A CASE STUDY OF PERCEPTIONS OF STUDENTS,

TEACHERS, AND ADMINISTRATORS ON DISTANCE

LEARNING AND MUSIC EDUCATION IN NEWFOUNDLAND

AND LABRADOR:

A CONSTRUCTIVIST PERSPECTIVE

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A Case Study of Perceptions of Students, Teachers, and Administrators on Distance

Learning and Music Education in Newfoundland and Labrador:

A Constructivist Perspective.

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ABSTRACT

The purpose of this study was to gather perceptions of students, teachers, and administrators regarding the pilot on-line delivery of a music course in secondary education. This study was conducted from a constructivist perspective using an exploratory case study methodology.

The results of this research revealed valuable insights into the online learning environment of *Experiencing Music 2200* as they pertain to a constructivist approach to online pedagogy. Perspectives, issues, challenges and opportunities identified by participants in the study are analyzed within the framework of Duffy and Cunningham (1996). Of particular note is the realization that many high school students in rural communities of Newfoundland and Labrador are now provided opportunities to study music, with a specialist music teacher, regardless of their geographic location and/or size of school. Since the pilot delivery of *Experiencing Music 2200*, a second music course has been developed for distance delivery and a second full time e-music teacher has been contracted to teach secondary music education through the Centre for Distance Learning and Innovation, Government of Newfoundland and Labrador.

Building on research available on online learning that is primarily focused at the adult and post-secondary levels, this study contributes valuable insights and perspectives into secondary level distance education generally and the delivery of web-based music education specifically. It provides timely and significant data relating to this new context of delivery of secondary music education. The results of this study may serve to inform ongoing and future developments relating to policy and practice in this web-based context.

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CHAPTER ONE

INTRODUCTION

Building on a significant history of distance education in Newfoundland and Labrador, since 1987, technological advancements have significantly enhanced distance education programs for secondary schools in Newfoundland and Labrador. The first distance course to be offered via the audio-graphics teleconference network in 1988 for high school students was Advanced Mathematics. After the success of this first course, Physics, French, and Chemistry were added. With the continuing advancements of technology, distance courses are now available online via web-based contexts. Secondary students in Newfoundland and Labrador currently have access to 36 online (distance) courses.

In the fall of 2004, the Centre for Distance Learning and Innovation (CDLI) offered its first online music course, *Experiencing Music 2200* (pilot). This new pilot course offering represented a new and innovative approach to the teaching of music in a high school curriculum-based setting. It is offered online (via the internet) using both synchronous (Elluminate Live conferencing software and video-conferencing) and asynchronous components (WebCT management system, email, and MSN) (CDLI, 2004). With the ever-continuing development of web-based technologies, there is much potential to transform the way music education is delivered to students via online distance education models. Students and teachers are given opportunities to explore music teaching and learning in new, innovative, and creative ways. As part of this growth

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and transformational process, music educators, curriculum developers, administrators, parents and students will need to examine and explore both traditional and online approaches to the teaching and learning of music. These emerging contexts will need to be critically analyzed so stakeholders are aware and conscious of the many and varied aspects relating to online curriculum development and delivery generally, and within the Newfoundland and Labrador context specifically.

1.1 Purpose of the Study

The purpose and intent of this case study is to gather perceptions of students, teachers, and administrators regarding the online (pilot) delivery of *Experiencing Music 2200*. The objective is to shed light on experiences, ideas, perspectives, concerns and issues that might have an impact on future design and development of online experiences in secondary music education, and to explore the elements and future possibilities of transformation and change within music education via this new mode of delivery. Merriam (1988) states that, "a case study approach is often the best methodology for addressing these problems in which understanding is sought in order to improve practice" (p. xiii). Topics such as advantages and disadvantages of teaching and learning music online, interactivity and collaboration, and technical and course development issues are examined in this study.

1.2 Context of the Study

1.2.1 Distance Education

Distance education has existed in Newfoundland and Labrador for approximately 70 years. With the creation and expansion of new technologies, distance education has evolved from delivering courses via postal services (1930's) and the radio (1940's) to using an audio-graphic teleconference network in the 1970's (Rose, Hickey, & Mercer, 2008). The *Report of the Small Schools Study Project* (Riggs, 1987) identified some major concerns with distance education services at the secondary level. The report documented discrepancies between urban and rural schools. The major issues with rural schools centered on: low enrollments (which affected teacher allocation); unavailability of subject-area specialists; and a limited number of teachers to offer courses (Riggs, 1987).

In an effort to eliminate the inequity of course offerings between rural and urban schools throughout the province, the Government of Newfoundland and Labrador put forth *The Distance Education Project* in 1990. This project was "designed to meet the needs of students in small remote schools in rural Newfoundland and Labrador who are unable to receive instruction in certain high school subjects because of low enrollments and/or lack of teaching personnel" (Government of Newfoundland and Labrador, 1990, p. 2). Distance education was seen as an important element in a strategy to improve educational opportunities for students in these schools. As noted by Sparkes and Williams (2000) in their *Report of the Ministerial Panel on Educational Delivery in the*

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Classroom, there was a need to create equal access to high school courses and other learning opportunities for post secondary admission and career options (p. 50).

This inequality between rural and urban schools grew dramatically with the sharp increase in out-migration and decrease in births that resulted in a population decline of approximately 60,700 in Newfoundland and Labrador between 1992 and 2002 (Sullivan, 2004). This decline in population affected student enrollment and had a considerable impact on teacher and other resource allocations. Schools were left with even lower enrollments and few specialized teachers to teach core subjects such as mathematics and science. The number of schools in the province dropped from 781 in 1971 to 285 in 2006 in part due to the population decline and school integration when denominational education was abolished (Government of Newfoundland and Labrador, 2007, ¶ 7). Tift (1989) stated: "Technology-based education is maintaining the viability of small, rural schools through equitable access to a quality education by all students" (p. 42). Stevens and Piper (1999) reported that the government recognized this decline and "designated approximately 80 schools as 'necessarily existing schools', meaning they are the recipients of teacher allocations and other funding above the norm for the province" (p. 1). Of the 285 schools that remained open in 2006, 64.6% were rural schools. According to the Department of Education, K-12 enrollments declined from 162,818 in 1971 to 74,304 in 2006 and are expected to continue to decline about 3% per year to fewer than 60,000 students by 2010 (Government of Newfoundland and Labrador, 2007).

To further provide more educational opportunities to rural schools, the Centre for Telelearning and the Rural Education of Memorial University of Newfoundland's Faculty

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of Education, the provincial Department of Education, the Vista School Board and Industry Canada became partners in a project for a virtual high school (VHS) within the province. This endeavor began in 1998 with a mandate to meet the needs of the 60,000 students in rural communities across the province. The Department of Education defined a rural community as one with a population of less than 5,000 people (Government of Newfoundland and Labrador, 2009). Stemming from the success of the virtual school, the provincial government in 2000 developed a distance learning centre now known as the Centre for Distance Learning and Innovation (CDLI). The director of CDLI at the time, stated in his welcome message that, "the Centre for Distance Learning and Innovation was created to respond to challenges to the delivery of K-12 education in the province and to capitalize on dramatic advances in information learning and communications technologies" (CDLI, 2000, ¶ 1). It was also part of the Government of Canada's goal to ensure broadband access availability to all Canadian communities by 2005. At the time, then Premier Roger Grimes, in a statement to the press said, "CDLI will allow us to greatly expand our distance education programs in small schools and give many more students an opportunity to access a broader range of course options" (Government of Newfoundland and Labrador, 2002, ¶ 2).

CDLI provides a mixture of instructional media used by both learners and educators that can generally be divided into two categories: synchronous and asynchronous. Synchronous (live) learning means that communication occurs simultaneously between individuals and information may be accessed instantly. Examples of synchronous learning include (real-time) communication using the Voice

over Internet Protocol (VOIP) software, Elluminate Live software, video-conferencing, and MSN messaging. Asynchronous learning is often referred to as off-line learning in which "instruction is offered and students access it at separate times, or anytime it is convenient to them" (Simonson, Smaldino, Albright & Zvacek, 2009, pp. 32-33). Some examples of asynchronous (off-line) learning include access to course material, pre-recorded lessons available anytime, exchanging e-mail messages, and posting messages to discussion groups through the use of Blogs, Wiki's, and WebCT Management System. The ratio of time of synchronous to asynchronous learning in *Experiencing Music 2200* (pilot) was four synchronous to six asynchronous classes over a ten period cycle.

Providing rural students with equal educational access remains a challenge. Distance education is enabling students to take courses they would not otherwise have access to, but is it meeting their needs? This study examines the *Experiencing Music 2200* (pilot) course delivery model in relation to the perceptions of students, teachers and administrators.

1.2.2 Arts and Music Education

There have been numerous changes in the Newfoundland and Labrador curriculum since the partnership with the Atlantic Provinces Education Foundation (APEF) in 1995. As a result of course changes, adjustments needed to be made to the graduation requirements. The Department of Education established a committee to review the graduation requirements and proposed new requirements to reflect the curriculum changes. One graduation requirement recommended for the students of

Newfoundland and Labrador in 2003 was that a "broad fine arts curriculum should be available to all students in the province" (Canadian Parents for French, 2003, p. 7). Fine arts were seen to be essential components for a well-rounded education and significant in the growth and continuation of Newfoundland and Labrador culture. Thus, in September 2005, one specific change in the graduation requirements at the high school level was the inclusion of two required credits in fine arts (Government of Newfoundland and Labrador, 2008).

Rural schools also have had limited access to specialist teachers and other teacher allocations due largely to low student enrollments in small communities. CDLI's course offerings are determined generally through consultation with school districts. In consultation with the Department of Education's Division of Program Development, CDLI provides these schools with access to specialist teachers (Government of Newfoundland and Labrador, 2004, p. 8). Since 2004, CDLI has offered the following online courses in fine arts: *Experiencing Music 2200, Art Technologies 1201, Art and Design 3200 and Applied Music 2206* (new pilot offering as of 2008). Table 1 illustrates the number of students and communities served with online arts courses in the last several years.

Table 1
Arts Course Enrollment

	2005-06		2006-07		2007-08	
	Students	Communities	Students	Communities	Students	Communities
Art Technologies	91	25	85	30	60	20
Art and Design	26	11	44	18	41	24
Experiencing Music	39	10	44	19	52	19
Applied Music (pilot)	n/a	n/a	n/a	n/a	19	7
TOTAL	**156**	**46**	**173**	**67**	**172**	**70**

(Rose, Hickey & Mercer, 2008)

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1.3 Need and Significance of the Study

Valentine (2002) reports that attitudes and perceptions are noted as one of four critical issues related to online learning. The new online secondary music education course offered in Newfoundland and Labrador, *Experiencing Music 2200* was the first of its kind in Canada. Hence, there exists an important opportunity at the time to study the delivery, content, and pedagogy of a pioneer educational project. This study focuses then, on the experiences of those directly involved in the initial stages of the course delivery (students, teachers, and administrators).

It is hoped that the results of this research will foster the further development of secondary music education by the identification and analysis of the perceptions, issues, and challenges faced during the delivery of the pilot course, *Experiencing Music 2200*. The documentation and analysis of these perceptions will reveal important insights into this new online initiative in music education. This research may be critical to ongoing music curriculum design, development, and delivery in online internet-based contexts.

1.4 Theoretical Framework - Constructivism

The theoretical framework for this study is based upon the principles of constructivism. Constructivism is an approach to education in which "learners construct their own knowledge, based on their experience and relationship with concepts" (Weller, 2002, p. 78). Learning is accomplished through dialogue with others and collaborative activities where the focus of attention is on the learner, otherwise known as a learner-centered approach to education. This approach to online learning holds much promise in

terms of student interaction, involvement, and the opportunity for what is learned to become knowledge.

Martin Weller (2002) identifies six pedagogical approaches to teaching through online formats. They are "constructivism, resource based learning, collaborative learning, problem based learning, narrative based learning and situated learning" (p. 79). Of these six, Weller claims that constructivism is the leading approach in online courses. McClintock (1999) concludes that current computer technology enables 'constructivist' pedagogy by providing readily accessible resources and multiple sources of information.

Constructivism provides the foundational theoretical framework for this study not only because it is the leading approach in the development of online courses as Weller (2002) suggests, but also because the course *Experiencing Music 2200* (through its resource-based approach) was itself initially developed from a constructivist approach with a focus on the learner. This emphasis is evident in the following statement found in the *Experiencing Music 2200* curriculum guide: "*Experiencing Music 2200* has the unique opportunity to address individual needs and interests regardless of one's previous musical experience...Each individual will perform at different levels as he/she progresses through the course; this is to be expected" (Government of Newfoundland and Labrador, 1994, p. 3).

The *Experiencing Music 2200* curriculum guide (1994) provides further examples of a learner-centered approach as evidenced by the following extracted statements:

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Students are encouraged to experience music in as many ways as are possible

through each of the modes of musical activity, i.e., performing, creating, and

listening. (p. 1)

This activity-based approach is critical to the student's success in the course. (p. 1)

Because of the nature of this course, the specific materials and strategies related to

course content may vary from school to school and change from year to year

within a particular school. (p. 1)

Music provides an outlet for creativity and self expression. It engages our

imaginations and allows us to explore our own identities. (p. 3)

This course can heighten one's sensitivity, level of appreciation, and expand

musical and cultural horizons. (p. 3)

The critical issue is not the level of performance but rather the fact that students

actively participate in the experiencing of music and music-making. (p. 3)

CDLI also published an Educator's Reference Manual (2004) providing principles

of learning to which all online courses must adhere. This information was then formatted

and hosted on the CDLI website for public viewing. These principles of learning provide

evidence that CDLI focuses on a learner-centered, constructivist approaches. These principles of learning as described by CDLI are presented in Chapter Two.

Noting the correlation between CDLI's principles of learning and the *Experiencing Music 2200* curriculum guide in regards to constructivism, it was important to discover if the principles of a learner-centered approach were indeed manifested in the online environments and contexts for course delivery. In order to explore this matter, Duffy and Cunningham's (1996) principles for the design of constructivist learning environments were selected within this study to use as a basis for analysis of the online *Experiencing Music 2200* course in relation to constructivism. Also, a modified Constructivist On-Line Learning Environment Survey (COLLES) instrument was modified and included in the questionnaire administered to students taking the course to reveal further constructivist insights or principles at play.

1.5 Overview of Methodology

This research makes use of a case study approach using mixed methods design utilizing both quantitative and qualitative data. This case study focused on the examination and exploration of students', teachers', and administrators' perceptions and the identification of issues that related to or might have had an impact on the delivery of the pilot music course, *Experiencing Music 2200*. The primary methods of data collection utilized in this study were questionnaires, interviews, and document collection.

According to Palmquist and Sloan (2003), there are four case study designs: *illustrative*, *exploratory*, *cumulative*, and *critical instance*. Of these designs the

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exploratory design was deemed to be most appropriate to this study. As Winston Tellis (1997) states, "In exploratory case studies, fieldwork, and data collection may be undertaken prior to definition of the research questions and hypotheses. Pilot projects are very useful in determining the final protocols that will be used" (¶ 20). Hence, in Phase I of this research, a preliminary study was conducted to discover some basic information on web-based delivery in Newfoundland and Labrador. More specific questions were then generated from the results of Phase I to guide Phase II of the study which involved a questionnaire for students enrolled in *Experiencing Music 2200* as well as in-depth interviews with four students and their e-music teacher.

1.6 Research Questions

This research was guided by the following questions:

1) What are the current perceptions of students, teachers, and administrators regarding the online learning of a secondary music course *Experiencing Music 2200* in Newfoundland and Labrador?

2) What are the perceived issues and challenges identified in the pilot online delivery of *Experiencing Music 2200*?

3) Do the students' and e-music teacher's perceptions of the context of the online learning environment in *Experiencing Music 2200* relate to those of a constructivist environment?

4)   How might these perceptions, issues, and understandings, as expressed by

students, teachers and administrators, serve the ongoing developmental

process of online secondary music education generally, and in

Newfoundland and Labrador specifically?

1.7 Summary

Through the two phases of this study involving questionnaires, interviews and

document analysis, the intent of this research is to study, document and analyze the

perceptions of those involved in the pilot delivery of *Experiencing Music 2200* as they

might pertain to constructivist principles and constructs. The overall goal is to provide

potential insights that may serve to guide ongoing and future developments in online

music education at the secondary school level. Chapter two will provide a review of the

literature pertinent to this exploratory case study.

CHAPTER TWO

REVIEW OF THE LITERATURE

A review of literature pertaining to distance education, and more specifically relating to learning via the Internet (online learning), reveals that the majority of the literature focuses on adult, post-secondary and graduate levels of education. Topics of research on online learning at post-secondary and graduate levels are centered primarily on issues and challenges (O'Quinn & Corry, 2002), interactivity and collaboration (Ehrlich, 2002; Zucker, 2005), perceptions (Hughes & Daykin, 2002; O'Malley & McCraw, 2004; Swan, 2001), and comparative studies of the traditional classroom versus the virtual classroom (Clark & Jones, 2001; Ferdig, DiPietro, & Papanastasiou, 2005).

While online learning at the secondary level has progressed and expanded over the past decade, the amount of published research is limited. Gallini and Barron (2002) believe that:

> An increasing number of educators in K-12 and post-secondary settings are experimenting with the potential of the technologies for instruction and learning, but all of this is happening at a pace that is far surpassing the collection of useful data to test the mediational effects of the tools. (p. 143)

By obtaining the reactions of students, teachers and administrators of a new and innovative secondary level online music course, this study seeks the collection of 'useful data' of online learning at the secondary level. In this chapter the review of literature will focus on five areas: distance education in general, distance education at the secondary

level, music and distance education, constructivism and distance education and the Newfoundland and Labrador context.

2.1 Distance Education

Distance education in North America is considered to have originated with the rise of the mail service (Canadian Association for Distance Education, 1999, p. 5). Distance education began to expand with the need to educate those who were not among the elite, those who could not afford full time residence at an educational institution, and those who were geographically isolated. This need arose out of a desire to provide equal access to educational opportunities. Education through correspondence was the first form of distance education.

Distance education expanded with the development of radio and television broadcasts in the 1950's (Gunawardena & McIssac, 2004). As technology developed, governmental and educational institutions utilized this technology to provide more effective distance education, and its delivery by radio and television is still available today. Distance education encompasses a wide range of technologies and formats for educational delivery. With the rapid expansion and access to technology, distance education courses can be delivered in a variety of configurations from teleconference to internet based models. Distance education is defined by Moore (1990) as "all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors" (p. xv).

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With the creation and expansion of new technologies, distance education is referred to by a variety of terms. For example, the following labels are often used synonymously with distance education: distance learning, virtual classroom, web-based training (WBT), computer-assisted instruction, distributed learning, e-learning, and online learning. The Department of Education in Newfoundland and Labrador uses the term e-learning in its 2003 statement:

> The CDLI uses a Web-based approach to deliver a form of distance education called e-learning. E-learning connects teachers and students scattered over a wide geographical area through telecommunications systems and computer networks. (Government of Newfoundland and Labrador, 2003, ¶ 4)

The term "online learning" is used throughout this study. Online learning is defined as "any learning experience or environment that relies upon the Internet/W(orld)W(ide)W(eb) as the primary delivery mode of communication and presentation" (Fowles, 2000, ¶ 4). A core element of online learning involves the use of the Internet, whereas distance education may or may not make use of the Internet. Distance education could, for example, be delivered through the use of teleconferences or postal services. Online learning, therefore, is a form of distance education but not always synonymous with the term distance education.

Online learning technologies enable communication 'one to one' or 'one to many'. Such technologies may include: chat, listservs, instant messaging, and video or audio conferencing. The use of these technologies allows for a collaborative and flexible

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learning environment in which students and teachers can communicate with each other at any time in any place with access to the internet.

It can be difficult to keep up with the rapid growth and development of online learning technologies and the key to understanding and utilizing these new technologies is of course, having access. Without access and understanding there are bound to be several misconceptions about online learning and these may affect decisions regarding online learning. Valentine (2002) discusses four critical issues related to online learning and how each one affects the overall quality of an online course: quality of instruction, hidden costs, misuse of technology, and attitudes of instructors, students and administrators. As an example, Ross (2001) revealed some misconceptions of online learning that "some academics believed that online learning aims to 'replace' traditional classroom instruction" (¶ 5). Hence, it is necessary to reveal the perceptions of those involved in online learning so to better understand and meet their needs. Student attitude and satisfaction are also important factors in distance education. For example, Schwitzer, Ancis, and Brown (2001) state:

> While the success of a program ultimately must be measured by student performance and achievement, satisfaction is a critical intermediate outcome goal because achieving higher learner satisfaction is expected to produce higher levels of student motivation, greater commitment to the program, and in turn, better retention. (p. 39)

Abramov and Martkovich (2001) claim that there are two major contributing factors that influence student satisfaction in online learning: the delivery mode, and

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structures for collaboration. They determine that communication is critical in the creation of an online presence and connection to students.

2.2 Distance Education at the Secondary Level

Distance education in Canada at the secondary level began with correspondence courses dating as far back as 1929. According to Dunae (1992), British Columbia was the first province in Canada to offer high school courses to students in remote areas and "provided supplementary material to students attending small high schools that offered only a limited range of programmes" (¶ 6). To accommodate the range of students' needs and geographic separation of teachers and students, a distance education approach was established.

The transition from the correspondence method to the online method has led to the development of virtual schools, the current most popular format for offering distance education to high school students. The term 'virtual school' is explained by Smith, Clark, and Blomeyer (2005): "online learning occurs through a virtual school that offer online instruction, not merely instructional resources or content" (p. 4). A virtual school is defined by Clark (2001) as "an educational organization that offers K-12 courses through Internet or Web-based methods" (p. i). A more specific definition of a virtual school is provided by Barker, Wendel and Richmond (1999) as:

> one that offers the mandated provincial instructional program to students through electronic means (i.e., computer-mediated and on-line via the Internet ... is characterized by: a structured learning environment wherein the program is under

the complete supervision of a teacher; electronic delivery to students who are at home or in a physical setting other than that of a teacher; and instruction that may be synchronous or asynchronous. (p. 5)

In the United States, Florida was the first state to establish a virtual school (FLVS). Founded in 1997, it was the country's "first state-wide Internet-based public high school" (Florida Virtual School, 2008, ¶ 1).

A report commissioned by the North Central Regional Educational Laboratory (NCREL) in the USA includes a summary of eight research studies conducted at the secondary level in 2005. The purpose of the research was to respond to a recommendation in *The Effects of K-12 Distance Education on K-12 Student Outcomes: A Meta-Analysis* (Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004) for more research into online learning at the secondary level. The request for research proposals was due to a "lack of authoritative education research examining K-12 online learning" (Smith, Clark, & Blomeyer, 2005, p. 1). Online enrollments for K-12 in the United States have increased greatly from 40, 000 to 50, 000 in 2000 (Clark, 2001) to 300,000 in 2002-03 (Newman, Stein, & Trask, 2003), up to 700,000 enrollments in 2006 (Picciano & Seaman, 2006). Enrollments in online learning at the K-12 level are increasing rapidly and the need exists for more research on online education so that students will receive a quality education that meets their learning needs and future goals.

In response to this growth in online learning, the North American Council for Online Learning (NACOL) was founded 2003. The mission of NACOL is "to increase educational opportunities and enhance learning by providing collegial expertise and

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leadership in K-12 online teaching and learning" (NACOL, 2003, ¶ 2). This non-profit

organization represents online educators in the United States, Canada, and Mexico,

whose purpose is to "facilitate collaboration, advocacy, and research to enhance quality

K-12 online teaching and learning" (iNACOL, 2008a, ¶ 1). The organization published a

National Standards of Quality for Online Courses in 2007 to aid in the evaluation of

online courses (iNACOL, 2008b).

A national survey of school district administrators in the United States was

conducted during the 2005-2006 academic year. "It was one of the first studies to collect

data on and compare fully online and blended learning (part online and part traditional

face-to-face instruction) in K-12 schools" (Picciano & Seaman, 2009, ¶ 1). The same

study was conducted again two years later over the 2007-2008 academic year. A

highlight of the study revealed that "the overall number of K-12 students engaged in

online courses in 2007-2008, is estimated at 1,030,000. This represents a 47% increase

since 2005-2006" (Picciano & Seaman, 2009, ¶ 4).

Mills (2001) conducted an evaluation study of a virtual high school in the United

States. The study revealed that achievement was at least equal to that in a traditional

classroom setting, technical difficulties were mainly related to access or installation, and

teachers' use of synchronous and asynchronous interventions had a significant impact on

student learning and satisfaction. The study also showed that the main reasons students

enrolled in online courses was due to interest in the subject area and lack of course

offerings at their local high school.

Swan (2001) conducted a descriptive study of students' perceptions at the secondary level of distance learning via Interactive Video Network (IVN) and its effectiveness in the United States. Swan explained that the IVN is a "two-way interactive network" where students and teachers in various locations "can see, hear, and talk to each other" through the use of video cameras and televisions (¶ 5). The study revealed that students were pleased with IVN and would take another course using this method. The reason for students enrolling in IVN courses were the same as online courses: interest and the unavailability of the course in a traditional format. Strengths and weaknesses of the IVN were identified: Strengths included access to the course, a chance to meet new people, more variety, and meeting college requirements. Identified weaknesses were: the breakdown of equipment, scheduling difficulties, teacher absence, and discipline issues (Swan, 2001).

2.3 Distance Education and Music

A review of the literature on music and distance education revealed a wealth of information on new technologies used to enhance music learning. Learning music online is still a relatively new phenomenon. While literature exists on the changes in music technology and its capabilities, there has been little research conducted regarding teaching and learning music online in secondary contexts.

New distance learning technologies offer exciting possibilities for transforming music education. Anderson and Ellis (2003) report that web-based technologies such as digital video can be used to enhance music teaching via the web. The study began with

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exploring the viability of teaching performance of musical instruments via the web using desktop video-conferencing technology. "For some this will mean letting go of the idea that the only effective way to teach someone to play a musical instrument is in person on a one-on-one basis" (¶ 2).

With technology advancing rapidly there has been, and will continue to be radical changes in the design and delivery of music education. One current project becoming well known in Canada is the Music Grid Project (Music Grid, 2004). Using broadband technology:

Music Grid's educational goal is to enable, expand and enrich Canadian music education programs in urban, rural and remote communities. This addresses two structural barriers: inequity of student music programs across Canada; and lack of music teacher access to peers, mentors and professional development" (Music Grid, 2004, ¶3).

Music Grid is associated with Learn Canada whose main goal "is overcoming professional development barriers to address teaching skills that empower students with capabilities they will need in Canada's Knowledge Economy" (Learn Canada, 2004, ¶6). One successful outcome of the Music Grid Project would be ongoing growth of the broadband music education community in cooperation with Learn Canada. It is uncertain what the effects of these improvements will be on secondary education in Newfoundland and Labrador.

At present, musicians are participating in real-time synchronous performances and mentorship programs at different sites around the world. A project called the Virtual

European Music School (VEMUS) created interactive software for novice and intermediate level students of recorder, flute, trumpet, saxophone and clarinet (ICT Results, 2009). According to the project coordinator George Tambouratzis, the software allows for a musical score to be entered:

> into the platform so the system can then recognize it and check if the right notes are being played in the right sequence, using correct note durations. Any deviation from the score is noted by the system and fed back to the student. (ICT Results, 2009, ¶ 6)

Vemus developed three learning scenarios: self-practice, distance learning, and collaborative learning and group activities in a conventional classroom. These developments are having a major impact on music education and the music industry as a whole. Bengt Olsson (2003) states, "…music education leads to a spirit of community. It is through the musical performances as well as experiences of music that the social dimensions of music education are strengthened" (¶ 5). Programs such as these will have an impact on secondary music education in the very near future. Most research conducted on distance learning of music has been based primarily on post-secondary institutions. As distance learning for high school music is a relatively new venture, there is need for more research in this area.

2.4 Distance Education and Constructivism

Dougiamas and Taylor (2002) claim, "the most prevalent theoretical perspectives in research on online learning are those related to constructivism, particularly social

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constructivism" (¶ 7). When the pedagogy of online learning is discussed, it is often

presented in terms of a 'constructivist' view of education, emphasizing the importance of

"... personal control, authentic learning contexts and diverse personal interactions

including collaboration" (Bostock, 1998, p. 225). "The constructivist theory holds that

knowledge has to be discovered, constructed, practiced and validated by each learner;

learning involves 'active struggling by the learner'" (Duffy & Cunningham, 1996, p.

174). Online learning, particularly virtual learning environments, support this kind of

learning through collaboration and communication tools, and the ability to present video,

audio and simulations.

As noted by Rimmington and Gruba (1997), implementing a constructivist

environment in the traditional classroom or online has its challenges. The biggest

challenge is for the instructor to: "resist taking control of student activities, become

learning facilitators rather than knowledge transfer controllers, not underestimate the

effects of peer pressure, [and] re-evaluate the grading system" (p. 11). The instructor

must let go of the traditional lecture style of teaching to more of a collaborative learner-

centered approach. Collaboration is essential in creating an "effective learning

environment as it provides learners with the opportunity to discuss, argue, negotiate and

reflect upon existing beliefs and knowledge" (Agostinho, Lefoe, & Hedberg, 1997, ¶ 2).

Following a 'learner-centered' approach to online learning, the Centre for

Distance Learning and Innovation (CDLI) provides students with two modes of

instruction: synchronous and asynchronous. The synchronous component enables the

student to be involved in real time interaction with the instructor and other students using

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the Elluminate Live online conferencing system. The asynchronous component allows students flexibility and time to complete course work and to contribute to discussion forums or interact via email. This 'learner-centered' approach closely follows the constructivist theory that explains learning as an active process in which the learner builds knowledge and understanding from individual experiences (Harasim, Hiltz, & Teles, 1995). The emphasis is on knowledge construction and learner autonomy (Ewing, 2002), and this kind of e-learning therefore allows learners to displace the teacher at the centre of the learning experience, and take more responsibility for their own learning (Galagan, 2000).

Cunningham, Duffy, and Knuth (1993) generated seven goals for the design of constructivist learning environments:

1. Provide experience with the knowledge construction process.

2. Provide experience in and appreciation for multiple perspectives.

3. Embed learning in realistic and relevant contexts.

4. Encourage ownership and voice in the learning process.

5. Embed learning in social experience.

6. Encourage the use of multiple modes of representation.

7. Encourage self-awareness of the knowledge construction process. (pp. 21-28)

Savery and Duffy (1995) also identified a number of instructional principles derived from constructivism.

1. Anchor all learning activities to a larger task or problem.

2. Support the learner in developing ownership for the overall problem or task.

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3. Design an authentic task.

4. Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning.

5. Give the learner ownership of the process used to develop a solution.

6. Design the learning environment to support and challenge the learner's thinking.

7. Encourage testing ideas against alternative views and alternative contexts. (pp. 3-6)

In 1996, Duffy and Cunningham refined the constructivist goals designed in 1993 by Cunningham, Duffy and Knuth, and generated constructivist design principles titled "metaphors we teach by" (Duffy and Cunningham, 1996, p. 9). The foundation of these principles stems from the socio-cultural relationships of constructivism. The significant difference between Cunningham, Duffy and Knuth's (1993) goals and Duffy and Cunningham's (1996) principles was the inclusion of "learning is mediated by tools and signs" (p. 11). The following is a description of Duffy and Cunningham's (1996) constructivist design principles:

1. *All knowledge is constructed; all learning is a process of construction.* Learning is a matter of changes in one's relation to the culture(s) to which one is connected-with the gradual transformation of one's means of constructing one's world as a function of the change in membership in that culture. Cultures can be conceived at various levels, activities, tools and signs. Knowledge is a

construction by participants in a community that simultaneously transforms and is transformed by such participation.

2. *Many world views can be constructed; hence there will be multiple perspectives.* Providing experience that elevates our world view to a conscious level typically entails bringing up alternative views for comparison. It is this engagement with others, this establishment of the need to continually expand our web of understanding that creates the awareness of multiple perspectives.

3. *Knowledge is context dependent, so learning should occur in contexts to which it is relevant.* Learning needs to be situated in authentic, relevant and/or realistic contexts.

4. *Learning is mediated by tools and signs.* All distinctly human instances of learning are constructions situated within a context that employs some form of mediational means, tools, and/or signs.

5. *Learning is an inherently social-dialogical activity.* A primary way in which mental functions are altered by the mediation of language signs is that knowledge, and thereby learning, becomes a social, communicative, and discursive process, inexorably grounded in talk.

6. *Learners are distributed, multidimensional participants in a sociocultural process.* A distributed concept of self shifts the activity of learning to the connections one has with communities, to the patterns of participation, and away from the efficient internalization of knowledge.

7. *Knowing how we know is the ultimate human accomplishment.* This highlights the

   importance of self-awareness of learning and knowing. The term reflexivity

   means directed, or turned back upon itself, or self-referential. To be reflexive is to

   direct back on your own efforts to learn, teach, and know. (pp. 9-13)

CDLI hosted on their website a list of guiding principles for students for online learning. Also included in this section were expectations for learning, learning conditions of e-learning and more importantly a list of principles of learning to which online courses adhere. This material originated from the CDLI Educators Reference Manual (Government of Newfoundland and Labrador, pp. 7-9, 2004). The principles of learning are:

1. Learning is a process of actively constructing knowledge.

2. Students construct knowledge and make it meaningful in terms of their prior knowledge and experiences.

3. Learning is enhanced when it takes place in a social and collaborative environment.

4. Students need to continue to view learning as an integrated whole.

5. Learners must see themselves as capable and successful.

6. Learners have different ways of knowing and representing knowledge.

7. Reflection is an integral part of learning.

8. Learning involves taking risks. (CDLI, 2004, ¶ 8)

Taylor and Maor (2000) designed a questionnaire to investigate students' perceptions of the quality of their online environment utilizing a social constructivist

perspective. Dougiamas and Taylor (2002) identified the six scales used in the Constructivist On-Line Learning Environment Survey (COLLES) as:

1. Relevance - how relevant is online learning to students' professional practices?

2. Reflection - does on-line learning stimulate students' critical reflective thinking?

3. Interactivity - to what extent do students engage online in rich educative dialogue?

4. Tutor Support - how well do tutors enable students to participate in online learning?

5. Peer Support - do fellow students provide sensitive and encouraging support?

6. Interpretation - do students and tutors make good sense of each other's communications? (¶ 12)

The suggestions for design of constructivist learning environments presented provide important information for instructors of online courses and assisted the development of this research. After examination of the data presented, Duffy and Cunningham's (1996) constructivist design principles will be used as basis for analysis of the data (See Appendix G).

2.5 Newfoundland and Labrador Context

During the 1930's, the Commission Government of Newfoundland called for a general survey of the educational conditions across our province to be conducted.

According to Andrews (1985), the results indicated a desperate situation. The physical condition of most schools was poor, approximately only 50% of students were adequately supplied with textbooks, few settlements had access to a library, and 65 communities had no school. To further add to this situation "89 of 1209 teachers had university training and 344 had no training at all" (p. 223). As a result of these findings, the Department of Education organized a Correspondence Division in 1939 to educate children in isolated communities through postal services. By 1940, the radio was utilized in the evenings to provide educational programs for teachers (Andrews, 1985). Through use of the radio, the CBC Radio School Broadcast Series was created and aided in the delivery of the provincial curriculum through the 1950's and 60's (Rose, Hickey, & Mercer, 2008).

As technology continued to progress, videos were produced to supplement educational programs. In the mid 1970's an audio-graphic teleconference network was introduced. The system transferred information via telephone wires to a telewriter (ms dos computer). This method was first developed by the Telemedicine centre at Memorial University now referred to as TETRA, in an effort to provide professional development to people in the medical field who were geographically isolated across the province. This service expanded in the 1980's to support community colleges, teachers, distance high school activities and other educational institutions (Keough, 1990).

The *Report of the Small Schools Study Project* (Riggs, 1987) identified major concerns with distance education services at the secondary level. The report documented inequities between urban and rural schools with rural schools suffering from low enrollments (which affected teacher allocation), unavailability of subject-area specialists,

and limited teachers to offer courses. In order to eliminate the inequity of course offerings between rural and urban schools, the Distance Education/Learning Resources Section, Department of Education organized *The Distance Education Project: Using Technology to Improve Educational Opportunities in Rural Areas* (1990). It was "designed to meet the needs of students in small remote schools in rural Newfoundland and Labrador who are unable to receive instruction in certain high school subjects because of low enrollments and/or lack of teaching personnel" (p. 2). Distance education was seen as an important element in a strategy to improve educational opportunities for students in these schools. There was a need to create equal access to high school courses and other learning opportunities for post secondary admissions and career options (Government of Newfoundland and Labrador, 2002).

To further provide more educational opportunities to rural schools the Centre for Telelearning, the Rural Education of Memorial University of Newfoundland's Faculty of Education, the provincial Department of Education, the Vista School Board, and Industry Canada became partners in a project to develop a virtual high school (VHS) within the province. This endeavor began in 1998 with an intention to meet the needs of the 60,000 students in rural communities across the province. Stemming from the success of this virtual school the provincial government developed a distance learning centre now known as the Centre for Distance Learning and Innovation.

In 2000-2001 the Centre for Distance Learning and Innovation (CDLI) was founded in response to recommendations by the 2000 Sparkes and Williams Ministerial Panel on Educational Delivery (Sparkes & Williams, 2000). CDLI began offering online

distance education courses primarily to students in rural schools throughout the province. This new model of delivery was described as:

> IP based, meaning it relies on the use of computers, networks and the Internet. It is immediate, easier to update, and provides a growing variety of types of content and ways of interacting. Access is not locked to a prescribed schedule of communications times. All content and communications are digital, allowing for a more seamless blending of traditional and newer forms of content and learning experiences. Learning is not limited to the course content. (CDLI, 2007, ¶ 2)

In 2001-2002 services provided by TETRA were slowly being phased out as courses were re-formatted to the web-based model of CDLI. During this year CDLI piloted ten courses to be offered online via the internet. An evaluation at the end of the year revealed three main facts:

1. The concept of an m-teacher [mediating teacher – a support for online courses] was found to be inadequate and the concept of an m-team emerged [support group].
2. The need for a provincial K-12 broadband network was made clear.
3. The concept of a blended synchronous/asynchronous delivery model was given general acceptance. (Brown & Barry, 2008, p. 26)

CDLI continued to expand over the years and now as of 2009, CDLI provides a wide selection of course offerings. Such offerings consist of courses in Science, Social Studies, Mathematics, Health, Music, Art, French, English Language Arts, Career Education, Economic Education, Technology Education and Skilled Trades, and Family

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Studies. Table 2 illustrates student population and program figures as of 2008 cited by

Rose, Hickey and Mercer (2008).

Table 2

CDLI Program and Population Figures as of 2008

Total High School Student Population of NL	Online High School Student Population	Number of High School in NL	Number of High School Online	Number of Online Courses	CDLI Staff (E-teachers, Administrators, I Guidance Counselor)
21,768	1000(approx.)	140	103	38	45

(Rose, Hickey, & Mercer, 2008)

There has been little research conducted on e-learning in Newfoundland and

Labrador since the Centre for Distance Learning and Innovation began offering courses

in 2001. Barbour and Mulcahy (2004) conducted a survey of the mediating teachers (m-

teacher) during CDLI's pilot year of 2001-02. For the most part m-teachers were

following the proposed duties outlined by CDLI but the survey revealed that they were

also providing "instruction, tutorial assistance and technical troubleshooting" (p. 7). All

three of these duties were not the m-teachers responsibility. The purpose of the survey

was to help refine the duties for which an m-teacher would be responsible. It was

reported that the "mediating teachers had quite a burden placed upon them due to the

wide range of duties and time commitment associated with these new responsibilities" (p.

10). Barbour and Mulcahy (2004) stated, "more quantitative data needs to be collected on

the duties and time commitment required by m-teachers as CDLI continues to grow" (p.

13). As mentioned previously, CDLI's year-end evaluation of the pilot year 2001-02

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revealed that the m-teacher concept was inadequate and thus formed the m-team which is still in effect at the present time.

One study, conducted by Murphy and Coffin (2003), using a descriptive method, focused on the interactions between students using synchronous communication tools in a French course. The four types of interaction examined were student with student, student with teacher, student with course content, and student or teacher with learning tool. The results of the study revealed that all four types of interaction were successful with some limitations. Murphy and Coffin (2003) stated:

> The teacher's decisions related to the choice of pedagogical activities and the assignment of privileges will play an important role in effective use of the tools so as to promote the types of interaction that will help achieve goals related to communication. (p. 242)

Michael Barbour (2007) conducted a study on the principles of effective asynchronous web-based content design for secondary school students. The study was focused on CDLI and its purpose was to "generate principles of effective asynchronous web-based materials specifically applicable for secondary students based upon the perceptions of those who have developed courses for this population" (p. 109). The result of the study suggested the implementation of seven guidelines:

1. Course developers should, prior to beginning development of any of the web-based material, plan out the course with ideas for the individual lessons and specific items that they would like to include.

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2. Course developers should keep the navigation simple and to a minimum, but don't present the material the same way in every lesson.

3. Course developers should provide a summary of the content from the required readings or the synchronous lesson and include examples that are personalized to the students' own context.

4. Course developers should ensure students are given clear instructions and model expectations of the style and level that will be required for student work.

5. Course developers should refrain from using too much text and consider the use of visuals to replace or supplement text when applicable.

6. Course developers should use multimedia to enhance the content and not simply because it is available.

7. Finally, course developers should develop their content for the average or below average student, while including enrichment activities for above average students. (Barbour, 2007, pp. 101-107)

Barbour (2007) acknowledged the need for more research into secondary education when he stated:

This [study] was considered necessary because much of research in this area [online learning] has used adult populations and there are differences between how adults and adolescents learn. These principles provide a promising beginning in an effort to fill the existing research gap. (p. 110)

2.6 Summary

The literature presented in this chapter highlighted a few important aspects of online learning at the secondary level that informed the development of this study. One important recognition is the dramatic increase of online learning at the secondary level, especially noted in the United States (Sloan, 2008) and in Canada. This increase is important to note as instructional and delivery methods are varied and research into online secondary education is sparse.

A constructivist approach to teaching and learning has been gaining popularity in the last few decades and there exists a wealth of literature on designing constructivist learning environments. The most prevalent pedagogical approach to teaching through online formats is constructivism (Weller, 2002). Although there are a few constructivist design approaches identified in this chapter, it is Duffy and Cunningham's (1996) constructivist approach that is used for a theoretical analysis of the findings of this research study.

With the rapid growth in technology, distance education at the secondary level in Newfoundland and Labrador has changed dramatically over the last twenty years. This literature has provided a foundational history and presented concepts and research that were used in the development and design of this study and the analysis of data in Chapter Five. Of particular significance is the recognition of the rapid change in technology and its impact on the delivery of distance education in Newfoundland and Labrador and the dearth of research of CDLI's online courses generally and in online music education specifically. As noted earlier, the new online course *Experiencing Music 2200* provides

an excellent source for the beginnings of research in online music education in Newfoundland and Labrador.

The purpose of this study was to explore the perceptions of students, teachers, and administrators regarding distance delivery of a music course in secondary education; ascertain if their perceptions of the quality of the online learning environment in music education relates to that of a constructivist environment; identify perceived issues and challenges in the pilot delivery of online music education; and explore how these perceptions, issues and challenges might affect the ongoing development of online secondary music education in Newfoundland and Labrador.

Chapter Three provides an overview of the methodology used to collect and analyze the research data and findings.

CHAPTER THREE

METHODOLOGY

The first section of this chapter reviews the methodology of this exploratory case study. The second section describes the procedure of the research: Phase I - preliminary study, and Phase II - main study (participant selection, instrument development, interviews, and document collection). Finally, the third section previews the examination and analysis of the resulting data.

3.1 Method and Design

Case studies have been differentiated from other research designs by what can be called interpretation in context. By concentrating on a single phenomenon or entity, (e.g. the case), aims to uncover the interaction of significant factors characteristic of a given phenomenon. Merriam (1988) claims that a case study approach is appropriate when the objective is "to develop a better understanding of the dynamics of a program. When it is important to be responsive, to convey a holistic and dynamically rich account of an educational program, the case study is a tailor-made approach" (p. 5).

This study is specific to the development of a music course designed for web-based format to meet the needs for the distance delivery of music education to secondary students in rural Newfoundland and Labrador. This case study approach provides "insights into aspects of education practice can have a direct influence on policy, practice, and future research" (Merriam, 1988, p. xii).

Tashakkori and Teddlie (2003) write about "the purpose of triangulation mixed methods design is to simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand the research problem" (pp. 564-565). Given the intent and scope of this study, and the necessity to have two phases, it seemed prudent to take such a mixed methods design approach. It is also believed that "a fuller, richer, and more complete understanding of a research question [can be] gained by combining both quantitative and qualitative perspectives" (Jupp, 2006, pp. 180).

In order to develop comprehensive answers to this study's research questions, data triangulation methods such as questionnaires, interviews and document analysis were utilized. As noted by Ritchie and Lewis (2003), "the use of different sources of information will help both to confirm and to improve the clarity, or precision, of a research finding" (Ritchie & Lewis, 2003, p. 275). This strategy serves to establish trustworthiness of the results.

An exploratory case study was used as the primary method of data collection for this study. Exploratory research is conducted when there are limited earlier studies available for reference. The exploratory case study method according to Vogt (1999) is defined as "… a broad-ranging, purposive, systematic, prearranged undertaking designed to maximize the discovery of generalizations leading to description and understanding of an area of social or psychological life…emergent generalizations are many and varied" (p. 105).

As part of exploratory research a preliminary study (Phase I) was conducted to gather basic information regarding online learning. As part of Phase I, separate

questionnaires were developed to explore the perceptions of online learning of students, e-teachers, music teachers and administrators and to discover whether the students had any awareness of the new pilot music course. After completion of Phase I, the data was analyzed and used in the development of Phase II (main study).

Phase II began with the administration of a modified student questionnaire to explore the perceptions of students involved in *Experiencing Music 2200*. The purpose of the questionnaire was to ascertain if the music online learning environment related to that of a constructivist environment, and to identify any issues and challenges experienced. Interview questions were then formulated based on themes and issues that arose from the student questionnaire results. Individual interviews were conducted with four students enrolled in *Experiencing Music 2200* and their e-music teacher.

3.2 Phase I – Preliminary Study

As part of an exploratory case study, a preliminary study was conducted to test the online questionnaire format that was to be used for Phase II of the study and to gain insights on which to base the final design of questions and set the context for interviews. The online questionnaires were developed specifically for four groups of participants. The four groups of participants were: high school students, e-teachers, administrators and music teachers. The data was collected over the period of a 12-week semester using the online questionnaires in a semi-structured format. The questionnaires are described in more detail later in this chapter.

3.2.1 Participant Selection

In selecting participants for Phase I of the study, a sampling strategy called purposeful sampling was utilized. Creswell (1998) illustrates sixteen strategies of purposeful sampling put forth by Miles and Huberman (1994). Creswell acknowledges the use of all strategies but prefers the strategy of maximum variation for case study sampling. Maximum variation is a strategy used "to represent diverse cases to fully display multiple perspectives about the cases" (Creswell, 1998, p. 120). This is one strategy that makes use of the selection of participants for questionnaires to ensure that clusters of participants do not stem from the same location.

The participants of Phase I were grouped into four categories. The first group consisted of high school students across Newfoundland and Labrador who were currently enrolled in online learning through CDLI; the second group consisted of teachers currently instructing a variety of CDLI courses (e-teachers); the third group included administrators in those schools that currently offered CDLI courses; and the fourth group included current classroom music teachers throughout varied districts.

Group 1 - Students

The selection of student participants was conducted with the assistance of CDLI's director of programs and professional development. The questionnaire population was defined as a random selection of all students enrolled in distance courses through CDLI in the 2004-05 academic year. A random selection of one-third of the students in each district was obtained using the *Statistical Package for the Social Sciences* (SPSS). The

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total target population at the time of Phase I of the study was 1,353. A sample size of one-third of the population yielded 270 students. The 270 student sample was distributed over four school districts in Newfoundland and Labrador.

The next step was to gain permission from each school district that offered courses through CDLI. Once permission was granted then all schools in each district that students had been selected from had to be contacted to gain permission from principals to conduct the research. When permission was granted by the principals, obtaining parental consent was the next logical step as most high school students were under the age of 18. Principals of the school districts were contacted via telephone calls followed up with emails. The majority of principals were willing to allow students to participate, but retrieving parental contact information and consent became a challenge. At the time of Phase I, communication with principals revealed that there were other surveys being conducted in their schools and that they were too busy to participate in this particular study. It was communicated to administrators that if parental contact information for a certain number of students selected was provided, the researcher would make the necessary contacts and ask permission. There were many principals who refused to disclose this information. As a result, it became clear that the sampling strategy had to change in order to get access to students. Following consultation with colleagues, the researcher came to the conclusion that the validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational and analytical capabilities of the researcher than with sample size. Hence, a decision was made to select cases across the four districts with the

highest student enrollment in CDLI courses. By placing the focus on fewer schools, this approach was successful in retrieving responses from one school in each district for a total of eighteen students. A parental consent form (See Appendix A) was sent home with students to be signed, returned to school, and faxed to the researcher. All eighteen of these students completed the online questionnaire.

Group 2 – E-Teachers

The second group of participants consisted of teachers currently instructing students online through CDLI (e-teachers). With permission from the director of CDLI, all e-teachers were contacted through email and asked to participate in this study. Two reminders were emailed requesting participation. Of the twenty teachers contacted, five responded and agreed to participate by completing the online questionnaire (See Appendix B).

Group 3 - Administrators

The third group of participants consisted of administrators (e.g., principals) located within the schools that offer CDLI courses. Administrators were contacted by email with two reminders and follow up phone calls. Of the forty administrators contacted, seven administrators agreed to participate by completing the online questionnaire (See Appendix C).

Group 4 – Music Teachers

The fourth group of participants included music teachers in traditional (e.g., face-to-face) classroom settings. All districts were approached for lists of music teachers but none of the four districts contacted would convey any contact information for their teachers. It was communicated that School District personnel would pass along the information to the principals through email and the principals would pass along the information to the music teachers. Hence, the request for music teacher participation was emailed to the school districts, forwarded on to principals, and then relayed to music teachers. Unfortunately, there is no way of knowing how many music teachers actually received the information pertaining to this study. Of the four districts, only eight music teachers responded and agreed to participate by completing the online questionnaire (See Appendix D).

3.2.2 Questionnaire Design

The advantages of online questionnaires are "low-cost delivery and return; wide potential coverage; ease of completion, submission and data capture; appropriateness to particular - not all - populations; high respondent acceptance for some groups; and even novelty" (Yenza, n.d., ¶ 3). With the permission of CDLI's director of programs, permission was granted to host the questionnaire on the CDLI server. There were four separate questionnaires developed for each group of participants in Phase I and all were posted to the CDLI server for easy access and timely return. While the main organizational categories were similar (e.g., background, course design and delivery, and

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constructivist perspectives) the questions were varied. Participants were also provided opportunities to make their own additional comments.

Once the online questionnaire form was completed, each respondent was advised to select 'Send Response' at the end of the form and the results were sent to a password-protected email account hosted on the CDLI server. With the aid of CDLI's delivery support specialist and senior systems administrator, each set of questions was coded so that the results were well organized and easy to access. Once the responses were received, the information was copied and pasted into a formatted Microsoft Excel file for easy importation into SPSS for further analysis and coding. The results were then analyzed to aid in the development of further questions for the questionnaire and interviews to be administered in Phase II of this research study.

3.3 Phase II – Main Study

This main study comprised of a single case study to explore the perceptions of students currently enrolled in the pilot music course and their e-music teacher, to determine if the online learning environment related to that of a constructivist environment, and to identify any issues and challenges put forth by participants. The goal of this case study was to provide critical feedback and evidence about this initial development of *Experiencing Music 2200* in order to potentially inform the ongoing developments and future course designs in online secondary music education and provide important insights from participants that might lead to future research and study.

Phase II began with an online questionnaire (modified student questionnaire from Phase I) administered to students enrolled in *Experiencing Music 2200*. The data was then analyzed and the interview questions for participating students were developed. The interviews were conducted with four students enrolled in *Experiencing Music 2200*. Once the student interviews were transcribed and analyzed, interview questions were then formulated for the instructor of the music course, the e-music teacher.

3.3.1 Questionnaire

3.3.1.1 Participant Selection

As Patton (1990) stated, "The logic and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research" (p. 169). Patton lists several techniques used in purposeful sampling. One of the techniques, criterion sampling, involves picking all the cases that have some common characteristic. The criterion sampling strategy selected participants (students) who were currently enrolled in *Experiencing Music 2200*. After examination of the data received from the questionnaires of Phase I, the questionnaire was modified for Phase II in order to gather data on the perceptions of the participants currently completing *Experiencing Music 2200*. Of particular interest specifically was their experiences and their perception about the music online learning environment. Contact was established with the current e-music teacher of the music course through the director of programs. The e-music teacher agreed to pass along the information about the study to students in the online

Experiencing Music 2200 course. Of the thirty-nine students enrolled in the music course, seventeen students agreed to participate in the study by completing the online questionnaire (See Appendix E).

3.3.1.2 Questionnaire Design

The questionnaire was hosted on the CDLI server using the same protocol described in Phase I of the study. The questionnaire was divided into four sections. The purpose of section A was to generate background information from students including the number of distance courses they had taken, previous computer experience, training in taking an online course and their learning preferences. Section B included specific questions related to the course materials and equipment. Section C was created using elements from the COLLES instrument (Constructivist On-Line Learning Environment Survey). The COLLES questionnaire was divided into scales that focus on students' perceptions of the reality of the virtual classroom environment that enabled them to reconstruct themselves as reflective and collaborative learners.

The five point Likert Scale used in this (COLLES) section consisted of: almost never (a value of 1), seldom (2), sometimes (3), often (4), and always (5). This Likert Scale was used for all six topic headings of the COLLES instrument: relevance, reflection, interactivity, tutor support, peer support, and interpretation. Section D included questions regarding the students' opinions on the advantages and disadvantages of learning music online, and their experiences and suggestions for further development

of the online music course. Throughout the questionnaire sections A, B and D, had text boxes provided for students to provide their own comments (See Appendix E).

To ensure anonymity, questionnaire responses were numbered (e.g., Student 1). The results from this questionnaire were then analyzed to aid in the development of interview questions for students. The purpose of these interviews was to follow up on pertinent results in the questionnaire and to probe issues with a smaller number of students. The range of interview topics was generated from themes and issues that arose from the results of the questionnaires.

3.3.2 Interviews

One of the primary modes of data collection in qualitative research is the individual interview with selected participants. Glesne (1999) stated, "the elaborated responses you hear provide affective and cognitive underpinnings of your respondents' perceptions" (p. 93). The approach to interviewing used in this study consisted of open-ended questions and in-depth exploration into specific aspects of participants' experiences with the online learning of *Experiencing Music 2200*. Some questions were semi-structured to allow room for more in-depth enquiry into a specific area. The design of questions for the interviews was based on the categories proposed by Patton (1990) that focus on experiences, feelings, opinions, background, and personal knowledge.

3.3.2.1 Interview Participants

Students

Interviews were completed with select students and with the e-music teacher of *Experiencing Music* 2200 (At the time of this study there was only one e-music teacher in Newfoundland and Labrador). With further cooperation from CDLI, all students taking *Experiencing Music 2200* were contacted through their e-music teacher on my behalf and asked to participate in an interview. Of the six students who volunteered to participate, only four were available to complete the interview.

Interviews with the students enrolled in *Experiencing Music 2200* were conducted via telephone-conferencing and recorded using a computer software program called Audacity. The interviews as suggested by Seidman (1991) were no longer than 90 minutes and participants were informed of this time frame prior to the interviews. In the consent form and at the beginning of the interview, the interviewees were also notified of the recording device which was used to record the interview for transcription to enable further analysis and that the files were to be stored in a password-protected file until the research report was completed, at which time all interview files would be destroyed. To ensure anonymity, student interview responses are lettered (e.g., Student A).

E-music teacher

The e-music teacher was contacted via email and consented to participate in the interview process. The interview was conducted via telephone-conference and recorded

using Audacity. The same protocol utilized for the student interview process described above was followed for this interview.

3.3.3 Document Collection

Documents were collected for background information and cross-referencing when appropriate, throughout all aspects of this study from the design to data analysis. The *Experiencing Music 2200 Curriculum Guide* (Government of Newfoundland and Labrador, 1994) was chosen for information specifically related to the course purpose, instructional strategies and approaches. The *Program of Studies* (Government of Newfoundland and Labrador, 2005) was reviewed for graduation requirements. The Sparkes and Williams Report (2000) was consulted for the state of educational delivery. A brief description of each document is provided.

Experiencing Music 2200 Curriculum Guide was published by the Department of Education in 1994. It is available to the public on the Department of Education website. The purpose of the document was to provide music teachers with the rationale, outcomes, teaching strategies, and suggested resources to successfully offer the course. *Experiencing Music 2200* provides material that is not offered in other high school music courses.

> *Experiencing Music 2200* is designed to explore a variety of musical styles, including jazz, rock, classical, country and western, pop, [and] folk. Students are encouraged to experience music through each of the modes of musical activity, i.e., performing, creating, and listening. It is a practical study of music in which

active involvement with various aspects of music is encouraged. (Government of Newfoundland and Labrador, 1994, p. 1)

This music course is available to all high school students. Students are not required to have a musical background. Music is experienced in a variety of ways through performing, creating and listening.

The Department of Education publishes an annual *Program of Studies* to provide course descriptions of our K-12 educational system. Included in the 2005 *Program of Studies* is a section titled, Graduation Requirements. Graduation Requirements provides a listing of required high school course credits that students will need in order to graduate. In 2005, two required credits in Fine Arts were added to the list of provincial graduation requirements (Government of Newfoundland and Labrador, 2005).

Sparkes and Williams (2000) comprised a report entitled *Supporting learning: Report of the ministerial panel on educational delivery in the classroom.* This was an official report published by the Department of Education. Sparkes and Williams (2000) were appointed by the Minister to review curriculum and supports to the K-12 education system including recommendations for a new method for the allocation of teachers. The mandate of the panel was to:

1. Examine the current educational delivery model and consider alternate approaches;

2. Conduct consultations to ascertain views on appropriate methods for allocating teacher resources and supporting the delivery of education in the classroom;

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3. Examine current research, allocation procedures used in other jurisdictions and methods of delivery; and

4. Recommend changes to program offerings, the current methods of allocating teachers, and program delivery methods and to examine issues associated with teacher training and professional development. (p. 3)

This report ultimately resulted in the development of CDLI's online courses generally, and *Experiencing Music 2200* specifically. This report was a significant factor in the development of education in Newfoundland and Labrador.

These documents as well as other related literature and studies noted in Chapter Two informed all aspects of this research study.

3.3.4 Data Analysis

A theoretical framework based upon constructivism provided the foundational context for examining the data gathered in this study. Jonassen, Davidson, Collins, Campbell, and Bannan-Haag (1995) emphasizes that instructional design for online learning courses is key to implementing a successful constructivist environment. Cunningham, Duffy, and Knuth (1993), Savery and Duffy (1995), and Duffy and Cunningham (1996) provide suggestions for instructional design of constructivist online learning environments outlined in Chapter Two. As well, Taylor and Maor (2000) devised a survey to evaluate the effectiveness of constructivist online learning environments (COLLES) (see Appendix F). The survey was developed on the principles of social constructivism to gather student perceptions of the extent to which the online

learning environment enables them to be reflective and collaborative learners. The COLLES instrument was modified to reveal the 'actual' circumstances rather than include the 'preferred' circumstances' in the online environment and was included as a section in the student questionnaire. The COLLES instrument aided in the investigation of the online learning environment as it may relate to a constructivist environment.

Second, after a comparative analysis of the constructivist designs mentioned in Chapter Two, the COLLES instrument and CDLI's principles of learning (see Appendix G), the data collected was analyzed through Duffy and Cunningham's (1996) design principles of constructivist learning environment with references to appropriate documents identified under document collection. The data collected from the sources mentioned in the previous section were analyzed using the qualitative research technique of content analysis. Content analysis is "a research technique for making replicable and valid references from data to their contexts…a researcher searches for structures and patterned regularities in the text and makes inferences on the basis of these regularities" (Myers, 1997, ¶ 15).

Third, the data was then used to make recommendations for the enhancement of future online course development and delivery of *Experiencing Music 2200* and possibly other online music curriculum development.

3.4 Limitations of the Study

Due to reasons outlined earlier in this chapter, the data collected in Phase II of this study came from a relatively small number of participants who were all involved in

online learning with CDLI. Hence, there exists a limit to the degree to which the findings and suggestions in this study can be generalized. Also, because the data for this study was gathered during the pilot of *Experiencing Music 2200* in 2005-2006, the ability to generalize these results to the present day is limited as well.

Conducting research that involves students, teachers and administrators spread across the province of Newfoundland and Labrador would require time, support from district levels and a commitment to follow through with participation from all levels. It was difficult trying to retrieve contact information for students. Emails sent to school administrators, then had to be passed onto students either through announcements or documentation. Then such information had to be brought home for parental approval, then returned to school and faxed back to the researcher. A lengthy process that had minimal return in the case of Phase I of this research study. Michael Barbour (2007) conducted research and sent emails and received few responses as well. He reportedly contacted eight former course developers and twenty-four current and former e-teachers which resulted in only six participants.

Ongoing educational research is a necessary component of teaching and learning. There has to be appropriate mechanisms in place to provide necessary feedback. One critical mechanism to the success of all educational research is communication. As evidenced by Barbour (2007) and this research, there needs to be better communication strategies, cooperation from targeted participants and more support at the school district level. Since the data was collected for this research there have been some positive steps made. For example, all administrators of the Eastern School District now have direct

access to each other through an Administrators Conference. Similarly, all administrators and groups of teachers can now be contacted with one single email.

3.5 Summary

An exploratory case study method was chosen for this study. As part of an exploratory design, a preliminary study (Phase I) was conducted to provide background information on CDLI's online learning environment and to test the online questionnaire format and design. This preliminary study provided the basis for the development of the main study (Phase II). Phase II focused on the exploration of perceptions of students enrolled in the pilot online music course, *Experiencing Music 2200* and their e-music teacher. The primary focus was to examine perceptions of the online learning environment as it may have related to a constructivist learning environment. Data gathered in this case study are presented in Chapter Four.

CHAPTER FOUR

PRESENTATION OF THE DATA

The objectives of this research were to reveal the current perceptions of students, teachers, and administrators regarding the pilot online delivery of a music course in secondary education. Then compare the online learning environment in music education to that of a constructivist environment. Identify the perceived issues and challenges in the pilot delivery, and to explore/examine how these perceptions, issues and challenges contribute to the ongoing development process of online secondary music education in Newfoundland and Labrador.

In this chapter, the tabulated data from the online questionnaire and in-depth interviews are presented. The first section presents the findings of the online questionnaires of Phase I (preliminary study). Phase I was successful in testing the online questionnaire format; gathering data from music teachers; and also gathering data from students, e-teachers and administrators involved in online learning with CDLI in Newfoundland and Labrador. The second section presents the data gathered in Phase II (main study) of the study. Phase II findings include results from an online questionnaire completed by students enrolled in the pilot online music course, *Experiencing Music 2200*, in-depth interviews of four students also enrolled in *Experiencing Music 2200*, and their e-music teacher.

4.1 Phase I: Preliminary Study

4.1.1 Group 1 - Students

The student questionnaires revealed some crucial information about their experiences with online learning. The questionnaire was organized into four sections: general background information, technical aspects, online environment, and perceptions of online learning. The first section revealed that of the 18 participants, 44.4% of students enrolled in online learning out of necessity and the remaining 55.5% enrolled out of general interest. The second section revealed that 61% of participants experienced technical difficulties throughout their online course experience. Of the 61% who experienced technical difficulties, 33.3% explained that the difficulties were mainly connectivity issues, 16.6% had microphone/headset issues and 11.1% had computer hardware problems. The third section focused on the online environment with questions based mainly from a constructivist angle. The purpose of this section was to test the adaptation of the COLLES survey. The results show that 72.2% of students felt that the online course delivery was appropriate for the way they learn. Although 94% believe that what they are learning is important for their future, 88.8% claim that it seldom connects with their lifestyle. Only 27.7% of students felt 'connected' to other students in their online course.

The fourth section revealed the perceived advantages and disadvantages of online learning; 83% of students still preferred traditional classroom versus the online environment; 83% thought online learning should continue, mainly because it provides access to courses that they normally would not have in rural areas with small schools;

only 11.1% of students had heard about the pilot music course, but 61% of students stated they would be interested in taking a music course.

4.1.2 Group 2 - E-Teachers

The questionnaire for the e-teachers was organized into three sections: background information, online environment, and perceptions of online learning. All five teachers reported to be teaching online full-time teaching from one to ten courses. In the online environment section, 80% of e-teachers reported that they sometimes lectured during Elluminate Live real-time class sessions (also referred to as vClass) and 60% always allowed students to dialogue during vClass sessions. E-teachers (60%) reported providing activities for students to work in pairs or groups some of the time and 40% always provoked students to participate in discussions. E-teachers (80%) stated that all students completed the same tasks and 40% seldom allowed student choice in method of assessment.

When asked about perceived advantages of online learning one e-teacher commented: "offering opportunities where options are limited; building learning communities from diverse geography and culture; having a good, competent, successful teacher with a strong background in the subject area" (E-teacher 1). When asked about perceived disadvantages most teachers agreed that with no face-to-face contact they could not see facial and/or other forms of student body language. The e-teachers also reported access issues, scheduling problems, demands on time, and reliance on the "kindness of strangers to supervise science lab activities and tests" (E-teacher 2). E-

teachers were then asked if they had encountered any challenges in teaching in the online environment and their responses centered on motivating students, time, keeping pace with technology, and coping with the steep technology learning curve. One e-teacher reported challenges related to students, teachers, schools, and learning culture. This e-teacher identified the following specific challenges:

1. Student-related: poor time management, misplaced students and inadequate training for new students.

2. Teacher-related: trying to work synchronously with students whose schools have widely varying opening and closing times, and managing the huge number of emails sent and received daily.

3. School-related: lack of support at the school/community level and inadequate resources for completion of asynchronous activities.

4. Learning culture: the widespread notion that schooling is about learning and 'regurgitating' facts and the expectation to 'teach me what I need to know for the test'. (E-teacher 1)

When asked about the new pilot music course, one teacher thought it was a "fantastic opportunity for students to learn and share their talents with others" (E-teacher 5) and another stated that "it is an opportunity for someone who has an interest in music

to share thoughts and ideas about music with peers and to learn something about the history and theory behind it" (E-teacher 3).

4.1.3 Group 3 - Administrators

The questionnaire for administrators (principals) was organized into three sections which revealed some insights of how the pilot music course was perceived by these individuals. The first section briefly illustrated some background information that also included pre-conceived thoughts of the course prior to and after course completion. The second section focused on what administrators thought about the course delivery such as materials, access, advantages/disadvantages, challenges and class environment. The third section focused on the administrators' perspectives of administering online courses which include characteristics for success and suggestions for further development.

Administrators were asked what they had thought about the pilot music course prior to its actual delivery. Some of the administrators (42.8%) reported that they were skeptical. Concerns ranged from being unsure if the music course would be successful, doubting whether delivery via distance would demand unique skills on the part of both the teacher and student, and wondering how well the performance aspect of music could be encouraged and rewarded. After the course had actually started to be delivered in their schools, administrators that were skeptical, responded more favorably by reporting that students were more interested and responsible than they had anticipated. They also commented on the how well the course materials were delivered despite the challenge of distance.

When administrators were asked if online learning was meeting the needs of students, 71% agreed that it was. The responses of those that thought online learning was meeting the needs of students described access to a broader curriculum and music specifically, enabling students to meet graduation requirements, and providing access to entrance requirements to post-secondary institutions. The administrators who felt that online learning was meeting the needs of students reported that often there is no choice for a student but to take an online course. One administrator reported that the course did not meet the needs of a particular student who was more musically advanced. These concerns are evident by the following comments:

Online learning should be a choice by the students but in our school we do not have the on-site staff to offer certain courses so very often students are doing online courses that they would not do if they had a choice. Online learning is not for everyone. (Administrator 3)

The only student taking the course has a significant background in music and the course is really not much of a challenge for her. (Administrator 7)

Administrators were asked if the full student population in their schools had access to online learning. The data showed that 43% of administrators responded no, not all students have access. When asked if there was a student selection process for online learning, 43% of administrators revealed that there was a selection process in their particular school. The selection criteria included work ethic, above 75% average,

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independent and mature learners and parental permission. The following comments are examples of those responses:

> Only students in Levels1-4 can take on online course, only if study habits and marks indicate a reasonable chance of success and only with parental permission. However, decisions are made on an individual basis. (Administrator 2)

> Generally, students have to have a good work ethic, be mature and independent, and have demonstrated a reasonable academic level (roughly a 75% average). (Administrator 4)

A very different approach was noted by one administrator:

> Nothing formal. If a student expresses a genuine desire to do an online course, it would certainly be considered. We do have general students doing online courses who require pathway 2 supports. A couple of years ago, we had a student do a modified (P3) course in Canadian history. This involved significant collaboration between the e-teacher and our on-site special needs teacher. The student was successful in this course! (Administrator 7)

The administrators were asked to outline attributes that a student should posses to be successful with online learning. They responded with the following attributes as illustrated in Table 3.

Table 3
Characteristics for Student Success

	Frequency	Percent
Self-motivated	4	17
Hard- working	4	17
Self-disciplined	3	13
Independent	3	13
Reasonable level of ability and or intelligence	2	8
Mature	2	8
Reasonable study skills	1	4
Eager to learn	1	4
Willingness to form good study habits	1	4
Organizational skills	1	4
Positive attitude	1	4
Attentive	1	4
Total	24	100

Note: Administrators could provide more than one response.

When administrators were asked about drop-out rates they reported that the drop-out rate for online courses was low. Some administrators reported that the students' explanations for dropping out were generally related to frustration with late registration, difficulty managing time and adhering to teacher expectations, becoming overwhelmed by the work, being unable to keep up due to poor study habits and sometimes experiencing a level of discomfort connecting with teachers and students in other schools whom they didn't know.

Administrators were then asked if they encountered any issues or challenges regarding the administration of online courses. Their responses centered on three issues: monitoring, supervision of students during on and offline classes, and that video-conferencing was not used as often as it could be. When asked about the constructivist environment, 57.1% of administrators reported that there was evidence of a constructivist environment and one responded with this comment:

The students' individual talents seem to be at the centre of the teacher's work and expectations. (Administrator 1)

Finally, administrators were asked for suggestions for continued development of *Experiencing Music 2200* online. One administrator recommended that there should be an online music teacher in each of the districts so that more onsite visits could be made. Another administrator suggested more in-school support for all online courses. The following comments reflect these issues:

I think that there should be a music teacher online in each of the districts (West, East, Central, and Labrador) so that teacher can get together with students at least once a year. (Administrator 2)

The issue of in-school support continues to challenge this school and this is particularly true of music education. I believe that the number of students doing online courses should positively, not negatively impact the school's teacher allocation. Teachers need in-school time to support and encourage students doing courses on line. Presently, this support is added to an already busy schedule and as a result does not usually receive the attention necessary to monitor students' successes and challenges. (Administrator 1)

4.1.4 Group 4 - Music Teachers

The questionnaire for music teachers in traditional, face-to-face settings was formatted into three main sections: background information, music technology and perceptions of *Experiencing Music 2200*. In the section of music technology, music teachers were asked if they used the computer or internet to support music teaching or music making and 75% responded affirmatively. Software programs most commonly used were Music Ace and Finale and the most used website was www.dsokids.com.

When asked about their thoughts on *Experiencing Music 2200* online, music teachers were generally positive. Their general responses are evident by the following comments:

It's exciting but at the same time, there are many things to be concerned about. (Music Teacher 7)

I think it is a great idea, especially for students in rural/remote areas who normally do not get an opportunity to take a music course. (Music Teacher 2)

I am not very familiar with *Experiencing Music 2200* because I have never taught high school. However, if this will bring music to areas which otherwise would not be able to offer music programming, I think it is a wonderful idea. (Music Teacher 8)

While there were positive perceptions, all had concerns about music being offered via online delivery formats. The following comments reflect these concerns:

I have seen the way CDLI courses work and students still need a teacher with experience in that area in the school to guide them along. If you are offering experiencing music online more than likely a music teacher isn't in the school. Who would the students go to for immediate help? (Music Teacher 5)

It is important to maintain the integrity of the course and capitalize on the cultural capital of the students. (Music Teacher 7)

Music is such a hands-on type of class. Can it really be offered as web delivery and still maintain that? (Music Teacher 3)

My concern is that there would be certain limitations by offering music online. Students could not benefit from the interaction with other students in a classroom environment. (Music Teacher 8)

4.1.5 Summary

The results of the student questionnaire revealed that although students prefer a traditional classroom setting, there is a need for online learning as 44.4% enrolled out of necessity and it should continue. The majority of students also reported that CDLI's online course delivery method was appropriate for the way they learn (72.2%). The major

technical difficulty reported by most students was in relation to connectivity issues specifically dealing with internet connectivity and speed. In making connections with other students via the online learning environment only a small number of students reported success (27.7%).

The results of the e-teacher questionnaire revealed that online learning is providing students with options and opportunities that they otherwise would not have. The major disadvantage reported by e-teachers is not having face-to-face contact with students. The challenges some e-teachers disclosed centered on student motivation, supervision, scheduling and demands on time.

The results of the administrators' questionnaire revealed that they were skeptical about the offering of music online and it was only after they were able to witness it that their perception changed. Most administrators felt that online learning was meeting the needs of their students. It is also clear that there is a discrepancy from school to school concerning who has access to online learning via CDLI. While some administrators reported selection criteria (e.g., 75% average, be independent, etc) that a student must meet before given permission to avail of online learning, one administrator admitted only a genuine desire was necessary. Administrators also disclosed that supervision was a challenge during synchronous and asynchronous classes.

The results of the music teachers' questionnaire revealed that the majority of classroom music teachers are using technology to enhance the teaching and music making. Generally, music teachers were supportive in the offering of music online but had some concerns on the delivery format.

The results of Phase I provided solid background information that assisted in the design of Phase II. Phase II focused on students enrolled in *Experiencing Music 2200* specifically and their e-music teacher. Phase II began with a newly designed/modified questionnaire (informed by the results of Phase I) distributed to students enrolled in *Experiencing Music 2200*. The results of this questionnaire informed the construction of interviews to be conducted with a smaller group of student participants and the e-music teacher.

4.2 Phase II: Main Study

4.2.1 Questionnaires

The data from the student questionnaires are organized into sections which reveal

some significant insights of how the online pilot music course, *Experiencing Music 2200*

was perceived by students. The first section briefly illustrates some background

information of the students (reason for taking the course and their preconceived thoughts

of the course prior to and after course completion). The second section describes what

students thought about the course design and delivery (materials, computer lab, access,

ratio of synchronous/asynchronous classes, technical difficulties, and the classroom

learning environment). The third section illustrates the students' perspectives related to a

constructivist environment using the modified COLLES instrument (relevance, reflection,

interactivity, teacher support, peer support, interpretation, and characteristics for success).

The fourth section describes the students' thoughts on advantages/disadvantages of

learning music online, characteristics for success and interests in future music courses).

4.2.1.1 Student Background

The student sample comprised seventeen (43.5%) out of thirty-nine students

enrolled in *Experiencing Music 2200* in 2005. Table 4 shows background data of the

student sample. As the data show, all students had taken at least one online course, 65%

of students had completed three or more online courses, and two students had taken

between nine and ten online courses. Prior to taking the online music course, the majority

of students (76.5%) had a musical background, primarily guitar and piano.

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Table 4
Student Background Data

		Frequency	Percent
Number of Completed	0	1	5.9
Online Courses	1	5	29.4
	3	4	23.5
	4	2	11.8
	5	3	17.6
	9	1	5.9
	10	1	5.9
	Total	**17**	**100.0**
Music Background	No	4	23.5
	Yes	13	76.5
	Total	**17**	**100.0**

Reasons for Taking Experiencing Music 2200

Table 5 identifies the students' reasons for registering for the online music course

Experiencing Music 2200. While the majority of students registered for the music course

because of their interest in music and furthering their knowledge, there were some

students who registered for other reasons such as needing the fine arts credit, or the fact

that it was the only course some students could fit in their schedule.

It is interesting to note that there were some students who had to take the course

because they needed a credit. With the new graduation requirements calling for a fine arts

credit, this music course, even in its pilot stage, helped students achieve this necessary

graduation credit. The only other fine arts credit available to students online at the time of

this research was a visual art course of which not all students could avail of due to

scheduling. The 'other' section included comments mainly dealing with scheduling

issues. For example, a student wrote "only course I could fit in" (Student 9). The majority

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of students enrolled in *Experiencing Music 2200* because they have an interest in music

and enjoy it.

Table 5
Student Reasons for Taking Online Music Course

	Frequency	Percent
Enjoy music	7	25.9
Interesting	6	22.2
To further music knowledge	5	18.5
Needed credit	3	11.1
Never did music before	2	7.4
Other	4	14.8
Total	27	100

Note: Students could provide more than one response.

Students' Perceptions of Experiencing Music 2200 (Online)

Students were asked what they had thought of the course before actually

registering for the course. Table 6 illustrates the perceptions that students had prior to

taking the course. While a number of students thought that the course was going to be

fun, others thought it would be focused on music history or learning to read music and

play an instrument. The 'other' section included perceptions that the course was going to

be a lot of study and work, be interesting, be informing and they had heard good reviews

from other students. Hence, 50% of students had 'musical' intentions for taking the

course, 23% thought it would be fun and 7.7% thought it would be easy.

Table 6
Students Perception of Online Music Course

	Frequency	Percent
Thought it would be fun	6	23
Focus on music history	4	15.4
Learn to play an instrument	3	11.5
Learn to read music	2	7.7
Music appreciation	2	7.7
Enjoy music	2	7.7
Thought it would be easy	2	7.7
Other	5	19.2
Total	26	100

Note: Students could provide more than one response.

The following section shows if students' preconceived notions of the course were accurate or if they had changed after they began the course. Table 7 shows that approximately 58.8% of students' initial perceptions of the course changed.

Table 7
Students Perception Change

	Frequency	Percent
Yes	10	58.8
No	7	41.2
Total	17	100.0

Students were asked to explain why their perception might have changed. Two students who originally perceived the course was focused on music history replied:

I found that there is a lot more to learn about music than I initially thought.

(Student 5)

I found out that we had to learn how to play an instrument and there was some researching to do, but not a lot. (Student 9)

Two students who registered for the course because they enjoyed music responded:

It's a lot more interesting than I thought it was going to be. (Student 15)

They [courses] have gotten much better. I had no idea the course would be this much fun. We have done a lot of exciting activities and we all get to share our thoughts on music. I have met some new people and we share music we like. It has opened my views on some music. (Student 16)

Two students who originally perceived the course to be easy responded:

There is a lot more work involved. (Student 2)

It is not as "easy" as I thought it would be. (Student 3)

4.2.2 Course Design and Delivery

When the students were asked if the online *Experiencing Music 2200* course presentation and delivery was appropriate for the way they learn, 88% responded yes. The students' explanations focused on three main reasons: organization, explanations, and delivery. Some students who commented on organization responded:

All CDs were available online and we could go in and access material at any time.

(Student 16)

I like the organization of all the little assignments to be completed...I believe this

better prepared me for the tests to be completed. (Student 5)

One student who commented on how everything was explained in the course

materials and assignments responded:

Everything is explained very well and is very easy to understand. (Student 4)

Two students who commented on how the music course was delivered responded:

I feel that our teacher has done an awesome job at delivering what we needed to

learn and he also added in things to make the class even more exciting. (Student

13)

I thought it was delivered very well, I found it easy to learn when it came to study

material and music. (Student 14)

4.2.3 Course Materials

Regarding the course design and delivery, students were asked if the course

materials were adequate. The data in Table 8 shows that 94% of students thought that the

course materials were adequate.

Table 8
Course Materials Adequate

	Frequency	Percent
yes	16	94
no	1	6
Total	17	100.0

When asked to explain what they thought about the course materials, the students

responded positively. Their responses again centered on organization, explanations and

delivery as illustrated by the following comments:

Everything in our lesson teaches us want we need to learn and what is required for

us to know. (Student 13)

Whenever I had a question or a query I could find the answers with the on-line

resources/material. (Student 7)

Whatever we need to do this course is available at anytime especially when

having a computer at home. (Student 6)

Sufficient Computer Lab Time

One aspect of online course delivery involves having sufficient computer lab time

and access. Table 9 illustrates that 94% of students felt satisfied with amount of time

allotted in the computer lab in order to complete homework and assignments.

Table 9
Sufficient Computer Lab Time

	Frequency	Percent
yes	16	94
no	1	6
Total	17	100.0

Course Access

The data in Table 10 shows 77% of students had access to online course material

from home. When asked how often they would access their online course material within

a period of one week, 62% of students' reported that they accessed material three times or

less as seen in Table 11.

Table 10
Number of Students Accessing Course Material from Home

	Frequency	Percent
yes	13	77
no	4	23
Total	17	100.0

Table 11
How Often Students Accessed Course Material from Home

# of Times	Frequency	Percent
0	5	29.4
2	3	17.6
3	5	29.4
4	2	11.8
5	1	5.9
8	1	5.9
Total	17	100.0

Ratio of Synchronous/Asynchronous Classes

As mentioned earlier in Chapter One, the course delivery is divided into two sections: synchronous (online with teacher, real-time) and asynchronous (off-line). Students were asked if they thought that the ratio of time of synchronous vs. asynchronous was adequate. The students (60%) reported, 'yes'. One student responded:

Even though we only have a small amount of online time I think it is a good amount with all the work that is set in this course, we have a lot of off-line time to get it done. (Student 16)

Two other students had different opinions:

Very few online classes, four online classes in a 14-day cycle, should be 90% [nine classes] online. (Student 13)

Too many offline classes. Four online to six off-line. (Student 2)

Technical Difficulties

With a pilot online course there is the possibility of incurring some technical difficulties. When asked if they experienced any technical problems, 47% of students responded yes (as illustrated in Table 12). Some students reported difficulty with computers being slow and freezing, connecting headphones, sending assignments, slow

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connections that would lead to disconnection and difficulty downloading music, and one

student reported difficulty with music software (Cakewalk).

Table 12
Number of Students that Experienced Technical Difficulties

	Frequency	Percent
no	9	53
yes	8	47
Total	17	100.0

Classroom Learning Environment

The students were then asked if the classroom learning environment in which they

access their music course was appropriate for their needs. While the majority of the

students (94%) agreed that it was appropriate (as illustrated in Table 13), their

explanations highlighted a few concerns they had.

Table 13
Classroom Learning Environment Appropriate

	Frequency	Percent
yes	16	94
no	1	6
Total	17	100.0

Some student concerns noted were:

It isn't [adequate] because there needs to be a piano near and other musical things

when we need them. (Student 12)

For the most part it is, but when we go to play our instruments we bother the class

around us, so I think that the online Music should take place where we can't

disturb other classes that are around us. Also with our school we have this big window that looks out into the computer lab next door. Sometimes when we are online the people from the lab are looking in at us. For example last month we did a section on drums and rhythms; so the whole class sat on the floor and was beating the drum, but the point of the lesson was to become totally relaxed but with the other people looking we couldn't accomplish it. (Student 13)

It has printers and computers where I do my work (also, a piano is available when I need it). The only disadvantage is that the video-conference center is in another room that is used frequently and I don't get to use it as much as I would like. (Student 16)

Students were asked if their online learning environment was a positive one. Table 14 shows that 88% of students felt that the online learning environment was a positive one.

Table 14
Number of Students Reported Positive Online Learning Environment

	Frequency	Percent
yes	15	88.2
no	2	11.8
Total	17	100.0

When asked to explain why they thought their online learning environment was positive, some students responded with the following comments:

It is 'very' fun and keeps you listening to see what might happen next. (Student 4)

It has the same characteristics as a normal class except we are not in the same school. (Student 5)

Taking a music course through distance learning is great opportunity to get involved in subject areas which would not usually be available to you in a regular small school environment. It is a good thing. (Student 7)

We are in a room where there are computers and technological things. For this course I think that it would better if there was a special music room because you can have a piano and other instruments that are closer to you. (Student 12)

There isn't anything that we don't learn that isn't positive. (Student 13)

The teacher supports everyone and we all get 'interaction' with each other. (Student 16)

4.2.2.1 Students' Perception of Constructivist Learning Environment

This next section of the questionnaire focused on the students' online learning experience as related to constructivism. A survey instrument, COLLES (Constructivist On-Line Learning Environment Survey), was modified and included into a section of the student questionnaire. The COLLES survey was designed to help assess key questions about the quality of an online learning environment with a social constructivist

viewpoint. There are six sections to this portion of the questionnaire: relevance, reflection, interactivity, teacher support, peer support, and interpretation.

Relevance

This section illustrates the students' thoughts on how relevant online learning is to their lifestyle. The data in Table 15 shows that 75.1% of students believed that their learning in this online music course focused on issues that interested them. While students stated that they were learning things that were of interest to them, only 23.5% of them thought that what they learned was important for their future. The data also showed that 41.1% of students felt that what they learned in the music course connected well with their lifestyle.

Table 15
Responses to Questions Related to Relevance

	Never	Seldom	Sometimes	Often	Always	Total Response
My learning focuses on issues that interest me	-	6.3	18.8	56.3	18.8	16/17
What I learn is important for my future	11.8	5.9	58.8	11.8	11.8	17
What I learn connects well with my lifestyle	5.9	11.8	41.2	17.6	23.5	17

Reflective Thinking

In this section, students were asked to report if they think online learning stimulates their reflective thinking. Table 16 shows that 76.4% of students seldom think about how they learn. While 41.2% of students were critical about their own ideas, 76.5%

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report that they were seldom critical of others' ideas. Students (82.3%) also reported that

they seldom think critically about ideas in the assigned readings.

Table 16
Responses to Questions Related to Reflective Thinking

	Never	Seldom	Sometimes	Often	Always	Total Response
I think about how I learn	17.6	23.5	35.3	17.6	5.9	17
I am critical about my own ideas	-	17.6	41.2	35.3	5.9	17
I am critical of other students' ideas	11.8	29.4	35.3	11.8	11.8	17
I think critically about ideas in the readings	5.9	29.4	47.1	11.8	5.9	17

Interactivity

Interactivity represents the extent in which students engage in online rich

educative dialogue. Table 17 shows that 76.5% of students seldom explained their ideas

to other students. While 47.1% of students asked others to explain their ideas, 70.6% felt

that other students seldom explained their ideas. Students (82.3%) felt that other students

seldom responded to their ideas.

Table 17
Responses to Questions Related to Interaction

	Never	Seldom	Sometimes	Often	Always	Total Response
I explain my ideas to other students	17.6	11.8	47.1	23.5	-	17
I ask other students to explain their ideas	17.6	5.9	29.4	41.2	5.9	17
Other students explain their ideas to me	17.6	5.9	47.1	23.5	5.9	17
Other students respond to my ideas	17.6	17.6	47.1	17.6	-	17

Tutor Support

Tutor support reflects the ability of how well online teachers enable students to participate in online learning. The data in Table 18 shows 47.1% of students reported that the teacher stimulated their thinking, 88.3% of students felt that the teacher encouraged them to participate, 70.6% thought that the teacher modeled good discourse, and 56.3% felt the teacher modelled critical self-reflection. Although, the data in Table 18 revealed that the tutor was successful in enabling students to participate in online learning, only 37.5% felt that the tutor challenged their assumptions.

Table 18
Responses to Questions Related to Tutor Support

	Never	Seldom	Sometimes	Often	Always	Total Response
The teacher stimulates my thinking	-	17.6	35.3	35.3	11.8	17
The teacher encourages me to participate	-	5.9	5.9	41.2	47.1	17
The teacher models good discourse	-	5.9	23.5	29.4	41.2	17
The teacher models critical self-reflection	6.3	6.3	31.3	37.5	18.8	16/17
The teacher challenges my assumptions	-	12.5	50	25	12.5	16/17

Peer Support

Peer support makes reference to whether or not fellow students provided sensitive and encouraging support. Table 19 shows that 58.8% of students felt that their participation was seldom encouraged by their peers and 94.1% say that other students rarely praised their contributions. There were 23.5% of students who never felt connected to other students taking the course, while 41.2% felt connected only some of the time.

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Students (70.6%) reported that they felt comfortable participating in vClass

(synchronous) sessions.

Table 19
Responses to Questions Related to Peer Support

	Never	Seldom	Sometimes	Often	Always	Total Response
Other students encourage my participation	11.8	23.5	23.5	35.3	5.9	17
Other students praise my contributions	11.8	29.4	52.9	5.9	-	17
I felt 'connected' to other students taking the course	23.5	-	41.2	23.5	11.8	17
I felt comfortable in participating during vClass sessions	11.8	5.9	11.8	41.2	29.4	17

Interpretation and Teacher Communication

Interpretation and teacher communication focuses on whether or not students and

teachers make good sense of each others' communications. Data in Table 20 illustrates

that 70.6% of students were satisfied with the timeliness of interaction with the instructor

and 82.4% felt that the teacher's response to tests and assignments was conducted in a

timely manner. The data also showed that 88.3% thought the instructor's responses to

questions and concerns were helpful. Although 94.1% of students reported that the

instructor clearly stated how they would be evaluated at the beginning of the course,

70.6% felt they were informed of their progress throughout the course and 70.6%

received adequate directions for using course technologies. The data in Table 20 revealed

the extent to which students and teachers made sense of their communications and

illustrated that 47.1% felt that the workload for the music course was comparable to other

courses at that level.

Table 20
Responses to Questions Related to Interpretation and Teacher Communication

	Never	Seldom	Sometimes	Often	Always	Total Response
I was satisfied with the timeliness of interaction with the instructor	-	11.8	17.6	47.1	23.5	17
I received feedback on tests and assignments in a timely manner	-	5.9	11.8	47.1	35.3	17
The instructor's responses to my questions and concerns were helpful	-	11.8	-	41.2	47.1	17
The instructor clearly explained how my performance in the course would be evaluated	-	5.9	-	52.9	41.2	17
I was informed of my progress throughout the course	-	5.9	23.5	29.4	41.2	17
I felt the workload for the course was comparable to that in other courses I have taken at this level	-	23.5	29.4	47.1	-	17
I received adequate directions for using the computer technologies in the course	-	5.9	23.5	41.2	29.4	17

Advantages of Learning Music Online

Students were asked if they thought there were advantages regarding the learning

of music online. Data in Table 21 illustrates the advantages of learning music online

noted by these students. A synopsis of the Table 21 revealed that 50% of the advantages

noted by students were centered on learning, 13.6% perceived that an advantage was to

meet new people, 13.6% claimed that music was fun and 9.1% felt that not having the teacher present was an advantage. Two students commented:

The biggest advantage, overall, is that we are actually able to do music, in a school with a high school population of only six students--just being able to attempt a music course is an advantage, as it were. (Student 7)

I get to learn a lot of things with people across the province and broaden my horizons. I have been introduced to many new bands etc. I had so much fun doing this course. (Student 16)

The most positive experiences noted by students during the course were: learning to play the violin and tin whistle, learning about different kinds of music, getting to meet music students all over the province, reading each other's journals to learn more about their classmates and being able to partake in a music course.

Table 21
Students Perspectives on Advantages of Learning Music Online

	Frequency	Percent
Makes you more independent and responsible	3	13.6
A chance to meet new people	3	13.6
It was fun	3	13.6
Learn new things	3	13.6
Learn how to play an instrument	2	9.1
A chance to do music	2	9.1
No teacher present	2	9.1
Makes you more interactive	1	4.5
Other	3	13.6
Total	22	100

Note: Students could provide more than one response.

Disadvantages of Learning Music Online

Students were asked if they thought there were any disadvantages related to the

learning of music online. Students (55.5%) felt that not having the teacher in the

classroom (face-to-face) was a disadvantage to learning music online. Data in Table 22

illustrates other perceived disadvantages.

Table 22
Students Perspectives on Disadvantages of Learning Music Online

	Frequency	Percent
Not having the teacher in the classroom	10	55.5
Not able to connect with students personally	3	16.6
Not having hands-on with a mixture of instruments	2	11.1
Difficulty finding time to complete work	1	5.5
Other	2	11.1
Total	18	100

Note: Students could provide more than one response.

Characteristics for Student Success in Online Learning

Students were asked to provide some characteristics that they perceive students

should embody to be successful in online learning. Data in Table 23 shows that 29.1% of

students felt that a student should be an independent worker, 16.6% stated that a student

should listen well and 12.5% reported the student needs to be a hard worker. Other

characteristics such as organization, self-discipline, participation, self-motivation,

diligence, patience, punctual and comfort with technology were also mentioned.

Table 23
Students Suggestions for Characteristics for Student Success

	Frequency	Percent
Be able to work independently	7	29.1
Listen well	4	16.6
Hard-worker	3	12.5
Be organized	2	8.3
Self-disciplined	2	8.3
Participate	1	4.2
Must have self-motivation	1	4.2
Diligent	1	4.2
Patience	1	4.2
Be on time	1	4.2
Should like technology	1	4.2
Total	24	100

Note: Students could provide more than one response.

Final Comments

At the end of the questionnaire students were provided with an opportunity to comment or ask questions regarding the online delivery of educational programs generally and/or the *Experiencing Music 2200* course specifically. Their final comments were:

I really like online learning, its 'pretty' fun but it's only good when your teacher is an outgoing person because if not class gets boring and you get side-tracked easily. (Student 10)

I think it is important to make sure the students are 'right' for this type of learning...if they are not interested in learning online it will just drag down the entire class. (Student 5)

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This course is the best...it's fun and interesting...the teacher is cool and he's a nice person...he's easy to get along with....awesome course!!!!!!!!!!......PEACE OUT. (Student 15)

I think that this course is a good course and I have had a lot of fun doing it. I will always remember this course. It is my favourite. (Student 16)

When students were asked if they had any suggestions for continued development of this course or of music education in general, the majority replied no. However, several students responded:

I think that there should be more courses like it. (Student 10)

...maybe a little more focus on defining different genres. (Student 6)

I think this course is a very good course, maybe there could be more exploration of music and analyzing the lyrics of songs. (Student 16)

Interest in Future Music Courses

The majority of students (60%) seemed interested in taking other music courses if offered mainly because they enjoy music, love listening to music, would like to take a

course where the goal is to learn a musical instrument, and would like to do more playing in the next course. When asked if they thought other students would be interested (76%) replied yes and provided further explanation:

This is a great experience for those that like music. (Student 8)

...a good opportunity for students in smaller schools to get involved in something they would not have had a chance to otherwise. (Student 7)

Students in this school are generally musical and music is a very big part of their life and I'm sure they would like to see what other music courses would have to offer. (Student 6)

Summary

The analysis of the data gathered from student questionnaires informed the development of interview questions. The presentation of data from Phase II continues in the next section revealing data gathered from the in-depth interviews of four students enrolled in *Experiencing Music 2200* and their e-music teacher.

4.2.3 Student Interviews

The data gathered from the questionnaires of students enrolled in the pilot online music course, *Experiencing Music 2200* guided the development of interview questions. Interviews were conducted with four students enrolled in the pilot online music course,

Experiencing Music 2200. The data from the student interviews is organized into three categories: student background, course design and delivery and students' perception of a constructivist learning environment.

4.2.3.1 Student Background

Of the 39 students enrolled in *Experiencing Music 2200*, six agreed to participate in an interview. Of the six who agreed, only four students were actually available to be interviewed. The students were either Level II or III. The interviews began with some preliminary questions focused on the students' experiences with online learning. Of the four students interviewed, three had completed three to five online courses and for one student, this music course was the first. The students were then asked how they came to register for the music course. The main reason given for registering was because they enjoyed music and heard from their peers that it was a good course to do. One student response indicated general interest in music and very few other course options as noted:

> Well, the principal of our school knew that we were all interested in music and a lot of us play instruments and stuff so she brought it up to us and asked us if we wanted to do a music course next year so we just said, yeah, we'll do music. She told us that we should do it. Where we are a small school we don't have many options to take. (Student B)

The first impressions of the course by the students varied. Two students' impressions relied on what they had heard about the course from students the previous

year. They were thinking that it was going to be a lot of work and assignments, but still fun to do. These two students responded as such:

Ah, when I heard about the course I thought it was going to be a lot of where we can play instruments and stuff. Where it was a music course I was thinking we were going to have a lot of work with reading music and just learning how to play music and different instruments and things like that. (Student B)

Well I really did not know what it was going to be like because I couldn't imagine doing music online but I wanted to do it because I wanted to see what it would be like. No one else did it in my school before. (Student D)

When asked if the course met their expectations all students responded favorably. One student responded:

Yeah, we actually did a lot more than I thought we were going to do. Like last year they did the tin whistle and this year we learned the tin whistle and the fiddle and we used Cakewalk and other music software. It was a lot more than what I expected but in a good way. (Student A)

Students were asked what, if any music background they had prior to taking this course. All had varying degrees of music experience from singing karaoke to substantial piano experience. In the students' opinions, it was not necessary to have a background in music to take this course, as seen by the following comments:

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I don't think they need any background but a love of music. If they don't like

music they probably really won't like the course because that's what it is all

about…music, learning about music and cultures and they need to like music.

(Student C)

Well, one thing that I took from the course was actually learning how to read

music. Like before I did this course I always wanted to know how to read music

like I never did any kind of music course before and I play instruments and stuff

like that, I never actually ever knew how to read sheet music so it was a good

introduction to learn about that. I'd say that anyone could take this course and

learn. (Student B)

4.2.3.2 Course Design and Delivery

Students were asked if they thought that the presentation of the course suited their

learning style needs. All agreed that various aspects of the course enhanced the learning

experiences. The students responded:

Yeah, because it was just the same as having someone in the classroom where our

communication was communicated through the TV mostly and when he was

doing the fiddle thing, we could see it and do it too, so it was good. (Student A)

I find that a teacher who is pretty outgoing keeps a lot of energy in the classroom.

You know if you don't see them there you are only hearing their voice. So if

someone is talking like really energetic and keeps that class alive that then it's a lot more interesting and easier to listen to than say someone who was there and sound monotone. (Student B)

I found one-on-one with the teacher...when we got on the video-conferencing unit he showed us how to hold the fiddle, how to hold the bow, like really seeing that helped me. I like learning from sight. I find like learning from books really hard...I need a more visual thing or hands-on. This course was really like...how he has it outlined on the internet is really easy to find your assignments and what work you need to do. I found everything about it was pretty good. (Student C)

Well we did a lot of just listening to music and interacting with the teacher and that was really good. But we really didn't do a lot of like note taking questions and that was a change so I really liked that. Hands-on is a lot better. We do a lot of stuff hands-on in the course. (Student D)

Technical Difficulties

Some technical difficulties that students reported were: trouble figuring out how to scan and send assignments, online course MP3's sometimes were slow downloading, the video-conferencing unit was slow to connect at times and the picture was fuzzy on rainy days and sometimes it wouldn't dial out, and microphones on the headset would give out. Two issues with course software were also reported. One student noted that

Cakewalk did not arrive to the school on time and thus put them behind on assignments requiring the use of Cakewalk. Another student reported trouble loading Music Ace on the computer. A few connectivity issues also arose. The issues included slow internet connection, CDLI server going offline, and slow loading of Elluminate Live at times.

Video-Conferencing

All four students that were interviewed had access to a video-conferencing unit for this course. Some issues that students reported dealt with connectivity issues, three-way conferencing would cause the screen to be blotchy and system would shut down, and bad weather affected the unit. The students thought that video-conferencing was a necessary component in this course. Their comments illustrate this point.

> It is one-on-one and you get to know your teacher. It was more personal. Like you can learn when you are talking to somebody in person. For the amount of time that we had online we used it quite a bit. (Student A)

> It allows us to see our teacher face-to-face and I like that. In some of my other courses I only get to see a picture. Here I got to see my teacher as I talk to him. It kind of gives you that connection with the teacher and you know him better. I really didn't want to take WebCT when I heard that I had to because I knew I couldn't see the teacher and I was really upset because I like talking with my teachers after classes and interacting with them but the video-conferencing was

really useful. I could see my teacher and we tried to get him on the video as much as we could. (Student C)

If you were going to show someone something like teaching us how to play tin whistles he could actually get on the TV and show us how to do it and not just have us learn on our own. (Student D)

Music Software

A music software program called Cakewalk was provided to students for use with this course. A minor problem with installing the program was reported. One student commented on the ease of use: "It was pretty easy to use because he had step-by-step instructions and he told us how to use it" (Student B). Students seemed to enjoy the program as illustrated by their comments:

I like Cakewalk. I found that it was interesting. Me and my friends just goof around sometimes and make demos and remixing of songs for fun. No problems. (Student A)

It was really good and you could use it for like, if you played a song on recorder you could add different things to it. I never heard of midi's before until I started this course, we could actually turn on some instruments and actually get the sheet music for one particular instrument. (Student D)

Another music software program called Music Ace was also provided. All four students interviewed enjoyed the software and found it very useful. One student reported trouble using the software CD and as a result the program would shut down and any progress in lessons or games would be lost. In general, students found that Music Ace provided good information and practice for the learning the basics of how to read music. They commented:

Ahh...learning how to read music. It was a basic program but for learning it helped a lot for just like someone who is just new to reading notes and stuff like that, it helped a lot. (Student B)

I think if I had Music Ace it would be good for the future because it is good for learning music yourself, not just for a course. It teaches you the notes that you need to learn, you need that for any instrument your gonna play, to learn to read the notes, it also teaches you about tempo and speed so it is good outside a music course. (Student C)

Students were asked if they were familiar with other music software and they discussed the use of Audacity and the Prodikeys keyboard.

A classmate used it (Prodikeys) and I used Audacity and we recorded a little techno song and we sent it to our teacher using these two technologies. Prodikeys is really fun because you can get to make dance music and different kinds without really knowing how to play it. (Student C)

Oh we used the keyboard. There was actually a keyboard sent out with a piano keyboard and a typing keyboard. You could play the music and record yourself and hear yourself on the computer. (Student D)

Music Equipment

Two students reported they never had access to music instruments other than the tin whistle and Prodikeys keyboard with which they were provided. The other two students reported having access to a school piano and drums when they were not in use otherwise. Overall students were satisfied with the equipment they received.

Experiencing Music 2200 Content

Students were asked to describe the content of the course. Students reported learning about music elements (tempo, dynamics, timbre, etc), music history and theory, various music styles, musical instruments, different cultures, and learning to play an instrument. Table 24 illustrates the content students described learning in the course.

Table 24
Content of Music Course (as reported by students)

Music history	Music theory
Tempo, Timbre	Music Definitions
Different styles of music	Learning to play the tin whistle
Performers, Virtuoso, sopranos, tenors, etc	Types of instruments, voices
Instruments in different cultures	Learning about ourselves
Music in the community	Learning to play the fiddle

Students were asked to describe an aspect of the course they enjoyed the most. Their responses varied from: using Music Ace, playing tin whistle and completing the community project. Students were asked if they felt they have a greater understanding of music as a result of this course and they all responded yes. One student commented:

> Yeah I think I do. My knowledge of music has really grown and music in different cultures and different types of people in music and how music affects different people. (Student C)

The students reported that they have more appreciation and understanding of music after having taken this course, specifically in the areas of Newfoundland music, native cultures, a better understanding of music to be able to discuss different aspects of it, and different careers in music.

Course Evaluation

Students were asked to describe how they were evaluated in the course and if they thought the evaluation method was appropriate. The types of evaluation methods identified by the students were lots of mini assignments, playing tests, unit tests, and two major research papers. There were some complaints about the amount of mini-assignments as those students with heavy course loads found it difficult to keep up. However, the students with that complaint were satisfied with teacher leniency on submitting assignments. Overall, students were pleased with the method of evaluation for this course. Some students commented:

I think the tests and the large assignments were probably the best part of the

course. (Student C)

It was mostly assignments because there was only like three unit tests and then we

had two big projects that we had to do. Yeah, I really liked it because there were

not a lot of tests and sometimes it is hard to test on stuff like that, but where we

did assignments it was really good. (Student D)

Students' Positive Experiences

The students most positive experiences in this course centered on learning the tin

whistle and the fiddle. One student commented on a one-day fiddle workshop where the

teacher went to her school.

I got to learn fiddle songs and meet my teacher in person. That was the highlight

of my year. (Student C)

Challenges

The major challenge that students reported focused on the number of assignments

they had to complete in the course. While they thought that the course work was

comparable to other courses at the same level, they identified that good time management

was the key to keeping up with all the assignments in the music course.

Ratio of Synchronous/Asynchronous Classes

Students reported that in a fourteen day cycle there were four online classes (synchronous) and six off-line classes (asynchronous). They felt the offline classes were useful to complete all the mini-assignments and tasks. However, overall they preferred more online classes. One student commented:

Well there was a lot of offline classes to get our work done, but there probably could have been more online classes. We only had four in a cycle. It was better to get the work done, but I would have preferred more online classes. (Student D)

Advantages/Disadvantages of Learning Music Online

The advantages students reported of learning music online were centered on: meeting new people and being able to take a music course. The disadvantages of learning music online were focused on not being face-to-face with a teacher and technical issues. The technical issues commented on were:

The TV connection at times, because if you needed to ask something like or to show something...he wasn't there to show because of the TV connection, but if you had to ask something it could be asked on Elluminate Live. (Student A)

Probably that it was through computers and you had to do a lot of stuff with technology and that. If something went wrong it took awhile to fix it. (Student D)

Characteristics of a Good E-teacher

Data in Table 25 illustrates the characteristics students believe a good e-teacher

should possess. The questionnaire revealed that 41.1% of students highlighted the

importance of the teacher interacting and creating a connection with students. Two

qualities that 23.5% of students thought were also important are being positive and

understanding. Other notable attributes include good attitude, energetic, patience,

communicate well, get to know students and be fun.

Table 25
Students Suggestions of the Characteristics of a Good E-teacher

	Frequency	Percent
Connect with students	4	23.5
Interact with students	3	17.6
Be positive	2	11.7
Understanding	2	11.7
Good attitude	1	5.8
Energetic	1	5.8
Communicate well	1	5.8
Patience	1	5.8
Get to know students	1	5.8
Be fun	1	5.8
Total	17	100

Note: Students provided more than one response.

Classroom Learning Environment

Students were asked to describe their classroom learning environment for online

courses. In all cases students reported that they had a room specifically designated for

CDLI courses. When asked if they thought this environment was appropriate for music

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all students replied, 'no', for various reasons. Following are statements given as to why students did not think the environment was appropriate:

When we wanted to get creative and have fun with the fiddle or tin whistle or something, the noise was often commented on. …people (other students) would just bang on the wall sometimes and they just didn't like the noise, so it was really an inappropriate place for music, for other courses, yes. (Student A)

The only problem with it, being in music we had to play instruments and some classes were physics and math and they'd hear us playing and they'd be like guys stop it and we'd be telling them that we had to play this for our teacher. One person was taking physics and he was right between all four of us, like he had two on one side and two on the other. (Student C)

Students were also asked if they thought the online learning environment was appropriate for the learning of music. They reported that they felt online learning was a positive learning environment for music. Two students commented:

I like one-on-one learning but I did enjoy the course and I thought it was positive learning. (Student A)

Yeah, I'd say. I don't know it's just there…it's technology and technology is a big part of music now. With it comes working with different programs and everything. On a computer actually learning how to learn music, it just works. (Student B)

4.2.3.3 Students' Perceptions of Constructivist Learning Environment

Interacting with students (peer to peer) is a key component to online learning. Students were asked if they worked alone or with others. Students reported that they sometimes had others in the same school taking the course so they would often work together and help each other. However, one student was the only person taking the course in her school and responded as such:

Alone mostly. But sometimes we'll just get on and we'll email to each other and we talk to each other on MSN. You can just email them if you want to ask them something, and more than likely they are online and can email you back right away. (Student D)

Students reported that most assignments in the course were individually-based. The students who had fellow classmates in the same school thought that there were enough collaborative activities in the course. One student commented:

I thought it was okay, because the individual assignments we did on our own but most of our online class we didn't use for assignments we used to play. So that was as a group and if we needed help then the others were there and the teacher was there and everybody just helped each other. (Student A)

The student taking the course alone commented:

There probably could have been some more things where we actually like partner up and do a project. I'd like that. (Student D)

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Apart from course assignments, the students were asked if they felt connected with other students in the course. Students reported that they did feel a connection with other students on different levels. Two students commented:

Well, not completely, I could chat with them on Elluminate Live, I had no trouble talking to them on there. But outside the classroom, I never talked to anyone outside of class. Just basically in class but compared to other courses, music was probably well this year, music was probably on top for interacting with the other students in my class. (Student B)

Well, you kind of feel more connected because this is a more social course. It's not like math and you are all watching problems on a screen, you are really interacting...telling what you hear in the music and you get to hear them play their tin whistle and you play yours and they can bring an instrument they already know how to play. (Student C)

The suggestions students had for creating more interaction were to incorporate tin whistle collaborations on the video-conferencing unit so students could play songs together, to keep the instruments the same and have little group efforts, to give a group assignment sometimes, and to have two major separate projects for the year and a group effort as the third.

One aspect of constructivism focuses on student-centered learning rather than teacher led and directed learning. The students reported that there was a mixture of both methods in the course as illustrated by the following comments:

I find that we all have our say in this music course but we all have our say in our own opinions about things and the teacher lets us speak if we want to talk about something like a song. If we just listened to a song he would say well this is my thoughts on the song what are your thoughts on the song? (Student B)

I think it was a mixture because our teacher worked with us and helped us respond to him, he'd ask us what type of music we listened to and he'd take song suggestions and we'd give him bands we know of and he'd check them out and listen to them and he'd say 'email me this, and I'll check out that', it was really a mixture of both, it was really good. (Student C)

Students explained the role of the teacher in this online course as compared to other courses. They reported that the teacher has to be more trusting in an online environment because the teacher can't always see what students are doing.

A few students felt connected to the teacher because of the interest the teacher took in them. The following comments illustrate this point:

Oh, the teacher in this course wasn't just interested in our thoughts on music, he was interested in other things to, say...motorcycles and stuff like that, people who got motorcycles, he was interested in just talking about things like that too at the beginning of class before we got into anything. He probably knew us better than

any other teacher in say any other course. He knew who his students were and what we were interested in and things we do and stuff like that. (Student B)

He was more of a role model teacher really because he told us his stories and we got to know him. Like the teacher in Geography kind of went on and on about the course but here he'd tell us about his experiences in music and we could tell him ours so you could kind of connect. (Student C)

For one student the social and interactive nature of this course boosted her self-confidence:

This course really helped me understand the rest of them and interact with the rest of them because we had to interact there and he made us feel comfortable to interact there, he made me feel more confident with the other courses, speaking, and giving answers. (Student C)

Suggestions for Further Course Development

Students were asked if they would like to see any changes made to the course for future offerings. While one student preferred there to be fewer assignments, another student reported that the material (e.g., text) was dated and should probably have more current information in the text book. Even with these comments, students generally responded favorably to keeping the course the way it is. One student commented:

Nah, not a lot, I'd say the course is good as it gives people a good understanding

of what music is all about. I think for somebody who is just being introduced to

music, like I know everyone listens to music and stuff but it's getting introduced

to learning about styles and stuff like that, I think it is a good course just the way

it is. (Student B)

Students were asked if they would register for another music course if it was

offered to them in the future. All students responded positively and provided a few

suggestions:

Yep. If there was a next level to this course, where you learned more, like

learning how to play say just instruments in general. Like we did work with the

styles of music but with the instruments, instrument wise we didn't do a whole lot

of work with it. (Student B)

Yeah, I think art has two programs. It would be nice if music had two, like one

year might cover more basics and the next year maybe cover songs in other

cultures, like you could do Newfoundland studies and stuff, and Canada studies

and stuff. Then each year you do two different instruments. (Student C)

Summary

The results of the student interviews provided further insights and a deeper

understanding of the students' perceptions of the online music environment. The next

section of this chapter provides the results of the interview with the e-music teacher of *Experiencing Music 2200.*

4.2.4 E-Music Teacher Interview

The data from the e-music teacher interview is organized into three sections: e-teacher background, course design and delivery and e-teacher perception of the constructivist learning environment.

4.2.4.1 E-Music Teacher background

At the time of this study, this e-music teacher was the only online music teacher in the province of Newfoundland and Labrador. This e-music teacher holds a Bachelor of Music and Music Education degree from Memorial University of Newfoundland and has had previous experience with technology and developing software. He was contracted to develop the course in its current online format and began teaching *Experiencing Music 2200* (online) in the fall of 2004. He has been teaching *Experiencing Music 2200* (online) since 2004 and has recently piloted *Applied Music 2206.*

4.2.4.2 Course Design and Delivery

Technical Difficulties

The technical difficulties the e-music teacher experienced with the course were mostly dealing with equipment. As the difficulties arose they were reported to be resolved through consultation with CDLI. Some difficulties however, were not as easy to

resolve and continued to cause problems. One recurring difficulty was with the use of video-conferencing. Since the video-conferencing network was incorporated into the course, listed below are three main difficulties reported by the e-music teacher that tended to be daily problems that sometimes took up to twenty minutes to fix:

1. It's as simple as when the janitors go in at night and shut off the machine, so the next morning 9:00 am when the class would start they can't connect and there is time wasted so there is logistical issues.

2. When we use the video-conferencing (polycom) system, polycom systems are really particular when it comes to IP addresses, so if the network specialist or technology specialist in the school needs to configure a printer or something and they make a change to the polycom IP all of a sudden nobody can connect to that camera anymore.

3. Firewall changes. If somebody goes in and makes a firewall change and turns a port off that we need on then we cannot connect via the polycom system.

Another technical issue reported is that some schools and school districts from time to time have decided to block sites like youtube.com. This was seen to be problematic by the e-music teacher because a lot of teachers, not just e-teachers, utilize content from sites like youtube.com. The e-music teacher stated that when a school decides locally that they are going to block youtube.com then he receives calls from students saying "I can't access my assignment because youtube.com is blocked". Then he responded: "Then where does that leave us? So then I have to call the school and talk to

the principal about policy and about this and asked the principal would it be okay, if they unblocked it or at least unblocked it for specific workstations."

The Elluminate Live online conferencing system was used for the synchronous environment portion of the music course. The main difficulty the e-music teacher reported was that the system would go down from time to time and classes were cancelled as a result. This was reported to happen about once a month until a second server had been installed. He reported that one server is located at MUN and the second server is located in Gander. So, if one server goes down there is a backup and no interruption to class.

Another difficulty the e-music teacher reported was with headphones. He stated that it is always going to be a problem. He said: "when they break them they have to be replaced and students are a certain period of time without their microphones and headphones so there are problems associated with that". The e-music teacher was then asked if he had experienced any difficulties with the course software. He reported that there were logistical issues with getting the course software set-up and teaching students to learn how to use it. He said, "I teach them, if they can't understand how to use Audacity that's my problem. No, I can't see that we have any problem with Audacity, Music Ace or Cakewalk…those are the three that we use." One issue he reported was trying to verify if students completed work assigned in Music Ace. He stated:

> The way I do that is, I get them to do a screen grab of the page and then they send
> it to me. I get them to watch the how-to video but you know some of them still
> have trouble getting through the process, some of them are more technically

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comfortable than others, but some of them have trouble getting through that process, so I find that I have to explain that in class many times throughout the year.

WebCT was the learning management system in the pilot course and the e-music teacher reported that it is not the software being used today. Desire2Learn (D2L) is the new learning management system. He reported that WebCT was very dated, really difficult to work around, and cumbersome to a point where a simple task may take five different steps and he stated: "that if I had to do that for 75 students then its 75 times...number". He claims D2L is better because "there are a lot of things it does much more modernly".

Now one of the things that I don't like about WebCT and Desire2Learn is that it still promotes text based instruction. Ah, which is great for University. But when we are trying to create a learner-centered environment and hitting all the learning styles, text is one small piece. So one thing that I've been trying to do with D2L is embed video, like youtube video and things like that, I embed Flash into it, I try to make it a lot less text and more video and audio interfaced. D2L for the most part, that doesn't work fairly easily. For me to embed a video into D2L can be extremely complicated. That's one of the bad sides of D2L, trying to customize it so that it hits on various learning styles doesn't work as well as I think it should. In saying that, it does it better than WebCT ever did.

When the e-music teacher was asked if he had experienced any other problems with D2L he said: "no", and reported that CDLI had been really accommodating by providing tools that allowed D2L to do what the e-teachers needed. One example is the grading section. He stated:

CDLI has developed an interface with D2L that allows D2L to export the data we need and turn it into a report that we need, so now reports have gone from days and days down to as quickly as you can put in your own personal comments to each student, because it's gotten very stream-line, there is still more work to be done but that was a major breakthrough.

Ratio of Synchronous/Asynchronous Classes

The e-music teacher was asked if the ratio of synchronous/asynchronous time allotment was still 4-6 and if it was satisfactory. He responded no, it was not satisfactory, and it had changed to 5-5 meaning equal online and offline classes. He stated: "Because this course is very activity oriented, the students need time to work on activities. In a four to six class arrangement like we were doing before, I didn't have enough time with them to explain things and talk to them and build up all these other things". He was then asked if he was available during offline classes for students and he responded yes and then said:

If something happens like a snow storm and they are at home, they can go on MSN and say "you know I am not going to be in today, I am home because of the snow storm", or somebody may be in an offline period, rather than email me, they'll just give me an MSN and say, "I got a problem with this assignment", and

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I can say, "well meet me in Elluminate Live and we can talk about it". So I am available during those periods and students do take advantage of that.

New Edition of Course Text

Since the beginning of the pilot a new edition of the course textbook was supplied to high schools with new topics and current information. The e-music teacher was asked if he was planning to implement this new edition and how he was going to do it. He reported that it was a major problem because the core course material developed for the course was based upon the first edition of the text. The second edition has different material and it has to be inputted. So what has to happen now at CDLI, is that all of that course material that has been developed has to be adapted to the new textbook and he reports that he has no idea of when that's going to happen. The e-music teacher explained how he tries to accommodate this challenge in the online class:

> I pick an activity that I want to do and I'll go in myself and I'll make the changes, refer to the proper pages and all that kind of stuff and when I give it to the students then they can adapt it. But there are 60 lessons worth of assignments and each lesson may have two, three or four assignments in each one. So, it's impossible for me to just in my day to day work to adapt any percentage of those so I pick and choose the ones I want to adapt and take them out and I add to them and add to them and build them up a bit more.

Evaluation

The e-music teacher was then asked to describe the evaluation methods of the course. There are four grading categories reported: daily assignments worth 30% of the final grade; major term projects (one in term I, one in term II) that are 12.5% each of the final grade; class participation is 20% of the final grade; and tests and quizzes are worth 25% of the final grade. He explained that the daily assignments are worth the most because that is where most of the work actually occurs. Tests include components like tin whistle performance, chapter tests, and take-home assignments. The first major project that all students must complete in Term I is interviewing a local musician. The second major project in Term II is a topic of student's choice (with close guidance from the e-music teacher). He provided some examples of student's choice of assignments as indicated by the following comment:

> I have a student who is building the body of an electric guitar, I had a student last year who recorded 12 instructional videos on throat singing, I have a student this year who is a very good tin whistle player and he is recording six very, very advanced tin whistle songs, and I got another student who is recording herself singing and playing her guitar for four original songs, and last year I had a student who wrote a 1500 word paper on the history of hip hop, so the assignments are pretty broad. So they work closely with me to design their assignments and I help facilitate to help get their assignments done. Again, I try to make the course as individualized as possible and that kind of assignment is very individualized.

The e-music teacher was asked if there was an opportunity for students to evaluate the course at the end of the year. He stated that there is no official course evaluation from CDLI but he created one for *Experiencing Music 2200* for his own personal and professional reasons. He reported that the course evaluation he created is not mandatory for students but most complete the evaluation by choice at the end of the year.

Advantages of the Online Music Course

The advantages the e-music teacher reported of learning music online centered on student access to specialized teachers, and the use of the internet for access of a wealth of information and resources. No disadvantages were noted by the e-music teacher.

Characteristics of a Good E-teacher

The e-music teacher was asked to identify some characteristics of a good e-teacher. His response focused on three characteristics: be creative, be adaptable, and be comfortable with the course material.

4.2.4.3 Perception of Constructivist Learning Environment

The e-music teacher was asked what percentage of the course work comprised of group work and individual work. He reported that 85% of the course was individually-based. He admits that it is an area in need of improvement and is looking to do so. One main problem he reports is that the collaboration tools are really difficult to make do what he wants them to do. He stated that:

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Elluminate Live, breakout rooms, that has a certain amount of effectiveness. But

there are tools like Google *Docs* and things like that, that allow students to

communicate with each other very, very effectively but they are not necessarily

approved by the boards or schools for use, so the technologies that we need are on

the cutting edge of being developed but they have not filtered down to learning

management systems like D2L yet, but they will at some point.

The e-music teacher was asked if the course was more teacher led and directed

rather than student led, or was there a mixture. He replied: "It is a mixture and I would

say that *Experiencing Music* is probably like 40% student led". One of the tools he uses

to foster student led activities is a website called Wiki. Wiki is a fully functional website

that is really easy to use. He stated that "one can embed video and sound very easily. It is

very simple". He also stated that he created a Wiki page that was restricted to the students

in the course, and that the students had full authoring capabilities, and can make any

changes they want in any page in the Wiki. The use of Wiki allowed students to journal

back and forth with each other and comment on the music to which they were listening.

When every student makes a change, the e-music teacher gets an email, so he can then

view what he or she wrote. He commented that "as students may hear something on the

radio, a student may write "I'd like to learn some flamenco guitar" or "I'd like to listen to

some of this Jimmy Hendrix, I heard some the other day and I think it is really good".

The e-music teacher reported that students' comments in Wiki often led to discussions in

an online class and that directives are sometimes provided for students based on their

comments for further learning opportunities.

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The e-music teacher was asked to comment on the level of interaction between students and if there was any evidence as to whether students were able to make a personal connection with each other. He reported that a face-to-face presentation had taken place the previous year with a couple of students who had completed courses with CDLI. One question students were asked was about interacting with other students online. The students relayed that there was interaction amongst students within the same school but not much beyond that. The e-music teacher believes that there is more interaction taking place than what the two students reported. In an effort to increase interaction he tried to encourage students to work with others across the province. In group work, he tried to pair up students who are in different locations. He also stated that:

I try to get them to comment on things and talk about stuff in class, maybe the first couple of minutes in class while we are waiting for other people to arrive, I'll spend time asking students questions, and trying to keep them with each other, to work on distant collaboration.

When describing some positive experiences in teaching this course online, the e-music teacher said that he had the opportunity to meet and work with students from around the province, he learned music about our various cultures, and that the variety of students' backgrounds have forced him to become more learner-centered in his own teaching and learning.

Suggestions for Future Course Development

The e-music teacher's recommendations for course improvement included a suggestion for the video-conferencing unit to be located in a different room away from course computers. His reason for this is because when the unit is on, every other student in the class logged in to other courses is being disturbed by the work that he (the e-music teacher) is doing with the class. He also recommended that students always be supervised on-site. He stated:

> Sometimes they are, sometimes they aren't. I know that in the trenches there are not a lot of schools supervised, I would not be able to say a percentage, I really don't know but there are quite a few out there not supervised and that is reflected in their work.

The e-music teacher also proposed that each school should have a high quality digital sound recorder for the making of student recordings. He stated:

> A high quality recorder, like the Edirol R-09 Recorder, a little handheld recorder. I have my students do a lot of recording, so if they're doing a rhythm pattern or want to sing a song, I'd like for them to archive that, not only for me for my evaluation but for them to keep, so some better quality recording equipment that is portable would be really nice.

In conclusion, the e-music teacher had a unique insight to the inner workings of the online learning environment because of his background and experience in developing the online course content for *Experiencing Music 2200.* He had in-depth knowledge of all the technical tools available for the online offering of the music course as well the ability

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to change and adapt material quickly to meet the various needs of the students. It is

evident from the interview that the e-music teacher recognized the need for more peer to

peer collaboration in the online environment and has set a goal to create more

opportunities for student interaction and collaboration.

4.3 Summary

This chapter presented the results of the Phase I online questionnaires of students,

e-teachers, administrators and music teachers that informed the development of Phase II.

The results of the Phase II online questionnaire of students enrolled in *Experiencing*

Music 2200, interviews with four of those students and their e-music teacher were also

presented. Analysis of the data, along with a discussion of implications arising from this

research and suggestions for further research are presented in Chapter Five.

CHAPTER FIVE

DATA ANALYSIS AND CONCLUSIONS

The purpose of this case study was to gather perceptions of students, teachers, and administrators regarding the design and delivery of *Experiencing Music 2200*. The goal was to highlight experiences, ideas, perspectives, concerns and issues that might have an impact on future design and delivery of online experiences in secondary music education, compare the online environment in music education to that of a constructivist environment, and explore the elements and future possibilities of transformation and change within music education using this new mode of delivery.

This chapter is divided into three main sections. In this first section the data gathered in this study are analyzed within the framework of Duffy and Cunningham's (1996) design principles for a constructivist learning environment. Issues, challenges, and implications that arose from the data are discussed within each of the principles of constructivist learning environment. The remaining sections include a summary, conclusions, suggestions for further research and final thoughts.

5.1 Constructivist Design Principles

In this study, the seven principles for the design of constructivist learning environments or "metaphors we teach by" (p. 9) developed by Duffy and Cunningham (1996) provided the context for the examination of data as gathered from questionnaires, interviews and documents. The purpose was to analyze participants' perspectives in

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relation to constructivist principles and the online context of music education (as determined by this exploratory case study of *Experiencing Music 2200*). Each principle provides a context for analysis and discussion of the data as presented in Chapter Four.

5.1.1 Principle I: All knowledge is constructed; All learning is a process of construction

Through the provision of activities, tools and signs in the online environment, students should be provided with the opportunity to direct their own learning (Duffy and Cunningham, 1996).

The Sparkes and Williams (2000) report recommended to "increase the scope of distance education offerings in the schools through the establishment of a Centre for Distance Learning and Innovation" (p. 73). In response to this recommendation the Department of Education founded CDLI in 2000. Thus, when the Department of Education provided the opportunity for access to *Experiencing Music 2200* and a specialist music teacher (via CDLI) this was an important step in allowing students to construct knowledge in the very broadest of terms. For many students living in small, isolated and rural schools, the opportunity to study music at secondary school may well be a basis for their eventual selection of career options and port-secondary studies.

When students were asked why they registered for *Experiencing Music 2200*, 66.6% reported registering out of a personal interest in music. Providing a variety of course options, including art and music, has given these students an opportunity to choose courses that they want or need to do.

From the research data it is evident that students felt very comfortable with the *Experiencing Music 2200* pilot course format and delivery. The questionnaire results showed that 88% of students said that the course presentation and delivery was appropriate for the way they learn in terms of organization, explanations, and delivery. One student said, "I felt that our teacher has done an awesome job at delivering what we needed to learn and he also added in things to make the class even more exciting" (Student 13). Providing quality material with simple navigation tools allowed for students to browse course content without difficulty and locate necessary information. Additional efforts of the e-music teacher in the online classes (e.g., personalizing instruction) motivated students to learn. Curiosity and motivation are important precursors to knowledge construction and learning in general.

Internet delivery allowed students to access course materials at any time and from any place. The course content was hosted on the WebCT management system which was accessible through the CDLI web portal. The Elluminate Live software provided real-time communication for online classes and also provided an option for e-teachers to record online classes. If a student missed a class or needed to review class discussions he/she had the opportunity, provided the class was recorded to log in and view the class missed. The questionnaire showed that 76.4% of the students reported accessing the course from home and that 66.6% of students reported that the ratio of synchronous to asynchronous (4 synchronous-6 asynchronous) classes was satisfactory. The asynchronous classes provided students with the opportunity to complete daily assignments. Thus the ability to access course material at their convenience provided

students with the opportunity to learn material at their own pace. Students were able to direct their own learning to a large degree by making decisions about their own time management and optional course content such as choice of projects.

Through the use of the website, Wiki, as mentioned earlier in the e-music teacher interview, students were provided with an additional opportunity for self-directed learning. Students were provided with authoring rights in the Wiki and were able to post thoughts and comments or questions on music topics. A feature of Wiki also notified the e-music teacher when any comment or change was made in the Wiki. This allowed the e-music teacher to track all information posted so he could answer questions, respond to student comments or direct them to helpful resources to seek out further information. One of the two major assignments for the course reported by both students and the e-music teacher was by student choice. The e-music teacher reported that approximately 40% of the course was actually student led and directed.

One example of students taking initiative and using the technology in the course to collaborate and create music was noted by a student who partnered with a friend in the same school. He described the use of the Prodikeys keyboard and Audacity to record a techno song. The student commented on the capability of technology that provided students the opportunity to create dance music and other musical styles without knowing how to play it on an instrument. They had a very enjoyable experience and shared it with their e-music teacher. Thus, through the provision of music technology tools and encouragement from the e-music teacher students were able to create their own music.

5.1.2 Principle II: Many world views can be constructed; hence there will be multiple

perspectives.

Through interaction with course content and engagement with others, students

must be open to considering others beliefs and alternative points of view (Duffy and

Cunningham, 1996).

In the curriculum guide for *Experiencing Music 2200,* the Statement of Purpose

highlights the need for students to make connections with others through music so that

they can better understand themselves as "active participants in music and culture-in-the-

making" (Government of Newfoundland and Labrador, 1994, p. 3). All students

experience music in the course through performing, creating and listening. The

curriculum guide for *Experiencing Music 2200* also states that students "become aware of

the overall relationship between music and culture in a way that provides for the ongoing

development of both. Students have opportunities and are given the tools to participate in

musical and cultural experiences" (Government of Newfoundland and Labrador, 1994,

p.1). This recognition that students need to be actively engaged in constructing local and

global identities and knowledge indicates a commitment similar to this particular

constructivist goal.

The use of various online resources such as blogs, Wiki, email, and MSN in

Experiencing Music 2200 online also support this goal by providing students with access

and opportunities for communication in diverse formats. As noted in the data, students

were provided time within the first few minutes of each synchronous class to interact and

discuss topics or issues of interest, current events and personal experiences. At various

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points throughout the class students were again provided with the opportunity to interact with each other and were monitored by the e-music teacher. As reported by students, this openness to ongoing interaction and dialogue allowed them to feel comfortable in the online classroom setting for this course. They felt they could speak freely, question topics and participate in discussions. One student commented on how exciting some of the activities were. The sharing of thoughts on music and the opportunity to share music with new people actually changed one student's outlook on music.

While opportunities for student dialogue and interaction were indeed provided in *Experiencing Music 2200* online, both students and the e-music teacher felt that there could have been even more opportunities for collaboration relating to course material. Students reported that they collaborated with other students taking the course within their school but expressed the desire for more group activities from playing songs together to group assignments. The e-music teacher also acknowledged the need for more peer to peer collaborative activities.

Collaborations between students from different parts of the province resulted in the sharing of varied experiences. For example, students were encouraged to share their own musical and cultural traditions with each other. Students reported positive experiences that focused on learning different kinds of music, meeting students from all over the province and learning about other students through their music, traditions and journal writings.

The students' different needs and interests also seem to be valued and incorporated into the course design and delivery of *Experiencing Music 2200*. Openness

of the instructor to multiple views, ways of learning, interests, varied content and modes of evaluation was also evident. Hence, the recognition, valuing and exposure to multiple perspectives and traditions were critical components in the students' and e-music teacher's construction of world views.

5.1.3 Principle III: Knowledge is context dependent, so learning should occur in contexts to which it is relevant.

Teachers must provide situations that relate to the real world and that are relevant to the students' cultural background (Duffy and Cunningham, 1996). In the curriculum guide for *Experiencing Music 2200* (1994), the statement of purpose notes the need to meet students' needs and interests regardless of their previous musical experiences. It also states, "Because of the nature of this course, the specific materials and strategies related to course content may vary from school to school and change from year to year within a particular school" (Government of Newfoundland and Labrador, 1994, p. 3).

According to the questionnaire results of students enrolled in *Experiencing Music 2200*, 75% of students believed that their learning focused on issues that interested them. Students reported online discussions that were centered on their musical preferences with their e-music teacher and other students. They were provided with opportunities to openly share their thoughts and they felt their opinions were valued. The data revealed that 41% of students believed that what they learned in *Experiencing Music 2200* (online) connected well with their lifestyle.

Students were provided with their own choice of assignments which allowed them to develop programs of study that were relevant and of interest to them and their own individual and collective contexts. For example, one major assignment reported by the e-music teacher and students was the students' choice. As noted in the e-music teacher interview, there were a variety of projects ranging from music recordings, video recordings and essays to hand-making the body of an electric guitar.

Evident from the data was that the e-music teacher viewed his role to be one of a facilitator of knowledge construction. The effort of the e-music teacher to facilitate and individualize the course for students was consistent with Goal III. The e-music teacher strived continuously to make the content and various interactive media relevant to students, both individually and collectively.

Students reported registering for the music course out of an interest and desire to learn more about music. Many of these students would have had limited options to study music in their current school, due to living in an isolated community, attending a small school, or not having a music teacher. The questionnaire revealed that 50% of students perceived an advantage of having access to an online music course was to learn about music. As one student noted, "The biggest advantage, overall, is that we are actually able to do music, in a school with a population of six students... just being able to attempt a music course is an advantage" (Student 7).

Students' perspectives were indeed broadened via the WWW and related online resources. The use of interactive and music-making software allowed students to explore and share their interests, musical or otherwise.

As part of this research, students created a list of character traits they thought were necessary for student success in the online environment. The most important characteristic noted was the ability to work independently. Students reported the need to be good listeners and hard workers. They also thought that students need to be organized, self-disciplined, self-motivated and patient. The characteristics that administrators thought a student should possess in order to be successful were: self-motivation, hard working and self-organizing. Other characteristics highlighted by students were self-discipline; independence; a reasonable level of ability and intelligence; a good average; maturity; a positive attitude and an eagerness to learn. In general, students revealed that their online learning experiences had enabled them to develop a deeper self-awareness of their own learning and needs within the online environment.

The classroom environments in which students congregated to access the online music course had inherent challenges. Both the students and e-music teacher acknowledged that physical space such as the on-site environment had an impact on the overall satisfaction with the course. The classroom location was identified as an issue for some students. One main concern was sharing the space simultaneously with other CDLI students involved in courses other than music. Students commented that they worried about distracting others when they had to perform on the tin whistle. One student reported that they were often told about the level of noise from other students in the same room and surrounding classes. The e-music teacher was also concerned that other non-music students in the room were being disturbed by music activities. The e-music teacher suggested that the video-conferencing unit should be in a separate room away from the

computer lab so students could practice and perform for their music class with little to no interruption to other students' classes.

Students reported that they would have preferred more access to musical equipment, access to a separate room for practice and performances, and more use of the video-conferencing unit for synchronous sessions with the e-music teacher. The data revealed that these 'music making' issues need to be addressed in future developments and course delivery. The online nature of music making and experiencing requires that students have space and privacy. Students need secure sites free from interruption to engage in musical activities and learning, both alone and with others.

The contexts in which learning occurs in the online environment of *Experiencing Music 2200* are multi-faceted. Thus, despite some challenges as noted above, it was evident that the instruction of music (online) was indeed relevant to students.

5.1.4 Principle IV: Learning is mediated by tools and signs

Duffy and Cunningham (1996) support Wertsch's (1994) view that the "essence of mediated action is that it involves the tension between the mediational means as provided in the socio-cultural setting, and the unique contextualised use of these means in carrying out particular, concrete actions (Wertsch, p. 205). Thus learning is constructed in a context that utilizes mediational means, tools and signs (Duffy and Cunningham, 1996, p. 11).

The curriculum guide for *Experiencing Music 2200* states that, "Students investigate the relationship of music to other forms of art as well as the impact of

technology and technical innovation in music" (Government of Newfoundland and Labrador, 1994, p. 1). The use of varied tools and signs in the teaching and learning of music is viewed as an important component in experiencing music.

The data from this study revealed that the use of technologies in *Experiencing Music 2200* (online) included various tools and signs. Generally the computer was the tool by which students accessed and operated within the learning environment. Other supportive on-site tools included a webcam, whiteboard with stylus, headphones, Prodikeys keyboard, a three-in-one printer/scanner/fax machine for sending assignments, and a video-conferencing (POLYCOM) unit. Various software and the tin whistle also served as basic components for this online teaching and learning context.

Duffy and Cunningham (1996) clarify that "signs...are meditational means used for cognitive functioning, and certainly word processors influence the writer as well as the written product" (p. 11). Thus, examples of signs that are utilized in the online environment include word processing software, texting (in Elluminate Live/MSN), music recordings, videos, and verbal instruction (Elluminate Live/video-conferencing). Music notation is also considered a language of signs.

All of the course material and assignments for *Experiencing Music 2200* were available online via the WebCT management system, with exception of the course text and CDs. Students were required to log in into Elluminate Live for synchronous (real-time) class sessions and WebCT for asynchronous (off-line) class sessions for further learning opportunities and assignments. Elluminate Live also provided text messaging, application-sharing and a whiteboard for demonstrations.

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Music software such as Music Ace and Cakewalk were provided for students to expand and practice their musical theoretical knowledge. Audacity is a free audio editor and recorder that was provided for students so that they could record their tin whistle songs and send them electronically to the e-music teacher for review. Internet sites such as Blogs, and Wiki's were created and made available to students to enable discussions, collaboration and the development of personal portfolios.

Students reported that they very much enjoyed the listening component of the course and also the operative approach to learning music. As one student commented, "We do a lot of stuff hands-on in the course" (Student D). Another student acknowledged the effect of technology on music, "Technology is a big part of music now. With it comes working with different programs and everything… on a computer actually learning how to learn music, it just works" (Student B).

The physical equipment students used as part of the course were considered vital tools in this online context. One administrator reported the need for increased Internet capacity to avail of video-conferencing. Students and their e-music teacher reported that the 'wear and tear' on headphones was a recurring problem that often impeded the learning process. It was suggested that schools offering CDLI courses should have a certain number of headsets in supply, as well as other general maintenance and equipment supplies. Such tools are critical to the delivery of the courses and student learning.

One could also consider the content of *Experiencing Music 2200* that is hosted on the WebCT management system to be a 'tool' of learning. There was a new edition of the

course textbook and CD collection for *Experiencing Music 2200* supplied to schools in 2007. The e-music teacher commented on trying to update assignments to reflect the new edition on an as-need basis but that the task was overwhelming and much work still needs to be done in this area. It was suggested that perhaps a course developer should be hired to update all online course materials for *Experiencing Music 2200* in order to better reflect the new textbook and CD collection.

With the use of such technology there are bound to be a few challenges or difficulties. Students (50% of questionnaire respondents) reported technical difficulties such as problems accessing material from home, problems connecting head phones and sending assignments, computers freezing up, slow internet connections, course music files being slow to download, and sometimes the video-conferencing unit was being occupied by other students. Student-teacher interactions via the video-conferencing unit also became troublesome at times. This was noted as a concern by both students and the e-music teacher.

Students reported connectivity and video quality issues. The video-conferencing unit had significant delays at times, the picture was fuzzy depending on the weather, three-way conferencing was problematic. Often the screen would be blotchy and shut down. Those who did not have video-conferencing found it a challenge when learning to play the tin whistle. Data from the questionnaire revealed that 50% of the students reported that not having face-to-face help and interaction had impeded their learning and success on musical instruments.

The e-music teacher reported one of the major challenges using the video-conferencing unit was in setting it up for a class session which involved trying to connect to other sites. The data revealed that onsite school technology staff and even janitors affected the connectivity either through firewall changes or something as simple as turning off the unit in the evening.

The technical difficulties reported by the e-music teacher primarily centered on the video-conferencing unit and Elluminate Live server. The technical issues with the video-conferencing unit were due to IP address changes and firewall changes that prevented students' access. The issue with the Elluminate Live server was resolved by the creation of a second server for back-up should the server be disconnected.

The use of the Internet as a tool by which students accessed their online course provided many other opportunities such as access to a wealth of information for self-directed learning, research and discovery, access to various multimedia to enhance the learning experience for different style learners, and local to global communication and connections. One particular difficulty that the e-music teacher commented on in relation to the internet was that schools and districts had differing policies on internet use. For example, some schools would block a number of websites from student use. One particular instance was noted when the site youtube.com was blocked and students could not access material needed for their assignments.

Hence, the role of the e-music teacher was to mediate the use of tools and signs in the teaching and learning of music concepts, skills and outcomes generally. The data reveal a significant level of mediation on various levels between students and the e-music

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teacher, and both with the technologies used in the online environment that had a direct impact on learning.

5.1.5 Principle V: Learning is an inherently social-dialogical activity

Learning is constructed through a mediation of language signs. Dialogue between teacher-student and student-student influences intellectual development. Therefore, "learning becomes a social, communicative and discursive process" (Duffy and Cunningham, 1996, p. 12).

Throughout the pilot delivery of *Experiencing Music 2200* (online), the students reported a lot of varied dialogical interactions with the e-music teacher. Sessions using the video-conferencing unit (synchronous) helped students 'connect' with the teacher through both group and one-on-one conferences. Several students felt connected to the teacher in general ways because of the interest the teacher took in them by sharing stories, musical experiences, videos, blogs and taking the time to get to know them via dialogue. The questionnaire results illustrated that 70.6% felt comfortable participating in Elluminate Live (real-time) vClass sessions. A high percentage (88.3%) of students felt that the teacher encouraged them to participate.

When students were asked to list characteristics of a good e-teacher, 41.1% highlighted the importance of the e-teacher interacting and creating a connection with students. This connection was noted by one administrator who reported in relation to *Experiencing Music 2200* (online) that the "students' talents seem to be at the centre of the teacher's work and expectations" (Administrator 1).

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Students commented that they felt free to express their opinions as the e-music teacher let them speak and share opinions and ideas in online classes. One particular student revealed that the interactive nature of this course made him/her feel more confident in conversing than in other online courses (Student C). The music course was reported to be the "top" course for interaction with other students (Student B). One student supported this by stating, "The teacher supports everyone, and we all get to interact with each other" (Student 16).

Although there was a high level of teacher-student interaction in *Experiencing Music 2200* online, the questionnaire results of students enrolled in the course illustrated a need for more/additional student-student interaction and support. While 23.5% of students reported not feeling connected to other students in the course, 41.2% felt connected only some of the time. The questionnaire also revealed that 58.8% of students felt that their participation was seldom encouraged by their peers and 82% of students felt that others seldom responded to their ideas. Only a small number of students reported making a connection with other students in the online environment. It is not clear as to why this is so low. Students reported music being a 'social course' but for some reason it appears that the majority of students were not connecting with each other. Thus, it is evident that there needs to be a further examination into why students felt they were not making connections with each other in this online music environment.

The students had mixed responses when asked to comment about the amount of synchronous vs. asynchronous classes. The students reported that the allotment of synchronous and asynchronous classes was four to six respectively in a 14-day cycle.

Data revealed that 40% of the students claimed that this ratio was not adequate. They felt there were too many mini assignments but that the off-line classes provided them the time needed to complete the work. Overall, all students preferred more online classes. Even though most students expressed they would prefer all classes to be synchronous, some students enjoyed the asynchronous part of the course because it allowed them an opportunity to work both alone and together with others.

The e-music teacher perceived that his role was to facilitate the social-dialogical process by creating pedagogical and technical opportunities for sharing and interacting in varied ways. Providing a variety of dialoguing and communicative opportunities enabled students to share their perspectives and experiences, learn from each other, and thus gain a deeper understanding and awareness of others' viewpoints. The forms of dialogical experiences noted included: discussion and conferencing (student to student and student to teacher), question and answer, journal writing, texting, emailing, video-conferencing and sharing whiteboard sessions in Elluminate Live.

The data revealed numerous occurrences and opportunities for social activities and dialogue. It is apparent that significant relationships developed between students and their e-music teacher. However, further examination into opportunities for student to student dialogue and connection needs to occur.

5.1.6 Principle VI: Learners are distributed, multidimensional participants in a
sociocultural process.

Learning occurs in relation to one's pattern of participation in a social community
(Duffy and Cunningham, 1996). The curriculum guide for *Experiencing Music 2200*
states, "The critical issue is not the level of performance but rather the fact that students
actively participate in the experiencing of music and music-making" (Government of
Newfoundland and Labrador, 1994, p. 3).

Even though students reported low levels of peer-to-peer support in the online
environment, a high number of students commented on the relationship they developed
with other students taking the course within their own school. The students worked
together most of the time, had a tendency to figure things out on their own and provided
support for each other. As a result of this interaction students reported that it made the
experience more enjoyable. Both students and their e-music teacher reported the desire to
have more collaboration activities and their suggestion was to provide more opportunities
for group pairing across sites (students from different communities) to enhance the
development of shared understandings and general participation.

Data revealed that the use of video-conferencing made a significant impact on
students' music experiences and learning in general. Students reported that video-
conferencing provided one-on-one interaction and face-to-face music demonstrations.
One student remarked, "I got to see my teacher as I talked to him. It kind of gives you
that connection with the teacher and you know him better" (Student C). Not only were
students able to see their e-music teacher via video-conferencing but they could see each

other as well. In addition to online classes, some students were able to meet the e-music teacher in person when he traveled occasionally to their school and/or community. One student commented that the e-music teacher's visit was actually "the highlight of my year" as she got to meet the e-music teacher in person (Student C).

The online learning environment provided opportunities for students to experiment, discover, dialogue, and share, all of which are necessary for constructivism to flourish. Both students and their e-music teacher recognized the need and desire for more collaboration activities. It was the hope of both the students and e-music teacher that, with more collaboration activities and group pairing of students from different schools, students will forge a better relationship with their peers. This collaborative relationship may then provide the peer support that some students reported was lacking, as noted in previous section.

5.1.7 Principle VII: Knowing how we know is the ultimate human accomplishment

This goal is also referred to as reflexivity. Reflexivity allows for students to think back upon themselves to discover how they learn and come to know (Duffy and Cunningham, 1996). The curriculum guide for *Experiencing Music 2200* states, "Music provides an outlet for creativity and self-expression. It engages our imaginations and allows us to explore our own identities" (Government of Newfoundland and Labrador, 1994, p. 3). The curriculum guide also states that "*Experiencing Music 2200* has the unique opportunity to address individual needs and interests regardless of one's previous musical experience" (Government of Newfoundland and Labrador, 1994, p. 3).

The data revealed that *Experiencing Music 2200* in both formats is a general music course that anyone can partake in regardless of his/her previous musical background. One student commented, "It's a great learning experience for people who don't know much about music (Student 8)." Students commented on learning about various aspects of music through performing (playing tin whistle), creating (writing songs, improvising, mixing music) and listening.

The results from the student questionnaire that focused on reflection and self-learning revealed that while 41% of students were critical about their own ideas, 76.4% reported that they seldom think critically about how they learn. The data also revealed that 70.6% of the students thought that the teacher modeled good discourse, and 56.3% felt that the teacher modeled critical self-reflection.

There is evidence from the data that students were involved in a number of reflective activities (e.g., journal writing, discussion, and self-assessments). Through participation in these activities students reported that their views on music had changed, they enjoyed sharing music with other students, and they learned about different cultures and styles of music.

Data revealed that via *Experiencing Music 2200* (online), opportunities were created for students to learn more about themselves. Students even discovered what their learning preferences were. For example, one student commented on being a visual learner as she stated, "I find like learning from books really hard... I like learning from sight. I need a more visual thing or hands-on. This course was really good." (Student C).

Hence, there is evidence that throughout *Experiencing Music 2200* (online), students engaged in research, self-directed learning, and self-determined pacing, came to be more self-aware of themselves in many ways, particularly as learners. These acquired awarenesses will be an important part of their lifelong learning processes. In this regard, it is important to note that the e-music teacher saw his role as a facilitator, in order to facilitate or encourage students in their self-discovery process. It was also important for him to provide students with the 'space' for self-learning and growth within a constructivist environment.

5.2 Summary

These constructivist designed principles, as discussed previously, have provided a basis for analyzing the data in relation to a constructivist environment. In general, there is evidence that there was a clear relationship between the online learning environment of *Experiencing Music 2200* and Duffy and Cunningham's (1996) principles. This analysis revealed a number of positive and successful learning experiences that occurred as a result of the opportunity for students in rural communities to avail of *Experiencing Music 2200* (online). These include having an opportunity to learn about music, learning how to read music, learning how to play an instrument (tin whistle/fiddle), making a music recording, meeting new people from across the province and getting to meet the e-music teacher in person.

However, it is clear also that there are still a number of areas that need refining and/or exploration and examination in relation to the constructivist teaching and learning

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principles as put forth by Duffy and Cunningham (1996). These areas include peer-to-peer communication and support in the online environment, the physical context by which students access the online environment, and technical difficulties experienced that may have affected teaching and learning.

5.3 Conclusions

The purpose of the study was to gather perceptions of students, teachers, and administrators regarding the online delivery of *Experiencing Music 2200* (pilot). The methodology chosen for the study was an exploratory case study. As little research has been conducted in the area of online secondary music education in general, and in Newfoundland and Labrador specifically, it was deemed an appropriate method to undertake. As part of this exploratory case study approach, a preliminary study (Phase I) was conducted to gather data and test the online questionnaire instrument. Thus, Phase I consisted of online questionnaires developed individually and administered to students (enrolled in CDLI courses), e-teachers, administrators and classroom music teachers. The data from Phase I was then analyzed and used to formulate the questionnaire and interview questions for Phase II.

Phase II began with an online questionnaire developed for students enrolled specifically in *Experiencing Music 2200*. The data collected from this questionnaire aided in the development of interview questions. Interviews were conducted with four students enrolled in *Experiencing Music 2200*. An in-depth interview was conducted as well with the e-music teacher of this music course. Throughout both phases, various documents

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were reviewed and analyzed for content that had specific relevance to the research questions that guided the study as well as the varied components within the study. The overall goal of this study was to provide knowledge and insights that might serve to assist the ongoing development of online music education contexts in Newfoundland and Labrador.

In general, it was gleaned from this study that the delivery of distance education at the secondary level in Newfoundland and Labrador is a very complex process. This was noted from the very beginning of the research, in relation to the challenges in locating information about CDLI (e.g., its history, mode of curriculum development and design) and being able to access schools, teachers and students in the online environment.

As noted earlier, CDLI is a branch of the Department of Education which provides secondary level courses and specialist teachers (generally on secondment from the various school districts) to students in all school districts throughout the province. To aid in the delivery of online courses, each school that avails of CDLI courses provides an m-team for student and technical support. The m-team consists of administrators and teachers located within these schools. There are many layers in the administration, course development and teaching and learning in the CDLI online environment.

This research has revealed that CDLI is serving an important role in the provision and delivery of educational opportunities for students who live in small or isolated communities scattered across the province of Newfoundland and Labrador. It has revealed also that *Experiencing Music 2200* (online pilot) not only met the needs of students by providing them with access to a fine arts credit required for graduation, but

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also provided them with positive and innovative music experiences in line with the intent of *Experiencing Music 2200*.

Through the examination of the relationship of this online music environment to that of a constructivist approach (by Duffy & Cunningham, 1996) data show that a constructivist environment does indeed exist, to varying degrees, in this online music education context. As noted earlier, the students and the e-music teacher reported on many elements of a constructivist learning environment. Although there were several challenges noted (e.g., technical, physical space, updated resources, means for collaborative learning and communicating) there was clear evidence that this context was designed in a way that was student-centered and integral to music education in general.

While there are a number of students continuing to enroll in CDLI's online courses, it became evident in this case study of perceptions, that online learning is not for everyone. This was a view expressed by many. Students and administrators revealed a long list of characteristics that one should possess in order to be successful in online learning, as noted in Chapter Four. They admit that in particular, online learning requires a significant amount of independence and time management skills. In this regard, data revealed that some school administrators do indeed have a protocol for screening students for taking online courses. For example, the selection criteria reported by administrators consisted of student characteristics such as independence, diligence, maturity, and demonstrated academic achievement (75% average). However, it is important to note that there currently exists within CDLI no system or level of consistency between schools

regarding the selection process by which students can register for and access online courses. This is an area in need of examination by officials, administrators and teachers.

The issues of in-school and on-site support in the areas of monitoring and supervision of students were highlighted as a main challenge by e-teachers and administrators. They admit that generally, more on-site student supervision is required. It is necessary to monitor students in the computer labs during online and off-line classes, for examinations purposes, and for tracking and supporting student progress. Hence, these areas of onsite support and teacher allocations need to be addressed in relation to the effective delivery of online courses. For example, one administrator commented that online courses should positively, not negatively impact the schools' teacher allocations. The negative impact is that the support provided by existing teachers in the school is added to an already busy schedule and as a result does not usually receive the attention necessary to monitor students' successes and challenges.

As noted earlier in this study, data revealed that the majority of students enrolled in *Experiencing Music 2200* (online) because of an interest in music. Having completed the course, they thought that other students would enjoy it as well. A main advantage the music students reported was having access to an accredited secondary music course and a specialist music teacher. They were very aware of this important opportunity and expressed that they may have had no experience in music education at all because they lived in an isolated community or attended a very small school with limited teacher allocations and resources. Hence, it is evident that *Experiencing Music 2200* online played a very important role in their general education. Many students expressed in

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interest in further study and musical activity. The variety of musical experiences appeared to fulfill the goals and outcomes of the curriculum as students experienced and were engaged with music through performing (e.g., tin whistle/fiddle), listening (e.g., various websites/CDs), and creating (e.g., song writing/video composition and music mixing).

It is important to note that this study has revealed that the nature or 'face' of music education in Newfoundland and Labrador has changed dramatically since the initial provision of *Experiencing Music 2200* online pilot. Exposure to the internet, local and global musicians and organizations, has brought with it new and innovative ways of "doing" music in music education and technological contexts. The e-music teacher has continued to share his knowledge and experiences with other music teachers in the province through various professional development programs. Current online technologies, software programs and various other classroom teaching aids are being utilized for music teaching and learning. Hence, much of the online approaches and resources are being utilized in music classrooms throughout the province. As well, classroom music teachers have access to *Experiencing Music 2200* online to use as a resource for instructional purposes.

This study has revealed that *Experiencing Music 2200* online has the potential to be a foundational new context for the delivery of secondary music education in Newfoundland and Labrador. It has provided a musical education to many who may not have had this opportunity, and it has opened up many new ways and means for the teaching and learning of music in general. As learned from the participants in this study,

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there is no doubt that this new online context will serve an important role in the ongoing development, growth and transformation of music education in this province, and beyond.

5.4 Suggestions for Further Research

As distance learning secondary music education is a relatively new venture, there is need for foundational research in this area. Stemming from this study, several topics have emerged as possible areas for future research.

Distance learning in general requires continued exploration and examination as it is an area affected by rapid growth and change. Further research in this area might include work to develop protocols for online program and course evaluations to be administered at the end of a semester/year in terms of accessibility, content, interactivity, student achievement of outcomes and overall delivery satisfaction.

With particular emphasis on music education (online) it is a good time to conduct a longitudinal study to determine the long-term effects of online learning compared to traditional classroom music learning. Research questions could include: What technologies are most effective? Should all secondary music courses be offered online? Should all students have the opportunity to avail of online learning? As enrollment declines and programs are cut, should distance learning be available to urban areas? Are there elements of online music education that could serve needs of the traditional settings as well? What are the limitations, challenges and opportunities relative to the design and delivery of online or web-based music education?

In relation to constructivist methodologies and approaches, further study could be conducted to explore the social and collaborative nature of online learning at the secondary level generally, and in music education specifically. A replication of this study could also be conducted with current students and e-music teachers and comparisons could be made between the pilot offering and current offerings. Of particular interest might be to study the role of in-school personnel (e.g. m-teachers) in the delivery of music courses.

Criteria for student selection in online courses, as related to achievement and success, needs to be explored. A study of this nature could examine questions such as who or what type of students can avail of online learning in rural schools; is it accessible to all – why or why not; is there a need of a standard criterion for student selection; what is the nature and approaches to student evaluation and assessment in online contexts?

5.5 Final Thoughts

Emerging from this data are several important factors about distance education in general and music education in particular. From the perspectives of students, teachers and administrators involved in the development and delivery of *Experiencing Music 2200* (online) we have learned some important issues, challenges and ideas surrounding the teaching and learning of music in the online context.

In closing, it is crucial to consider the perceptions of the various stakeholders (e.g., students, teachers, and administrators) involved in online learning when seeking to improve practice. The advantages of online learning include meeting new people from

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across the province, learning from others' views and experiences, engaging with modern technologies, and accessing specialist teachers. On the other hand, there exist some logistical and technical challenges and connectivity issues which were viewed by some participants as a disadvantage to online learning contexts. In order to maintain student interest and success, these challenges and issues need to be addressed to lessen the 'distance gap'. As Blomeyer (2002) stated, "Online learning or e-learning isn't about digital technologies any more than classroom teaching is about blackboards. E-learning should be about creating and deploying technology systems that enable constructive human interaction and support the improvement of all teaching and learning" (p. 19).

Emerging from this study, I have been very much reminded of the potential of new online contexts for music education. It is very exciting in general to be a part of the growth and development in this area, at this time. I recently accepted a position with CDLI as the second e-music teacher in the fall of 2009. Of significance for me is that I'll finally experience what it is like being a music teacher within the online environment. Having the experience of this study which included interacting with administrators, teachers, and students in the online context, I feel I have a good understanding of issues, challenges and opportunities as gathered through the insights and understandings of these current participants in distance, online teaching and learning.

As I look forward to exploring music education in this new context, I am also reminded however of the power of having a real teacher interact with real students in real time. There is much value in and indeed need for both contexts in music education. This

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sentiment is echoed powerfully by Student C in this study when she stated, "I got to learn

fiddle songs and meet my teacher in person. That was the highlight of my year!"

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APPENDIX A

PARENTAL CONSENT

Katharine Joy
430 Dunn's Hill Road
Conception Bay South, NL
A1X 7J4
Tel: (709) 834-2696
Fax: (709) 227-2069

Dear Parents,

My name is Katharine Joy and I am presently a graduate student in the Teaching and Learning Program at Memorial University of Newfoundland's Faculty of Education. Under the supervision of Dr. Andrea Rose, I am currently conducting a research study entitled: *A Case Study of Perceptions of Students, Teachers, and Administrators on Distance Learning and Music Education in Newfoundland and Labrador: A Constructivist Perspective.* The purpose of my research is to investigate the current perceptions of various 'stakeholders' in education, (e.g., students, teachers, administrators) regarding the emerging role of online learning in music education, and explore possibilities of transformation and change within music education via his new mode of delivery. I believe the information gained from this research study will provide valuable data for future curricular developments in the online delivery of music courses in the province of Newfoundland and Labrador.

I am writing this letter to request your consent for the participation of your son/daughter in this study. This study involves questionnaires to be completed online by students, teachers, and administrators as well as some possible follow-up interviews with a *smaller* sample from this larger group of participants. If you agree to allow your child to participate, please sign the attached form and return it to school at your earliest convenience.

By replying to this letter you are indicating that you understand the purpose of this research project and agree to allow your child to be an active participant in this study investigating the perceptions of students, teachers, and administrators on distance delivery of secondary music education. If at any time your child wishes to refrain from answering a question, or even withdraw from this study, he/she may do so without harm or prejudice. Anonymity is assured, and responses will be kept confidential so your child is at no risk during the course of this study. Should comments be used in my final report, identity will be protected by use of a pseudonym. The answers to the questionnaire will be kept on a password protected server (CDLI) and interview tapes will be stored securely under lock and key until completion of report, at which time all answers will be destroyed.

I have been granted approval by your School District to request your child's participation. I hope you will provide consent for your child to participate. Also, this research has been approved by the Interdisciplinary Committee on Ethics in Human

Research at Memorial University of Newfoundland. If you have any ethical concerns about this research you may contact the Chairperson of ICEHR at icehr@mun.ca or by telephone at (709) 737-8368. Should you have any questions regarding your child's participation in this research study please feel free to contact me at your earliest convenience by telephone at (709) 834-2696 or email kjoy@cdli.ca or my supervisor, Dr. Andrea Rose, at (709) 754-0337.

For your interest, please find enclosed in this email a link to a brief description of, and background to, this study.

http://dev.cdli.ca/musicresearch/info.html

Thank you for your consideration of this request. I look forward to hearing back from you as soon as possible.

Please sign and return this portion.

- -

I _____ hereby give permission to my son, and or daughter: Name: _____ to take part in this study investing the perceptions of students, teachers, and administrators on distance delivery of a music course, undertaken by Katharine Joy. I understand that participation is entirely voluntary and I can withdraw permission at any time. I also understand that participation in the study is strictly confidential with no individual being identified.

_____   _____
Date   Signature

Respectfully,

Katharine Joy

APPENDIX B

E-TEACHER QUESTIONNAIRE

E-Teacher

Instructions

Please fill out the questionnaire below and click on the 'Send Response' button at the end.

Do not hit ENTER at any time, it may cause an error on the form.

NOTE: Your *email* address will *only* be used for verification of responses.

SECTION A

Please enter your e-mail address:

1. Please identify yourself:

    ○ Male ○ Female

2. Have you ever taken a online course?

    ○ Yes ○ No

    If yes, how many online courses have you taken?

3. Is this your first time teaching online?

    ○ Yes ○ No

    If no, how many courses have you taught online?

4. Are you teaching online:

    ☐ Full-time

☐ Part-time

☐ Part-time with classroom teaching

☐ Other: [   ]

5. What is your main reason for choosing to teach online?

[text box]

6. How much prior computer experience did you have before taking a distance course? (Select all that apply)

☐ E-mail

☐ Web cam or video conferencing

☐ Instant messaging (i.e., MSN Messenger, Yahoo, ICQ)

☐ Word processing (Word Perfect, Microsoft Word)

☐ Presentation software or spreadsheet programs (i.e., Power Point Presentation, Excel, Access)

☐ Web page design software (Front Page, Netscape Composer)

☐ Other (specify) [   ]

7. Did you receive any training to prepare you for distance learning?

○ Yes ○ No

8. Do you think you had adequate preparation and training for teaching a distance course?

○ Yes ○ No

If no, what could you have learned more about?

SECTION B

For the following section please select the appropriate response.

		Almost Never	Seldom	Sometimes	Often	Always
1	My teaching focuses on issues that interest the students	○	○	○	○	○
2	I take into account of different student learning preferences	○	○	○	○	○
3	I take into account of the diversity of student cultures	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
4	I allow students to dialogue during vClass sessions	○	○	○	○	○
5	I lecture during vClass sessions	○	○	○	○	○
6	I use vClass to generate discussions	○	○	○	○	○
7	I encourage peer conferencing	○	○	○	○	○
8	I provoke students to participate in	○	○	○	○	○

		discussions				
9	I provide activities for students to work in pairs or groups	○	○	○	○	○

		Almost Never	**Seldom**	**Sometimes**	**Often**	**Always**
10	I model critical self-reflection	○	○	○	○	○
11	I encourage student self-reflection and journaling as part of my teaching	○	○	○	○	○
12	I challenge the students' assumptions	○	○	○	○	○

		Almost Never	**Seldom**	**Sometimes**	**Often**	**Always**
13	I provide clear expectations for my students	○	○	○	○	○
14	I respond to student's correspondence in a timely fashion (1-2days)	○	○	○	○	○
15	I provide feedback on tests and assignments in a timely manner	○	○	○	○	○
16	I inform students of their progress throughout the course	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
17	In assessment, all students complete the same tasks	○	○	○	○	○
18	I allow student choice in method of assessment	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
19	I have guest speakers join vClass sessions	○	○	○	○	○
20	I use a variety of charts, graphics and video components to enhance vClass activities	○	○	○	○	○
21	I use the world wide web during vClass	○	○	○	○	○

Section C

10. In your opinion, what are some advantages of distance learning?

11. In your opinion, what are some disadvantages of distance learning?

12. In your opinion, should the high school system continue to pursue distance learning as means of course delivery for students?

○ Yes ○ No

Please explain:

```
┌──────────────────────────────────────────┬─┐
│                                          │▲│
│                                          │▼│
│ ◄│  │                                 ►  │ │
└──────────────────────────────────────────┴─┘
```

13. Please identify some challenges you have encountered in teaching distance learning.

```
┌──────────────────────────────────────────┬─┐
│                                          │▲│
│                                          │▼│
│ ◄│  │                                 ►  │ │
└──────────────────────────────────────────┴─┘
```

SECTION D

14. Have you heard of CDLI's pilot course Experiencing Music 2200 that began in September 2004?

       ◌   Yes   ◌   No

If yes, how did you find out?

```
┌──────────────────────────────────────────┬─┐
│                                          │▲│
│                                          │▼│
│ ◄│  │                                 ►  │ │
└──────────────────────────────────────────┴─┘
```
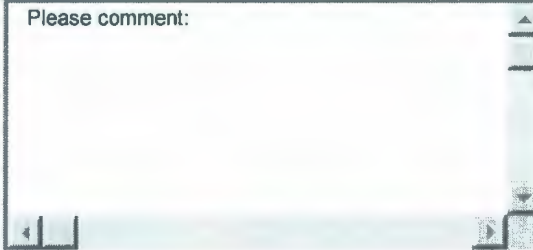
15. Do you have any musical background?

       ◌   Yes   ◌   No

If yes, explain further (do you play an instrument, sing, etc.)

```
┌──────────────────────────────────────────┬─┐
│                                          │▲│
│                                          │▼│
│ ◄│  │                                 ►  │ │
└──────────────────────────────────────────┴─┘
```

16. What are your perspectives on a high school music course being offered through distance learning?

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Please comment:

17. Please add any other comments you might have regarding web-based delivery of educational programs generally and/or music education courses specifically.

Thank you in advance for your contribution and timely response

Send Response | Clear

kjoy@cdli.ca
Katharine W. Joy.

APPENDIX C

ADMINISTRATOR QUESTIONNAIRE

Administrator

Instructions

Please fill out the questionnaire below and click on the **'Send Response'** button at the end.

Do not hit **ENTER** at any time, it may cause an error on the form.

NOTE: Your *email* address will *only* be used for verification of responses.

SECTION A

Please enter your e-mail address:

1. Please identify yourself:

    ◯ Male   ◯ Female

2. What is your current position?

    ◯ Principal   ◯ Vice-Principal   ◯ Assistant Principal

3. Have you ever taken an online course?

    ◯ Yes   ◯ No

    a) If yes, how many online courses have you completed?

    b) What was the main reason for taking an online course?

4. Have you ever taught an online course?

        ◯ Yes ◯ No

5. Did you receive any training to prepare you for administering online learning?

        ◯ Yes ◯ No

6. Do you think you had adequate preparation and training for administering online learning?

        ◯ Yes ◯ No

If no, what could you have learned more about?

```
[                                          ]
```

SECTION B

7. In your opinion what are some advantages of learning music online?

```
[                                          ]
```

8. In your opinion what are some disadvantages of learning music online?

```
[                                          ]
```

9. In your opinion, is online learning meeting the needs of students in your school?

        ◯ Yes ◯ No

Please elaborate:

[text box]

10. Do all students have access to online learning in your school?

    ○ Yes ○ No

11. Is there a student selection process for online courses?

    ○ Yes ○ No

    If so, please briefly describe:

[text box]

12. What characteristics do you perceive students should embody to be successful in online learning?

[text box]

13. What do you think are the main reasons students enroll in online courses?

[text box]

14. What is the success rate for distance learning students in your school?

    ○ 25% ○ 50% ○ 75% ○ 100% ○ Other [_____]

15. Of the students who drop out, what do you think some of the reasons are?

[text box]

16. What are the most positive or rewarding experiences you have encountered while administering online courses?

```
[                    ▲]
[                    ▼]
[◄ ▐               ►  ]
```

17. In your experience, do you think this online music course shows evidence of a constructivist (student-centered) environment?

      ⊂ Yes   ⊂ No

    Please explain:

```
[                    ▲]
[                    ▼]
[◄ ▐               ►  ]
```

18. In your opinion, should the high school system continue to pursue distance learning as means of course delivery for students?

      ⊂ Yes   ⊂ No

    Please explain:

```
[                    ▲]
[                    ▼]
[◄ ▐               ►  ]
```

SECTION C

19. Do you have any musical background?

      ⊂ Yes   ⊂ No

If yes, explain further (do you play an instrument, sing, etc.)

```
[                    ▲]
[                    ▼]
[◄ ▐               ►  ]
```

20. What were your thoughts on the music course before students enrolled?

```
[                              ]
[                              ]
```
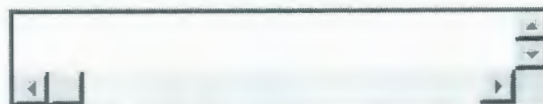
21. Have your perceptions about the course changed?

    ◯ Yes   ◯ No

If so, in what way?

```
[                              ]
[                              ]
```

22. Please identify some issues or challenges you have encountered in administering the online music course?

```
[                              ]
[                              ]
```

23. Do you feel that this method of delivery is a positive learning environment for music?

    ◯ Yes   ◯ No

Please explain:

```
[                              ]
[                              ]
```

24. Do you think other students in your school would like to do this course?

    ◯ Yes   ◯ No

Why or Why not?

```
[                              ]
[                              ]
```

25. Do you have any suggestions for continued development of this course or of music education in general?

Please comment:

26. Please add any other comments you might have regarding web-based delivery of educational programs generally and/or music education courses specifically.

Thank you in advance for your contribution and timely response

Send Response   Clear

APPENDIX D

MUSIC TEACHER QUESTIONNAIRE

Music Teacher

Instructions

Please fill out the questionnaire below and click on the **'Send Response'** button at the end.

Do not hit **ENTER** at any time, it may cause an error on the form.

NOTE: Your *email* address will *only* be used for verification of responses.

SECTION A

Please enter your e-mail address:

1. Please identify yourself:

    ⊂ Male   ⊂ Female

2. Please Indicate your level of education:

    ☐ B.Mus, B.Mus.Ed.

    ☐ B.Ed.

    ☐ Other (Specify)

3. How much computer experience do you have? (Select all that apply)

    ☐ E-mail

    ☐ Web cam or video conferencing

    ☐ Instant messaging (i.e., MSN Messenger, Yahoo, ICQ)

☐ Word processing (i.e.,Word Perfect, Microsoft Word)

☐ Presentation software or spreadsheet programs (i.e., Power Point Presentation, Excel, Access)

☐ Web page design software (i.e., Front Page, Netscape Composer)

☐ Other (specify) [   ]

4. Have you ever taken a web-based course?

○ Yes ○ No

If yes, what were your reasons for taking a web-based course?

[   ]

5. Have you taught a web-based course before?

○ Yes ○ No

6. Are you aware of the Virtual High School in Newfoundland and Labrador?

○ Yes ○ No

If yes, how and when did you become aware?

[   ]

7. Do you use computers or the Internet to support your music teaching and/or your music making?

○ Yes ○ No

If yes, please identify three ways computers or the Internet is used in your classroom?

If no, why not?

8. What musical software do you find most useful and why?

SECTION B

9. What are your first impressions of *Experiencing Music 2200* being developed for web-based delivery?
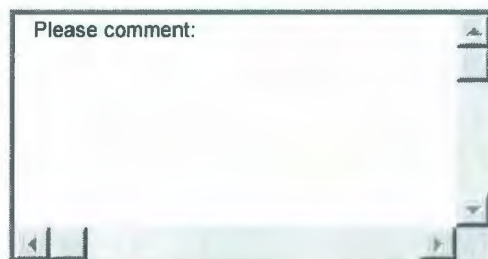
10. Do you have any concerns about this new mode of secondary music education delivery?

     ○ Yes ○ No

If yes, what are they?

11. Can you identify some possible positive outcomes of this new mode of music education delivery?

Please comment:

12. Please add any other comments you might have regarding web-based delivery of educational programs generally and/or music education courses specifically.

Thank you in advance for your contribution and timely response

Send Response | Clear

kjoy@cdli.ca
Katharine W. Joy

APPENDIX E

STUDENT QUESTIONNAIRE

Student

Instructions

Please fill out the questionnaire below and click on the 'Send Response' button at the end.

Do not hit ENTER at any time, it may cause an error on the form.

NOTE: Your *email* address will *only* be used for verification of responses.

SECTION A

Please enter your e-mail address:

1. **Please identify yourself:** ○ Male ○ Female

2. **How many online courses have you taken through CDLI?**

3. **Did you have any musical background prior to taking this course?**

○ Yes ○ No

If yes, explain further (do you play an instrument, sing, etc.)

4. **Why did you choose to register for this music course?**

5. What were your thoughts on the music course before you registered?

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│                                         │▼
│◄│ │                                   ►│
└─────────────────────────────────────────┘
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6. Have your perceptions about the course changed since the beginning of the course?

    ○ Yes   ○ No

If Yes, in what way?

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┌─────────────────────────────────────────┐▲
│                                         │▼
│◄│ │                                   ►│
└─────────────────────────────────────────┘
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7. Are you the only person taking this course in your school?

   ○ Yes ○ No

How is this affecting your experience?

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┌─────────────────────────────────────────┐▲
│                                         │▼
│◄│ │                                   ►│
└─────────────────────────────────────────┘
```

8. How much prior computer experience did you have before taking an online course? (Select all that apply)

   ☐ E-mail

   ☐ Web cam or video conferencing

   ☐ Instant messaging (i.e., MSN Messenger, Yahoo, ICQ)

   ☐ Word processing (Word Perfect, Microsoft Word)

   ☐ Presentation software or spreadsheet programs (i.e., Power Point Presentation, Excel, Access)

   ☐ Web page design software (Front Page, Netscape Composer)

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☐ Other (specify)

9. Did you receive any training to prepare you for online learning?

○ Yes   ○ No

10. Do you think you had adequate training to take the online music course?

○ Yes   ○ No

If no, what could you have learned more about?

11. Which of the following best describes you as a learner?

☐ A preference for activity, discussion, and group work

☐ A preference for reading, internal processing, and working alone

☐ A preference for step-by-step, careful, thorough preparation; observation of specifics; and memory of facts

☐ A preference for concepts and relationships, imagination, theory, and reading

☐ A preference for logical organization and objective material

☐ A preference for learning through personal relationships

☐ A preference for steady, orderly, work and prescribed tasks

☐ A preference for informal problem solving, discovery, and flexibility

12. In your experience was the course presentation and delivery appropriate for the way you learn?

        C Yes   C No

Please explain:

[text box]

SECTION B

13. Do you feel you had sufficient time in the computer lab to complete homework assignments?

        C Yes   C No

14. Do you have access to your online course material from home?

        C Yes   C No

If yes, how often would you say you accessed your online course material? [dropdown] **a week.**

15. Did you experience any technical difficulties?

        C Yes   C No

Please explain:

[text box]

16. Do you think the course materials and online resources were adequate?

        C Yes   C No

Explain:

[text input box with scrollbar]

17. Is the classroom environment where you access the music course appropriate for your needs?

◦ Yes ◦ No

Explain:

[text input box with scrollbar]

SECTION C

Reflecting on your music course experience please select the appropriate response.

		Almost Never	Seldom	Sometimes	Often	Always
1	My learning focuses on issues that interest me	◦	◦	◦	◦	◦
2	What I learn is important for my future	◦	◦	◦	◦	◦
3	What I learn connects well with my lifestyle	◦	◦	◦	◦	◦

		Almost Never	Seldom	Sometimes	Often	Always
4	I think about how I learn	◦	◦	◦	◦	◦

5	I am critical about my own ideas	○	○	○	○	○
6	I am critical of other students' ideas	○	○	○	○	○
7	I think critically about ideas in the readings	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
8	I explain my ideas to other students	○	○	○	○	○
9	I ask other students to explain their ideas	○	○	○	○	○
10	Other students explain their ideas to me	○	○	○	○	○
11	Other students respond to my ideas	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
12	The teacher stimulates my thinking	○	○	○	○	○
13	The teacher encourages me to participate	○	○	○	○	○
14	The teacher models good discourse	○	○	○	○	○
15	The teacher models critical self-reflection	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
16	The teacher challenges my assumptions	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
17	Other students encourage my participation	○	○	○	○	○
18	Other students praise my contributions	○	○	○	○	○
19	I felt 'connected' to other students taking the course	○	○	○	○	○
20	I felt comfortable in participating during vClass sessions	○	○	○	○	○

		Almost Never	Seldom	Sometimes	Often	Always
21	I was satisfied with the timeliness of interaction with the instructor	○	○	○	○	○
22	I received feedback on tests and assignments in a timely manner	○	○	○	○	○
23	The instructor's responses to my questions and concerns were helpful	○	○	○	○	○
24	The instructor clearly explained how my	○	○	○	○	○

	performance in the course would be evaluated				
25	I was informed of my progress throughout the course	○	○	○	○	○
26	I felt the workload for the course was comparable to that in other courses I have taken at this level	○	○	○	○	○
27	I received adequate directions for using the computer technologies in the course	○	○	○	○	○

SECTION D

18. What do you consider to be the main disadvantage(s) of learning music online for you?

19. What do you consider to be the main advantage(s) of learning music online for you?

20. Is the current ratio of time for Synchronous (real-time interaction) versus Asynchronous adequate for music learning?

○ Yes ○ No

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Why?

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┌─────────────────────────────────────────┬─┐
│                                         │▲│
│                                         │▼│
│◄│ │                                  │►│  │
└─────────────────────────────────────────┴─┘
```

21. Did or are you experiencing any challenges with this music course?

      ○ Yes ○ No

If so, what are they?

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┌─────────────────────────────────────────┬─┐
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│                                         │▼│
│◄│ │                                  │►│  │
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22. Do you feel that this method of delivery is a positive learning environment for music?

      ○ Yes ○ No

Please explain:

```
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│                                         │▲│
│                                         │▼│
│◄│ │                                  │►│  │
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23. What are the most positive or rewarding experiences you have encountered while participating in this course?

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│                                         │▲│
│                                         │▼│
│◄│ │                                  │►│  │
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24. Do you have any suggestions for continued development of this course or of music education in general?

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│                                         │▲│
│                                         │▼│
│◄│ │                                  │►│  │
└─────────────────────────────────────────┴─┘
```

25. Would you be interested in registering for another music course if it was available?

○ Yes ○ No

Please explain:

```
comment:                                    ▲
                                            ▼
◄                                           ►
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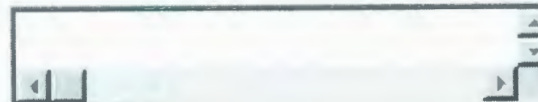
26. Do you think other students in your school would like to do this course?

○ Yes ○ No

Why or Why not?

```
                                            ▲
                                            ▼
◄                                           ►
```

27. What characteristics do you perceive students should embody to be successful in online learning?

```
                                            ▲
                                            ▼
◄                                           ►
```

28. Please add any other comments or questions you might have regarding web-based delivery of educational programs generally and/or the music course specifically.

```
                                            ▲
                                            ▼
◄                                           ►
```

Thank you in advance for your contribution and timely response

Send Response | Clear

APPENDIX F

CONSTRUCTIVIST ONLINE LEARNING ENVIRONMENT SURVEY

Constructivist Online Learning Environment Survey

(Taylor & Maor, 2000)

This is the original COLLES survey that was then modified for use in this research.

Relevance

In this online unit...			Almost Never	Seldom	Sometimes	Often	Almost Always	
1	I prefer that	my learning focuses on issues that interest me.	○	○	●	○	○	●
	I found that		○	●	○	○	○	●
2	I prefer that	what I learn is important for my professional practice.	○	○	●	●	●	●
	I found that		○	○	○	○	○	●
3	I prefer that	I learn how to improve my professional practice.	○	○	○	○	○	●
	I found that		○	●	○	○	○	●
4	I prefer that	what I learn connects well with my professional practice.	○	○	○	○	○	●
	I found that		○	○	○	○	○	●

Reflection

In this online unit...			Almost Never	Seldom	Sometimes	Often	Almost Always	
5	I prefer that	I think critically about how I learn.	○	○	○	○	○	●
	I found that		●	○	●	○	○	●
6	I prefer that	I think critically about my own ideas.	○	○	○	○	○	●
	I found that		○	○	○	○	○	●
7	I prefer that	I think critically about other students' ideas.	○	○	○	○	○	●
	I found that		○	○	○	○	○	●
8	I prefer that	I think critically about ideas in the readings.	○	○	○	○	○	●
	I found that		○	○	○	○	○	●

Interaction

In this online unit...		Almost Never	Seldom	Sometimes	Often	Almost Always	
9	I prefer that	I explain my ideas to other students.	○	○	○	○	○	⊙
	I found that		●	●	○	○	○	○
10	I prefer that	I ask other students to explain their ideas.	○	○	○	○	○	⊙
	I found that		○	○	○	○	○	⊙
11	I prefer that	other students ask me to explain my ideas.	○	○	●	●	○	○
	I found that		○	○	○	○	○	⊙
12	I prefer that	other students respond to my ideas.	○	○	○	○	○	⊙
	I found that		○	○	○	○	○	⊙

Making Sense

In this online unit...		Almost Never	Seldom	Sometimes	Often	Almost Always	
13	I prefer that	I make good sense of other students' messages.	○	○	○	○	○	⊙
	I found that		○	○	●	○	○	⊙
14	I prefer that	other students make good sense of my messages.	○	○	○	○	○	⊙
	I found that		○	○	○	○	○	⊙
15	I prefer that	I make good sense of the tutor's messages.	○	○	○	○	○	⊙
	I found that		○	○	○	○	○	⊙
16	I prefer that	the tutor makes good sense of my messages.	○	○	○	○	○	⊙
	I found that		○	○	○	○	○	⊙

Tutor Support

In this online unit...			Almost Never	Seldom	Sometimes	Often	Almost Always	
17	I prefer that	the tutor stimulates my thinking.	○	○	○	○	●	◉
	I found that		○	○	○	○	○	◉
18	I prefer that	the tutor encourages me to participate.	○	○	○	○	●	◉
	I found that		○	○	○	○	○	◉
19	I prefer that	the tutor models good discourse.	○	○	○	●	○	◉
	I found that		○	●	○	○	○	◉
20	I prefer that	the tutor models critical self-reflection.	○	○	○	○	○	◉
	I found that		●	○	○	○	○	◉

Peer Support

In this online unit...			Almost Never	Seldom	Sometimes	Often	Almost Always	
21	I prefer that	other students encourage my participation.	○	○	●	○	○	◉
	I found that		○	●	○	○	○	◉
22	I prefer that	other students praise my contribution.	●	○	○	○	○	◉
	I found that		●	○	○	○	○	◉
23	I prefer that	other students value my contribution.	●	○	○	○	○	◉
	I found that		○	○	○	●	○	◉
24	I prefer that	other students empathise with my struggle to learn.	○	○	○	○	○	◉
	I found that		●	○	○	○	○	◉

APPENDIX G

COMPARATIVE ANALYSIS OF CONSTRUCTIVIST DESIGNS

Duffy and Cunningham's (1996) "metaphors we teach by" (p. 9) were presented

in the literature review of Chapter Two along with design goals created by Cunningham,

Duffy & Knuth (1993) and Savery and Duffy (1995). Through the examination of

Cunningham, Duffy & Knuth (1993) and Savery and Duffy (1995) there were a number

of similarities. Table G1 shows that there is an overlap between these principles and

goals. See relationships as noted by arrows.

Table G1

Cunningham, Duffy & Knuth (1993) Comparison with Savery and Duffy (1995)

Cunningham, Duffy & Knuth (1993)	Savery and Duffy (1995)
1. provide experience with the knowledge construction process	1. Anchor all learning activities to a larger task or problem
2. provide experience in and appreciation for multiple perspectives	2. Support the learner in developing ownership for the overall problem or task
3. embed learning in realistic and relevant contexts	3. Design an authentic task
4. encourage ownership and voice in the learning process	4. Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning
5. embed learning in social experience	5. Give the learner ownership of the process used to develop a solution
6. encourage the use of multiple modes of representation	6. Design the learning environment to support and challenge the learner's thinking
7. encourage self-awareness of the knowledge construction process (p.11-12)	7. Encourage testing ideas against alternative views and alternative contexts
	8. Provide opportunity for and support reflection on both the content learned and the learning process (p.3-6)

Thus, Table G1 reveals that there is no significant difference between the two

approaches. As Chapter Two illustrated, Duffy and Cunningham's (1996) "metaphors we

teach by" (p. 9) were a further refinement of Cunningham, Duffy & Knuth's (1993) goals

with the addition of "learning is mediated by tools and signs" (p. 11).

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It was decided that Duffy and Cunningham's (1996) principles were to be used as the basis for analysis of the music online learning environment in this study. To support this analysis, the COLLES survey was examined and on the basis of a comparison illustrated in Table G2, it appeared that Taylor and Maor's (2000) questionnaire would be a useful instrument to assist in determining whether the quality of the online learning environment in music education related to that of a constructivist environment as defined by Duffy and Cunningham's (1996) metaphors. See the following table and relationships noted by arrows.

Table G2

Duffy and Cunningham (1996) Comparision with Taylor and Maor (2000)

Duffy and Cunningham's (1996)	Taylor and Maor (2000)
1. All knowledge is constructed; all learning is a process of construction	1. Relevance
2. Many world views can be constructed; Hence there will be multiple perspectives	2. Reflection
3. Knowledge is context dependent, so learning should occur in contexts to which it is relevant	3. Interactivity
4. Learning is mediated by tools and signs	4. Tutor Support
5. Learning is an inherently social-dialogical activity	5. Peer Support
6. Learners are distributed, multidimensional participants in a sociocultural process	
7. Knowing how we know is the ultimate human accomplishment	6. Interpretation

A review of CDLI's guiding principles for students listed in the CDLI's Educators Reference Manual (2004), revealed a list of principles of learning that online courses adhere (as noted previously in Chapter Two). After examination of these principles, it was evident that there were also similarities between CDLI and Duffy and Cunningham's (1996).

Table G3 illustrates the comparison of Duffy and Cunningham's (1996) and CDLI's (2003) principles.

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Table G3

Duffy and Cunningham's (1996) Comparison with CDLI (2003)

Duffy and Cunningham's (1996)	CDLI (2003)
1. All knowledge is constructed; all learning is a process of construction	1. Learning is a process of actively constructing knowledge.
2. Many world views can be constructed; Hence there will be multiple perspectives	2. Students construct knowledge and make it meaningful in terms of their prior knowledge and experiences.
3. Knowledge is context dependent, so learning should occur in contexts to which it is relevant	3. Learning is enhanced when it takes place in a social and collaborative environment.
4. Learning is mediated by tools and signs	4. Students need to continue to view learning as an integrated whole.
5. Learning is an inherently social-dialogical activity	5. Learners must see themselves as capable and successful.
6. Learners are distributed, multidimensional participants in a sociocultural process	6. Learners have different ways of knowing and representing knowledge.
7. Knowing how we know is the ultimate human accomplishment	7. Reflection is an integral part of learning.
	8. Learning involves taking risks.

As a result of the various comparisons illustrated it was decided that Duffy and
Cunningham's (1996) principles for the design of a constructivist environment was
appropriate to use as the basis for analysis of this research.

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