizing Learning. However, after closer examination, the unique element that I felt constituted a distinct Creating Salient Moments theme is that the data did more than optimize learning, they reflected exceptional and pivotal stand-out moments in the classroom. Although holding attention and triggering memory are closely related, for the purpose of discussion, attention and memory are separated into two distinct patterns.

In contrast to the predetermined, written humour in examinations discussed earlier, the type of humour that held students’ attention and triggered their memory was delivered in person in the classroom as Professor Levitin interacted with the students. Professor Levitin’s use of humour in the classroom is evident in the vignettes presented in Chapter Five, and is particularly highlighted in the “Laughter is the Best Medicine” vignette. As shown in the vignette, Professor Levitin did things such as perform a comical song, recite a humorous poem, and integrate funny cartoons into the classroom discussions. Professor Levitin’s tone, volume, pauses, accents, and overall delivery helped shape this type of humour. Sometimes the in person, classroom humour appeared to be completely unintentional and perhaps accidental. However, even when part of the humour was clearly intended, such as performing a funny song, the interactive spirit of the classroom resulted in much spontaneous humour.

Similarly, in the discussion on the pattern, “Tapping Into Student Culture With Music,” I showed how Professor Levitin made references to contemporary artists to connect with students’ culture. However, the type of music that served to retain students’ attention and trigger their memory of course material also included non-contemporary music or unusual patterns of sounds that were part of interactive cognitive demonstrations in the classroom. In these cases, the music created stand-out, salient moments. Table 6 below shows the rules of inclusion for the “holding attention” and “triggering memory” patterns that made up the theme.
Table 6

Creating Salient Moments

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Rule of Inclusion: The data excerpts…</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holding Attention</td>
<td>…provide examples/insight on how music or humour helped grab and hold students’ attention in the classroom</td>
<td>Creating Salient Moments</td>
</tr>
<tr>
<td>Triggering Memory</td>
<td>…make reference to how music or humour helped trigger memory of the course material</td>
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</tbody>
</table>

**Holding Attention**

As mentioned, my data analysis revealed that music and humour served to increase students’ attention span during the classes. Basically, music and humour helped to keep students on their toes. It is important to restate that the classroom was a very large amphitheatre and dimly lit in certain areas, particularly in the back rows of the room. As I have recorded in my field notes, there are no windows in this classroom and the lighting is muted. Although the classroom was not conducive to staying attentive, the participants indicated that both music and humour functioned to keep them alert. As the participants shared,

“Music is entertaining because it’s different than what you do in most of your classes, people pay attention because you get a little song, the professor wrote the song, so it’s kind of interesting for everyone.” (Flora/I/3/March)

Music in the classroom is great because my “attention span when reading can be rather limited,” (Lacy/E/2/April). It is “so helpful” and “a lot of the times, entry-level classes very rarely do that.” (Lacy/P/2/May)

Music “expands your attention” (Carla/I/3/March), and helps you to be “more attentive” in class (Carla/P/1/May).
Similarly, the participants indicated that humour also served to catch and retain their attention in the classroom.

“Humour was a great factor for motivation. No one wants to go to a boring lecture. And by boring, I mean that a monotonous lecturer can make even interesting material boring.” (James/E/2/April)

“I would have so failed that class instead of getting an A, had the class not been funny enough to keep me awake.” (Sylvie/E/2/April)

Humour “keeps me awake” (Carol/I/4/March), so “there was motivation to come to class.” (Carol/E/2/April)

“I think we need humour sort of to invigorate, like imagine life where we didn’t have humour, it would be too stale, too boring.” (Chelsea/I/4/March)

As outlined in Chapter One, the Cognition course was scheduled twice a week (Tuesdays and Thursdays) towards the end of the day, from 2:30 to 4:00 p.m. It is important to consider that for undergraduate students that may have had classes beginning as early as 8:30 a.m., staying alert after a long day of lectures may have been challenging. Regardless, the data consistently showed that Professor Levitin’s use of music and humour in the classroom served to grab and hold students’ attention.

Triggering Memory

The data analysis also revealed that in addition to grabbing students’ attention, the participants felt that both music and humour created salient moments that in turn helped them remember the material. In this sense, music and humour functioned as mnemonic devices. On the topic of music and memory the participants shared,

“Music helps us remember, because it is something sort of out of the ordinary. It doesn’t stimulate us the same as just talking about it would.” (James/I/4/March)

“Music has powerful cognitive aspects” and a “huge recall value.” (Marie/I/6/March)
“It reminds me of the memory lecture and how if you have emotions attached to certain memories you can remember” . . . “I remember those a little more clearly than if someone was just trying to describe it to me.” (Lacy/I/5/March)

“I do remember reading about Mozart and how it still took him years of practice. See, Mozart, it's something we know, and are familiar with. We can relate to that and tie it to the important stuff. It triggers memories.” (Sylvie/I/1/March)

One of the specific musical examples that the participants brought up in the interviews was the live classroom performance of “It’s Emergent,” a parody of Madonna’s hit song, “Like a Virgin.” With lyrics written by Professor Levitin, the parody made reference to various cognitive concepts covered in the course. The participants highlighted that with a musical example such as the “It’s Emergent” song, it was easier to remember the course material.

“You won’t remember the mark you got on the midterm” but “you will remember Levitin switching up the words to ‘Like a Virgin’” (James/I/7/March). “I think it’s more memorable that way. You don’t just have what you read or someone speaking, it’s like a different system being triggered. It’s easier for me to remember something musical than just a sentence.” (James/P/1/May)

“When someone bursts into song, you remember that, at least you remember the instance” . . . “I never would have thought much about emergence itself and so the song alone got me thinking, and I remember it.” (Marie/I/4/March)

“I remember singing through the song to try get an answer. Things like that. It keeps you interested and it makes you remember and makes it easier.” (Sylvie/P/1/May)

A similar pattern emerged during the data analysis with regard to humour creating salient moments that triggered the participant’s memory. The participants shared the following on how humour helped them recall aspects of the course material.
“Humour, I find, is really big. It’s a tool that I don’t think is being used very often at McGill in most of my classes. Humour just makes something interesting, you pay more attention, and in my case, it makes me remember more. So, the material sinks in better” and is “very helpful for remembering and for paying attention.” (Julie/I/5/March)

“It’s easier to remember things for class. We just learned was that if you associate a picture with bizarre imagery, or a face with funny name, it’s easier to remember, it’s the same thing like that.” (Sylvie/I/6/March)

“The fact that something’s funny, or whatever, it makes it stand out from the rest, which means we remember better, which means he’s taught to us. He didn’t just tell it to us, he taught it to us (laughs). Which is extremely effective.” (Anne/I/8/March)

“As we have learned in class, emotions play quite a large role in the formation of memories – and I also truly and genuinely believe that with the use of humour, one is able to remember those instances better because these 'moments' are set apart from the rest of one's mundane day and therefore entails memory for the relevant course memory that was taught during those moments. Humour also makes a person relaxed and more alert. When something is really boring, it's rather tedious to swallow down the information.” (Carla/E/2/April)

Ultimately, Professor Levitin not only taught the students about cognitive theories of attention and memory, but by integrating music and humour in the course, he also put the theories to use, creating salient moments to get students’ attention and improve their retention of the course material.

Review of the Course Evaluations

For a study of this type, it was only feasible to fully explore in depth the impressions and perspectives of a small group of participants. Still, I was curious about how the themes that emerged in the participant interviews might compare with the views of the students overall. While course evaluations cannot provide the depth of
understanding that was attained through the interview process that I carried out with the participants, it did provide a general sense of a greater number of students’ impressions over time in this course. Professor Levitin had saved his course evaluations and he gave me permission to review the student responses. It is important to note that I reviewed the student course evaluations near the end of writing this dissertation, long after analyzing the interview data for this study. As explained below, it was interesting to see that in many respects the student course evaluations closely mirrored the themes and patterns that emerged from the participant data analysis.

**The Course Evaluation Results**

In total, 330 students responded to the Psychology 213 course evaluation. For the first part of the evaluation, students responded to statements by selecting a number on a scale from one to five, from strongly disagree (one) to strongly agree (five). See Appendix G for an overview of the course evaluation statements and corresponding class mean scores.

The findings and conclusions drawn from the ten participants in this study were also reflected across the 330 course evaluations. For example, the course evaluation data showed that the students felt that Professor Levitin stimulated interest, gained student attention, and was open to student input and discussion. Similarly, the course evaluations reflected that the students perceived Professor Levitin as knowledgeable, helpful, fair, and overall, a good teacher. The course evaluation results included the mean scores of all the courses in the Psychology department at McGill University, and interestingly, on all but two questions, Professor Levitin’s mean course evaluation score was higher than the mean department score. The two questions in which Professor Levitin’s mean score were lower than the department mean were those statements that related to the reading material and workload being appropriate for the level of the course. The evaluations showed that students felt that the number of readings was high and the workload was heavy. Similarly, the participants in my study indicated that the course was challenging, and had a large number of required readings, some of which were demanding. Interestingly, even though the participants in this study felt the course was quite difficult, they did not appear
to resent or hold it against the professor. Similarly, the student course evaluations show that while the course was perceived as having a heavy workload, students nevertheless felt that Professor Levitin was a good teacher. As demonstrated above, it appears that Professor Levitin’s personable demeanor, sense of humour, and empathy for students helped to humanize him in the eyes of the students. Like the participants, the students who completed the course evaluations were critical of the heavy workload, but not the professor.

The second part of the course evaluations allowed students to write comments about the course. With 330 student evaluations, I expected to find a greater range of comments, but they were overwhelmingly positive and extremely similar to those expressed by the participants. The one exception was a student who wrote that Professor Levitin should stop trying to be everyone’s friend and just teach the course. That same student expressed that the course could be improved by replacing the professor! As Professor Levitin shared with me, and as any teacher knows well, you cannot please everyone. Still, apart from this one exception, the comments were very positive and they corroborated the themes and patterns that emerged in the participant interviews.

The overall results of the Cognition course evaluations are not surprising since it has been found that “students who perceive positive attitudes exhibited by professors tend to evaluate them higher in overall teaching effectiveness” (Kim, Damewood, & Hodge, 2000, p. 466). As shown in the discussion of participant themes and patterns in Chapter Four, the participants felt that Professor Levitin was friendly, humorous, attentive, empathetic, engaging, and so on. Similarly, throughout the 330 course evaluations, students expressed views and opinions such as, “Excellent teacher. Keeps class interesting and fun;” “Inventive. Passionate. It makes me feel [as] though he enjoys his job;” “Great sense of humour. Takes time with students and listens to our opinions;” “Very dynamic…holds class attention very well;” and “Very enthusiastic. Tries to integrate multifaceted ways of learning” (See Appendix G for a larger sample of student evaluation comments). While I was not surprised that the course evaluations were favourable, I was pleasantly surprised at just how closely the written comments (like the mean student scores) mirrored the themes and patterns that emerged from my analysis of
the participant interview data. Although I did not review the evaluations to validate or disconfirm the themes and patterns that emerged from the participant data, the course evaluations did provide breadth and a more general sense of students’ perspectives in the Cognition course. The similarity between the participants’ impressions and those of the students’ overall suggest that the themes and patterns that emerged from my analysis were not particular to only those who volunteered to participate in the study.

Summary

In this chapter, I discussed the participants’ views and thoughts on the cognition course and Professor Levitin’s teaching. Using the constant comparison method of data analysis, three major themes emerged from the participant interview data: 1) Connecting With Students, 2) Optimizing Learning, and 3) Creating Salient Moments. Under the theme of “Connecting with Students,” the data showed that Professor Levitin: Established a personable atmosphere (by learning students’ names and incorporating humour in the classroom); Empathized with students (by not rushing through material, not scaling down high grades, and sharing personal notes from his days as a student); Facilitated student involvement (by involving students in classroom discussion and demonstrations); and Tapped into student culture with music (by drawing upon contemporary music examples in the classroom and examinations). The data also suggest that connecting with students promoted their engagement with difficult material. As I discussed earlier, although the course was challenging, Professor Levitin found a common ground with the students, and this appears to have helped the students see the course as manageable. Within the “Optimizing Learning” theme, the data reflected that Professor Levitin: Enticed students with passion (by drawing analogies with areas he knows well and with which he has a personal attachment); Reduced exam tension (by integrating humour in the examinations); and Clarified concepts dynamically (by using a variety of teaching techniques in the classroom.) Finally, the patterns that emerged within the “Creating Salient Moments” theme indicated that Professor Levitin: Held students’ attention (by using music and humour to change the pace and create pivotal moments in the classroom; and triggered students’ memory of material (by using music and humour as mnemonic
The analysis indicated that both music and humour appeared across the three themes, reflecting the nuanced ways in which these dimensions functioned in the course.

This chapter also includes musical memos, a musical representation of the data, which were written while conducting the constant comparison analysis of the participant data. Together, the participant themes and musical memos answered the research question, “How do students perceive the role music plays in the course?” As a secondary data source I examined the course evaluations completed by 330 students, and as it happens, the results were very much aligned with the views and opinions expressed by the ten research participants.

In Chapter Five, I provide vignettes: Detailed aggregated descriptions of classroom events which are used as a means to contextualize what occurred in the Cognition classroom. The vignettes help flesh out the themes and patterns that emerged in the analysis of the participant interview data. Following each vignette, I draw upon my field notes and interview data with Professor Levitin to shed light on the rationale for his teaching approach. While a large university classroom with hundreds of students presents a challenge for applying constructivist learning principles, the analysis discussed in this chapter suggests that Professor Levitin’s approach to teaching and learning reflected principles of constructivist pedagogy. Finally, I argue that Professor Levitin’s teaching was in fact fundamentally constructivist, and in Chapter Six, I present a performance metaphor for constructivist teaching.
CHAPTER FIVE: VIGNETTES

Introduction

This chapter is comprised of four vignettes that are aggregated representations of the events, sights, and sounds that typically occurred during a Cognition classroom. In research, vignettes serve to contextualize data and provide the reader with a greater understanding of the phenomenon under study. As mentioned in the discussion on methodology in Chapter Three, to some degree, the details of the “sights and sounds” in the chronological storytelling of vignettes help create the sense of being present and experiencing the phenomenon first hand (Erickson, 1986).

Drawing from data across my field notes, I used vignettes to aggregate the data and produce vivid chronological accounts that are both grounded in the study and representative of the kinds of things that happened in the Cognition classes. Thus, the four vignettes presented in this chapter provide context to the participant experiences discussed in Chapter Four. In order to create the vignettes, I began by reviewing my field notes to become re-familiar with the type of things that occurred in the classroom. I then worked to identify general patterns and characteristic classroom events in my field notes. My goal was to get a sense of the kinds of things Professor Levitin would typically do and say, how the students would respond, and so on. In addition to reviewing my field notes, I listened to segments of the Cognition classroom audio recordings which, more so than my field notes, helped me recall the feeling of being in the class. Through the audio recordings I could hear how the students scrambled to find available seats at the beginning of class, I could hear how Professor Levitin grabbed students’ attention with a joke, and I could hear the laughter and classroom interactions. Together, the field notes and classroom audio recordings provided nuanced details that I was able to draw upon to create four illuminating vignettes: 1) “A Meeting of Minds” illustrates how Professor Levitin created a welcoming atmosphere and introduced a student-friendly teaching approach; 2) “Cognition in a New Key” reflects the ways Professor Levitin integrated contemporary music in the classroom to connect material to students’ lives; 3) “Laughter is the Best Medicine” is situated in the pre-examination class and highlights how
Professor Levitin’s use of humour helped reduce students’ anxiety; and 4) “The Guest Lecture” vignette is an aggregated account of the cognition guest lectures that provides an interesting juxtaposition of guest styles with Professor Levitin’s style of teaching. Each vignette is followed by a reflection, which not only includes my personal impressions, but also illuminates excerpts from my interviews with Professor Levitin. The vignettes address the research questions: How is music integrated into a higher education Cognition psychology course? What does the professor do in the classroom and how does he explain what he does?

While all events described in the vignettes occurred in the classroom, efforts were made to protect the anonymity and confidentiality of the students and guest lecturers. With the exception of Professor Levitin, all individuals in the vignettes have been assigned pseudonyms and certain details that might indentify individuals have been altered. All quotations have been italicized. However, to maintain the narrative flow of the vignettes, the quotations are not attributed.

**Vignette One: A Meeting of Minds**

It is 2:30 pm on a cold snowy winter afternoon in Montreal which is typified on the McGill campus by slushy walking conditions, chilly winds, and grey skies. A steady trail of heavily clothed students trudge across the campus for the beginning of winter semester classes. Leacock 132, a large, cavernous, amphitheatre holding approximately 600 people, offers little contrast to the day outside. The rows of closely packed, tablet arm chairs reflect some light in an otherwise dim, cavern-like space with concrete, windowless walls, and a podium for the instructor far below in the “pit.” The silhouettes of students carrying backpacks become visible in the four entrances at each corner of the room and the seats fill up quickly with some students relegated to sitting on the steps in the aisles. As the students settle in the Cognition classroom, the faint sounds of people stomping the slush off their boots as they enter the building can be heard from the upper, ground level entrance.

Meanwhile, Professor Levitin, dressed in a suit and tie, busily sets up his PowerPoint presentation, which appears on two large movie-theatre style screens at the
front of the classroom. Although a microphone is fixed to the podium at the front of the class, Professor Levitin is wearing a cordless one. As he adjusts the volume of his voice he waves his arms above his head and asks, “Can you hear me? If you can’t hear me, raise your hand.” A few students raise their hands, and he replies, “How did you know I said that?” It is barely 20 seconds into the lecture and the students break out in laughter.

As the ripples of laughter subside, Professor Levitin says,

“It’s better if you think of me, not as the professor who’s going to tell you everything, but more as a guide. Someone who can help steer you through some of the readings and some of the ideas, and you can take charge of the knowledge yourself. And you can decide what you believe to be true in a number of controversial issues.”

Professor Levitin indicates that to get a good grade in the class students need to “Read the articles TWICE” and then, in a comical tone, he adds “Really!” Again, laughter fills the room. Professor Levitin announces, “OK. We’re gonna talk about Plato.” The students glance upwards as an image of the cast of the Diff’rent Strokes television sitcom series appears on the large overhead screens. Professor Levitin quickly changes the slide and says, “NO, not Dana Plato…PLATO!” The students simultaneously erupt into laughter. As Professor Levitin begins to discuss Plato he notices that some students are furiously taking notes. He stops mid sentence and says, “it is better to just listen and not focus too much on writing everything down since all this material is in the text. You are probably better served if you just try to listen and ask a lot of questions during class and we’ll have a conversation.”

As the students put down their pens and highlighters, Levitin shouts out, “What is cognition?” There are whispers among neighbours, but no one answers out loud. Suddenly, an image of the “male brain” appears on the screen. Outlined in bold, block letters are the different parts and functions of the brain: sleeping, beer, and sex. Immediately bursts of laughter fill the cavernous room. Professor Levitin smiles and asks, “So tell me, what do you think cognition is?” Suddenly responses ring out and echo across the large room: “Reasoning,” “language,” “free will.” Simultaneously, Professor
Levitin paces back and forth at the front of the class making eye contact with different students. As each hand is raised Levitin asks, “What’s your name?” “Nick,” a brave student responds “Hi Nick. Everyone say hello to Nick!” At Levitin’s command there is a chorus of “Hello Nick!” and laughter erupts again. Levitin switches gears to ergonomics, which is concerned with design as it relates to human needs. To illustrate, he speaks wryly about the annoying flashing lights on VCRs and disdainfully talks about how no one has been able to solve that problem. He encourages the students to brainstorm about possible solutions to ergonomic problems. Even with a microphone, at times the volume of the students’ reactions almost overpowers his voice. At the end of the brainstorming session a smiling Professor Levitin points to the upper right section of the room and says “Nick,” then he points to the middle of the classroom and says “Julie.” After pointing out and naming about eight students that had contributed to the discussion, there is a loud wave of applause! Professor Levitin jokingly says, “OK, only 620 to go!”

“I want to learn as many of your names as possible. It’s awful enough that you have to be in a class with 700 people, I don’t want to add an insult to that and make you feel like you are just a number in a vast sea of student numbers. Give me awhile to work on it and I’ll try to learn as many names as I can.”

To wrap up the first class, Professor Levitin announces, “There are a lot of nuances to all these theories that we will look at next class. We’re almost out of time so I’m going to stop talking about this stuff. See you next class.” Levitin raises the lights, and hundreds of students spill out of the classroom. Several lingering students gather near the front of the room to speak with Professor Levitin.

Reflections on “A Meeting of Minds”

As an undergraduate student, I had many courses in room Leacock 132. Still, when I returned to the room as an observer/researcher, I was taken aback by the sheer size of the room. Compared to most classrooms it is simply massive, resembling something closer to a room designed for a musical concert performance rather than teaching. As well, the lack of windows, concrete walls and dark colors produce a dreary, dungeon-like feel. In contrast, the tone and atmosphere in the classroom was friendly and
lively. This vignette provides a sense of how Professor Levitin’s sense of humour and easygoing conversational style helped create a welcoming atmosphere. Interestingly, he always wore a suit and tie which conveyed that he was serious about his work, and yet, his actions showed that he was able to simultaneously be playful in the classroom. Above all, the students and I were really impressed by Professor Levitin’s ability to establish a rapport with the students so quickly.

It is important to highlight that Professor Levitin showed respect towards the students. He did not enter the classroom to simply pass along his knowledge and personal perspectives. Rather, he presented himself as a facilitator who would guide the students through an exploration of cognitive principles, theories, and issues, but it was up to the students themselves to work with the information and formulate their own conclusions. I asked Professor Levitin for his thoughts on student-driven learning, and he told me that, in his opinion, motivating students is the “most important” issue. He stressed that with a total of twenty-six hours of teaching time for the entire semester, the bulk of the work has to occur in the nine hours a week students are recommended to put towards studying for the course.

“The point of the lecture is to motivate them, to get them excited about the material. And part of that is not just motivating them about getting them interested in the readings, but in what the topic relates to and what cognition has to say about problems in the environment, or politics, or decision making, or why people make bad decisions and keep going out with people, boyfriends or girlfriends who are bad for them, how people forget things they really wanted to remember, why the music they like appeals to them and doesn’t appeal to other people...all of this (is) part of the motivation I think.” (Levitin/I/9/May)

Professor Levitin added that it is important that teachers help students “realize that they have great intellect they can use to think carefully about the things they are reading” and “embark on a lifelong course of learning. The learning doesn’t end here. It only begins here” (Levitin/I/9/April09).
When I looked back at my field notes taken during the first class of the semester, I realized that they foreshadowed an approach to teaching and learning what would be applied and expanded upon throughout the Cognition course. For example, Professor Levitin continued to use humour to lighten the mood in the classroom, as well as in the examinations; he used visual and auditory stimuli to illustrate cognitive principles; he promoted engagement and classroom participation; he connected with the students, and did so particularly through the use of music examples, references, and illustrations. Ultimately, as reflected in the vignette, the first class was an introduction to the Cognition course, but also an introduction to Professor Levitin’s student-orientated approach to teaching and learning.

Vignette Two: Cognition in a New Key

It is almost 2:30 on a Thursday afternoon and throngs of students steadily arrive through two different entrances to the dim auditorium. A rustling sound fills the classroom as hundreds of jackets are removed. The volume of chatter rises to a din as Professor Levitin tests his cordless microphone and tinkers with his PowerPoint screen. Suddenly, he flicks the lights off and on and a hush permeates the room. As he adjusts his microphone he asks, “Did everyone have a good weekend?” There is a chorus reply, “Yes!” “Did anyone go skiing?” A few hands shoot up. “Great! Who did the readings?” Glancing around the room at all the raised hands, Professor Levitin, without missing a beat, follows with, “Who raised their hand to impress me?” Some students keep their hands up and the class erupts into laughter. Professor Levitin smiles knowingly and quickly gets back to the lecture material.

Professor Levitin announces that today’s class will begin with an overview of music cognition and theories of expertise. The students sit quietly and attentively as Professor Levitin reviews theories on nature versus nurture, citing research that shows that people who grew up in musical families often become musicians themselves. He continues by explaining how memory is domain specific and that “musicians can remember legal chord progressions but not random or atonal ones”...“ask a musician to remember a sequence of chords that don’t go together musically, and it’s hard to
remember...expertise has an impact on memory.” Professor Levitin then adds that expertise is domain specific, which is why when actors try to sing, it usually doesn’t work. He says that when Paul McCartney tried to write a symphony he had difficulty because it was outside his area of expertise in music. He adds how even Mozart, who is considered an expert classical composer, required over 10,000 hours of practice in order to produce compositions that reflected a level of expertise.

In contrast to the energetic sounds that filled the room before class began, the students remain quiet as Professor Levitin speaks, though an occasional sneeze or sniffl is audible over the low rumble of the heating and ventilation system. The students break their silence when someone raises a hand. Professor Levitin points to the student and says, “Joe, there you are! You were sitting over there last time!” The class expresses amusement at Professor Levitin’s ability to remember students’ names. Joe laughs too and then asks, “I have a technical question about music. What is an octave?” Professor Levitin pauses briefly, and then, turns to the crowd and seeks a volunteer from the audience, “Anyone trained in singing?” Professor Levitin walks up and down the aisle scanning the classroom. He spots a volunteer and asks for her name. “Ok, Vicky, can you stand up and sing a note and then sing it an octave higher?” The warm timbre of Vicky’s operatic voice reverberates throughout the room. Professor Levitin adds, “Great. Now sing a major scale.” Vicky sings moving up and back down the scale and her musical demonstration garners an enthusiastic applause! While the students are still clapping, a blushing Vicky bows and waves to the audience and Professor Levitin thanks her for her assistance.

Professor Levitin announces, “OK. Let’s try a few interactive musical illustrations.” Over the classroom speaker system, he plays a jumbled, odd piece of music. He explains that the music is actually two interconnecting melodies. “Can you identify the melodies?” he asks. The students giggle as they try to decipher them. Professor Levitin assures the students that they know the two melodies. As the two interconnected melodies grow apart in pitch, they slowly become distinguishable from one another and the students excitedly begin to yell, “Twinkle Twinkle Little Star! Mary Had a Little Lamb!” As the classroom chatter subsides, Professor Levitin introduces
another demonstration, this one on the *McGurk Effect*. He instructs the students to turn their attention to the overhead screens to watch and listen to a videotape of a person saying the sound “DA.” After approximately 30 seconds Professor Levitin pauses the video and says, “*OK. Now when I play the video, everyone shut your eyes.*” The students shut their eyes and immediately begin laughing when they discover that the audio sound is actually BA rather than DA and that the visual cues in the videotape have an impact on what they perceive they are hearing. The rumble of hundreds of students laughing and chatting permeates the room.

As the students settle down following the *McGurk Effect* demonstration, Professor Levitin moves on to a discussion on probability. To illustrate conditional probability, he holds his arm in the air and asks, “*By a show of hands, how many students like Nelly and how many like the band, Linkin Park. Ok, first, who likes Nelly? Now who likes Linkin Park?*” With hundreds of arms waving in the air, the classroom transforms into a scene like a rock concert. Roughly estimating the results, Professor Levitin tallies the numbers and fills in a contingency table. He then asks, “*Ok, if you like Linkin Park, what’s the probability you like Nelly?*” After a few seconds of silence the students begin to yell out their answers.

As Professor Levitin begins to cover the final topic of the day he realizes that there are only five minutes left before class ends and then asks, “*Who wants the rest of this now? Now or later?*” The students’ response is mixed, and Professor Levitin says “*Ok, I won’t rush through this. We’ll cover this next time. Have a good weekend everyone. See you next Tuesday.*”

**Reflections on “Cognition in a New Key”**

The “Cognition in a New Key” vignette reflects how Professor Levitin integrated music in the classroom. It also shows the ways in which music, particularly contemporary music, served to establish a common ground with students. The role of music in the course was something I discussed with Professor Levitin and when asked why he integrated music in his teaching he told me,
“The fact is a lot of people in the classroom listen to music, even if they don’t know any music theory, it’s a way to find some common ground between the concepts which can be really abstract and things that are a part of everybody’s daily life. I think any teacher tries to find some common ground. I don’t sit down and think how can I bring music into this? It’s more like I’m thinking, how can I find an analogy for this, and the analogies that come to me first are the musical ones.” (Levitin/I/3/June)

Professor Levitin also shared with me that making a musical reference “loosens things up a bit, makes it seem a little bit less formal” and it makes him “seem a little bit less like a machine,” and this he believes, results in students feeling that the material is “more accessible.” (Levitin/I/11/June)

Professor Levitin not only drew upon musical references in the classroom, but in the multiple choice examinations as well. As mentioned in the discussion on participant themes in Chapter Four, one question in particular that resonated with a number of students made reference to the rock group, The Postal Service. I spoke to Professor Levitin about the use of music in the classroom and examinations, and asked why, in particular, he made reference to The Postal Service. He explained that “I mentioned The Postal Service because I like The Postal Service. I wasn’t trying to manipulate them (the students). But, in the end it’s a matter of common ground. It showed them that their teacher has interests outside of cognition” (Levitin/I/6/June). I think this touches on an important point regarding authenticity. I believe that the students could sense that Professor Levitin had a genuine interest in music. He wasn’t trying to put on airs to impress them, but rather, through music he was able to personally connect with students while simultaneously relating the course material to students’ lives, interests, and culture.

As shown in Chapter Four, tapping into student culture with music was among the patterns that helped Professor Levitin connect with students, and this appears to have promoted student engagement with the difficult course material. Professor Levitin shared the following with me:
“I know that when the material is difficult and you think the professor is completely out of touch, you might think, well this material is difficult, this guy is so out of touch that his expectation for me to understand the material is also out of touch. But if you realize that the same guy who’s teaching what seems like difficult material to you eats pizza and spills it all over his shirt and plays hockey on the street and listens to The Postal Service, it makes it seems a little closer, a little less on high.” (Levitin/I/11/June)

Professor Levitin’s use of music artists Nelly and Linkin Park to illustrate conditional probability is an example of establishing a “common ground” with the students. In this case, Professor Levitin could have asked students if they preferred vanilla or chocolate ice cream to generate the numbers to illustrate conditional probability, but by using contemporary music artists Nelly and Linkin Park he seemed to make a connection with students.

As I mentioned in the discussion on musical integrity in Chapter Two, ideally, when music is integrated with another discipline, each discipline should inform the other. Throughout the Cognition course, music was used in a manner that maintained its integrity, and the students simultaneously learned about music while exploring cognitive concepts. However, making a musical reference to musical artists such as Nelly and Linkin Park in the probability demonstration does not actually teach students anything about music. However, as the data shows in the study, making references to popular bands can serve to pique students’ interest and connect the material to students’ lives. As one participant shared,

“It doesn’t matter if it (the musical reference) is not related to the subject, because it will get people talking, get people interested, and if he makes a reference to music and then with the subject matter, cognition, people start making associations and will start wanting to learn more about cognition because they realize that, oh maybe it is something that I can be interested in, or does relate to me after all.” (Sylvie/I/4/March)
In Chapter Two, I suggested that while teachers should aim to maintain musical integrity as much as possible, music can serve to establish a connection with students and foster a positive classroom atmosphere. References to contemporary music artists are one way to make that connection.

**Vignette Three: Laughter Is the Best Medicine**

Following a weekend of cold, stormy Montreal weather, today brings a relatively mild and sunny day and an increased number of students can be seen strolling around the campus, without hats and scarves. The students enter Leacock 132, casually chatting amongst themselves as they find available seats. Their attention soon turns to the front of the room where Professor Levitin is standing with a guitar. He strums a few slightly out of tune chords, and all eyes are fixed on him. With their attention riveted, Professor Levitin casually tunes and sets the audio levels of his guitar, while Tanya, his research assistant, checks the volume of the microphone. No one seems to notice when a few students arrive late and scramble to find a seat. Without a word, Professor Levitin turns towards the students, smiles and nods to Tanya, and then counts aloud, “one, two, one, two, three, four.”

*It's Emergent*

*(Sung to the melody of Madonna’s "Like A Virgin"; new lyrics by D. Levitin)*

I made it through cognition  
Somehow I made it through  
Didn't know how lost I was  
'Til the Chinese Room

There's a brain – there's a mind  
Are they the same? Or is there just one kind?  
Oh they made me feel, yes they made me feel  
Ideas shiny and new

It's emergent  
The brain just creates the mind  
It's emer-er-er-gent  
So says Dennett, Searle and Quine

Gonna give them all my thoughts boy  
My grades are fading fast  
Been reading and I conclude
That only brains can last

My brain's fine, and it's mine
Makes me strong, yeah it makes me bold
Yeah my brain creates
Yes my bra-a-a-ain creates
All the thoughts that I hold

It's emergent
The brain just creates the mind
It's emer-er-ergent
So says Dennett, Searle and Quine

As Levitin plays the song, the students are in stitches, at times even drowning out Tanya's vocal. The students applaud and yell “Encore! Encore!” when the song ends. One student hollers from the back of the classroom, “Can you post the lyrics on WebCT?” Professor Levitin says, “Sure. Would you all like that?” and students reply favourably. Then he says, “And now we’ll review the material covered in the upcoming examination.” A hush falls over the room. In a reassuring tone he adds,

“I hate exams... If I had it my way, we’d have different kinds of evaluation for different students, and you could choose, but I’m stuck with this system that the university has imposed on us and we’re stuck into it together. So, to that end I want to make the best of it, so I’m going to try not to have any tricky questions.”

Professor Levitin opens the review with a discussion on categorization and asks students to define a cup. The students quickly offer their definitions: “It holds liquid,” “You drink out of it.” One outspoken student boldly counters with “What about a jockstrap? We call that a cup!” Everyone in the class laughs, including Professor Levitin. “Ok, now I want you to participate in a demonstration on parallel distributed processing.” Professor Levitin posts “Tr_ _ _” on the overhead screens and asks, “What would your uncle give you for your eighth birthday?” One student says “tramp!” and the students laugh. Throughout the demonstrations students interject with questions, and Professor Levitin refers to each student by name. A soft-spoken student asks a question and Professor Levitin walks up the aisle to hear. She restates the question and he leans in to hear her and then repeats the question aloud to the class. The students bombard him
with questions about the upcoming examination. One student asks him to explain dualism (the view that mind and body are distinct realities) and monism (the view that mind and body are inseparable entities), and he replies,

“I think most of you are here at McGill for the first time and so this is only the second semester. You probably noticed that professors often forget what it was like to not know something. So, when they teach stuff they tend to go really fast and they think it should be obvious and that you should be able to pick it up. So, in the spirit of trying to remember what it was like when I didn’t know this stuff, I went back and checked my notes from my first cognitive psychology class and I had written this down. This is a diagram. If you are having trouble keeping track of dualism and monism and the different kinds of them, this might help you keep it straight. At least it helped me and I’ll post it on WebCT.”

In a calm voice, Professor Levitin informs the students that there are two scheduled examination periods, one at 6:00 pm and another at 7:45 pm. He tells the students that of the 55 multiple choice questions on the examination, the five most poorly answered questions will be “thrown out.” He explains, “I can’t expect you to know everything, that would be unreasonable. You are all working very hard so you can get five wrong and still get a perfect score.” The students applaud! As the class comes to an end, Professor Levitin announces, “Before you all leave, I’d like to read a cognition review poem that I wrote.” The students respectfully quiet down, and Professor Levitin begins:

_Cognition 213 First midterm review poem_
(D. Levitin, February 3)

_We began with the Greeks and their ideas about knowledge_
_The kind of boring stuff you only hear about in college_
_Plato said ideas about objects came before them_
_Aristotle said the opposite, as to ideas, experience forms them_

_The problem ontological we next defined_
_As the origin of ideas, of thoughts and of mind_
_The problem mind body started week number two_
_No it’s not something naughty, it’s about the nature of you_
The dualists believe your mind pre-existed
The monists argued that this idea's completely twisted
The brain is all there is, the materialists claim
Your mind somehow is built from the material of the brain

Dennett took up the case of the functionalists' cry
You can make a mind out of anything if you try
Searle said "not anything," it can't be just instructions that get run
Because understanding takes something more, though he didn't say what

There's one thing though that on which both agreed
The mind is just software, running programs at lightning speed

We noted that our brains largely function in parallel
We had students act as neurons, and contrasted this with serial PDP models about which you read (and were confusing)
Try to emulate the brain in the computers that they're using

Cascade correlation was a model taught by Shultz
It learns some things like humans and gets impressive results
You read in the book a chapter about experimental design
The important point here is that experiments come in three kinds
Observational, correlational, and experiments controlled
Form a hierarchy of certainty about the findings we are told

The functionalists, recall, say that the mind's a bunch of programs
In week three we began to break those down and explore them
Perception is construction, that is we don't "just see"
The mind builds up an image of what it thinks things should be
It starts with input from the senses, "bottom up" excitations
Then "top-down" processing adds memories and expectations

Auditory scene analysis is about object recognition
And "what goes with what" to inform your cognition
Like the principles Gestalt that we saw in vision
Timbre, pitch, and loudness change your stream segregation

In the neuroscience lecture we actually looked at some brains
Identified the lobes, and Brodmann's division of the terrain
Hebb's cell assemblies combine into functional neural nets
We can see how these are arranged with MRI and with PET

And finally my advice is to study slowly and not to cram
Review things with your friends, and – good luck on the exam.
The students giggle as Professor Levitin reads. He fights back from laughing along with the students, especially at the point where the poem breaks from the expected rhyme scheme. This recital earns another round of applause and a few students ask for the poem to be posted online. Professor Levitin promises to post both the song and poem on WebCT later in the day, and then raises the lights in the room and wishes everyone good luck on the examination.

**Reflections on “Laughter Is the Best Medicine”**

This vignette reflects how Professor Levitin used humour in the classroom, in this case, to reduce students’ anxiety before an examination. I was intrigued by what emerged from the student data and I made sure to get some insight from Professor Levitin on how he felt humour functioned in the classroom.

“I think what I did a better job of this year was alleviating some of the tension before the midterm. They are always really stressed out … when they saw that I could laugh about it, then they laughed about it, and everybody sort of chilled (I/6/June). I think it does break the tension because students are thinking that their whole career rides on this one exam. If they don’t ace this, they won’t ace the course, and they won’t get into law school or grad school or whatever, so I hope that it breaks the tension. I’ve got a lot of positive reactions that students find, as comedy often does, it helps you to loosen up and not take things so seriously and maybe they do better in the long run because they’re not so stressed.” (Levitin/I/8/June)

The participant data support this view that humour served to reduce tension and create a comfortable and less stressful atmosphere in the class, as well as in the actual examinations. Whereas humour in the classroom was delivered in person to a live audience, humour in the examinations was in written form, typically as a silly possible answer in a multiple choice question. Therefore, the written humour in the examinations was always intended and pre-planned, and did not have the spontaneous improvisational aspect that was a part of the humour in the classroom. Still, like humour in the classroom, it played a key role in reducing the participants’ anxiety.
Professor Levitin also shared with me that, “People tell me they read it before the exam and it helped them remember” (Levitin/I/6/June). He added, “we know that with music, people remember music and lyrics better than they remember words alone, usually, because of the constraints that music provides” (Levitin/I/6/March). The It’s Emergent song is an example of Professor Levitin drawing upon and applying cognitive memory principles directly in his teaching.

I feel the performance of It’s Emergent is a prime example of the types of things Professor Levitin would do to create a welcoming atmosphere and easygoing learning environment. As well, writing a parody and a poem likely played a role in having students feel that Professor Levitin is sensitive to what it is like to be an undergraduate student with a heavy workload. I also found it interesting that by sharing his views on examinations, Professor Levitin validated that students do have different ways of expressing their knowledge. I believe this sent the message to the students that he could relate to and empathize with them. Dropping the five most poorly answered questions from the examination results is another example of teaching with students’ perspectives in mind.

Vignette Four: The Guest Lecture

It’s mid-afternoon on a Thursday, and with the weekend approaching, many students enter the classroom with drawn faces. One student near the front of the class yawns, which contagiously spreads to those nearby. As the students sluggishly manoeuvre their way through the aisles to find available seats, a casually dressed Dr. Allen enters the classroom. The guest lecturer immediately begins to set up and test his PowerPoint presentation. He quickly fixes a technical glitch and white text on solid brown background appears on the classroom overheads. Dr. Allen steps up to the microphone that is fixed to the podium at the front and center of the classroom and says “Check. Check. Is this working?” His voice is loud and distorted and he says, “audio works!” and the students laugh. Dr. Allen adjusts the microphone volume and begins by telling the students, “Today I will be talking about visual perception. I talk a bit fast, I am told” and “I never have whispering in my room either, so, I’m going to have to ask you...I
find it a little bit distracting, so if you have something to say, take it outside or write a little note to your friends.” A few students snicker and roll their eyes. Dr. Allen adds that he doesn’t mind being interrupted if someone needs a point clarified, but there will be time for discussion and questions at the end of class. Early into the session frowns appear on faces signalling that the material is confusing. Students begin to ask a number of questions. Dr. Allen responds here and there during the lecture. Students at the back of the classroom lean forward, straining to hear the questions. Dr. Allen responds to the questions with “yeah” and “good point,” but he does not repeat the comments and questions so that all can hear.

Near the end of the lecture Dr. Allen posts an image of Homer, from the Simpsons TV cartoon, hooked up to a lie detector to illustrate a point, and the students laugh. Dr. Allen follows with a joke, but his rushed and mumbled delivery make it hard to hear. Aside from the sound of distant footsteps outside one of the classroom entrances, the classroom is awkwardly quiet. Dr. Allen moves past the silence and continues with the lecture. The students continue to throw out questions and some challenge Dr. Allen on a few points. Dr. Allen replies, “These are great questions, keep them coming... at this rate we may finish two hours late. Time is flying, so let’s move on.”

Slowly the whisperings among the students get progressively louder. Suddenly he stops mid sentence and says “Shhhhhhhhh!” The classroom becomes silent as he adds, “I can’t talk if you are talking.” Dr. Allen resumes and with only minutes left, a few students quietly tiptoe out of the room. He wraps up the lecture and says thanks. The students clap and quickly begin to exit the room.

Reflections on “The Guest Lecture”

“The Guest Lecture” vignette provides an interesting juxtaposition with Professor Levitin’s teaching approach. Whereas Professor Levitin promoted student involvement and input at various points throughout the course, Dr. Allen seemed more comfortable sticking to a schedule. Although he did end up taking questions at random points in the class, the comment, “we may finish two hours late,” sent the message that the students were asking too many questions. And while Dr. Allen saying “Shhhhhhhhh” may not seem
strange or out of place in a classroom, it was unusual in this particular context. Ultimately, Dr. Allen’s lecture did not have the easygoing conversational style of Professor Levitin. It was interesting that while Dr. Allen dressed less formally than Professor Levitin, he was much more formal and rigid in his lecture style. As the guest vignette reflects, in comparison to Professor Levitin, the guest lecturer was less dynamic, animated and engaging. To be fair to Dr. Allen, he entered the classroom that had established norms and expectations, and perhaps these were expectations that he simply could not meet. For example, when Dr. Allen told a joke that flopped, I was reminded immediately about how Professor Levitin’s background in stand-up comedy showed in the way he delivered a joke, and how he could recover if a joke didn’t go over as expected. Overall, Dr. Allen taught and addressed the students in a very different manner from Professor Levitin.

When I asked Professor Levitin what he considers to be the most important aspects of good teaching in higher education he told me, “It’s important to not talk down to the students”… “Just because you are the professor doesn’t mean you are smarter. So I don’t talk down to them” (1/9/April09). My data demonstrated repeatedly that Professor Levitin never “talked down” to students, but rather, he made a conscious effort to teach with the students’ perspectives in mind. It became clear that Dr. Allen tended to treat the students as passive recipients of knowledge, while Professor Levitin was more of a guide in the learning, and the students played a greater role in what transpired in his classroom.

Summary

The previous chapter (Chapter Four) explored the patterns and larger themes that emerged from the analysis of the participant data. This chapter provided further insight into what occurred in the Cognition classroom by adding context in the form of vignettes: Aggregated descriptions based on reoccurring events, sights, and sounds that I had recorded in my field notes as I observed in the Cognition class. To write vignettes, I reviewed my field notes and identified general patterns and characteristic classroom events. I also returned to the Cognition classroom audio recordings which served to help me get a greater feeling of being in Professor Levitin’s Cognition course. Through an
examination of field notes and classroom audio recordings, I obtained nuanced details that provided the basis for me to create the four vignettes presented in this chapter: 1) A Meeting of Minds; 2) Cognition in a New Key; 3) Laughter Is the Best Medicine; and 4) The Guest Lecture. I chose to write these particular vignettes to contextualize the themes and patterns that emerged from the participant data analysis, and to provide the reader with a sense of what it was like to be in Professor Levitin’s cognition classroom.

The vignettes tease out just how Professor Levitin created a welcoming atmosphere; showed empathy to students; promoted student engagement in the classroom and with the course material; applied humour to create a personable, and less stressful atmosphere. He drew on a range of real-life examples in his teaching, particularly from contemporary, music which made the course relatable to students’ lives. Interestingly, “The Guest Lecture” vignette provides a glimpse into how the Cognition course might have appeared with a different teaching approach, particularly one that is more teacher driven. As demonstrated poignantly in this vignette, a different instructor and teaching style can greatly alter the classroom atmosphere.

Each vignette was followed by a discussion that included my reflections as well as insightful excerpts from the interview data with Professor Levitin. The vignettes and discussions tried to show, not just tell, how music was integrated into a higher education Cognition psychology course, how the professor did this, and furthermore, how he explains what he did in the classroom.

In writing these vignettes it became apparent to me that Professor Levitin was able to connect with the “audience” and own the room, much like a seasoned professional in the performing arts. As I explored and reflected on the vignettes and performance analogy, I became convinced that it would be a fitting lens through which to view Professor Levitin’s teaching. In the following chapter I discuss teaching as a performance art, and show how the vignettes helped me identify and develop four facets of performance. I also present a “Teaching as Blues Performance” analogy and make the case that constructivist teaching is not only a performance art, but also as reflected in Professor Levitin’s teaching, it is an improvisational one.
CHAPTER SIX: TEACHING AS IMPROVISATIONAL PERFORMANCE

Introduction: Exploring Performance

I have indicated previously how easy it was for me, at least on a superficial level, to make a musical performance analogy of Professor Levitin’s teaching. After all, he has been a successful record producer, and his office walls are lined with gold records. His music cognition laboratory at McGill University is filled with musical instruments and recording gear. At the beginning of class, he yelled out things like, “Let’s get some noise out there!” and he actually did perform a parody of Madonna’s hit song “Like a Virgin” to nearly 600 students in the classroom. Certainly, after watching Professor Levitin play guitar in front of his students, it was natural for me to think of him as a musical performer. Through my lenses as both a graduate student in education and a musician, I noted a common thread that ran through his teaching and performance in general since both “involve communication of ideas, persuasion, and, obviously, speaking to an audience” (Greenberg & Miller, 1991, p. 429). However, as mentioned in Chapter Three, I reflected more fully upon this performance analogy after I created the vignettes. In doing so, I culled facets from the vignettes that were metaphors for performance (see page 66) and I was able to unpack the idea of performance more fully and gain insight into Professor Levitin’s teaching approach that have implications for teaching in general.

In the following sections I outline the major milestones I made as I delved deeper and further explored a performance analogy for teaching. To begin, I discuss and provide a definition of performance that highlights the reciprocity between the performer and the audience. Then, I present a three-phase time sequence that helped me understand how fundamentally similar teaching is to performing. Also, I discuss more fully how the process of writing vignettes in my data analysis helped me begin to see links between Professor Levitin’s teaching and my experiences as a musical performer. I provide an overview of four facets of musical performance and teaching that I identified when reviewing the vignettes. As I have discussed earlier, throughout this study I explored and frequently returned to the idea that music, in some shape or form, could shed some understanding on Professor Levitin’s approach to teaching and learning. However it was
at this stage that I made the most significant realization when I moved beyond the metaphor of teaching as performance to the idea of “Teaching as Blues Performance.”

The blues musical performance analogy led me to understand more fully that teaching is an improvisational art, which I argue is central to the implementation of a constructivist approach to teaching and learning. Although the context of the Cognition course presented a challenge to constructivist teaching, as shown later in this chapter, Professor Levitin’s ability to improvise was the key for enabling him to enact constructivism in his classroom.

**Defining Performance**

I first began exploring the link between teaching and musical performance in a more metaphorical way when I worked with and reflected upon the participant data discussed in Chapter Four. In my analysis of the participant data it became apparent that Professor Levitin simultaneously engaged and entertained students in a manner that I associated with a musical performer. This realization led me to reflect on how performance is defined. Merriam Webster’s dictionary defines “performance” as “the execution of an action,” “something accomplished,” “the fulfillment of a claim, promise, or request,” “the action of representing a character in a play,” “a public presentation or exhibition,” “the ability to perform,” “the manner in which a mechanism performs,” “the manner of reacting to stimuli,” “the linguistic behavior of an individual” and “the ability to speak a certain language” (Merriam Webster, 2009). The word “performing” on the other hand is defined as “to adhere to the terms of,” “to do in a formal manner or according to prescribed ritual,” “to give a rendition of,” and “to carry out an action or pattern of behavior” (Merriam Webster, 2009). These definitions tend to imply that a performance is something someone does, and the actions of the performer, according to these definitions, are somewhat prescribed as the performer carries out certain patterns of activity. An audience views or “receives” a performance, but as the definition above suggests, those who attend or watch have little or no impact on the performance. The analogy of teaching as performance similarly “suggests a solo performer reading from a script, with the students as the passive, observing audience” (Sawyer, 2004a, p. 12). However, this does not have to be the case, and as demonstrated in the previous chapters,
it was not the case in Professor Levitin’s Cognition classroom. There is one definition of
performance above that I believe is more aligned with Professor Levitin’s approach to
teaching: “the manner of reacting to stimuli.” The word “stimuli” implies a behaviourist
perspective. I propose modifying this definition to fit the context of this study by
suggesting that the definition of performance should read, “the manner of reacting to
others.” In other words, to perform is more than just delivering something to someone, it
is, at least to some degree, a dynamic, negotiated, and co-constructed experience between
performers and their audiences, or, between teachers and their students. Thus, a
performance can be seen as a “conversation between you and the audience” (Taylor,
2000, p. 4) that is “based on listening, with the knowledge that the best conversations are
the result of taking in, as opposed to putting out” (p. 4). As I created the classroom-based
vignettes covered in Chapter Five, “the manner of reacting to others”’ definition of
performance came to life. In writing the vignettes I came to see more clearly Professor
Levitin’s teaching as an example of a seasoned, partially non-scripted performance that
relied heavily on improvisational skills as he drew from and responded to the students.

**Three-Phase Performance Sequence**

In this section I present a three-phase time performance sequence presented by
Schechner (2006). It helped me further conceptualize how performances, including
teaching, share a similar process. The three-phase performance process sequence
comprises proto-performance, performance, and finally aftermath. The proto-
performance phase represents things that occur prior to a performance such as practicing,
workshops, and rehearsing. These are aspects of a performance that the audience does not
see. For example, the audience will not see the development of a musical score, though
they will see and hear it when it is performed. Similarly, students attend classes, but do
d not see the preparation and lesson planning leading up to the class itself.

Proto-performance leads to the performance phase, which includes warm-up,
public performance, events/contexts sustaining the public performance, and finally a cool
down. Generally speaking, the warm-up is what a performer does to get ready to perform.
For example, a singer may run through vocal exercises before a show and a teacher may
review lecture notes before a class. Whatever format the warm-up takes, it leads into the performance itself, which will usually have clear indicators to mark the beginning and end of the performance. These include things like opening and closing stage curtains or lowering and raising the house lights. Teachers may tap on a chalkboard, or as in Professor Levitin’s class, flash the lights on and off at the beginning of class and announce “I’ll stop here and we’ll pick it up next time” (FN-10/02) to end the class. Following the performance is the cool-down period which takes place when the performer returns to his or her “everyday” life. Generally, the cool-down is not as formal as the warm-up phase discussed earlier. For a musical performer, a cool down could involve changing out of stage clothes into more casual clothing and relaxing backstage. Similarly, a teacher can informally “let go” and relax following a class, or perhaps take a more formal cool-down approach and make follow-up notes or jot down his or her reflections about the class just taught. As well, while a performance does have a marked end, there are often a number of aspects related to performance that do not have a clear beginning and end. For example, a musical performance may involve contract negotiations, rehearsals, and so on, all of which occur on a continuous basis. Similarly, a teacher may be involved in ongoing activities such as being a member of an academic committee or conducting research related to his or her field. Thus, even once the performance ends, there are related activities that continue.

The last phase, or the aftermath, includes critical responses, archival activities, and the retention of the memories themselves, or anything that allows the performance to exist after the performance itself is finished. For example, the performance can be preserved by such things as audiotaped and videotaped recordings, reviews, word of mouth, and by the sharing of memories of those attending. The performance can take on a new life by those who reconstruct and share it with others. Actually, by situating my research in the Cognition course and producing a document (my PhD dissertation) that will be archived, the participants and I have also played a role in the aftermath of Professor Levitin’s “performance.” Other examples are the reviews and comments made by students in the end-of-the-semester course evaluations. In this case, the students were involved in the production of a document in the aftermath of the performance. In my interviews I asked Professor Levitin if there were things he would alter the next time he
taught the cognition course, and he told me he would have to check the course
 evaluations before making any decisions (Levitin/I/June). Thus, through the course
evaluations, the students are able to suggest and/or affect change on future performances.

This three-phase model helped me see how teaching and performance have
similar time sequences and corroborated some of the insights about performance that
emerged as I conducted this study. Although the model helped me to confirm some of my
ideas about teaching as performance, primarily, it helped set the stage for me to discover
the four facets of performing/teaching in Professor Levitin’s course and ultimately to
develop a “Teaching as Blues Performance” analogy based on my own experiences and
understandings and those that emerged from the data in this study.

Four Facets of Performing/Teaching

As discussed on page 67 in Chapter Three, it was when I was writing the vignettes
to try to show in rich detail some of the key types of events that occurred in Professor
Levitin’s classroom, that I was led to an unplanned analytic activity that allowed me to
tease out facets of his “performance” and get a better understanding of what Professor
Levitin accomplished in the classroom. As I wrote the descriptions of classroom events
for the vignettes, the details of how Professor Levitin addressed and interacted with the
students connected with me as a musical performer. I recall being struck by how aspects
of Professor Levitin’s teaching reflected a keen understanding of the nuances of
performance. As described earlier, I scanned the vignettes and took note of examples of
Professor Levitin’s approach to teaching that resonated with my experiences as a musical
performer. Once I arrived at a list of points that were related to performing, I collapsed
the list, and formulated metaphorical categories comprised of the various facets. For
example, “speaking loudly,” “walking up and down the isles,” and “pacing in front of the
class” were points that I felt represented the facet, “Owning the room.” After working
through my list of examples of Professor Levitin’s teaching, I arrived at four facets: 1)
Dressing for the performance; 2) Owning the room; 3) Establishing a rapport; and 4)
Drawing upon what you know. These aspects of “his performance” are discussed below.
**Dressing for the Performance**

Professor Levitin consistently wore a suit and tie to every class. Initially, I did not give it much thought, but I know that for any performer, the way he or she appears makes an impression and I began to see the suit and tie as analogous to a stage costume. Interestingly, in my interviews with Professor Levitin he had told me that he was conscious about his appearance. Also, he shared that he explored dressing up casually in the classroom in the past, but ultimately decided it was more appropriate to dress in more formal attire.

“I’ve gone in casual clothes a couple of times, well all last year, I just wore regular clothes and it didn’t feel right...The reason I dress up is that I want them [the students] to know that I’m taking the course seriously, even though I tell jokes and I’m informal in my speaking style, the message is that I’m taking them seriously enough to bother. They know I’m getting dressed up for them.”

(Levitin/I/8/June)

It could be argued that formal dress is a privilege not available to everyone, and therefore it could be construed as a distancing phenomenon. However, in this situation Professor Levitin’s dress fit the context of the “performance” and this was noted positively by the students. As one student said to me in an interview, the suit “gives the impression that he’s taking it very seriously, so you’re more likely to also”

(Flora/I/4/June). Dressing in a particular manner for an event is something that resonates with professional performers, including musicians. Although professional musicians certainly dress in a variety of styles, they are aware that the way they dress conveys a message. For example, ripped jeans, leather jackets, and spiked hair are fitting with the rebellious and anti-establishment image of a punk rock musician. On the other hand, there is a long tradition of blues musicians dressing formally, and as the Juno award winning blues performer Jack De Keyzer told me in an interview that I conducted with him in 2006, “I don't like to see musicians standing on stage who look like they just got back from cleaning the garage!” Although “Dressing for the Performance” is the most overt and obvious of the four facets, it is an important dimension nonetheless since professional performers are aware of the message they convey with the way they dress.
As illustrated here, this basic aspect of performance and presentation was taken into consideration and applied by Professor Levitin in the classroom context.

_Owning the Room_

The second part of Professor Levitin’s “performance process” is what I called “owning the room.” During his classes he consistently moved around the large Leacock 132 classroom. He was animated and upbeat. He spoke loudly and clearly. He was calm and relaxed, and totally at ease with his role. In short, the large room and hundreds of students did not throw him off his game plan. Rather, he adapted to the room and carried himself in a manner that exuded a sense of confidence. Throughout this study I had the sense that Professor Levitin was very comfortable in a setting where I have seen other instructors lose their composure. However, it was when I wrote the vignettes for Chapter Five that I was reminded of how well, and how quickly, Professor Levitin was able to take command of his position and own the room. In particular, when I juxtaposed “The Guest Lecturer” style in that vignette, with Professor Levitin’s teaching style, this highlighted how “owning” a room such as Leacock 132 presented a challenge. Yet, Professor Levitin appeared to do it with comfort. Unsurprisingly, in my interviews with Professor Levitin we talked about class size and how it impacted on his teaching approach. What he had said, had even more resonance as I considered the metaphor of “owning the room.”

“When you have like up to about 40 people or so, that’s sort of like the size of classroom that you’ve probably had in elementary or high school and you can get to know everyone’s name and know a little bit about everybody and you can get some real interaction. After 40 it gets different. From 40 to 100 it has a different vibe, and after 100 it’s all the same. There’s no difference between 200, 600, and 800.” (Levitin/1/2/March)

At another point in the interview he had elaborated by comparing a gig in a small bar located in downtown Montreal, Quebec called the Cock ’n Bull to a performance on a large festival stage at the Montreal International Jazz Festival.
“You have to take up a little bit more of the stage because it’s a bigger room, you have to sort of draw attention differently… You know when you play a little club like the Cock ‘n Bull, your stage presence is different than if you were playing something that seated three or four hundred, or if you’re at the jazz festival, it is outdoors…at the Cock ‘n Bull you have to stand right there. If you want to be really wild you can move over here (points a few feet over and laughs). It’s the same with teaching. In that big room, you have to do something to take up the space I think.” (Levitin/I/June)

As one participant noted, “It’s a lot easier in a small classroom for a professor to catch your attention” but “in a class of that size, the professor has to walk back and forth” (Sylvie/P/3/May). Compared to the usual classrooms to which most teachers and students are accustomed at McGill, Leacock 132 is enormous, and to teach well in such an environment requires owning the room. To do this can be very different from teaching in a small, intimate setting with a small number of students. From a musician’s perspective, for example, in a small coffeehouse with an audience of ten people it would be inappropriate, or at least unusual, for a performer to run around the room and yell, “How are you all doing tonight?” However, in front of 2000 people in a large venue, being highly animated and screaming at the top of one’s lungs may be appropriate, perhaps even necessary. On some level, teaching is similar, Professor Levitin was able to adapt his teaching performance to fit the context and “command” the attention of his “audience.”

Establishing a Rapport

In my analysis of my interviews with the participants, I have described how the data revealed that Professor Levitin was able to create a welcoming atmosphere and establish a rapport with students. However, when subsequently, I created and analyzed the vignette, “A Meeting of Minds” I was able to see how Professor Levitin: 1) quickly broke the ice with humour; 2) validated students’ autonomy to decide where they stand on controversial issues and debates; 3) engaged student input and participation; and 4) showed an effort to learn students’ names. Together, these dimensions of his teaching
helped set the stage for the “performance,” that is, the delivery of the Cognition classes. As discussed in Chapters Four and Five, a primary way that Professor Levitin found a common ground with his students was through references to popular culture, particularly in the area of music. As shown in the “Cognition in a New Key” vignette, Professor Levitin made references to rock music artists such as Paul McCartney and Nelly in his classes. As well, Professor Levitin showed a willingness to share his personal life experiences and impressions on a number of subject areas, and this also helped to create a connection with the students. As one participant indicated,

“Dr. Levitin shares his personal experiences – dropping out of school, working in the music industry, going back to school, stories and photographs of researchers, his impressions of the undergraduate education system – in his lectures. It makes him less of an intimidating professor and ’holier than thou’ and much more ’human’ and approachable.” (Chelsea/E/2/April)

Ultimately performers aim to have the audience join them and engage in, or at least appreciate, the performance, and this requires somehow connecting with the audience. Similarly, a teacher must create an atmosphere that facilitates student engagement and participation. As presented in greater detail in the previous chapters, by finding a common ground and making a connection with students, Professor Levitin established a friendly, open, and interactive learning environment. Just as a musical performer might aim to do in a concert setting, Professor Levitin was able to establish a rapport with the audience (i.e., the students) and have them willingly engage and participate in the classroom.

**Drawing Upon What You Know**

In his teaching, Professor Levitin drew heavily upon his personal interests and areas he knows well to draw analogies and illuminate the course material. As demonstrated in both Chapters Four and Five, humour and music played a significant role throughout the course. When I wrote the vignettes, “Cognition in a New Key” and “Laughter Is the Best Medicine,” I realized that Professor Levitin drew heavily upon areas that he knows well in his teaching, specifically music and humour. It was this
showcasing of what he knew well that relates to performance. To use a musical analogy to explain, if a performer’s “intent is to put the audience at ease” it is important “to do material with which you are comfortable” (Taylor, 2000, p. 28). For Professor Levitin, music and humour are areas he knows well, so he used these areas that he is passionate about to make links to the material in his course. He shared the following with me:

“I just teach what I know. If I had been a filmmaker I’d be using more visual stuff and if I’d been an auto mechanic I’d be using more stuff from that. I’m using what’s familiar to me and I’m making a link that I can.” (Levitin/I/3/June)

It seems that by drawing upon areas that he knew well, Professor Levitin was able to convey an authentic connection and passion about the course material. As well, he was able to integrate music and humour with a high degree of confidence. There is no doubt that Professor Levitin integrated humour into his teaching because he has a sense of humour and has experience in the field of comedy. Similarly, he drew on musical analogies in his teaching because he has worked for years in the music industry. Music has always been an integral aspect of Professor Levitin’s life and for him it has naturally developed into a pedagogical vehicle that he uses to help teach cognition. The content material for the cognition course is brought alive by Professor Levitin’s passion and enthusiasm. This is important because to “connect the feeling with a voice, the idea must be personalized” and this results in the listener perceiving that the speaker “likes and believes the material” (Greenberg & Miller, 1991, pp. 436-437). With music and humour, Professor Levitin was able to personalize and own what he said in the classroom because these areas are so familiar to him. To write, sing, or speak about what one knows firsthand conveys a sense of legitimacy to the audience or, in this case, a classroom of students. In songwriting, some feel that the art “demands authenticity” (Beall, 2009, p. 126) and advise songwriters to “write what you know” (p. 126). Perhaps this is why many songwriters, such as renowned artists Guy Clark or Travis Tritt, feel that their best and most sincere songs are about subjects they know well (Waterman, 2007). Although there is certainly no single way to write a song just as there is no one way to teach, I do believe that when teachers look for analogies to use in their teaching, like Professor
Levitin did and does, they will be better served to draw upon subjects that they know well.

**Teaching as Blues Performance**

Once I had connected the four facets of performance (Dressing for the performance; Owning the room; Establishing a rapport; Drawing upon what you know) to understand more deeply Professor Levitin’s teaching, I began to further explore the ties between teaching and performance, with an interest in examining and perhaps teasing out some nuance of music performance that could inform me about teaching more generally. As described in this section, by articulating that I built upon the four facets of performance in Professor Levitin’s teaching, I was able to discover an illuminating interpretation of and metaphor for his teaching as that of a “blues performance.” I argue that at its essence, teaching is an improvisational performance art and that this might be a useful way for teachers, school leaders, and other educators to think about teaching in terms of preparation, implementation, and assessment.

In the literature on performance and teaching, the vast majority of metaphors are drawn from areas such as theatre and acting (Greenberg & Miller, 1991; Tauber & Sargent Mester, 2007; Whatman, 1997). Music metaphors are rarely used, and although Sawyer (2004b) and Humphreys and Hyland (2002) introduced a jazz music metaphor to show how teaching and jazz music both reflect improvisation, their metaphors did not provide an in-depth link between musical performance and teaching that served to corroborate what had emerged in my study. In particular, I found the audience, and the improvised interaction with the audience, to be missing from these metaphors. As I reflected on the data and my own experiences as a performer, I found it more and more fitting and useful to conceptualize Professor Levitin’s teaching as a performance, and particularly, a blues music performance. This “eureka moment,” or realization occurred when I posited that if Professor Levitin’s teaching is analogous to a performance, then what type of performance is it, or is it similar to, and what this suggests about teaching. Although I had toyed with the link between music and teaching for some time, both prior to and during the study, the blues performance connection was a pivotal point for me. For
one, blues performance is something I know and understand from first-hand experience, so the connection really resonated with me. Secondly, by drawing a link between a teacher and blues performer I was able bring forth and illustrate a key aspect of this study: Improvisation. I should highlight that there may be other types of performances that reflect improvisation, however, as mentioned, the metaphor of teaching as a blues performance allowed me to articulate much more specifically what I would suggest was happening in Professor Levitin’s classes.

This “Teaching as Blues Performance” analogy which draws unique links between performing and teaching and emphasizes the role of the audience in co-constructing the experience filled in the missing areas from the teaching as performance discussion mentioned earlier. Whereas the three-phase performance sequence showed how teaching and performing reflect a similar sequential process (proto-performance, performance, and aftermath phases), my “Teaching as Blues Performance” analogy helped me to understand that a music performance and an academic course and classes are also structurally similar. For example, an entire academic course is comparable to a musical performance (e.g., concert). Whereas an academic course is made up of a series of classes, a musical performance features a set list, a sequence of songs to be performed. Just as each class comprises a lesson plan, a song typically has a structure with verses, bridges, choruses, and so on. Finally, just as a teacher provides structure for students, a musical performance is mediated by a band leader who sets the pace and guides the audience. In both cases, the goal is to deliver information in some type of cohesive manner.

Although there are structural similarities between music performances and academic courses, there are different types of performances and different roles and interactions between the performer and audience. For example, in a classical concert, it is customary for an audience member upon entering to receive a program of the music to be performed. The audience member then sits quietly throughout the performance without speaking or interjecting, and applauds at the end of a composition. On the other hand, when attending a blues concert, audience members do not receive a program (or set list of songs to be performed). For oftentimes, even the blues performer may not know for
certain which compositions he or she will perform. It is common for audience members to applaud whenever the music moves them, and to yell out comments or requests at will. Moreover, it is not unusual for a blues performer to elicit audience participation and interaction and incorporate it directly into the performance. In response to the audience input, a blues performer may shorten, lengthen, remove or add songs to the show. In a sense, this is similar to the interactive call-and-response that is characteristic of many blues songs. Call-and-response occurs when a band member poses a musical statement, and another band members replies, finishing the line and/or building on the thought. This interactive and frequently spontaneous communication between musicians can be accomplished musically and/or lyrically. In a sense, many blues artists establish a call-and-response like communication with their audience, and the performance, to some degree, is co-constructed. Whereas the relationship and interactions between the performer and audience at a classical concert is more scripted, a blues performance tends to have a loose structure and somewhat improvised approach. Creating the “Teaching as Blues Performance” analogy helped me understand more deeply how Professor Levitin implemented his teaching. Just as the audience at a blues concert can affect change on the songs and their structure, the students in Professor Levitin’s classroom had a hand in shaping the classroom events. This is not to say that there is ever a carefree attitude on the part of either a teacher or a blues performer. A blues performer may have certain songs he or she plans to perform in a show, and similarly, Professor Levitin certainly entered the classroom with a set of topics to address in the classroom period. Like a seasoned blues performer would do with his or her audience, Professor Levitin provided structure and guided the classroom experience, while still establishing reciprocity with the students.

Thus, I would argue that a teacher, like a blues performer, mediates a co-constructed experience with his or her students/audiences, and that to perform or teach in this manner requires an exceptional ability to improvise. In the following section, I build upon the link between improvisation and teaching and return to my interviews with Professor Levitin to elaborate on why and how he improvised in the classroom.
Exploring Improvisation

As students, most of us have experienced the occasional teacher who seemed to follow his or her course plans in a very scripted manner. Some teachers refuse to take but a few questions from students in order to stick to their rehearsed course plan (this was illustrated in “The Guest Lecture” vignette). Some teachers, particularly at senior secondary and post-secondary levels write and literally read a prepared text verbatim to their students. Yet, students have also encountered teachers who were quite spontaneous and flexible. The best of these teachers in my experience were able to elicit and respond to student input and involvement while still managing to cover the course content. These teachers, like some of the finest musicians, are skilled improvisers. After I arrived at this realization, I probed to find Professor Levitin’s view on improvisation in the classroom and he shared that: “Improvisation is exciting for everybody involved. For the person on the stage, for the audience member who is being riffed on, and for the spectators. It’s very, very exciting” (Levitin/I/9/April09).

In addition to being exciting, improvisational skills are necessary since each class brings something unique depending on the specific context (Greenberg & Miller, 1991). Improvising is a key aspect of performing and teaching and to do it well, one must adapt to the context. Ultimately, “no class is ever given in the same way twice, just as no live performance can be” (Prendergast, 2008, p. 15). Professor Levitin had alluded to this when he said during one of our interviews:

“There will be times when I give a lecture and the room will be completely silent and totally into what I’m saying. Other times I do the same lecture using the same words and same slides, as far as I can tell, and they [the students] are completely bored and uninterested and they start talking. And you adjust because you want to get their attention back and you change to something else. You have to be ready to do that. It’s like having the set list [a list of songs for a musical performance] and being responsive to the audience.” (Levitin/I/5/April09)

To summarize, a teacher can enter a classroom with a guide, just as a performing musician can have a set list, a sequence of songs to be performed for a show. However,
much like a blues artist must deliver a cohesive performance while responding to the audience, teachers have to deliver the course content while thinking on their feet and shifting their focus in response to students in the classroom. Thus, like “improvisational actors, who arrive onstage with a set of guiding principles rather than a written script, interactive teachers are also improvising performers” (Baker-Sennett & Matusov, 1997, p. 205), responding to the uniqueness of each situation. As mentioned, this notion is central because no class lecture or live performance is ever the same. As any teacher knows, the classroom demonstration that engaged students on one day may leave students unimpressed at another time. For a musician, a song that has the crowd singing along at one show may have people yawning at the next. For a comedian, the joke that wins a crowd over on one occasion may flop on another. On that note, Professor Levitin corroborated in an interview how being a stand-up comedian is similar to teaching:

“More than anything that [stand-up comedy] prepared me for teaching a big class because you’re used to saying something that you think is going to get across and there are just these blank faces…I’m talking about the comedy clubs (laughs), but cognition is the same.” (Levitin/I/2/June)

To some degree, performers have to check their preconceived notions about a performance at the door, because “you cannot know what will happen until you are at the intersection that is the start of the show. “Each performance is a brand-new ride” (Taylor, 2000, p. 134). This point about improvisation applies to a teaching as much as it applies to a blues performance, and as I suggest in the following section, in particular, it is central to creating a constructivist learning environment where the teacher and students co-construct the learning experience in the classroom.

**Constructivist Teaching and Improvisation**

In the review on the literature in Chapter Two, I discussed constructivist principles as they apply to teaching. Some of the central points of constructivism are that teachers must embrace the idea that there is no single reality or “truth,” but rather, students’ prior experiences and perspectives influence how they understand and interpret new information. Thus, the constructivist teacher does not treat students as blank slates
that simply ingest information. Instead, the constructivist teacher works to create a co-constructed learning environment where student input is facilitated and valued. Here I would add that a truly constructivist teacher, much like the blues performer described earlier, is in essence an improvisational performer. Professor Levitin’s teaching reflects a number of constructivist principles and his ability to improvise in the classroom is central to his approach to teaching and learning. In constructivist theory, “effective teaching must be improvisational, because if the classroom is scripted and directed by the teacher, the students cannot co-construct their own knowledge” (Sawyer, 2004a, p. 14). In fact, “conceiving of teaching as improvisation highlights the collaborative and emergent nature of effective classroom practice” (p. 12) and therefore, what occurs in the classroom becomes a “shared social activity” (p. 14). Thus, the constructivist improvisational instructor can be viewed as a “teacher-as-liminal-servant” that creates a “liberating pedagogy” where students are “co-celebrants of knowledge with [the] teacher” (McLaren, 1999, p. 114). For the teacher, facilitating and feeding off of student input requires allowing “room to react” which “tells the audience that you are in the moment” (Taylor, 2000, p. 6). This requires being especially alert and attentive to students, which requires a high level of focused energy on the part of the constructivist teacher. Professor Levitin had suggested this earlier when he explained to me,

“If you are going to incorporate student comments into the lecture you have to be ready to run with it and that’s exhausting. It’s a real balancing act. It’s a tight-wire act. And to be honest, when I teach that course, I can’t do anything else the rest of the day. All my energy goes into preparing and after it’s over I’m exhausted.” (Levitin/1/7/April09)

While it takes a lot of energy to react in response to students and improvise, teachers can rely on their previous experiences to build a repertoire of useful and effective techniques to draw upon in the classroom. For instance, Professor Levitin offered the following insight in what I now understand was his ability to improvise in the classroom:
“Part of it is though, I only make a comment if I know it is going to work. So there is a selection bias. I have taught it enough that I have encountered a lot of different things and I have a pretty good memory, so I remember what has worked and what hasn’t. I have a repertoire of one liners and comebacks that I can draw on.” (Levitin/I/8/April09)

In addition to drawing from previous experiences, teachers can also learn from the experiences of other skilled improvisers. For example, Professor Levitin indicated how he gained insight from a fellow comedian and performer:

“Robin Williams was telling me that he has a storehouse of things that he’s ready to pull out at any minute. And he’s always thinking and practicing in his mind and it’s exhausting to do. He’s maybe one of the best improvisers we have and it’s not really improvisation for him, in that...it looks like improvisation to us, but he’s got thousands of comebacks and retorts ready to go, loaded in the chamber and ready to fire when the right moment comes along. Some percent of the time he generates a new one, but most of the time it’s a recycled one. And I think that’s the way the great improvisers do it.” (Levitin/I/8/April09)

The truly constructivist teacher must actively incorporate and respond to student input in the classroom, and yet, provide structure to the classroom activities. As Professor Levitin said, it is a balancing act. The central point that I have tried to highlight in this and previous sections, is that it takes great improvisational skills to teach in a constructivist manner. This is especially evident with Professor Levitin’s teaching, since the exceptional context of the Cognition course provides a unique example of the implementation of constructivist principles in a huge classroom with a large number of students.

**Constructivism in Professor Levitin’s Cognition Course**

Although it can be argued that Professor Levitin’s teaching was not wholly constructivist (for much of the classroom period he lectured and the student learning was assessed by multiple choice examinations), in a number of ways he demonstrated and
espoused constructivist principles in this teaching. For example, some guiding principles for constructivist teaching outlined by Brooks and Brooks (1993) are that teachers should, 1) pose problems of emerging relevance to students; 2) structure learning around primary concepts that are clustered and presented holistically; 3) seek out and value students’ perspectives and input in the classroom; 4) adapt the curriculum to address students’ suppositions and be accessible to students; and 5) assess student learning in the context of teaching by asking questions and engaging in discussions that allow students to express their reasoning. These are all principles that Professor Levitin embraced in his teaching, as demonstrated in the interviews with students, in the observations documented in my field notes, and in the interviews I had with him. And while it could be argued that all good teachers apply constructivist principles and therefore, what is so special about this classroom, there are reasons why the results that emerged in this study are particularly interesting. First, the nature of the context is unique. This study was situated in a university cognition classroom, as opposed to an elementary classroom, for example, where constructivist teaching practices (such as group work) are more easily implemented. Second, as mentioned above, the research site represents a unique situation where constructivist principles are present, yet, at the same time, a lecture format provides the basis for much of what occurs in the classroom. Third, if a snapshot of the cognition class were taken it might appear to a viewer to be merely a lecture. However, this snapshot would not reflect accurately the feeling of sitting in this classroom. As I have attempted to show in my analyses and vignettes, even when Professor Levitin’s teaching looked like a lecture, it did not feel like one. As illustrated in the discussion of participant themes drawn from the interviews with students in Chapter Four, and the vignettes that were created and presented in Chapter Five, Professor Levitin did not impose himself upon the students, and he was not pushy. Rather, he was respectful of students, and even when he lectured, he did so in a manner that was not aggressive or domineering. He engaged them with his material and vehicles of presentation, he related his teaching to their popular culture and contexts, he responded to their input and changed direction when needed, he permitted them to interact with him and each other and gain from this collaboration, and he communicated empathy and understanding without lowering his standards. These dimensions are supported in the literature related
to constructivist teaching and learning (Cunningham, 2006). And while not included in the scope of this study, it can be hypothesized that Professor Levitin’s teaching contributed to their growth as critical learners (Lunenburg, 2011). Finally, I believe these findings are particularly unique in light of the context: an exceptionally large classroom with almost 600 students. Most would agree that a classroom of this size is far from an ideal context in which to create the student-oriented learning environment and yet, Professor Levitin did just that. Given the context of Professor Levitin’s classroom, class size is particularly interesting. Rocca (2010) in a literature review on student participation found that class size is a major obstacle in promoting communication in the classroom. Also, it has been argued that “providing a constructivist teaching environment will have little effect on the quality of learning while conventional assessment procedures remain in place” (Entwhistle et al., 1993). Consequently, courses with a large number of students, paired with limited teaching assistants, tend to go hand-in-hand with multiple choice examinations. As indicated earlier, this was the case in Professor Levitin’s Cognition course. Although there are clear challenges to adhering totally to constructivist principles in large classrooms, this study shows that it is possible to achieve and/or move towards a constructivist learning environment where students play an active role within the context and confines of a large classroom. However, it is important to remember that individuals have different learning styles and while most students may appreciate a constructivist approach to teaching and learning, others may prefer a different type of instruction. For example, Bostock (1998) conducted a study where five constructivist educational principles outlined by Grabinger and Dunlap (1995) were applied in a higher education context with 300 humanities and social science university students. These principles were: 1) Authentic assessment; 2) Student responsibility and initiative; 3) Generative learning strategies; 4) Authentic learning contexts; and 5) Co-operative support. Although the constructivist approach was appreciated by most students, Bostock stressed that there was much diversity in the class, and responses to questions about the course varied and were sometimes evenly divided. The author concluded that while constructivist designs are helpful, they may not address the diversity often found across a large number of students, such as one might find in some higher education classrooms. In such cases, a radically constructivist course would be difficult to implement within the
constraints of large numbers, resources and institutional culture, so it is encouraging to think that the implementation of some constructivist principles may actually be optimal for the majority of students (Bostock, 1998, p. 236). Similarly, considering the diversity in learning styles that one could expect to find across the almost 600 students in Professor Levitin’s Cognition course, a diverse teaching approach that incorporates some constructivist principles may be both realistic and ideal, resulting in a positive and engaging learning experience overall. The main point I want to highlight in this discussion is that while applying a constructivist approach to teaching and learning is certainly a challenge in a large classroom with a large number of students, it can be done to some degree very successfully. Although class size, to a certain extent, has an impact on how one will teach, “expert professionals find ways to be effective despite any restrictions imposed by class or classroom size” (Cruickshank, Bainer Jenkins, & Metcalf, 2009, pp. 12-13). I would argue that Professor Levitin is one of these “expert professionals.”

In this chapter I have argued that a true constructivist teacher, much like a blues musician, is an improvisational performer. Improvisational skills are not optional, but rather, are essential to implementing constructivist principles. As evident with Professor Levitin’s teaching, exceptional improvisational skills enabled him to respond to and incorporate input from a large number of students and create a co-constructed learning experience in spite of the heavy course content, and the large class size.

Summary

Throughout this study it has been evident that Professor Levitin has a strong background in music. Just as he naturally made musical analogies in his teaching, early on in analyzing the data, because of my background and positioning, I began to make musical analogies about Professor Levitin’s teaching. Initially my analogies between his teaching and performance were based on overt and superficial classroom events, such as when he performed the parody to Madonna’s “Like a Virgin” to the students. However, once I analyzed thoroughly the student interviews and created vignettes to show typical “teaching moments” in Professor Levitin’s classroom, I was able to explore a definition
of performance, and determine that a blues performance, that is unique in the way it uses audience response, was an excellent metaphor for how Professor Levitan teaches and can be seen as “the manner of reacting to others,” a definition that is in keeping with a constructivist approach to teaching and learning. In the discussion on performance, I introduced Schechner’s three-phase performance process model which consists of proto-performance (training, workshop, and rehearsal); performance (warm-up, public performance, events/contexts sustaining the public performance, and cool down); and aftermath (critical responses, archives, and memories). This model is reflective of all performances, and as demonstrated, in a general sense, is quite applicable to teaching. However, as I analyzed the participant data and studied my field notes to write vignettes, I became aware of the need to look more closely at the vignettes where I was able to identify four facets of performance/teaching that were more closely tied to my performing experiences: 1) Dressing for the performance; 2) Owning the room; 3) Establishing a rapport; and 4) Drawing upon what you know. These four patterns led me to further explore the relationship between performing and teaching in a more interpretive manner and in an eureka moment identified the link between Professor Levitin’s teaching and a blues music performance. This “Teaching as Blues Performance” analogy helped me to see the links between Professor Levitin’s teaching and that of constructivist teachers—a link that had not been apparent before. In this interpretation, I have suggested that an entire academic course is analogous to a musical performance (concert); the series of classes that make up a course are like the songs that comprise a performance; a lesson plan for a class is similar to the parts of a song (verses, bridges, choruses, etcetera); and while a teacher provides structure in the classroom, a band leader directs a musical performance. I realized that not only did Professor Levitin’s teaching reflect aspects of performance, but it was also, to some degree, an improvised performance. Just as a blues performance can reflect an improvised approach to integrating crowd input and participation, Professor Levitin’s improvisational and performance skills enabled him to implement constructivist principles in the classroom. However, some teachers may be hesitant to embrace an analogy between teaching and performance. “There is the image of the flamboyant, show-off teacher who consciously exploits the showman or show/woman image” but “this is only one type of role and performance” (Greenberg &
Miller, 1991, p. 442). Teachers should not equate performing with being showy, because as I have shown, this does not have to be the case. Since a performance is a “complex interplay of knowledge, wisdom, body language, wit, charm, humour, and a host of other elements that go into making the teacher an effective communicator” (p. 430), teachers can benefit from reflecting on their personal performance styles and the impact it has in the classroom.

This study provides insight into a learning environment that is largely unrepresented in the literature. It provides a unique example of constructivist teaching because: The context of the course was an undergraduate Cognition classroom; a lecture format formed the basis of the teaching approach; the lecture format did not feel like a lecture; and finally, the course was held in a large classroom with close to 600 students present. Yet, Professor Levitin demonstrated that constructivist principles undergirded his work, that is, he engaged the students in meaningful ways, he related his teaching to the popular culture and the context of the students, he responded and changed direction when needed, he promoted interaction and collaboration, and he communicated with empathy and understanding without lowering standards for the course.

There is a vast literature that promotes constructivism as a sound basis for teaching and learning. Yet, many indicate that large classrooms present a major obstacle to applying a constructivist teaching approach. For some, large classrooms may be perceived as an obstacle that cannot be overcome. This study suggests that the main obstacle of large classrooms may not be related to the number of students one must teach, but whether or not a teacher has the performance and improvisational skills to deliver a constructivist approach. We do know that inexperienced teachers tend to run into difficulty when a lesson deviates from their plan, and this can result in some teachers opting to minimize improvisation to stay on track with the course objectives (Baker-Sennett & Matusov, 1997, p. 207). Instructors of large classes need to move beyond tried-and-true constructivist principles that perhaps better suit small classrooms, and adapt constructivist principles to meet any context, and as this work suggests, the ability to improvise may be the key for making this happen.
In the following concluding chapter I provide a summary of my study and the contributions that I believe the work makes to methodology and pedagogy. Also, I discuss the implications that my research has for methodology, future research, and teacher preparation.
CHAPTER SEVEN: CONCLUSION

Review of Chapters

In Chapter One, I indicated that as a former student in Professor Levitin’s cognition course at McGill University, I appreciated the way he integrated music in his teaching, and this experience stayed with me over time. In the following years when my academic interests turned towards education, this experience bubbled to the surface and I decided to conduct my research for my PhD using Professor Levitin’s course as the site for the work. I believed it would be a unique place for exploring a university teacher’s approach to incorporating music in a Cognition psychology course. My guiding research questions were: How is music integrated into a higher education Cognition psychology course? How do students perceive the role music plays in the course? What does the professor do in the classroom and how does he explain what he does? To provide a context for this study, I included in Chapter One: 1) an overview of the Cognition course (course requirements, assessment, etcetera); 2) a description of the research site, Leacock 132, the large amphitheatre classroom; 3) an introduction to Professor Levitin and his academic work as a cognitive scientist, and his non-academic endeavours in areas of humour, and particularly, music; and finally, 4) an overview of my work as a musician, music instructor and freelance music journalist to situate myself in this study.

In Chapter Two, I explored various literatures relevant to my study. This review provides the theoretical context and background for my exploration of the use of music in Professor Levitin’s Cognition course over a semester at McGill University. The review includes an overview of pertinent learning theories, specifically, behaviourism, constructivism, and adult learning. In this chapter I have argued that music has legitimate pedagogical value, and can serve as a teaching tool in an interdisciplinary context. Furthermore, I discussed how the integration of music across the curriculum serves constructivist learning principles by drawing upon and connecting with students’ prior knowledge. And I posited that a constructivist approach to teaching and learning is particularly essential in higher education because adult learners naturally bring with them a vast variety of prior experiences that should be explored and valued in the classroom. I
included a discussion about the cross-disciplinary potential of music in teaching and the concerns that need to be addressed when integrating music across the curriculum. As shown, music is one means to connect material to students’ lives and when used as a teaching tool, it is important, whenever possible, to use it in a manner that maintains musical integrity. Finally, in anticipation of the description of my methodology for this study that followed in Chapter Three, I provided an overview of qualitative research, a discussion on how I connected with it, situated myself in a qualitative perspective, and explained why it was the most appropriate approach to answer my research questions. Finally, I introduced arts-based inquiry, which provided me with the basis to develop and implement my own arts-based methodological contribution, namely “musical memos.”

Chapter Three provided an overview and discussion of the qualitative methodology used in this study. The discussion outlined how I obtained access to the research site and consent from Professor Levitin and the participants, and how I collected three primary data sources for this study: participant interviews, professor interviews, and field notes. Constant comparison inquiry (Maykut & Morehouse, 1994) was introduced as the means to analyze the participant data. This approach to data analysis first required unitizing and coding data into categories. Then through a process of expanding and contracting these categories, the analysis produced a series of themes that provided a credible explanation of what is transpiring in a particular context, namely Professor Levitin’s Cognition course. Part of this analysis included the creation of musical memos, an adaptation of memoing that usually accompanies qualitative analyses. I have shown how these memos provided a musical way to represent the data that helped me to discern the essence in particular patterns that emerged from the data. This process helped to generate holistic representations of the data and to represent these data in an embodied way. This in turn gave me a deeper and better understanding of what transpired in the data. The themes and patterns that emerged from the analysis of the participant data inspired me to write vignettes. These were created from my field notes taken during classes over the semester. Vignettes are vivid, aggregated descriptions of a particular event or phenomenon (Miles & Huberman, 1994), in this case, classroom events that served to contextualize the themes and patterns that were drawn from the participant data. Each vignette was followed by a discussion and where appropriate, excerpts from my
interviews with Professor Levitin were included to corroborate and give nuances to these reflections. I described that in the process of creating the vignettes, I was struck by how aspects of his teaching reflected the nuances of a performance. I embarked on an unplanned analysis that gave me further insights about his teaching and helped me to discover and discuss more fully and specifically the analogy of his teaching as a blues performance. Also in Chapter Three, I discussed how issues such as credibility (the degree to which the findings reflect reality); transferability (the degree in which the findings can be transferred to another situation); dependability (the degree to which similar results can be obtained if a study is replicated); and confirmability (the degree to which others can confirm or corroborate the results) have been addressed in my study.

Chapter Four highlighted the themes and patterns that emerged from the constant comparison analysis of the student interviews. The three major themes that emerged were: 1) Connecting With Students; 2) Optimizing Learning; and 3) Creating Salient Moments. Each theme was comprised of patterns that ran through the data. For example, I showed how by connecting with students, Professor Levitin promoted engagement with difficult material, and this realization inspired my first musical memo, “It’s a Tough Course,” and increased my understanding of what was happening in this course. Similarly, the other themes emerged by categorizing the student interviews and writing musical memos and presented in some detail the perceptions of the course according to the student participants. Finally, I obtained permission to look at Professor Levitin’s course evaluations which served to corroborate what had emerged in the analysis and I believe adds credibility to these findings.

Chapter Five featured four vignettes which served to contextualize the themes and patterns covered in Chapter Four by providing aggregated descriptions culled from my field notes that represented the typical events that occurred in this classroom. Each vignette was followed by a reflection that integrated excerpts from my interviews with Professor Levitin. These reflections helped to deepen my understanding and further contextualize what was transpiring in this Cognition course. I described how unexpectedly the writing of these vignettes gave rise to facets of his teaching that I linked
metaphorically to the idea that his teaching was like a performance. Writing vignettes helped me to further explore this idea in the following chapter.

In Chapter Six I described my journey as I explored this performance metaphor and arrived at the view that teaching can be conceptualized as an improvisational performance. To begin, I used a definition of performance that reflects a reciprocity and conversation that exists between the performer and the audience. A three-phase time performance sequence (Proto-performance, Performance, Aftermath) was presented which provided a basis for me to explore further performance and teaching, and eventually to identify four facets of performance/teaching that emerged in the creation of the vignettes. Ultimately, based on the observational data and my own experiences as a performer, I was able to see and discuss Professor Levitin’s teaching as analogous to a “Teaching as Blues Performance.” This analogy showed how structurally, a musical performance shares similar dimensions to those of an academic course. Most importantly, the “Teaching as Blues Performance” metaphor helped me to view teaching as an improvisational art. Just as a blues performer may alter the songs in a performance in response to the audience, some teachers, like Professor Levitin, integrate the input of the students, allowing them to influence the class to some degree. I made the case that Professor Levitin’s efforts to facilitate and respond to student input in the classroom reflected a constructivist approach to teaching and learning. Moreover, it is an example of constructivism that is not represented in the literature. First, the context of a university Cognition classroom was unique (as opposed to elementary school classrooms where constructivist teaching methods are more easily implemented); although constructivist principles were evident, much of what occurred in the classroom was a lecture format; even when Professor Levitin lectured, it did not “feel or seem” like a traditional lecture; and the course was held in an exceptionally large classroom with approximately 600 students. However, the main point that I stressed in Chapter Six was that Professor Levitin’s ability to improvise was a key and necessary skill that enabled him to teach based on constructivist principles which have tended to be dismissed as impossible in the context of a huge classroom with hundreds of students.
Limitations

In the following sections I address the potential limitations of this study. This includes addressing biases, assumptions, and participant sampling.

Addressing Biases

I was very aware that when I entered this research process that I brought biases and assumptions with me. During my PhD course work I realized that my world view embraced constructivism and a “relativist” stance, because I believe that there are multiple realities that are constructed through social interaction and experience. Also I have a “subjectivist” view which means that as a qualitative researcher, I would be directly implicated in the study as I discovered findings through an interactive and interpretative process. Moreover, as I presented in Chapter One, I am a singer/songwriter, guitarist, recording artist, music instructor, and freelance music journalist, and I strongly believe that music has great potential as a pedagogical tool in schools. I described how in my own schooling my propensity for music was never acknowledged and remained relegated to my life outside of school. In retrospect, this explained my lack of engagement as a young student. As acknowledged, I was a former student of Professor Levitin. My positive experiences as a student in his Cognition course were what inspired me to return to his class and to examine what he does systematically and carefully. I selected Professor Levitin’s Cognition course because of my own positive experiences in his course, and because I knew of his work as a producer and mixing engineer. As well, he had been a producer and consultant on some of my music recordings. I was determined, therefore, that my views about music in schools and my professional relationship with Professor would help and not hinder me in my research. I felt strongly that there was something exceptional about his teaching that was worthy of study. Some might argue that this “proximity” to both Professor Levitin and his course would be a limitation to this work because it could unduly bias the results. I would argue the opposite. I believe that my familiarity with Professor Levitin’s teaching and the course actually facilitated what emerged from the work because I was privy to an insider’s (emic) perspective that allowed me to probe more fully and see things that an outsider
might have overlooked. As many qualitative researchers have stated in different ways, a researcher always enters a site with assumptions and biases. It important to not apologize for these, but rather to account for them in reflexive processes throughout the study (Butler-Kisber, 2010, p. 19). I believe I have attended to this throughout my work. I implemented a series of strategies to address this possible limitation in the study. First, I was open from the outset about expressing my biases and assumptions, in particular my belief that music could and should have a place in the classroom. As outlined in Chapter Three, issues of credibility, transferability, dependability and confirmability were addressed throughout the study. In particular, the triangulation of data (participant interviews, teacher interviews, field notes), served as a means to show how my interpretations were confirmed from different data sources. Also, ongoing discussions with my supervisor have helped to ensure that my interpretations remained grounded in the data. Together, these research strategies have helped to account for my biases and shown that my interpretations were supported in the data throughout the study.

**Participant Sample**

As discussed in Chapter Three, a group of ten volunteers, consisting of eight women and two men, participated in the study. Considering the time and effort it took to conduct three separate interviews with each participant as advocated by Seidman (2006), and then to transcribe and analyze the data, this was a reasonable number of participants for the study, so all the volunteers were included. I discussed in Chapter Three how it turned out that all the participants had in various ways an affinity for music and may have self-selected to be in this study as a result. Of the ten participants in this study, eight reported being either a beginner (one participant), amateur (two participants) or formally trained musician (five participants). Although the remaining two participants were not musicians, they reported being avid music fans. Therefore, their perceptions of the Cognition course may have been influenced because of this. Also, the uneven participation of men and women may also have influenced the results. If a greater number of students had volunteered for the study, I would have been able to be more selective in order to ensure there was more diversity represented in my sample. It would have been interesting to have spoken to students who were casual listeners of music, or perhaps
students who may not consider themselves music fans. If I were to do this study again, I would make greater efforts to solicit more volunteers, in hopes that it would provide a more diverse sample of participants. However, as discussed in Chapter Four, as a counterbalance to what may have been a self-selection by students who were participants in the study, I examined the Cognition course evaluations, which were completed by 330 students at the end of the course. While the course evaluations did not provide the detail and depth of information obtained in the participant interviews, they did provide a sense of the views and impressions of many more students. These course evaluations reflected similar views and perspectives and helped to corroborate what emerged from the analysis of the participant data.

**Implications**

In the following sections I present the implications that this study has for future research and teaching. Drawing from the three themes (connecting with students, optimizing learning, and creating salient moments) that emerged from the analysis of the participant interview data, I present a discussion of the implications this study has for teaching and offer suggestions for future research. As well, I explore further the importance of improvisational skills for implementing a constructivist teaching approach and discuss how this can inform teaching practices and programs that prepare teachers. I open this implications section by discussing musical memos, and offer suggestions for how it may serve future researchers.

**Musical Memos: Implications for Researchers**

In qualitative research, the practice of memoing allows the researcher to record his or her impressions, reflections, questions and ideas while examining and coding the data (Glaser, 1978). When memoing, the researcher works closely with the data (Birks, Chapman, & Francis, 2008), tying together pieces of data and ultimately discovering relationships (Miles & Huberman, 1994). What has not been said in the literature is that the mode of representation used by the researcher may have a helpful impact on what emerges. Attention needs to be paid to the communicative propensity of the researcher and how a researcher can draw on this to enhance the memoing process. In Chapter Three
I explained how I adapted the process of memoing based on my propensity for and experiences in music and developed musical memos to reflect more deeply on my data, and elicit the salient ideas. As well, I used musical memos to represent what was emerging in the analyses and provide a more nuanced way of explaining my understanding of what was transpiring in this setting. Musical memos were inspired by found poetry (Butler-Kisber, 2002; Feldman, 2004) and ghostwriting (Rhodes, 2000), and the lyrical component of the memos were simultaneously written with music. I drew upon my skills as a musician and songwriter to write musical memos, though the approach can be adopted and modified by future researchers to better suit their research needs and skills in music. Whereas pairing words and music worked for me and may work well for researchers with similar skills and background in music and songwriting, others can potentially draw from other arts-based inquiry methods to personalize their memos. For example, researchers skilled in drama can create ethnographic texts or “ethnodrama,” which involves developing a script and dramatized performance that reflects the research data (Saldana, 1999). In such cases, researchers who are also skilled in music composition and performance might write and perform a score, music written to support and enhance the dramatic interpretations and representations. As well, the scripts themselves could be created and delivered in a similar fashion as a musical and parts of the text could be sung and integrated in the narrative, creating what could be viewed as “Ethnodramatic Musical Memos.” In the future, other researchers may draw upon such areas as dance and the visual arts to further explore, tease out, and reflect their data. My experience suggests that ultimately, researchers should be encouraged to establish a personalized approach to memoing using their natural proclivities (Gardner, 1993a, 1993b) and find ways that work for them (Charmaz, 2006). Regardless of the forms that musical memos may inspire, memoing can help researchers discover relationships in data and/or represent data in artful and compelling ways.

**Implications for Teaching and Learning**

This study brought forth a number of insights about Professor Levitin’s approach to teaching. The following is a discussion of the pedagogical implications inspired by the themes and patterns that emerged from this study. The implications, like the discussion of
participant themes in Chapter Four, are discussed under the headings: Connecting With Students; Optimizing Learning; and Creating Salient Moments. Also presented are considerations and implications for viewing teaching as an improvisational performance.

**Connecting with Students: Pedagogical Implications**

In the following sections I discuss the pedagogical implications that this study has for connecting with students. I present this discussion under the headings: Establishing a Personable Atmosphere; Showing Empathy to Students; Facilitating Student Involvement; Tapping into Student Culture; and Student Engagement with Difficult Material.

**Establishing a Personable Atmosphere**

This study suggests that teachers can connect with students by establishing a personable atmosphere in the classroom. Smiling, showing interest, providing support, and making eye contact are some of the ways that teachers can create such an atmosphere, which in turn encourages student participation (Rocca, 2010). Also, it has been documented how teachers can create a friendly and supportive climate by learning students’ names (Fritschner, 2000) and using humour in their teaching, such as through the use of comical cartoons that relate to the subject matter (Tauber & Sargent Mester, 2007).

What was particularly interesting about Professor Levitin was that he was able to establish a personable atmosphere so quickly in the classroom, and with such a large number of students. A lot of teachers create a friendly classroom environment, but Professor Levitin did so within minutes of the first classroom meeting. When trying to make sense of how he did this I turned to my experiences as a musical performer. When I perform music, my first goal is to quickly connect with the audience and create a personable, friendly vibe. On a good night, when it works well, before I finish the first song the audience will feel comfortable and relaxed; they let their guard down, and willingly engage in the performance. On nights when I fail to make that connection quickly, I find that I have to work extra hard to get the audience on board, and it can take
an entire show to do so. Professor Levitin helped to demonstrate that teaching is similar. The first impression Professor Levitin made not only set the tone for the duration of the course, but it also appears to have encouraged students to be more willing to engage in the learning process.

This study underscores that more attention should be paid to this initial time in class with students. The participants spoke about how they felt this tone from the very first meeting of the course. I would hypothesize that it may be particularly important to establish a friendly tone early in the first classroom meeting to offset dry administrative details that teachers have to present. Second, for the student, there is a lot of uncertainty and anxiety when entering a class for the first time, and perhaps a primary concern is about what the teacher and the course will be like. This initial tone may be very indicative of what lies ahead. Third, as shown in this study, making eye contact, learning students’ names, and integrating humour, all helped in this context to establish a friendly and welcoming tone. Future research in higher education should aim to explore further questions such as: How can teachers quickly set a personable classroom atmosphere with adult learners using their particular skills? What skills and competencies are required for teachers to do so? What aspects of the learning environment, such as class size and number of students, influence a teacher’s ability to set a personable tone?

**Showing Empathy to Students**

Part of connecting with students involves showing empathy to them. The goal should be, as much as possible, to teach with students’ perspectives in mind. Empathy can be shown in a number of ways, from making a conscious effort to not include confusing questions in exams to not overloading students with information during class time. It is certainly important to be empathetic to students, but in reflecting on the role of empathy in this study, I wondered about how genuine empathy is conveyed. This study suggests that genuine empathy is not something that is simply told to students, but rather, it has to be shown in the kind of responses from the teacher and interactions that occur with the students. What Professor Levitin was able to do was to show that he understood what it was like to be a student. In other words teachers have to “walk the walk” for
students to view them as real and authentic allies in the learning process (Brookfield, 2006). I believe that future research could study further the role of empathy in higher education teaching and by exploring such questions as: How and in what ways do teachers convey a genuine sense of empathy to students? What are the pitfalls or mistakes that teachers make? What are the dimensions of empathy that adult learners feel are the most important in the classroom?

**Facilitating Student Involvement**

This study suggests that teachers should consciously create opportunities to facilitate student participation. One way to do this is by opening up discussions that allow for students to interject and openly express their opinions and perspectives. This can appear to be easy enough to do, however, it is imperative that student contributions in the classroom be valued and treated respectfully. Students need to receive the message that the teacher is accepting of different perspectives and does not see everything as either right or wrong. This adheres to the constructivist notion that meaning is made via what the student brings to the event, what the teacher presents, and in the context of what is happening (Toynton, 2005). As I observed each Cognition class during the semester, I watched as Professor Levitin engaged students and facilitated their involvement in the classroom. Still, it was also obvious that it can be a challenge for teachers to encourage participation from students who may not feel comfortable interjecting and openly expressing their opinions. This can be especially challenging with a large number of students, since it is possible for some students to sit in the back of the room and refrain from participating. As presented earlier, teachers can promote student participation by establishing a personable atmosphere and showing empathy, and as mentioned above, by being respectful of students’ views. Still, future research should examine how teachers can promote further the participation of more students, particularly in larger university classrooms such as the research site for this study. I believe the following questions merit attention: In what ways can teachers make room for shy and timid students to participate in the classroom? With the greater use and availability of technology, could the use of a live, in-class interactive online forum serve to open up a means for more people to
contribute in classroom activities and discussions? These questions were beyond the scope of this study, but certainly are areas that can be explored in the future.

**Tapping into Student Culture**

In particular, this study suggests that teachers can establish a common ground and connect with students by tapping into student culture. In this instance it was with music. Whereas being empathetic sends the message that the teacher understands what it is like to be a student, integrating contemporary culture shows that the teacher has a sense of and appreciates students’ life outside of the classroom. It is important that the classroom and curriculum reflect student culture (Greata, 2006). If using music, teachers must use the kind of music that connects with students (devries, 2004) as Professor Levitin did with ease and expertise. This requires keeping up to date with music trends popular among students (Kelly & Van Weelden, 2004). Therefore, when possible, teachers should work to find links and draw analogies with contemporary music to help illuminate topics covered in their teaching. As well, whenever possible, teachers should integrate music in a manner that, as discussed in Chapter Two, maintains musical integrity (Barrett, 2001; Burrack & McKenzie, 2005; Rosenbloom, 2004; Snyder 2001). This means that when teachers integrate music across the curriculum, they do not treat music in a trivial manner to merely serve the other subject area. Rather, teachers should work to find genuine connections between subject areas, as opposed to just playing music in the background to set a mood or making a passing reference to popular music. Doing this is not necessarily negative, but the challenge for teachers is to find a balance where music can serve pedagogical needs, while, whenever possible, integrating music in a way that maintains its integrity. Given that most teachers tend to lack the confidence to integrate music into their teaching (Russell & Zembylas, 2007), I feel that future research could help teachers by addressing the following questions: What type of opportunities do teachers require to professionally develop their knowledge and confidence to integrate music in their teaching? How can teachers best be supported to integrate music in a manner that maintains musical integrity?
**Student Engagement with Difficult Material**

Interestingly, the data in this study suggest that as a result of the teacher connecting with students, the students were more accepting of what they perceived as heavy course demands. As mentioned in Chapter Two, when students feel a connection with a professor and that he or she has similar perspectives or interests (e.g., sharing similar taste/appreciation in music, for example), they tend to view that professor favourably. Presumably, if students perceive a teacher as a cold, unfriendly, and unsympathetic person, they might be less accepting of demanding course requirements. It is a delicate balance, but teachers should avoid overloading students to the point of frustration, and rather, set the degree of difficulty to optimally challenge students, while showing a willingness to provide support to students who need help to meet the course requirements (Collins, 2004). Even with adults I would argue that this is important. Both the participants’ interviews and the course evaluations suggested that connecting with students helped to promote student engagement with challenging course material, and I believe that future research could further explore how this plays out in different adult learning environments.

**Optimizing Learning: Pedagogical Implications**

Here I turn to the pedagogical implications that arose from this study for optimizing learning. Specifically, I discuss the following: Enticing Student with Passion; Reducing Exam Tension; and Clarifying Concepts Dynamically.

**Enticing Students with Passion**

Research shows that students appreciate when teachers demonstrate enthusiasm when teaching (Kim, Damewood, & Hodge, 2000). Similarly, this study revealed that students are enticed by a teacher who integrates subjects in which he or she has a personal and enthusiastic connection. Teachers who show a genuine and passionate connection to the classroom material can make lectures more engaging for the students. As shown in chapters four and five, Professor Levitin has extensive experience in music, and he incorporated this knowledge throughout his classes. This study suggests that
efforts should be made to learn about topics that may be of interest to students, and more specifically it demonstrated that music is one powerful medium through which to connect with students. However, music is not the only one, although in my estimation it is a good one. What is most important is that teachers should integrate what they know well and are passionate about into their teaching, regardless of what this is. By doing this, teachers will be able to speak from a point of genuine experience, knowledge, and enthusiasm which students will recognize and appreciate. That being said, it is important to consider that since music is such a key part of student culture, it may have certain pedagogical advantages over other areas of interest. Future research should explore how teachers can effectively draw from other personal interests in ways that will entice, connect, and engage learners.

Reducing Exam Tension

This study has shown how humour reduced students’ tension and anxiety prior to, and during, examinations. This finding is supported in the literature (Berk, 2002; Torok, McMorris, & Lin, 2004). Professor Levitin was very skilful and at ease integrating jokes and humour into his classes. This is a talent that not every teacher has or can develop. However, the appealing thing about integrating humour into examinations is that it does not require that the teacher be skilled in comedy. Perhaps for teachers who may not feel comfortable delivering humour as Professor Levitin did in the classroom, integrating a comical answer or cartoon in examinations is a feasible option. With planning, using some humour directly in examinations to reduce tension is something that most if not all teachers can implement. Future research might focus on the types of humour that serve to lighten the mood and reduce anxiety, but do not otherwise distract students during a test and whether or not different students in different disciplines respond in varying ways.

Clarifying Concepts Dynamically

This study suggests that applying a multifaceted approach to clarify concepts helped to improve the learning experience for students in spite of the large class size, the lecture format, and the dense content of the course. Clarifying concepts in a dynamic way not only makes the classroom experience more entertaining, but it can also help to reach
more students who may have different learning styles (Collins, 2004). In Professor Levitin’s case, he interwove into his lectures various interactive demonstrations, video snippets, audio clips, storytelling, and so on. This multimodal approach to teaching made for a diverse and engaging learning experience where the course concepts were explored and clarified in a dynamic fashion and is supported by the work of Gellevij, van der Meij, Jong, and Pieters (2002). Although quite prevalent in early schooling, it appears that even in adult learning situations teachers need to consider how a subject might be explored in a variety of ways to engage and reach all students. Further study should be given to how this can be done effectively within the constraints of large classes and inflexible classrooms which are prevalent in university settings.

**Creating Salient Moments: Pedagogical Implications**

In this section, I discuss the pedagogical implications related to creating salient moments in the classroom. As presented below, this study revealed that holding attention and triggering memory were facilitated by creating such salient moments.

**Holding Attention/Triggering Memory**

This study demonstrated that Professor Levitin’s use of both music and humour created salient moments in the classroom. These salient moments stood out in the classroom as being particularly unusual, and they served to hold students’ attention in class. As well, such pivotal moments also served as a mnemonic device, helping to trigger students’ memory of course material. Whereas Professor Levitin used his knowledge and skill to integrate music and humour in his teaching, future research could explore other ways that teachers can draw on their own skills to create these salient moments in the classroom. Perhaps the arts can provide some options. A dramatic skit, a recited poem, a musical composition, or a dance performance, etcetera, can all be used to explore and engage, open up a discussion on a subject and create stand-out moments that hold students’ attention and trigger students’ memory of course material.
**Improvisation: Implications for Teaching**

A central point that emerged from this study is the analogy of “Teaching as Improvised Performance.” Not only did I present the view of teaching as a performance art, but I also argued that a true constructivist teacher is, in essence, a skilled improvisational performer who draws from the input of students, co-constructing the classroom experience. Although a large amphitheatre-style classroom with nearly 600 students presented a major obstacle to constructivist teaching, this research shows that constructivist principles can still be implemented. However, to engage and draw input from a large number of students and create a constructivist learning experience requires exceptional performance and improvisational skills. Professor Levitin appears to have acquired these skills outside of academia. Having performed music and stand-up comedy throughout his life, Professor Levitin has years of informal performance and improvisational experience which have provided him with skills that he transferred to the classroom setting. Presumably, most teachers will not have experience or the necessary preparation for improvisation and performance, and therefore, teaching a large number of students in a constructivist manner may be a daunting challenge for some. Since stepping onto a stage or in front of a classroom with confidence requires being able to adapt and handle the unknown, teachers could benefit from formally acquiring improvisational skills. Without the proper improvisational preparation and support, teachers can espouse constructivist ideals, but perhaps lack the skills to implement constructivist principles.

This study can serve as a launching pad for future research into the links between constructivist teaching, performing, and improvising, and perhaps in the future, teacher education programs will feature courses and improvisational preparation similar to that found in the performing arts. This type of research could contribute to the existing work on promoting critical thinking and the benefits that it can have for developing responsibility for social change (Goodman, 2008). Sadly, there seems to be less of an emphasis in teacher preparation programs on these areas of the curriculum than there was twenty years ago. Future work should examine how this might be done efficiently and effectively in teacher education programs that are already filled with pedagogical and
certification requirements. Certainly, some re-visioning would be necessary, but the results could be well worth the effort.

**Conclusion**

My goal in this study was to explore how music was used in a university Cognition psychology course. I explored how this was done, how students felt about it, and how the professor enacted and explained his approach to teaching. Music permeates our world, and this study suggests that music is a powerful medium to which most, if not all, students have some connection. However, after careful analysis of the participant interview data, it was evident that music was just one among a variety of resources that Professor Levitin used in his teaching. The data analysis revealed that Professor Levitin connected with students by establishing a personable atmosphere; showing empathy; facilitating student involvement; and tapping into student culture with music. As well, it appears that by connecting with students, Professor Levitin also created a learning environment that promoted student engagement with the difficult demands of the course. Also, the data revealed that Professor Levitin optimized learning in the classroom by enticing students with passion; reducing exam tension with humour; and clarifying concepts dynamically. Finally, it was found that Professor Levitin’s use of music and humour also functioned to create salient moments which held students’ attention in class and helped trigger their memory of the course material.

Early in Chapter One I provided an overview of the research site, and it is worth restating that Professor Levitin’s undergraduate Cognition psychology course was held in a large amphitheatre that accommodated almost 600 students enrolled in the course. This context is key, since much of what occurred in this classroom might be considered simply examples of good teaching practices. However, what makes this an exceptional teaching and learning environment is that the professor connected with students, optimized learning, and created salient moments within the unique setting of a large classroom with a large number of students. As well, drawing upon his improvisational skills, Professor Levitin was able to teach according to constructivist principles within a context that presents considerable challenges to constructivist instruction.
This study demonstrates that it is possible for a teacher skilled in improvisation to engage and interact with an exceptionally large number of students in a constructivist manner. This was a significant realization, and it inspired a “Teaching as Blues Performance” analogy to conceptualize an approach to teaching and learning that embraces improvisation and constructivism in the classroom. With improvisational skills, teachers may discover new and more innovative ways of implementing constructivist methods, even within larger classrooms. Future research is needed to refine and explore further the implications of this for teacher preparation and/or adult learning.
REFERENCES


Campbell, S. P. (2005). Deep listening to the musical world: When students become fully aware of the sounds around them, they can build musical understanding and performance skills through listening. *Music Educators Journal, 92*(1), 30-36.


Levitin, D. (For reasons of participant confidentiality, the year is omitted). Course outline: Cognition (PSYC 213). Department of Psychology, McGill University, Montreal, Canada.


Appendix A: Course Outline

McGill University
Psychology 213 - Winter Semester, 2004-2005
Instructor: Professor Daniel Levitin
3 credits, Tuesdays & Thursdays 2:30 - 3:50 pm

SYLLABUS

Prerequisites
A course in introductory psychology or perception is required. If you do not have these prerequisites, you can still register for the course, but you do so at your own risk (and possible peril): students in the past who have taken the course without the prerequisites tend to get much lower marks than other students.

Lectures
26 class meetings (13 weeks * 2 per week), Tuesdays and Thursdays, 2:30 - 3:30 p.m., in Leacock 132. Readings assigned are to be completed before the lecture in which they are discussed.

WebCT/Questions/Registration Problems
Address any registration problems or WebCT problems to the psychology undergraduate secretary, Mary Gauthier <maryg@ego.psych.mcgill.ca>. If you have questions about course content, please post them to the WebCT discussion board so that everyone can benefit from the answer. If you are still confused, or unsatisfied with the answer you get on WebCT, ask your TA.

Required Textbook: Foundations of Cognitive Psychology, available at the Bookstore. On average you will be reading 61 pages per week. You should plan to read between 10-15 pages every day (that's five days a week with weekends off).

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3 For reasons of participant confidentiality, the year is omitted from the syllabus.
Course Goals

By the end of the semester you should have a better understanding of current models and controversies about the nature of human thought, and should have developed your skills in critical thinking and evaluation of scientific findings.

Cognition is the study of human information processing and includes the topics of memory, attention, perception, language acquisition and use, problem solving, decision making, categorization, and expertise. What is the nature of thought and how does it arise in the mind and brain? How can empirical research inform these questions? This course presents a survey of major topics and controversies in the study of cognition. Research findings will be considered from the perspectives of philosophy, anthropology, linguistics, psychology, computer science, and neuroscience; a theme will be consideration of the mind as an information processing device.

Grading and Administrative Matters

Course requirements: You should plan to attend the lectures, do the readings, take two midterms, and the final exam. You are required to check WebCT (the course web site) at least twice a week for updates, new information, and lecture notes. Prior to the midterms, you may need to check more frequently for information about the exams.

Evaluation: Your mark will be based on 2 midterms (each worth 30% of your grade) and a cumulative final exam (worth 40%).

McGill University Statement on Academic Integrity.

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see http://www.mcgill.ca/integrity for more information).

L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site http://www.mcgill.ca/integrity).

General Statement about course policies. Psychology 213, Cognition, is a large
course with 550 - 700 students enrolled each year. Over the last several years I've tried to improve the course so that everyone in the class has an equal chance to earn a good mark and to learn the material well. Because every year a number of students have expressed confusion about exams and grading, I have made an effort in the sections that follow here to spell out the rules so that everyone understands them at the beginning of the course.

**Exams.** The midterms will be held in the evenings on Tuesday February 8 and Wednesday March 9. The February 8 exam conflicts with the midterm for Biochem 212 and they have first priority; if you are taking both courses, see the Head TA to arrange a make-up exam. The March 9 exam may conflict with other exams, but our course has priority, meaning that your other instructor is required to arrange for an alternate time for you. The final exam will be held during the examination period at the end of the term, at a date to be announced later by the registrar.

**Exam administration.**

**Time of arrival.** You must report to the exam on time. The arrival time will be announced in class and on WebCT and there will be a 20 minute grace period. After 20 minutes, the doors to the examination room will be shut, and no one else will be allowed in. (Note that if you show up 1 minute after the doors close, you were not "one minute late" you were 21 minutes late, due to the grace period).

You will be given a seat assignment in advance of the exam on WebCT. You must sit in your assigned seat or you will receive a 0 on the exam.

**Identification.** You must write your student ID# on both the exam and the computerized answer sheet. If you enter a wrong number, or fail to put your name on both sheets, you will receive a 0 for the exam. There will be no exceptions to this.

What you can bring and what you can not bring to the exam. You must bring a pencil - the computerized forms will not read pen or colored pencils or other markers. You should bring an eraser if you think you might want to change an answer. If you break your pencil, or run out of lead, you will NOT be able to borrow a pencil from anyone in the room. You are allowed to bring an extra pencil.

You will not be allowed to bring anything to your desk in the examination room except for a pencil, an eraser, and a printed French-English translation dictionary if you need one. No cell phones, electronic organizers, PDAs, electronic dictionaries, etc. will be allowed. If you bring books, backpacks, cell phones, coats, etc. into the exam room, you must leave them in the front or back of the
room away from the desks.

**Behaviour during the exam.** No talking will be allowed during the exam, and no questions will be answered by the professor or the exam invigilators. Anyone talking for any reason will be assumed to be cheating, and will be dismissed from the exam with a grade of 0. Students who feel wrongly dismissed can appeal to the Dean of Students. Once the exam begins, you must stay in the room until the exam is over. No one will be allowed to leave early (this is because the rooms are cramped, and it is unfair to students still writing the exam to have other students crawling over them to try to get in and out).

After you've taken the exam, you can see your exam during the "exam review" period that is specified by the psychology department. You must sign up for an appointment at the psychology undergraduate advising office in Stewart Biology building.

**Extra Credit Option.** This course will offer the extra credit subject pool option. If you are interested in participating in psychological research, you will have the opportunity to sign up over the web, then complete a study and submit a one page report about it to earn 2 extra credit points, added to your final marks in this course. This extra credit option is an opportunity, not a right. If you are unable to complete an experiment due to scheduling or other problems (whether or not they are your fault), you will not receive the extra credit. There will be no other opportunities in this course for additional credit.

**Bonus points for students near the cut-off.** At the end of the term every year, some students find they are close to the next letter grade category, having missed it by only 1/2 or 1/10th of a point. No bonus points or adjustments will be made in these cases. The "extra credit option" described in the preceding paragraph was implemented for just this case – for students who are close to the next grade category. If you did do the extra credit and received those two points, then note that you are not only 1/2 a point away, you were 2 1/2 points away, and you've already received your extra credit. If you did not do the extra credit, then you missed your only opportunity for extra points in this course. There will be no other opportunities for extra credit for any reason (this is to make it fair to all students).

**Missing a midterm exam**

If you miss one midterm for any reason, you will take the final exam for 70% of your final grade. If you miss both midterms, you will take the final exam for 100% of your grade. (Past experience, and theories about learning and cognition, all strongly support the principle that you're much better off taking all three exams because it will give you more opportunities than just one to show what
you know.) There will be absolutely no opportunities to make up a missed midterm for any reason at all. Note that receiving a 0 on a midterm for a rule violation (talking during the examination, failing to put your correct student ID on both the answer sheet and the exam question sheet) does not entitle you to take the final for more points.

**Missing the final exam**
Students who miss (or anticipate missing) the final exam must contact the Associate Dean of their faculty (arts, science, engineering, etc.). If the reason is acceptable to the Associate Dean the student will be able to write a deferred exam for 40% of the final grade.

**Supplemental exam for those who fail the course**
Students who obtain a D, F, U, or J will be able to write a supplemental exam for 100% of the final grade.

**The arrangements for evaluation may have to be changed in the event of circumstances beyond the instructor's control.** Every effort will be made to consult the class if changes should be required.

**How to get a good grade.** Keep up with the readings. There are A LOT of readings, and some of them are difficult. Plan to set aside enough time to read every article and chapter TWICE before the lecture that covers it. One of the findings of cognitive psychological research is that you will synthesize the information better if you read a little bit every day rather than all at once. Don't get behind! In the past, students have found it helpful to form study groups to study and discuss the readings together. I very much encourage this.
Appendix B: Ethics

CERTIFICATE OF ETHICAL ACCEPTABILITY FOR FUNDED AND NON-FUNDED RESEARCH INVOLVING HUMANS

The Faculty of Education Ethics Review Board consists of 6 faculty members appointed by the Faculty of Education, an appointed member from the community, and the Chair of the Ethics Review Board.

The undersigned considers the application for certification of the ethical acceptability of the project entitled:

Exploring a University Teacher’s Approach to Incorporating Music in a Cognition Psychology Course

as proposed by:

Applicant’s Name  Dale Boyle

Applicant’s Signature/Date

Degree / Program / Course  PhD Integrated Studies

The application is considered to be:

A Full Review

A Renewal for an Approved Project

A Departmental Level Review

The review committee considers the research procedures and practices as explained by the applicant in this application, to be acceptable on ethical grounds.

1. Prof. René Turcotte
   Department of Kinesiology and Physical Education
   Signature / date

2. Prof. Ron Morris
   Department of Integrated Studies in Education
   Signature / date

3. Prof. Ron Stringer
   Department of Educational and Counselling Psychology
   Signature / date

4. Prof. Joan Russell
   Department of Integrated Studies in Education
   Signature / date

5. Prof. Doreen Starke-Meyerring
   Department of Integrated Studies in Education
   Signature / date

6. Prof. Ada Sinacore
   Department of Educational and Counselling Psychology
   Signature / date

Office of the Associate Dean (Research & Graduate Students)
Faculty of Education, Room 230
Tel: (514) 398-7039  Fax: (514) 398-1527

Office Use Only

REB #: 486-1104  APPROVAL PERIOD: Dec 14, 2004 to Dec 14, 2005
(Updated September 2003)
Appendix C: Informed Consent Form

EXPLORING A UNIVERSITY TEACHER’S APPROACH TO INCORPORATING MUSIC IN A COGNITION PSYCHOLOGY COURSE

Researcher: Dale Boyle

INFORMED CONSENT FORM FOR PARTICIPANTS

This qualitative research study aims to explore and gain an understanding of a university teacher’s approach to incorporating music into the curriculum to help elucidate difficult concepts in a cognition psychology course, and how this approach is perceived and experienced by the students.

I understand if I participate in this study, I will be interviewed in three interview sessions on my perspectives on the integration of music in the cognition course.

Each Interview session of 30-60 minutes in length will be tape-recorded. Participants may refuse to answer any questions, and can withdraw from the study at any time. The information obtained in the interviews will be identified only by code, ensuring the privacy of the participants. I understand that there is no tangible compensation for participating in the study, other than the knowledge gained from my participation will contribute to the understanding in the research study area.

- I understand the purpose of this study and know about the risks, benefits and inconveniences that this research project entails.
- I understand that I am free to withdraw at anytime from the study without any penalty or prejudice.
- I understand that this research will not affect my grades or evaluation of my work.
- I understand how confidentiality will be maintained during this research project.
- I understand the anticipated uses of data, especially with respect to publication, communication and dissemination of results.

I have read the above and I understand all of the above conditions. I freely consent and voluntarily agree to participate in this study.

Name (please print) ____________________________________________________________

Signature ____________________________ Date __________________________
Appendix D: Participant Interview Protocol

PARTICIPANT INTERVIEW PROTOCOL

What program are you enrolled in?

What year of the program are you currently in?

What were you doing before coming to McGill?

What are the reason(s) that you enrolled in the course?
  • Is it a required or optional course?
  • What did you hear about the course before registering?
  • Any other reasons?

Do you attend this course regularly? Why or why not?

If you were going to describe this course to a fellow student at McGill, what would you say?

How do the course lectures, readings, and assignments compare to your initial expectations?

How is the course similar to or different from past classroom experiences? At McGill? Elsewhere?

Explain why you think the professor integrates music into the course?

What role, if any, has music played in your learning in this course? Explain why or why not.

Has music played any other role for you during your time in this course?

What else would you like to say about your experience in this course so far?

Explain what role, if any, music plays in your life generally.

Do you have any questions for me?
Appendix E: Professor Levitin Interview Protocol

PROFESSOR LEVITIN INTERVIEW PROTOCOL

What were you doing before coming to McGill?

How many years have you been teaching the Cognition course at McGill?

How, if at all, have the course lectures and readings evolved since the first year?

How is the course similar to or different from your other classroom teaching (or student) experiences? At McGill? Elsewhere?

Beyond the section on music cognition, why do you integrate music into the course?

What role do you feel music played in students’ learning in the course?

How do you feel the integration of music examples and illustrations in the readings and lectures impacted on students’ motivation?

Your motivation?

With regard to the integration of music, if at all, how do you feel the Cognition course could be altered?

Are there any key examples where music was used that stood out for you? Why?

The use of humour came up in the interviews (in classroom & exams). How do you feel humour impacted on students’ learning and motivation?

Do you consciously integrate humour and music?

Are there any additional points or comments you’d like to make?
Appendix F: Musical Memos

NOTE: See attached audio recordings of the Musical Memos (It’s a Tough Course, Take What You Know, and It’s Just a State of Mind.)
Appendix G: Overview of Course Evaluations

The Course Evaluation Results

In total, 330 students responded to the Psychology 213 course evaluation. For the first part of the evaluation, students responded to statements by selecting a number on a scale from one to five, from strongly disagree (one) to strongly agree (five). The table below contains the course evaluation statements and the corresponding class mean scores.

Course Evaluation Results

<table>
<thead>
<tr>
<th>Course Evaluation Statements</th>
<th>Class Mean Scores (1 = strongly disagree to 5 = strongly agree)</th>
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<tbody>
<tr>
<td>1) At the beginning of this course, the instructor clearly presented the course objectives, reading requirements, and evaluation methods.</td>
<td>4.553</td>
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<tr>
<td>2) The course was conducted according to the course outline.</td>
<td>4.497</td>
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<tr>
<td>3) Overall, the reading material for the course seemed appropriate to the subject and level of the course.</td>
<td>3.688</td>
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<tr>
<td>4) For the course level, the workload (including class preparation, assignments, and papers) in the course was appropriate.</td>
<td>3.710</td>
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<td>5) Overall, the class presentations by the instructor was clear and understandable.</td>
<td>4.623</td>
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<td>6) The instructor appeared knowledgeable and up to date with regard to the subject matter.</td>
<td>4.774</td>
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<tr>
<td>7) The instructor dealt with topics in a manner which stimulated interest and attention.</td>
<td>4.691</td>
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<tr>
<td>8) The instructor was open to student discussion, questions and disagreement.</td>
<td>4.741</td>
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</table>
9) The instructor was helpful to students seeking advice and consultation. 4.349

10) The methods of evaluation were fair. 4.557

11) Overall, the course was intellectually challenging. 4.339

12) Overall, the instructor is a good teacher. 4.717

The following table contains a sample of the type of comments students wrote in the evaluations. Each of the following comments came from different students.

**Course Evaluation Student Comments**

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<th>Comments</th>
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<tr>
<td>1. Great teacher! Communicates course material comprehensively, clearly, and in a humorous way. I loved the lectures.</td>
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<td>2. Excellent teacher. Keeps class interesting and fun.</td>
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<td>3. He really respects the students…I love the fact that he wrote a song just to help us remember.</td>
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<td>4. He made uninteresting material so fun to learn.</td>
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<td>6. Very dynamic…holds class attention very well.</td>
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<td>7. He has the ability to make complicated texts more comprehensible.</td>
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<tr>
<td>8. Professor Levitin always had something interesting to bring to the class, whether it was a song, poem, video or interesting fact.</td>
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<tr>
<td>9. Efforts to create in-class discussion was useful and thought provoking.</td>
</tr>
<tr>
<td>10. Very knowledgeable, interesting, enthusiastic, and most importantly inspiring.</td>
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<td>11. A very engaging speaker who makes the material understandable while not talking down to students.</td>
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*Note. Each of the above comments came from a different student.*