

**THE EFFECTIVENESS OF VIRTUAL MUSIC RESOURCES IN MEETING THE
NEEDS OF EARLY CHILDHOOD TEACHERS**

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Dedication

To my husband, Shaun Fuller

My parents, Rick and Pam Somerville

And my sisters, Chelsea and Carly –

Thank you for your unwavering support along this incredible journey!

Abstract

Private music teachers and early childhood educators have overlapping interests, but rarely seem to interact, despite the research indicating the benefits of music integration as a teaching strategy across several areas of curriculum. The design of this research is an intensive, descriptive case study with four participating teachers in Alberta kindergarten classrooms in the 2011-2012 school year. Over 12 weeks, four teachers accessed a website designed by a private music educator, containing music integration resources that could assist teachers in meeting many of the student-learning outcomes set out in the Alberta kindergarten program of studies. Three observations were conducted of each of the participants utilizing the resources in their classes, and interviews were conducted after each observation. Some of the underlying research questions that served to maintain the focus of the study were: How did the participants use the resources from the website? To what extent did the use of the website impact their willingness to use online resources for professional learning, networking and sharing? And, to what extent did this resource function like a virtual community of practice, connecting two communities interested in music education? Results are wholly encouraging, indicating that communities of practice can extend to the Internet, bridging the gap between two communities. This research has the potential to be replicated and expanded in many ways.

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Chapter One: Introduction to the Study

As a private music teacher, I have always felt that I have existed as a peripheral member of the education community. As I negotiated the meaning of my professional experiences, I appreciated that they added significant value to my practice and shaped my understanding of music education, but they did not seem to conform what I believed society defined as being a teacher. My experiences were transformative to me, but existed only within my small, isolated studio. Because of this, I struggled to identify myself as a teacher, and my experiences became situated within a pedagogic life that was shared with only a group of like-minded peers. I wondered why I felt like a marginal member of the broader teaching community and if other private music teachers felt the same way? I questioned if my music experiences and expertise could support not just music teachers but early childhood educators in the broader early childhood educational community?

An estimated 70% of elementary schools in Alberta do not employ music specialists; “[the] compulsory general music program ... is taught, for the most part, by generalist classroom teachers” (Dust & Montgomery, 2005, p. 2). Added to this, American studies show that “elementary music curricula taught by generalist classroom teachers often receives less time than what is officially required” (p. 3); these teachers may choose not to teach music because they can not sing or play (Bresler, 1993, p. 4). These statistics sparked my desire to search for ways to participate in and contribute to the community of early childhood educators in public schools. I hoped this would not only help me shape and navigate my own experiences as a teacher, but be transformative to the teachers that I interacted with (Wenger, 1998, p. 56) and offer opportunities for more music to be used in elementary school classrooms. This became the impetus for a

research study designed to bridge the divide between my private studio and the early childhood educators in the public and private education community, and expand my own community of practice.

The Research Question and Goals

A goal of this study was to use the literature on music integration and my own teaching experiences to provide early childhood educators with effective music resources to use in their classrooms, assisting them in meeting student-learning outcomes across many areas of curriculum. This study was not designed to show that music integration in public elementary schools should replace compulsory music programs. Research in this area says that “elementary music education has the potential to contribute significantly to the development of children’s musical understanding” (Montgomery, 2002, p. 9) and I agree that young children should be exposed to music, as well as music-specific instruction, from a very early age. This study was designed to encourage even more music to be used in elementary classrooms, by showing early childhood educators how effective music integration activities can be—even for non-musicians—in meeting student-learning outcomes across many areas of curriculum.

Some of the other research goals were: to see if public and private early childhood school teachers could benefit from the music integration activities. And, by providing them with easy-to-implement music resources, to see if they would be encouraged to use music more frequently in their teaching. Further, I wanted to find a way to effectively share the resources, to connect private music teachers and early childhood educators in the public and private schools and build a more inclusive community of educators in Alberta. And, lastly, an emerging goal that came to me as I was in the midst of this study

was: To determine if a website could function like a virtual community of practice, connecting two like-minded communities. This research has the potential to be replicated and expanded in many ways.

Communities of Practice

In the 1990s, Etienne Wenger and his colleagues developed a social theory of learning for professional communities that they called communities of practice. Wenger continues this seminal work today. He defines communities of practice as groups of people who share information and knowledge around a common interest and aim to generate new knowledge through interaction, collaboration and mutual engagement (Wenger, 1998). Wenger says that the organic nature of these special types of communities apply to all professions, and satisfy three constitutive dimensions: mutual engagement, joint enterprise and shared repertoire. Mutual engagement is what defines a community, as it “connects participants to each other in ways that are diverse and complex” (p. 77). As much as there is peaceful coexistence in these interactions, there is also conflict, disagreements, and tension, but it is through this mixture of “power and dependence, pleasure and pain ... friendship and hatred” (p. 77) that can result a strong sustained interpersonal engagement. The second dimension, joint enterprise, refers to the negotiated response of the participants, and creates among participants’ relations of mutual accountability (p. 78). Again, everybody does not have to agree or believe the same thing, but matters are communally negotiated. The third dimension is the shared history of learning, often embodied in the resources that are developed over time to allow members to more effectively pursue their joint enterprise. He calls this shared repertoire, saying this is the instrumental dimension of the community’s practice.

A community's members, Wenger says, will fit into one of four layers of practice-based connections. Core members are the smallest group, but provide the leadership to shape the practice and knowledge base. Active members regularly participate in the group, but without the intensity of the core group. Peripheral members keep to the sidelines because they feel they have little to contribute or are limited by time constraints. And, marginal members are those that are content to operate from the outside looking in, neither interested in leaving the community altogether, nor moving to a more active role. Wenger says that all of these members together make up the community, and that these communities are natural occurring social structures across all professions (Wenger, McDermott, & Snyder, 2002, p. 5). This framework is arguably the most developed community of practice theory available today (Murillo, 2008).

Wenger's theory is that a community has clear boundaries and well-established bodies of knowledge, but that any one community will not exist in isolation or work independently from the others (Wenger, 1998, p. 103). Often, communities are interrelated and overlapping, and this allows members to take a fresh look at their own community and gain new insights from others. Comparing this idea to my own community of music teachers in the private sector, I can see many related, overlapping dimensions to the early childhood educator community. Private music teachers often work with young children, and have chosen the path of education because they enjoy working with young children and are motivated to educate and inspire them. I believe many early childhood educators in the school systems have chosen their field with a similar goal in mind. In my experience, however, these two communities rarely cross boundaries or have multi-memberships. This may be because, as Wenger suggests,

professional practice is directly related to our sense of identity. In other words, private music teachers and early childhood educators in public and private schools may not feel any direct, personal connection to the others' practice or see any reason to collaborate or contribute to another, seemingly unrelated, community.

It is noteworthy to point out that this is often not the case at the secondary level in education, however. Music specialists may be more common, or necessary at the secondary level possibly because the classes require someone better equipped to teach more complicated music-specific instruction (Dust & Montgomery, 2005, p. 8). Secondary level educators teaching music-specific instruction often begin as musicians themselves before becoming educators so they may already have connections to multiple communities of practice. As well, music programming offered in Alberta high schools is often performance based, and because of this, teachers may seek out the assistance of the private music sector, looking for collaboration opportunities with musicians to offer students performance opportunities in the community or clinics as supplementary experiences for their students. This boundary crossing enriches their musical and teaching lives and demonstrates the power of membership in multiple communities of practice. This study aims to establish that same kind of mutually beneficial and mutually enriching relationship between educators, both public and private, that specialize in work with young children.

Wenger argues that brokers are key to assisting with this process of boundary crossing. He defines a broker as the person who understands both communities and can “enable coordination, and – if they are good brokers – open new possibilities for meaning” (p. 109). Wenger (1998) explains the importance of brokering:

The job of brokering is complex. It involves processes of translation, coordination, and alignment between perspectives. It requires enough legitimacy to influence the development of a practice, mobilize attention, and address conflicting interests. It also requires the ability to link practices by facilitating transactions between them, and to cause learning by introducing into a practice elements of another (p. 109).

Considering Wenger's framework and the roles that make up these communities of practice, I see a plausible explanation for the feelings of isolation that I, as a private music teacher feel from the early childhood public teaching communities of practice. And, this new understanding provides clarity as to why many private, early childhood music teachers seldom cross the boundaries into the public, early childhood educator school teaching community, despite having related and overlapping interests. If, as Wenger suggests, this is because we are lacking brokers whose key function through multi-membership is to connect the practices, it seems like the most effective way to bridge the gap that I feel between my private community and the public early childhood education communities is for me to take the role of the broker.

But, before going any further, it may be helpful for me to first chronicle the communities that I belong to, and how I got to this place.

A Private Music Teacher

I began teaching piano when I was a teenager. I grew up in a small town, and I was one of the most advanced pianists in my community. I loved playing and loved the meditative quality of getting lost in music. Mrs. Costigan was my teacher and my mentor, and in truth, she was one of the most important adult influences of my childhood. She

was in her 60's when I began studying with her, and I saw her at least once a week for almost 14 years. Those lessons shaped me musically, and she thoughtfully inspired me as a teacher and as a musician, making music an undeniable part of who I am.

My mother was also an important figure in my musical journey. Now retired, she was a classroom teacher as well as a private piano teacher with strong ties to the Suzuki method. The Suzuki philosophy is grounded in a curriculum that embraces inclusion. This embodies my mother, a thoughtful patient teacher who nurtured all of her students equally and aimed to awaken in them a universe of possibility. She thought—as I do—that music can offer a key to this universe. In many ways, my mother was a broker between two communities of practice: she embedded ideals from her private music teaching into her public school teaching and inspired her colleagues by opening up new possibilities for meaning. By being a member of the private and public teaching communities, she was able to link the practices and introduce elements of her private teaching into the public teaching community.

As her child, my childhood was a journey through a place that seems to only now be described in modern research. She innately understood that music had the power to facilitate parenting and foster a child's development in very organic ways. Because of this, our lives were immersed in music. She introduced and exposed us to music in meaningful, interactive ways, and supported and encouraged us in a way that included music in almost everything that we did. Through her experiences as a public and private music teacher, as well as a parent who valued the importance of music in a child's life, she has become an invaluable role model for me, as a teacher myself, and a parent of one-year-old twins. Modern research now seems to validate her actions and my experiences.

Music, to me, is a parent's secret super-power; I use the hundreds of children's songs, rhymes and dances that I know during my days with my babies to transition to new activities, to repeat motions, to foster the development of new skills, to distract them during unfavorable routines (diaper changing), and even to change the energy in preparation for naps. I believe teachers can harness these same types of 'super-powers' in their classroom.

My post-secondary education journey began in 1998 and has continued ever since. I received a Bachelor of Arts from the University of Alberta in Music, where I took a plethora of music courses, from piano literature, history, theory, and instruments for children to more obscure courses such as film music and world music. Applied piano courses added significant value to my post-secondary experience, and I performed small recitals under the tutelage of some amazing pianists and dedicated teachers. These private lessons were an opportunity for me to engage in a sustained personal relationship with my teachers and further pursue my connection to music. Following this, I took an after-degree at the University of Lethbridge, and received my Bachelor of Music. It was at this time that I studied piano performance more seriously and performed Grieg's Piano Concerto in A Minor in a graduation recital, under the direction of another amazing pianist. Later, I also performed this concerto with a full orchestra, a once in a lifetime opportunity not afforded to many musicians. A concerto includes virtuosic cadenzas and soloist passages that are extremely difficult. Learning and performing Grieg's piano concerto entailed memorizing 64 pages of piano music and timing it perfectly to the music of the orchestra. It required an incredible amount of dedication, perseverance and motivation. I learned so much in the six months that I spent in an isolated practice room,

not just about mechanics and expression, but about how these experiences can shape personal identity. Conquering this concerto instilled in me the belief that I was capable of and could achieve anything I wanted to do. It became an experience that is now part of who I am; it brought to light my capabilities and instilled confidence and a new perspective of my abilities.

This whole narrative of experience (Connelly & Clandinin, 1988) has led me to a junction where the musician and educator meet. I became a music teacher in private and classroom settings at the University of Lethbridge Conservatory of Music nine years ago. My teaching objectives are not to cultivate professional musicians in my studio, but to spend quality time with my students, listening to their music as well as their words. I am mindful of the potential of these one-on-one lessons. Music is incredibly personal and meaningful; it leaves us exposed and vulnerable. In my studio, I nurture my students and engage them in a sustained, personal relationship. My students learn discipline, dedication and confidence through musical study, but I also ensure they are comfortable so that they can express who they are. I provide them with opportunities to feel that same sense of personal achievement that I felt when I conquered the piano concerto. I foster their ability to express themselves in everything that they do. I want them to take what they have learned through music, and live a more peaceful, meaningful life.

I know now that I am a musical pedagogue more than I will ever be a performer. In addition to my private piano teaching, I teach Kindermusik® music and movement classes, which I adore. In the last nine years of teaching this program, I have taught hundreds of children between the ages of newborn to seven years and have learned

hundreds and hundreds of children's songs, dances, rhymes and music-integrated activities.

Becoming a licensed Kindermusik educator in 2005 was a life-changing decision for me. The program is specifically designed to use early-childhood music activities as the vehicle for learning and fostering the development of the whole child. The classes show parents how music can foster a child's development. This embodies my ideals and personal experiences that music is a journey through development and can awaken a sense of personal identity. In all of the classes that I teach (up to age three), the parents are expected to be completely engaged in the activities and their child's journey.

Testimonials for my program have been emphatically and overwhelmingly positive, with comments such as how their children love the dancing and singing but how the parents see changes in their child's overall development. Since parents attend the classes, I am afforded a rare and unique opportunity as a teacher where I can educate and inform parents about the research that supports the curriculum, and thoughtfully encourage them to continue the learning at home.

In addition to the classes I teach, I also coordinate the entire Kindermusik program at the Conservatory, supervising and mentoring five other Kindermusik educators, and scheduling and monitoring over 15 classes per week. I consider this an important community of practice in my life. In our own Kindermusik community of practice, the six of us meet monthly to discuss curriculum, retention, re-enrolment strategies and parent communication, and attend and observe at least one of our peer's classes per semester. In addition to this community of practice, we also subscribe to the larger international community of Kindermusik educators, and communicate regularly

with international, licensed educators around the world through web forums, chat-rooms, the ‘curriculum café’ social website and the “Minds on Music” blog (www.mindsonmusic.kindermusik.com). The most advanced teaching resource developed by Kindermusik International for all licensed Kindermusik educators is the Digital Teaching Guide, a subscribed, very well organized virtual environment containing modern ideas for each music activity, music clips of songs, videos with classroom examples, a listing of the required materials for each class, and feedback from educators around the world with variation ideas for each activity. It is accessible to the educators only, and is a very powerful teaching and communicating tool. This resource allows over six thousand, geographically and culturally diverse, like-minded educators to be brought together to interact, collaborate and engage with ease.

Private teaching at the Conservatory of Music has also allowed me to further expand into the private music teaching community of practice as well. In this community, I interact with over 60 music faculty and registered music teachers in our city. We share a passion for private music education and aim to deepen our knowledge and expertise by interacting on an ongoing basis (Wenger et al., 2002, p. 4). Through these relationships, we share research and scholarship opportunities and break boundaries into other smaller music communities to interact and collaborate. One example of boundary breaking across multiple communities that our private music teaching community pursues is called the *Feel the Beat* concert series for children. I co-founded, coordinate, and organize this classical music concert series, enlisting over 30 musicians from my community of practice to perform large-scale orchestrated works for public and private school children in our city. The goal of this series is to cross the boundary into the public school system,

and introduce live performances of classical music to young students. Every May, we offer multiple performances of large productions such as *Beethoven Lives Upstairs*, *Mozart's Magnificent Voyage*, *Peter & the Wolf* and *Hansel and Gretel* held during the day and at no charge to the schools. I also write and develop teaching resources that I send to the teachers before the concerts to help their students prepare. We are able to reach over 4,000 students each year, indicating that many early childhood educators recognize the importance of music in education and are looking for opportunities to integrate music into their classrooms. This concert series provides opportunities for students to see classical performances and for the public education community to generate new knowledge through interaction, collaboration and mutual engagement with the private sector.

This boundary crossing is an effective community outreach program in our city, but a limitation is that there are few opportunities or reasons to sustain interaction with the public teaching community after the concerts are over. Additionally, the concerts provide opportunities for the public early childhood educators to observe the concerts rather than participate in the process or expand their interaction with musicians or music educators. Wenger defines these types of limited boundary crossings as boundary objects, because “they enable coordination, but they can do so without actually creating a bridge between the perspectives and the various constituencies” (Wenger, 1998, p. 107). Seeing this limited, one-way interaction, I often wondered if there was a way to sustain interaction and engagement in both communities so all members felt engaged and connected for extended periods of time. Wenger suggests that “the key to good

community participation ... is to design community activities that allow participants at all levels to feel like full members” (Wenger et al., 2002, p. 57).

All of these experiences and insights led me to the decision to pursue a Master of Education through the University of Lethbridge as a way to connect more meaningfully with the public teaching community. I became a member of the M.Ed. cohort in 2009, already having realized that I was more interested in teaching than performing. I wanted to participate in public teaching communities as a way to share my own experiences with music integration, and learn from public educators and faculty about educating young children. Interestingly, the M.Ed. cohorts at the University of Lethbridge function just like a community of practice, meeting all of the constitutive dimensions: mutual engagement, joint enterprise and shared repertoire. Members are mutually engaged because they want to collaborate and share knowledge about their practice. They are invested in teaching, are accountable to the other cohort members, and understand the responsibilities and appropriate topics for discussion (joint enterprise) (Wenger, 1998, p. 78). “The third characteristic of practice as a source of community coherence is the development of shared repertoire” (p. 82), a dimension that can, however, impede full participation as it did in my case. In my cohort community, shared repertoire included the language of assessment, the program of studies and abbreviations used consistently in Alberta public classrooms, all terms I was not familiar with. Because of this, I began to identify myself as a marginal member of this community. This was largely because I could not contribute to the knowledge sharing with my limited experience in their field, i.e. public school classrooms. This compelled me to seek out ways that I could more actively participate. Wenger says that community members are often continuously

moving, on a trajectory, to different levels of participation (p. 154). Peripheral trajectories, Wenger says, may never lead to full participation, while those on an inbound trajectory may start as marginal members and move toward the core. He says members may put themselves on an inbound trajectory if “identities are invested in their future participation, even though present participation may be peripheral” (p. 154). I wanted to be more involved in the public education community, so I listened intently and was inspired by the teaching stories of my cohort peers. I collected the resources they shared, and learned the language that they all understood. All of this allowed me to move from the outside to the core of this community.

Reflecting on the experiences of initially feeling like a marginal member of a public education community, this prompted me to consider the opposite: how would an early childhood educator feel trying to contribute as a member of a private music teaching community? The goals of my multi-membership were not only to learn from practicing public educators, but also to entice them to pursue membership in my community. I thought, would my private music teaching community be inviting for public educators to join? Certainly, there are public early childhood educators who are non-musicians but have an interest in the expertise and skills of private music teaching communities. Some of these teachers may recognize the powerful uses of music in a classroom, but have little to no experience using or understanding music. Connelly and Clandinin point out that teachers look for resources that they can “select, organize and adapt for [their] own use” (Connelly & Clandinin, 1988, p. 139), but I wondered if they would be able to extract knowledge or resources from a private music teaching community for use in their own classrooms?

Music educators are often also performing musicians, and so in these communities, shared repertoire would seem—to outsiders—like a different language, with French, German, and Italian music terms incorporated into conversation or historical references which define performance technique. Just as I did not understand the language of the program of studies, public school educators may not understand the gestures, abbreviations and especially the musical notation that musicians read and discuss. An early childhood educator may feel intimidated by the language of the private music teachers' community, and find the content too specific to be helpful to their own practice. In addition, if that teacher had no music background and no understanding about the benefits of music integration in her own classroom, she might not find a benefit to being involved in a private music teaching community.

This problem intrigued me: the literature on music integration suggests early childhood school teachers and private music teachers could benefit from sharing knowledge and ideas. And, as will be explained in chapter two, research indicates that there are many benefits to music exposure on the development of the whole child. Given this, I think that—especially in a time where there are few music specialists available in the primary school systems—there is an opportunity for private music teachers to engage and interact with early childhood educators, as a way to share music experiences and resources. This inspired me to look for ways to break the boundaries between the public and private education practices in a way that could allow all participants to feel like active, contributing members. As well, I was motivated to try to shape the understanding of the benefits of multi-membership, all the while being cognizant that the entire process needed to be very inviting to non-musicians so as to overcome the feelings of

intimidation surrounding any type of music-related practice. This became the impetus for a research study designed so I could take the role of broker and develop a tool that could sustain interaction in an environment that was useful and inviting to all members. This, I hoped, might encourage sustained multi-membership and boundary breaking among my public and private education communities, and ultimately encourage the use of music in more public educators' classrooms.

Virtual Communities

The next consideration was what would be the best approach to brokering as a way to encourage collaboration among private music teachers and public and private early childhood educators. I reflected on my experiences with the Kindermusik virtual communities of practice, and wondered if a similar structure might be able to connect private and public elementary teachers in Alberta. I considered how this type of 'virtual' environment might function for sharing music resources. I also consulted scholarly research to corroborate my thoughts. Murillo (2008) is one who has applied Wenger's theoretical framework of learning communities to the new information revolution, saying that virtual communities are becoming naturally occurring modern communities of practice. Other researchers show that virtual communities can be a source for professional learning—mediated by technology—to offer individualized learning for each member, flexibility and a customized experience (Brooks & Gibson, 2012). My experiences with the Kindermusik virtual communities align with these ideas.

As already alluded to, Kindermusik's cutting-edge virtual communities exemplify the power of modern vehicles of communication. Through digital means, Kindermusik educators from around the world are continuously connected and engaged. The main goal

of this is for Kindermusik International to draw in committed, talented educators who can create successful Kindermusik programs around the world. Wenger says that in a globalized knowledge economy, companies are not just competing for market share, but also talent (Wenger et al., 2002, p. 7). Kindermusik International is an example of a company that invests a lot in the development of effective resources to unite committed and talented early childhood educators, securing the success of the program. Because Kindermusik exists all over the world, the development of effective web resources is the essential component that establishes a sense of belonging to the community and assists Kindermusik International in relaying new product information and providing professional development and communication opportunities to its members. The Kindermusik community meets Wenger's constitutive dimensions (mutual engagement, joint enterprise and shared repertoire) and exemplifies a successful virtual community of practice.

As discussed more in chapter two, research is becoming more and more prevalent on the various types of virtual platforms that are being used for professional learning, indicating an ever-growing potential for virtual resources to connect globalized communities and provide new opportunities for growth, networking and communication (Chambers, Threlfall & Roper, 2012). Whereas older-style virtual environments often focused on transmitting or providing information only, new platforms now revolve around social interaction (Murillo, 2008). New, multi-dimensional medias are now being used as modern, convenient and innovative communication strategies, as knowledge repositories, to facilitate powerful collaboration among members, and to maintain focused discussions and foster stable and persistent communities (2008). In this vein, it is

interesting to now consider that what was once defined as face-to-face interaction—two or more individuals communicating in person, in the same room—is now a grey area where two or more people can communicate via Skype, Facetime, video-conferencing, etc. My husband, for example, is a manager for TELUS, and spends much of his day in videoconferences with other managers across western Canada. Could these now be considered face-to-face, synchronous meetings, and how does this impact the members of a community, and the convenience of meeting times and places, etc.? Notably, scholars such as Murillo (2008) contend that “people will, most likely, prefer to engage in person rather than over a computer” (p. 26), but, these virtual options do have the potential to more conveniently reach peripheral and marginal community members, to break boundaries across professions (and geography), and to assist members in establishing a professional identity (2008). In this study, these virtual communication options could definitely be an advantage. Private music teachers often teach in the evenings, while public teachers teach during the day so simple scheduling of face-to-face meetings would be challenging; a virtual meeting place could connect and sustain interaction between these two groups when face-to-face meetings are not possible.

It would be helpful to know how many virtual communities are currently in existence, and to what degree they function like a community of practice. This would give researchers an idea of how successful they are as a source for professional learning, networking, and knowledge sharing. It is, however, practically impossible to fully describe, understand or study the number of virtual communities in existence because, as Murillo (2008) asserts, they exist in multiple platforms. Some examples of these platforms include email threads, blogs, Moodle (modular object-oriented dynamic

learning environments), yahoo groups, Wikipedia, Facebook, Twitter and chat rooms. Diverse but poignant examples of some that are searchable are animal rescue groups in the volunteer sector. Many volunteer-based animal-rescue groups use free social networking sites such as Facebook and Twitter to communicate, spread the word on injustices, post progress videos, have petitions signed and get animals adopted around the world. While they may not demonstrate all of Wenger's constitutive dimensions of a community of practice and are not a source for professional learning, they do show the effectiveness and efficiency of virtual tools in bringing committed individuals together and facilitating action. I follow many of them on Facebook and Twitter because I have an interest in animal welfare. I have seen amazing successes unfold before my eyes on these sites as these rescue groups and their followers band together in urgent situations. One that astonished me was the recent fundraiser by an American rescue group called the Beagle Freedom Project. The goal of this group is to save laboratory animals and educate the public about animal testing. With very little notice, they initiated an online fundraising campaign called a 'money bomb', trying to raise \$2,500 in just 24 hours to save one laboratory dog in Albania from euthanasia. In just one hour, animal lovers from around the world had donated more than enough for that one animal to be saved. It is because of these web experiences that I know of the potential of cutting edge virtual environments to connect communities, share information and knowledge around a common interest and generate new knowledge through interaction, collaboration and mutual engagement. These types of communities are widespread throughout the Internet, and easily searchable. The Kindermusik virtual community of educators, on the other hand, would be an example of a community that is unsearchable, as it is available to

members only. And, like Kindermusik, there are likely thousands of other functioning communities of practice on the Internet that are unknown, with high levels of security to keep members and the content and knowledge repository safe and secure. Given all of the anonymity possibilities on the web, there may never be a “systematic search strategy capable of detecting online collectives with high community of practice potential” (Murillo, 2008, p. 4). That said, there still are a massive number of communities that are searchable—probably only a small fraction of the total in existence—suggesting that they are very popular, convenient and growing very quickly. I’ve illustrated two examples of communities that I personally belong to: the Kindermusik virtual community example demonstrates that subscribed, secure communities for educators do already successfully exist and meet Wenger’s dimensions. The virtual platform that Kindermusik employs is a website. The animal rescue group is the second example that shows the power of virtual, free forms of social networking to bring together like-minded individuals, share information and effect change. Both are very effective and provide convenient ways to communicate, engage and share.

Considering all of the possibilities on the Internet, I pondered which platform (Facebook page, Blog, Pinterest page, Twitter, a website, etc.) would be the most convenient for sharing music resources with public elementary teachers in Alberta. From my experiences with the Kindermusik website and other websites that I use professionally, I knew that a website would likely provide the ideal platform to conveniently share music resources (via imbedded video, music clips, pdf score downloads, etc.) and organize information easily and professionally. In addition, new research that is beginning to outline precautions for users to consider allowed me to

create a website that could meet all of this criteria and function to its fullest potential. These will be described in detail in chapter two, such as pedagogical and technological usability, and rich multi-media content. Most research also notes that navigation should be of utmost importance. I surmised that a website might satisfy all of these criteria more so than a generic platform such as a Facebook page or Blog, since there would be more flexibility in design, layout and organization. Email threads, Facebook and Blogs are often chronologically organized (the most recent post is listed first), which is not always the best way to reference or retrieve knowledge at a later date. All of this led me to the idea of a virtual website as a platform to take the role of broker, disseminate music resources to early childhood educators, and attempt to develop a professional learning community to connect these two practices.

Significance of Research Goals

As I will show in the literature review, integrating music into early childhood classrooms can benefit a child's learning. And, with fewer and fewer music specialists in the public elementary school systems, it seems like an ideal time to pursue breaking the boundaries between the public elementary and private music teaching sectors, and working together to assist these non-musician teachers in bringing more music into their classrooms. Research shows that these virtual environments can be successful platforms for mutual engagement and knowledge sharing, and for reasons already mentioned, I believe they are a convenient, innovative and modern way to bring together private music teachers and early childhood educators. To conduct this study, I assumed the role of a broker and designed a website which included multi-dimensional web features, ideal for accessing and sharing music-related resources. My experiences in music served to shape

and inform the development of the resources, and the virtual resource was the vehicle with which I sustained interaction with the public educators and encouraged membership across both communities. As the study progressed I blended interactions, using virtual communication and face-to-face meetings to sustain mutually beneficial relationships with the participants. My hope was that with me as broker, linking the practices and facilitating the use of the website, it would allow public elementary school teachers—especially kindergarten teachers in Alberta—to take a fresh look at their own community and gain new insights and knowledge for use in their own practices.

Chapter Two: Literature Review

We, as educators, are grounded by the research that informs our practices (Leask, 2011). This literature review will add significant support to the idea that music can be a valuable teaching tool and can assist early childhood educators in meeting many student-learning outcomes across many areas of curriculum. I will highlight important research into how music can be used to enhance learning in mathematics and literacy, promote confidence in a group atmosphere and foster motor skills. The discussion and summary of research in music integration will demonstrate how powerful music can be as an integrative approach to teaching early childhood curriculum. It is largely because of this research and my own experiences that I was interested in creating instructional resources for non-musician-teachers and working with them to use more music in their classrooms. My experiences and the research also assisted me in recruiting participants, giving the study credibility and reliability.

In chapter one, I summarized my extensive and successful experiences with virtual resources, such as the web-based Kindermusik community, and how these experiences prompted me to consider a virtual community as way to share music resources. An integral question in this study was if a virtual resource would be a successful way to communicate and share resources, so it was important to look at research into virtual communities of practice as well. The research in this area—especially in education—however, is very sparse and the language to describe virtual communities is inconsistent (Hadjerrout, 2010, p. 56). Hadjerrout (2010) discusses the difficulties of researching this area because of these inconsistencies, with no unequivocal definition of virtual resources in education. He uses the term web-based learning, but

notes that other researchers use “technology-based learning”, “network learning”, “online learning”, “web-enhanced learning”, “internet-enabled learning”, as well as other similar terms (p. 56). I will consistently use the word “virtual resource” throughout this paper, a term which I believe accurately reflects how the website functions for the participants in this study. Notably, despite the varying language in the research, the underlying similarities seem to be that there is great potential for the web to connect professionals and meet the dimensions of a community of practice. Research stresses that though “these new formats are not a replacement for [traditional] face-to-face experiences” (Brooks & Gibson, 2012, p. 2), they can be “rich learning spaces for teachers to hone their practice with their colleagues” (p. 6). Lastly, this literature review explores researchers such as Murillo (2008) who have applied Wenger’s social theory of learning to web based platforms, showing how a community of practice can be successful through virtual means as a modern approach to professional learning.

Music as an Integrative Tool for Teaching

Most people would agree that young children have a natural disposition to engage in musical activities (Salmon, 2010). Because of this, music can be an effective teaching tool to engage young children and promote learning in many areas. The foundation of this study is built on the abundance of research suggesting that music can be an effective teaching tool for early childhood educators. As I pointed out in chapter one, there are very few music specialists in elementary schools in Alberta, so many early childhood educators not only have no guidance to experiment with music-integration as a teaching tool, but are also the ones teaching compulsory music programs. My hope is that by crossing the boundaries between the private music teachers and early childhood educators

in the school systems, early childhood educators might feel more comfortable with music, and be more likely to “resist any feelings of self-consciousness or embarrassment about [their] own singing voice or musical abilities” (Shore & Strasser, 2006, p. 67). This may, in turn, lead to a propensity to include more music-specific instruction in their classes as well. Since the focus in this study is not as much on how elementary teachers can use music to teach toward a musical understanding as it is on the ways that music can be used to meet other student-learning outcomes, this next section focuses on literature that supports music integration in early childhood classrooms.

The predominant research focus in the area of music integration seems to be on the relationship between literacy and music, but there are also notable studies on the connections between music and mathematics, social awareness and motor skills. Not only has research shown that music exposure can build and foster cognitive development, it also demonstrates that music as a teaching tool can be an efficient and complimentary educational approach. Music integration can be a holistic way to teach, and motivate and excite children about academic participation. Paquette and Rieg (2008) suggest that in order to have optimal learning environments, children must have weak affective filters, meaning they must have a positive attitude toward learning. In my extensive music teaching experiences, music seems to be loved by children and adults alike. From as early as birth, babies seem to be drawn to music. Given this, I would suggest that music integration activities in a classroom may be able to create this ‘weak affective filter’ for learning because students can become easily engaged by the use of music. As a teaching tool, this natural enjoyment of music also “allows for repetition that is not perceived as a drill” (Standley, 2008, p. 29); in other words, using music may be able to prolong

engagement in activities, translating to increased learning (Cowan & Albers, 2006). Thus, it is possible that the use of music may generate motivation for learning in addition to enhancing instruction in all subject areas.

There is ample research on the impact of music integration in education, so for the purpose of this study, I have grouped the research into three specific categories. The first are research studies written by those investigating interdisciplinary approaches that may serve to promote learning in both music and literacy. This category can stand alone because of the abundance of research in this area. The second category of research is broader, and includes those studies that show that music may enhance learning in curricular areas such as math, motor skills, and social skills as well. This category is more broadly grouped because each individual area is not as heavily researched. Articles range from research studies where music and movement activities are shown to foster loco-motor and non-loco-motor skills, to songs that directly teach counting and patterns, to lyrics that teach social identity, belonging, awareness and history. This research area also includes the lesser-researched idea of self-regulation, which some scholars believe to be a critical component to all other successes in early schooling (Winsler, Ducenne, & Koury, 2011). This category also includes prominent researchers like Daniel Levitin whose laboratory studies show chemical changes in the brain when young children are exposed to interactive music activities, such as how “singing together releases the hormone oxytocin, which engenders feelings of trust and bonding” (Levitin, in W-FIVE, 2011).

The third category includes accounts written by experienced music teachers who wish to share resources with other educators. Teachers tell us that “much of what they learn about teaching and what it means to teach is learned through being a teacher”

(Connelly & Clandinin, 1988, p. 203). Though these articles are not empirical studies, they are valuable contributions to the collective practice because they are written after years of experience and thoughtful reflection. They are also important to this study because they provided examples of successful, classroom tested resources. In many ways, these authors are brokers, facilitating transactions between practices, and impacting learning by introducing into a practice elements of another (Wenger, 1998, p. 109). These types of articles ultimately embody this research study. I will now expand on the first category of research into music integration in education.

Music integration and literacy. Research acknowledging the correlation between literacy and music is not new; it dates back to the 1950s (Bolduc & Fleuret, 2009). However, it appears to be growing even more popular in recent years, possibly because of a relatively new discipline that some scholars call neuro-musicology. As well, there is now a greater awareness of the relationship between literacy and what Statistics Canada calls “life-path outcomes.” This relates to the research showing that young people who have low scores in reading are more likely to end their education with high school completion or less (Statistics Canada, 2011). It becomes clear, then, that literacy plays an important role in adult life. These types of statistics spark government legislation, such as the American No Child Left Behind Act, which calls for higher standards and measureable goals in education in areas such as literacy. This increased pressure and push to increase literacy means that educators must look for even more efficient approaches to meet these standards in their classes (Standley, 2008). With research showing that music may be able to foster literacy skills, this form of curriculum integration may be a promising and effective teaching strategy to meet these outcomes.

Many scholars research from the perspective that music education programs taught by experienced music teachers will primarily teach musical understanding, and then achieve secondary outcomes, such as pre-literacy skills. For the purposes of this study, I have not focused on these studies as much as those that use music activities specifically with the intent of enhancing literacy or other outcomes in public classrooms (Anvari, Trainor, Woodside, & Levy, 2002; Bolduc, 2009; Colwell, 1994; Fisher & McDonald, 2001; Gromko, 2005; Hill-Clarke & Robinson, 2004; Kouri & Telander, 2008; Paquette & Rieg, 2008; Shore & Strasser, 2006; Standley, 2008; Wiggins, 2007). These studies are more relevant because they tend to include activities that can be taught by non-musicians and they complement my role in this study as a broker. These studies support my ideas that by introducing elements of music to elementary non-musician teachers, these teachers may gain skills to enhance their practice. Throughout this paper, I refer to this as music integration.

In Canadian researcher Jonathan Bolduc's study (2009), he enlists 51 children in an experimental group and 53 in a control group to demonstrate that through the use of music activities, linguistic skills can be enhanced. Results indicate that children who receive instruction with music and score higher on musical perception tests will tend to score higher on pre-reading tests. In other words, a child who has had some type of interactive music exposure may be predisposed to do well in reading and writing. Bolduc concludes, "music education offers a holistic type of education that may facilitate and enhance the development of listening and analysis abilities" (p. 3). In the same year, Bolduc and Fleuret wrote "learning programs that combine music and literacy have a very positive effect" (Bolduc & Fleuret, 2009, p. 2); "it is up to all of us in the education

community to consider the importance of music education to overall child development and to give a greater emphasis on the use of music in the classroom” (p. 4).

Colwell also explores the use of music to facilitate the development of reading skills, even before systematic teaching of reading begins (Colwell, 1994, as cited in Bolduc, 2009, the Quasi-experimental Studies section, para. 2). In Colwell’s study, she creates three reading groups, where one has stories sung to them, one has them read aloud, and one uses a combination of both. She then tests the students’ comprehension and ability to communicate the plot. Despite minor flaws in this study, this researcher finds that groups with a singing component in their reading group develop “a better understanding of the text, and substitute fewer words” when recalling the plot (Colwell, 1994, as cited in Bolduc, 2009, the Quasi-experimental Studies section, para. 2).

In an even more recent study conducted by Kouri and Telander (2008), similar reading groups are established with similar results. The students who have stories sung to them as opposed to spoken are able to use a richer vocabulary when re-telling the stories, develop a stronger verbal memory and have a greater interest in story participation (Kouri & Telander, 2008). Montgomery (2012) also discusses song-based picture books, and gives an example of the popular song “The Wheels on the Bus” being revitalized in a book called “The Seals on the Bus”. She points out that “the re-visiting of a familiar melody in an illustrated song-based picture book can provide young children with a comfortable framework through which to approach beginning singing” (Montgomery, 2012, p. 30) and also notes that the activities extend to the children’s oral and written vocabulary skills.

This music integration concept can be taken even further if teachers are “open to the possibilities that other books have to offer” (Gauthier, 2005, p. 2). Elementary teachers can choose a non-musical story based on a curricular outcome, and then add a well-known melody to enhance the instruction. This is a fairly easy approach to music integration that most non-musicians could undertake, and opens up the possibility of any story being made musical. In fact, there are many musical elements already evident in rhythmic, poetic story books (Heald, 2008). Gauthier notes “it is possible to find books that are rhythmic in nature or can easily be set to a melody” (Gauthier, 2005, p. 52). In this way, a teacher can focus on the content of the story and which student-learning outcome the story meets, while still utilizing the benefits of making a story musical.

When discussing the systematic steps on the path to literacy, some scholars aim to show exactly which emergent skills related to the acquisition of language can be enhanced by the use of music, such as phonological awareness, the sound structure of spoken words (Peynircioglu, Durgunoglu, & Oney-Kusefoglu, 2002) and phonemic awareness, hearing and manipulating the sounds in spoken words. In a review of thirty studies on how a variety of music interventions affect these specific skills needed for reading, Standley (2008) notes that “most studies show effects in a positive direction” (p. 27), but the results are not homogeneous (p. 27). In a summary of her data, she concludes that “clearly younger children benefit most from music interventions” and that the music activities designed to reinforce reading behaviors show the greatest potential (Standley, 2008, p. 29). In other studies, musical activities are shown to be a strong support base for phonemic awareness, possibly because music promotes and enhances the development of auditory abilities, which in turn affects a child’s ability to split words into phonemes and

identify emotions in speech (Gromko, 2005). To show that interactive music activities are related to significant gains in phonemic awareness, Gromko (2005) uses kindergarten classrooms from two schools, introducing music activities to only one school, while the other remains a control group. The results support the hypothesis that music making may develop cognitive processes similar to those needed for segmentation of a spoken word into its phonemes. Anvari et al. (2002) is another that aims to show the relationship between musical skills, phonological processing and early reading abilities in four and five year old children. Their article first explores the research supporting how phonological awareness correlates significantly with reading, and then, how musical ability is related to phonemic awareness. Each child in this study is individually given specific music and literacy related tests over the course of five sessions, lasting approximately 20 to 30 minutes. The results of the study indicate that phonemic awareness does correlate with musical ability, as predicted. Even more, their study shows that musical ability explains a variance in reading skills over and above that explained by phonemic awareness (Anvari et al., 2002).

Armstrong writes “to help individuals achieve literacy, it seems critically important that we acknowledge this important connection between words and music and use it as fully as we can to help our students read and write more effectively” (Armstrong, 2003, p. 55). The considerable evidence demonstrating the positive connections between music and literacy adds support to this study that music expertise and resources from private music teachers may assist public elementary teachers to meet some of the student-learning outcomes relating to early literacy.

Music integration in other areas of curriculum. The second category of research on music integration are studies that look at other disciplines that may be able to utilize music as a teaching tool, such as math, social skills, and loco-motor and non-loco-motor skills. Research suggests that music can foster gains in spatial reasoning, which is a broad array of intellectual processes that assists the brain in manipulating images and solving problems—skills necessary for math. It is, however, a very difficult subject area to quantitatively test. I feel compelled here to mention the well-known Mozart Effect, coined in 1991. This is the popular theory that passive activities, such as listening to classical music while performing other tasks can enhance cognition, specifically, spatial-temporal reasoning. This idea took hold in the nineties, and despite research only being conducted on adults, it spread to new parents who began to think that listening to Mozart would make their children smarter. Although research attempted to prove this theory, most studies were inconclusive or showed gains which were only temporary. Scholars such as Schellenberg (2006) assert that this theory falls short—even if results do show cognitive gains—because minor effects can only be claimed compared to the pronounced effects that can be achieved when active participation in various forms of structured musical activities are employed in classrooms (as cited in Winsler et al., 2011, p. 277). Many researchers do not even include results from passive music activities when participants use it for the purposes of enhancing cognition (Standley, 2008).

In Hanson's (2003) study, she aims to show that sequenced Kodály literacy-based active music instruction may influence spatial skills, including spatial temporal reasoning. Her subjects include five and six year olds that previously have not had classroom music instruction in their school. Of the three classes in the school, two of the

classes are treated, and one is left a control group. Interestingly, her data reveals no differences in any spatial skills in the control group versus the experimental groups. Notably, though, the teachers' suggested in interviews that despite the results, they saw improvements in their students' ability to actively participate for longer periods, and that they gained an appreciation of the benefits of music-integrated instruction.

Some researchers aim to show that music can be used to directly teach math concepts to very young students because of the characteristics that music and math share, such as rhythmic elements and predictable patterns that are mathematical by nature (Geist & Geist, 2008). Music is often a child's first patterning experience; they are engaging in mathematics even when they do not recognize the activities as mathematical (Geist, Geist, & Kuznik, 2012). Some authors posit that "amateur musicians can use elements of steady beat, rhythm, melody, tempo, dynamics, style and timbre in interacting with children" (Geist & Geist, 2008, p. 24), showing that there is potential for early childhood, non-musician teachers to teach math with music. Simple exercises like clapping or tapping to the beat of songs and then increasing the complexity over time can help children internalize the mathematical structure of audible music (Shore & Strasser, 2006). In a non-peer-reviewed article, music is shown to be effective in enhancing math skills by using lyrics in childhood songs and chants, such as "Five Little Monkeys" or "Ten in the Bed" (Church, 2006). Through the process of singing these types of songs, the children may be able to enhance their basic mathematical vocabulary. Activities like these can work on matching, comparing, patterning, sequencing as well as counting up and down (2006). Since these music activities are fun and engaging ways to teach math, they have

proven very successful in many early childhood classrooms (Shilling, 2002; Shore & Strasser, 2006).

Authors also explore how music can be used to enhance social skills for students of all ages. Alberta Education defines identity and belonging as key social studies student outcomes in kindergarten, and there are many ways that music can assist in meeting these outcomes. Shore and Strasser (2006) review research on how music affects emotions, self-esteem, and a personal sense of belonging and identity. In their article, they show that “singing along with almost any activity reinforces routine while creating a sense of belonging and community within the room” (p. 65). Reinforcing this thought are the laboratory studies of such prominent researchers as Daniel Levitin, who show that singing in a group setting can release the hormone oxytocin, creating feelings of trust and bonding (Levitin, in W-FIVE, 2011). Delving into other areas of social studies, authors suggest that by actively listening and examining world music examples, students can explore diverse culture from around the world. Or, to investigate popular cultures, teachers can ask students to think about the lyrics in popular music to learn about history or social justice. Levy and Byrd suggest that this could be a holistic and inviting approach to this subject matter (2011).

The less-researched idea of self-regulation, a child’s executive ability to organize, sustain and guide their behavior during learning and problem solving activities can also be enhanced by and with the use of music. Some scholars believe self-regulation is critical for success in early schooling (Winsler et al., 2011). Winsler et al.’s (2011) study aims to show the effects that interactive, early childhood music programs, specifically Kindermusik, can have on a child’s self-regulation. Her findings indicate that

“Kindermusik[’s] ... frequent use of music and movement activities require children to modulate their motor behavior ... as a function of characteristics of the music [and] that is linked to children’s self-regulatory skills” (p. 296). In her study of 89 children, she finds preliminary support for the notion that structured musical activities may increase self-regulation and the use of self-regulatory speech in young children (p. 299).

Limitations noted in this study are that it includes a sample of private classroom music students only, meaning the participants are homogeneous in terms of family income and marital status, and largely Caucasian.

As mentioned above, Winsler et al. (2011) shows us that music and movement activities “require children to guide and modulate their motor behavior through the music, rhythm, tempo and style of music” (p. 279). So, by enhancing self-regulation, this can also include the control that children have over their physical movements and actions. Thus, music and movement activities may also be an effective way to build loco-motor and non-loco-motor skills. Zachopoulou, Tsapakidou and Derri (2004), for example, conduct a study of 100 preschool students divided into two groups. They expose only one of the groups to music and movement activities. Results show enhanced rhythmic ability in the group with music and movement exposure, a skill which greatly enhances motor skills.

The review of this literature provides some evidence that developmentally appropriate music activities can enhance a child’s development in areas other than literacy. From an educational perspective, it shows us that music has the potential to serve as a powerful partner in integrative teaching; music may support the development of math skills, social identity, self-regulation and motor skills, among others. This

research adds significant support to my study that instructional music resources for non-musician-teachers could be used to realize the benefits of music integration across many areas of curriculum.

Teachers' shared repertoire. Lastly, this literature review explores published articles describing and researching specific interdisciplinary activities that include music as the vehicle for learning. This is a very rich research area, and the place where I would like my research study to reside. These arts-informed articles are largely written by experienced music teachers who have used activities repeatedly in their classroom, modified them over the years, and have come up with successful resources (Fisher & McDonald, 2001; Hill-Clarke & Robinson, 2004; Paquette & Rieg, 2008; Shilling, 2002; Shore & Strasser, 2006; Wiggins, 2007). These articles are accounts of the teacher's experiences, with "strong reflexive elements that evidence the presence and signature of the researcher" (Knowles & Cole, 2008, p. 61). Teachers state that "much of what they learn about teaching and what it means to teach is learned through being a teacher" (Connelly & Clandinin, 1988, p. 203), so these articles based on experience are valuable contributions to the collective practice and to this research study.

Shilling (2002) is one author who has published an extensive list of activities that explore mathematics through music and movement. She explains her background in music, and how her experiences in early childhood classrooms have uncovered "rich opportunities that build and strengthen mathematical ideas" (Shilling, 2002, p. 179). She gives examples of specific classroom activities that, in her experience, enhance the classification of sounds and movement, dynamic intensity, duration of sounds, ordering of events, patterns, and counting. She describes the results using personal opinions of the

effectiveness of the activities. Gillespie and Glider's (2010) article is not by experienced music teachers, but by researchers observing how three different experienced teachers use music in their preschool classrooms. The results aim to show "the broad experiences that teachers and children have with music on a daily basis in preschools" (2010, p. 799). In the over 120 observation hours, 782 music episodes are observed. Included in this article is a list of the classroom routines when music is most frequently used, such as scaffolding children's learning, and for routine activities like clean up, nap time and transitions to new activities. The authors' observations show that teachers tend to use music more for group activities and "less frequently during the time specifically devoted to music and movement" (p. 805). Also, the findings indicate that teachers use music to help children behave in certain ways, and most notably, that the use of music almost always exceeds the allotted ten minutes of music instruction per day. In fact, 85 percent of musical events would be missed if only those ten minutes per day were observed (Gillespie & Glider, 2010). This is an interesting result and significant to this study because it suggests that teachers are frequently using music in ways other than to teach specific music concepts, possibly indicating that non-musician teachers may be more comfortable using music integration activities rather than music-specific instruction.

Hill-Clarke and Robinson (2004), professors of elementary education and music education, are experienced educators that also want to share the possibilities of music integration with other educators. They write that music can be used to teach specific academic skills, and include research into why they believe music is an effective vehicle for enhancing literacy instruction for young children. Included in this article is a list of early literacy activities, showing step-by-step instructions for how music can be used to

assist in teaching early literacy. The details of each activity show that the authors are experienced and offer valuable contributions to the early childhood practice.

The authors that have published articles based on their experiences show us how important experience is to our practice (Connelly & Clandinin, 1988, p. 60). These articles illuminate the benefits of music integration, as told by experienced music educators, who have a desire to share the resources and to collaborate in this subject area, reflective of the goals of a community of practice. Fisher and McDonald (2001) write that if we can encourage teachers to collaborate and share instructional materials more, we can further explore all of the benefits of integrating music into many areas of curriculum.

This literature review on music integration is significant to this study because it adds support to my assertions that music can be used as an effective teaching partner in early childhood classrooms. However, it is important to point out that this study did not focus on how the music integration resources that I provided to the teachers actually impacted the childrens' learning. The review of this music integration research was used to inform the study in the sense that it affirmed the importance of providing resources to teachers to allow them to realize the benefits of music integration for their students.

This section of the literature review is also essential because it informed the development of music integration activities that could potentially meet relevant curricular outcomes in Alberta kindergarten classrooms. It also assisted in recruiting the participants by showing them that the developed resources were based on the latest research in this area. For example, the "Sung Stories" activity that I designed (explained in chapter three) is based on Colwell (1994), Kouri and Telander (2008), Dust and Montgomery (2005) and Gauthier's (2005) research that there is great potential in supporting early literacy

skills through musical stories in early childhood classrooms. The “Listening Song” aligns with Shore and Strasser’s (2006) research that singing in a group can create a sense of belonging and, in addition, can assist teachers in “welcom[ing] children to a group activity ... calm[ing] when the energy levels get too high ... [and] refocus[ing] the group” (2006, p. 66). Other activities such as “Beat Buds” is supported by Gromko’s (2005) research which suggests that music promotes and enhances the development of auditory abilities, such as a child’s ability to distinguish the different number of syllables in their peers’ names. The other activities designed for this study and the research that impacted their development will be discussed in more detail in chapter three.

Virtual Communities of Practice

The preceding summaries of music integration research indicate that music resources might help teachers meet a range of student-learning outcomes in a variety of school subjects. They also support my notion that there is a desire for educators to connect practices and share their experiences and resources. In chapter one, I explained that private music teachers and early childhood educators in public and private schools form separate communities of practice, but have interrelated and overlapping interests. Unfortunately, in my experience, they seem to rarely interact or collaborate, possibly because “moving from one community to another can require quite a transformation” (Wenger, 1998, p. 103). I explained that an alarming statistic shows that an estimated 70% of elementary schools in Alberta do not have music specialists (Dust & Montgomery, 2005, p. 2), and an American study of 39 elementary school teachers evidenced that most do not teach music because they cannot sing or play (Bresler, 1993). Interestingly, though, in a more recent study by Gillespie and Glider (2010) it was noted

that teachers do use music to “teach and manage daily activities with and for students” (p. 801). Assuming Canadian elementary teachers might feel these same insecurities about teaching music-specific instruction but see the benefits of using music as a teaching strategy, I see an opportunity in Alberta school systems for private music teachers to cross boundaries and look for ways to sustain interaction with the early childhood educators. This interaction would provide opportunities for private music teachers to share effective resources and knowledge with non-musician teachers about how music could be used in elementary classrooms to meet student-learning outcomes across many areas of curriculum. And, as previously suggested, this interaction and relationship building might also support and encourage non-musicians to “resist any feelings of self-consciousness or embarrassment about [their] own voice or musical abilities” (Shore & Strasser, 2006, p. 67). The next section explores the research into efficient and effective ways that resources and knowledge might be shared to connect two communities with similar interests.

Wenger’s communities of practice. To understand how the two communities in this study function and how they might collaborate, this study investigates and defines these communities with reference to Wenger’s community of practice, a social theory of learning (Wenger, 1998, p. 4). His research provides a framework that outlines different membership roles, how communities are organized, and how information and knowledge is shared. These are explained in chapter one. Communities are applicable, as Wenger suggests, to all professions: “we all belong to communities of practice ... [they] are everywhere ... and are an integral part of our daily lives” (p. 6). Wenger says, “members interact, do things together, negotiate new meaning and learn from each other” (p. 102)

and that “participation in social communities shapes our experiences, and it also shapes those communities” (p. 56). Though the concepts “rarely come into explicit focus” (p. 7), by exploring them in this paper, they provide a way to “systematically ... make [his ideas] more useful as a thinking tool” (p. 7). Further, his ideas help provide a clear structure for two related teaching communities, and aid in understanding how a productive boundary practice might be established between the early childhood educators and my private music teaching community. Wenger, McDermott and Snyder (2002) call this boundary crossing, saying that brokers are key to assisting with this process. He discusses the crucial importance of balancing community development and boundary work:

Crossing boundaries requires building trust not only inside communities but also through sustained boundary interactions. There is a definite tension between these two goals. Community development tends to turn a community within; boundary work turns it outward. Yet, communities of practice truly become knowledge assets where their core and boundaries evolve in complementary ways—creating deep expertise inside and constant renewal at the boundary. We would even argue that the learning potential of an organization lies in this balancing act between well-developed communities and active boundary management (Wenger et al., 2002, Chapter 7, “Managing Boundaries”).

This reinforces my ideas that crossing boundaries and sharing resources and knowledge with other communities could be just as important as the work that is done within a community. Wenger et al. (2002) note that “complex problems frequently require solutions that are not confined to any one practice” (Chapter 7, “Managing

Boundaries”); in this case, research demonstrates that music could be used as a powerful teaching tool, however, most early childhood educators do not have these tools available to them.

Since this study explores the possibilities of virtual environments as the vehicle for crossing the boundaries between two communities, it is also relevant to explore literature that demonstrates how Wenger’s social learning theories can be applied to the new information revolution. Brooks and Gibson note that Statistics Canada shows that over fifty percent of adults access the Internet for education and training, so it’s likely that “teachers are [also] actively foraging [the Internet] for many sources to meet their own personal learning needs” (Brooks & Gibson, 2012, p. 9). With reference to Wenger’s communities of practice, two assertions can be made from this statistic: teachers are actively looking for new communities of practice for their own professional learning needs, and the Internet seems to be where they are looking.

It is difficult to do a comprehensive search of literature that refers directly to the term ‘virtual communities’ because of the wide range of words used interchangeably to describe online resources (Hadjerrouit, 2010, p. 56) and because there are few studies that compare online communities to Wenger’s communities of practice. Many authors discuss concepts similar to virtual communities of practice, but use different terms. Notably, however, these online learning networks have many similarities and seem to align to the community of practice dimensions. For example, Brooks and Gibson (2012) note that groups of educators can share information and knowledge online around a common interest, and these can be places for professional learning, for building networks and for sharing resources. Further, Australians Herrington and Herrington (2001) discuss the

challenges of isolated teachers in remote locations, noting that demanding schedules and geography limit the time that teachers have available for traditional meetings or networking with other educators. So, from this perspective, virtual resources could be a way to create a kind of virtual community of practice for isolated teachers. Adsit (2004), as well, notes that one possible advantage of a virtual learning environment could be that it would reduce teacher isolation, provide access to a broad range of resources, and provide opportunities for collaboration and professional growth (p. 5). Brooks and Gibson (2012) speculate that virtual environments may support a kind of anonymity that may allow participants to ask questions that they may be reluctant to ask in face-to-face meetings (2012). In the case of early childhood educators in the school systems, they might appreciate anonymity when discussing and learning about music integration because of the lack of comfort in using music in public classrooms. Trust (2012) writes that “many teachers are joining online communities of like-minded individuals and subscribing to various blogs and websites to continue learning and improve their professional practice” (p. 133). She also notes that these online environments will continue to grow in popularity because they provide spaces where teachers can learn new information and connect with other individuals worldwide who can offer support, advice, feedback and collaboration opportunities (p. 138). These scholars support my notion that online environments can be an effective, innovative and convenient way to connect practices, collaborate and share resources and knowledge. And, though they don’t specifically refer to the communities of practice model, they mention learning, connecting, joining a group, sharing knowledge and improving practice, all ideas that align with the general description of Wenger’s community of practice: “a group of people

who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al., 2002, p. 1).

Murillo (2008) is one scholar who does refer directly to Wenger’s communities of practice, saying that there are many communities of practice that are entirely internet-based. He notes that “communities of various kinds seem to flourish on the web” (p. 3) and that these may be naturally occurring modern communities of practice. This research is very relevant to this study, so a summary of the study is included in this literature review. In Murillo’s study (2008), he sends a web-based survey to 1,300 users of professional online newsgroups, such as programming, history and financial planning. Of those surveys, 239 are received, and the results are grouped and coded according to Wenger’s dimensions. The summarized results indicate that virtual communities do have the potential to meet all of Wenger’s dimensions—mutual engagement, joint enterprise and shared repertoire. For example, common survey responses indicate that virtual communities enable: powerful collaboration between widely distributed members, collective problem solving, information sharing and sharing of knowledge and best practices. These fit under Wenger’s mutual engagement dimension, which, “according to Wenger, is the defining dimension of a community of practice” (p. 25). Meeting the joint enterprise dimension, Murillo’s summarized survey responses indicate that people believe virtual communities offer an avenue to create a professional orientation and maintain focused discussions. For shared repertoire, the summary of research shows that virtual communities can be places where members can develop knowledge repositories and online tools (p. 3).

In summary, Murillo's study provides evidence that "Wenger's (1998) theory of communities of practice [can] extend to the social area of the Internet, because a systematic search ... found operational news groups lacking none of the constitutive dimensions of co-located communities of practice" (p. 25). This kind of research is significant because it demonstrates that virtual communities align with Wenger's community of practice model and have many innovative possibilities to connect individuals across many professions. Many of the scholars use different terminology and do not refer to Wenger's communities of practice, but their results mention characteristics that align with the community of practice framework. In the reviewed articles specific to online or virtual teacher learning, the authors all mention the exciting possibilities of interaction, mentoring and sharing information in an online environment as a way to foster professional learning. These elements are all reflective of Wenger's dimensions of a community of practice. This literature shows the potential of creating virtual communities of practice for educators in this digital age.

Characteristics of a virtual community of practice. With the preceding research indicating that virtual environments may be possible places for communities of practice in education, it is then important to consider how a virtual environment should be created to be most effective as a virtual community of practice for educators, as a way to "realize the affordances of our digitally connected world, while at the same time being mindful of the intricacies of professional growth" (Brooks & Gibson, 2012, p. 12). Reese, Repp, Meltzer and Burrack (2002) point out that "the successful use of online technology rests ... on the characteristics of the technology [as well as] the development of a sense of community among a group of teachers" (Reese et al., 2002, p. 25). There are very few

scholars who have pursued characteristics that would be effective for virtual environments, especially in education, however. In the few reviewed, they discuss how teachers are beginning to engage in professional learning differently—from passive consumption of information to active engagement (Brooks & Gibson, 2012)—suggesting that new elements of virtual resources may be a way to enhance active engagement. This next section will look at their research and others, and on characteristics and elements that may enhance a virtual resource, especially for educators.

Technological and pedagogical usability. Characteristics that researchers seem to agree are important in online resources for educators are technological and pedagogical usability; these aspects are fundamental to learning (Hadjerrouit, 2010). A literature review in this area, however, reveals a lack of evaluation of web-based resources in education. Hadjerrouit (2010) is one scholar who proposes a conceptual framework for designing a virtual resource for learning. In his literature review, he found that scholars agreed that making a resource easy to use could “enable learners to easily focus on learning materials without having to make an effort to figure out how to access them” (p. 54). Gibson, Moline and Dyck (2011) found that teachers were hesitant to use online resources because they felt they “need[ed] more exposure to the various tools” (p. 80). This demonstrates that teachers may be more likely to access virtual resources for learning if they are comfortable using them. Hadjerrouit’s study of three classrooms and three teachers found that resources were more effective if they were “tailor[ed] ... to meet the learners’ needs, thereby implying that there is a further dimension to consider when designing web-based learning resources” (p. 55). Along this vein some authors also suggest that the target user must be clearly identified (Chambers et al., 2012, p. 416).

Brooks and Gibson seem to concur, cautioning educators to “critically assess and guard against the allure of the technology itself” (Brooks & Gibson, 2012, p. 9), suggesting that content and purpose are just as important as the conveniences and innovation associated with the technology itself. Thus, virtual resources should aim to provide teachers with a wide range of new teaching experiences if teachers are to be enticed to use them (Hadjerrouit, 2010, p. 1).

New media. Brooks and Gibson (2012) refer to Wenger’s community of practice (p. 6) in relation to modern communities fostering productive teacher professional learning. They state that online environments can make teachers’ professional learning “more personally relevant, meaningful and engaging” (p. 3) and can offer flexibility and opportunities for members to customize their experiences. They discuss a continuum, starting with traditional teacher professional development that is now better defined as professional learning, and speculate that soon a hybrid model may emerge that they call technology-mediated professional learning. This new approach may be a less structured, technology-enabled learning network with emphasis on synchronous and asynchronous interactions (p. 7). Brooks and Gibson (2012) suggest that technology-mediated professional learning has the potential to heighten interaction by “allow[ing] modeling to be visible and accessible anytime” (p. 12). This visibility is due to new media elements such as videos clips, video chat, pictures, music and/or sound clips. Some scholars call these new enhanced elements “Web 3.0”, which Brooks and Gibson say is a modern way for websites to “enhance[e] the personalization of information and continue[e] to offer rich, multimedia content” (Anderson & Whitelock, 2004 as cited in Brooks & Gibson, 2012, p. 12). These additions to a website could enhance the virtual community of

practice for elementary teachers. For example, if a teacher recorded and then posted a classroom example on a website for others to view, this is like “virtually leav[ing] the classroom door open” (p. 12). In education, most scholars still agree that “it is possible to learn a great deal about your own practices by acting as a participant observer in someone else’s classroom” (Connelly & Clandinin, 1988, p. 54), so virtual examples for others to view would be “highly beneficial to teachers” (Brooks & Gibson, 2012, p. 5). In the case of non-musicians who learn by imitation and repetition, multimedia elements such as sound clips and classroom examples could be extremely beneficial. They conclude that virtual professional learning may be “fertile ground for virtual mentoring, modeling and an array of customized resources to support specific professional learning needs” (p. 12). These elements might enhance the virtual experience by encouraging professionals “to participate in activities that require them to tap into the professional knowledge base and work together to apply their knowledge to solve problems of practice” (Randi & Zeichner, 2004, as cited in Brooks & Gibson, 2012). This research illustrates the innovative possibilities that virtual resources have in connecting individuals using new media technologies to support synchronous and asynchronous interactions.

Blending interactions. Many scholars who research online professional learning seem to conclude that blending interactions may also be a necessary feature for online learning. They say that “people will, most likely, prefer to engage in person” (Brooks & Gibson, 2012, p. 26), so virtual communities should ideally offer “a blended approach, as teachers benefit most from a combination of online and face-to-face learning opportunities” (p. 2). Reese et al. (2002) concluded their study saying that “websites as single source of learning may be less effective than our initial enthusiasm led us to

expect. ... It appears that face-to-face personal interactions ... may be necessary for many teachers to have sufficient motivation to turn to the web resources for additional learning in the context of demanding workloads” (p. 35). This is identified as an important consideration in this study as well; it became apparent that face-to-face meetings in addition to virtual, written communication could assist in building a stronger relationship and facilitate the knowledge sharing process. As well, because this process was new to some of the participants, face-to-face meetings seemed to reinforce and motivate the participants to continue using the resource.

Face-to-face interactions. Some scholars have discussed the advantages of synchronous elements in virtual communities, saying that in some cases they may simply be preferred to conventional face-to-face meetings (Herrington & Herrington, 2001; Kinzie, Whitaker, Neesen, Kelley, Matera & Pianta, 2006). Murillo (2008) notes that when “interaction convenience is considered, virtual communities of practice frequently have the advantage” (p. 26) over traditional interactions, because of scheduling limitations such as travel. Thus, face-to-face meetings can now refer to a “variety of contexts, based on ... needs, interests and resources” (p. 7). Whereas it once referred to two or more individuals in the same room, meeting in real-time, it can now include meetings via Skype, video conferencing, face-time, and other video-assisted interactions, thus eliminating many scheduling limitations. Even asynchronous interactions are now occurring quickly and exponentially, so they too can be effective ways to sustain connections. This is explained well by Brooks and Gibson (2012): “One can toss a query into the pool and ripples of wisdom will follow in close succession” (p. 9) With reference to Wenger’s mutual engagement dimension, the new capabilities of online

communication and interaction may allow “all kinds of relations, conflictual as well as harmonious, intimate as well as political, competitive as well as cooperative” (Wenger, 1998, p. 56).

Online examples. This literature review reveals a lack of research into the evaluation of virtual learning resources for educators (Hadjerrouit, 2010, p. 56). Further, very few relate virtual resources back to Wenger’s community of practice, even despite “rapid globalization, networked organizations and mobile workers ... making increasingly rare a condition for conventional communities of practice” (Murillo, 2008, p. 2). To expand this literature review, it seemed appropriate to perform a general Google search for websites that might function as virtual communities of practice for teachers. This search revealed countless websites for teachers, many of which satisfied the desirable characteristics for effective online resources for teachers. However, none in my search met all of Wenger’s dimensions, as many were modeled after older-style virtual environments, focused on transmitting or providing information only, not social interaction (Murillo, 2008). It is possible that there are more available than I was able to find, because as mentioned in chapter one, Murillo (2008) suggests that virtual communities of practice exist in multiple platforms. For example, in this study, participants often referred to their school district’s online “portal” which they described as a useful knowledge repository for educators. That resource may meet many of the community of practice dimensions, but is unsearchable by those not subscribed. Given the anonymity possibilities on the web, there may never be a “systematic search strategy capable of detecting online collectives with high community of practice potential”

(Murillo, 2008, p. 4). The following are a summary of some resources that the participants stated that they used for their own teacher learning.

Starfall (<http://www.starfall.com/n/N-info/curriculum.htm>) is a popular virtual resource for kindergarten programs in North America, but requires a school subscription. It was created in the United States, so it often refers to common core state standards, targeting an American audience. There is no forum to communicate with other members, and it does not offer classroom video examples. *Learn Alberta* (www.learnalberta.ca) is a website that requires authorized access and is difficult to navigate, focusing more on transmission of information than communication. It does include many curricula-specific videos that can be shown in class, and resources that are specific to teachers in Alberta, but many are very outdated, and there are very few relating to elementary music. There is no way to communicate with other members. *Learning through the Arts* (<http://www.ltta.ca/>) is a website targeted to teachers in Canada—albeit mostly Eastern Canada—to show them how to use arts in their classes. It was created by the Royal Conservatory of Music and requires teacher training before the resources can be implemented. There is no way to communicate with other teachers. I will also mention *Kindermusik* (www.kindermusik.com), a website which connects parents, teachers and schools to the curriculum, classes and virtual music resources. Through this website, parents or schools can locate a class anywhere in the world, read more about the program, purchase music instruments, download class music, and access the specific at-home digital materials (only available to class registrants). Because not everyone is familiar with the Kindermusik curriculum, it is possible that the main Kindermusik page may be overwhelming or confusing to someone stumbling upon the website and trying to make

sense of what it offers. As well, within this website, there is also a virtual community of practice for educators where licensed educators can find lesson plans, music, resources, classroom examples and connect with other educators. This facet of the website meets all of Wenger's constitutive dimensions, as described in chapter one, but is only available to licensed educators.

As described above, only one of the websites that I could find specifically seems to meet Wenger's dimensions for a community of practice. Nonetheless, this literature review reveals that a well-designed virtual resource could encourage a high-volume of participant interaction (mutual engagement), offer a place to share high-quality resources (shared repertoire), and focus on a specific profession or discipline with highly focused discussions (joint enterprise) (Murillo, 2008, p. 5). By satisfying these criteria, it is possible that a virtual resource could function like a community of practice.

Conclusion

This literature review first uncovered the research into the benefits of integrating music into early childhood classrooms to foster a child's learning in areas such as literacy, math, social skills and motor skills. The review of this research was used to inform the development of the activities designed for the website and the curricular areas addressed. It also aided in recruiting participants by highlighting how the resources align to research. The second section of this literature review revealed modern and innovative avenues that could be successful environments to share these resources, connecting two diverse but overlapping communities of practice in education. As well, it reviewed important criteria to consider in the creation of an effective resource. Though there is no clear or consistent terminology for virtual resources in education, there are many

consistent features and descriptions in the research that align with Wenger's communities of practice. This indicates that virtual resources may have the potential to be successful platforms for mutual engagement and knowledge sharing, and can be convenient, innovative and modern ways to cross boundaries and bring together private music teachers and early childhood educators. This literature review adds significant support to this study because it shows that well-designed virtual resource might allow public elementary teachers, and especially kindergarten teachers in Alberta, to take a fresh look at their own community by gaining new insights and knowledge from other communities.

Chapter Three: Methodology

The emerging theme that served to maintain the focus of this study was how virtual resources could effectively disseminate music resources to early childhood educators as a way to connect people in a community of practice. Other questions that fuelled my curiosity were:

1. How did the participants use the resources from the website? Who are the participants? Did their attitudes, interests, experiences and specific circumstances impact their use of the resources?
2. To what extent did the use of this website impact their willingness to use online resources for professional learning, networking and sharing?
3. To what extent did this resource function like a virtual community of practice, connecting two like-minded communities?

This chapter is divided into two sections. First, it will explore how the virtual resource was constructed and designed in preparation for this study, as well as a look into how and why the resources were created. Second, it will provide an overview of the study and the data collection methods.

Research such as this is important, as it “contributes to the empowerment of teachers ... and thereby can alter what occurs in schools” (Brennan & Noffke, 1997, p. 23). The theoretical orientation of this qualitative research study was based on a field-oriented, intensive, descriptive case-study approach (Bresler, 1993, p. 2). Yin defines a case study as “a study that investigates a contemporary phenomenon in depth and in its real-world context” (2014, p. 237). This was appropriate for this study because it allowed for direct observations of the teachers utilizing the resources in their teaching, and in-

depth interviews; In case study research it is very important to use multiple sources of evidence (p. 118). This study was designed to interpret if a virtual resource, managed by a broker from a private music teaching community, could connect two communities and share music integration resources as effective, holistic and motivating ways to help achieve many of the learning outcomes that are defined by Alberta Education in elementary classrooms. This descriptive examination of case studies included nine observations with four Alberta kindergarten teachers, conducted over 12 weeks.

Emphasis in this study was on how the teachers interpreted and utilized the resources, and then on their feedback of the resource in an interview setting. This is why the case study approach was the most effective. The examined context included teachers' music and technology background and teaching preferences. Interviews were conducted immediately following the observations and were recorded. A comprehensive description of the methodology is presented at the end of this chapter as it relates to the observations and interviews of the participants.

Construction and Design of the Website

To start this study, I designed a website called *Music for Learning* (www.musicforlearning.ca) which was fully functional by August, 2011, three months before the participants were enlisted in the study. The content included carefully crafted music resources that could be specifically used by early childhood educators with little or no music background, based on my reflective experiences in music, my post-secondary education in this specialized field and the current research in child development and music integration. Through this delivery mode, I became a broker, aiming to bridge the

gap between the private music teaching community and the early childhood educators in the public and private schools in Alberta.

The layout, functionality and technological considerations informing the design of the website came from the reviewed research on web-based—or virtual—learning as well as my personal experiences and years of research, both personal and professional on the web. Through the research described in chapter two, I became cognizant of important criteria to consider relating to the content and functionality of this innovative virtual resource. First, research pointed to the pedagogical and technological usability of a web based resource, saying these characteristics were fundamental to learning (Hadjerrouit, 2010). Related to these, scholars said a resource needed to be “targeted at a particular group of users” (Chambers et al., 2012, p. 416) and transparent in both the quality of content and credibility of the author. This would impact the validity and reliability of the resource, aligning with the rhetoric that teaching should be research-informed (Leask, 2011). Research also indicated that rich multi-media content and visual appeal would make a virtual resource more dynamic and interactive. This could include classroom examples embedded as video clips, downloadable classroom exercise sheets, music clips, and links to other pages. Although the research I conducted in this area did not mention this, it was also immediately apparent that pilot tests and troubleshooting were important to ensuring the virtual resource would function properly. Further, after the research period ended, it also became apparent that blended interactions formed an important part of the communication between participants and broker, but this was not considered initially. What follows is a discussion on the above criteria and how they impacted the content and functionality of the virtual resource designed for this study.

Pedagogical and technological usability. The address of the website used in this study is www.musicforlearning.ca, purposefully easy to remember and easy to search. It consisted of 11 web pages, including a home page to explain the purpose of the site, six music integration resources with a designated page for each one, a summary of the Alberta kindergarten program of studies, a contact / feedback page, a literature review page and a page containing other resource suggestions for further research and learning. All of the six resources were specifically designed to satisfy multiple student-learning outcomes from the Alberta kindergarten program of studies, thereby targeting a specific user. The pedagogical and technological functionality of each music integration resource included on the website is described here.

Hello song. I wrote this language-rich song to be used as a welcoming routine at the beginning of each class, to foster self-regulation and to create a cooperative classroom. This is based on research such as Winsler et al. (2011) who says “structured musical experience during the early childhood years ... [could be] related to increased behavioural self-regulation” (p. 299). This song is easy for the teacher to learn and has endless variations so that new vocabulary, concepts and movements can be introduced to the children through music. Shore and Strasser (2006) affirms the value of this, saying that by changing lyrics of songs, it opens up many more possibilities in an activity. Fisher and McDonald (2001) also notes “students acquire new vocabulary and are introduced to fresh content each time they sing a song” (p. 110). Lastly, Zachopoulou et al. (2004) discusses the importance of rhythmic exercises on motor skills, and this song contains many rhythmic possibilities by utilizing multiple word substitutions such as jump, spin, skip, etc., which can foster gross motor skills.

Many technological considerations were considered when adding this resource to the website. The goal was to make it convenient to get to the page, and easy for a non-musician to understand the activity. A sound clip was embedded on the page so the melody and words could be learned by imitation, making music reading unnecessary. Also embedded is a short video explaining how the activity works, and an explanation of how multiple variations might assist the teaching in meeting various student-learning outcomes. The page is easy to read, without advertisements, and big bright lyrics printed right on the page with succinct suggestions of variations to the activity. As well, there is an easy to download movement card sheet that can be printed and used in class. A point form list is included to show which student-learning outcomes are satisfied (in a blue font used throughout the site for this purpose). Various links to this page are on the page describing the student-learning outcomes so there are multiple ways to find this activity.

Emotions in music. Seven short clips of classical music are embedded on this page of the website for teachers to access and play in class. Each music clip differs in tempo, mode, instruments and genre specifically to assist teachers in showing students how music can impact emotions, and explore feelings, identity and belonging and to foster active listening skills. Variations of this activity also allow the entire class to collaborate in creating a story that could go with the music, enhancing artistry and clarity of communication. The two variations of this activity are: using the blank faces to draw how students feel as they listen; and jointly writing a story that could include various emotions and then playing each clip in the appropriate place as the story is read aloud, much like a movie soundtrack is used. This can be a rich music-integrated literacy

activity, which Wiggins (2007) notes can simultaneously promote literacy and music skills.

The technological considerations that were considered for this page include streaming the music clips from YouTube, eliminating the need for windows media player and faster to load. As well, the two suggested activities are separated visually by the color of font, and appropriate teaching resources are available for download immediately below the text (the blank faces, and an example of a musical story). A point form list is included on this page as well (in blue) showing which student-learning outcomes are satisfied and a link to this activity is included on the page describing the student-learning outcomes.

Sung stories. This page is a description and tutorial on how to add music to a non-musical story, as well as the research that supports the effectiveness of this innovative activity. After reading dozens of storybooks appropriate for kindergarten students, I narrowed the listing to ten storybooks that might meet specific identity and belonging student-learning outcomes in Alberta kindergarten classrooms. The webpage includes the list and the title of the well-known melody that works the best with each story. In recent studies by Colwell (1994), Kouri and Telander (2008) and Gauthier (2005) among many others, this activity is shown to foster a richer vocabulary, enhance narrative recall, and have more interest in story participation. Colwell's (1994) study found that children who had stories sung to them omitted and substituted fewer words than those who had the stories spoken. Wiggins (2007) also notes that "music's engaging nature encourages children to attend during reading activities, invites them to be active listeners, and promotes comprehension and dialogue" (p. 62). Attached as Appendix A is the list of the ten picture books that were included on the website.

This page is easy to draw information from because each title is linked to Amazon for a description and picture of the book, and the list is alphabetical for ease of reference. As well, below each title is a short synopsis showing the theme of the book so that teachers can focus on the content of the story and which student-learning outcome it will meet. Also included on this page is a short video with a classroom example of the sung story activity, which “virtually leave[s] my classroom door open” for observation and learning (Brooks & Gibson, 2012, p. 12). There are also various links from the web page containing the student-learning outcomes to reference which outcomes the activity meets.

Beat buds. Teachers create a personalized picture book for this activity, with their students’ pictures or other images relating to a theme. Practicing self-regulation, the students wait with anticipation as each window in the storybook is exposed. They sing a repeated short song (or chant), and then clap their peer’s name. Shore and Strasser (2006) suggests that “creating a recurring combination of moves for the refrain ... helps children develop skills in categorizing larger quantities of information” (p. 66). This activity fosters a cooperative classroom (p. 65), and offers teachers an opportunity to discuss similarities and differences in the names of the students, which can transition into other aspects of identity and belonging. On this page, a variation listed is to include pictures of other objects that you wish to study, such as animals, so that as each page is opened, discussion can ensue.

The technological aspects that make this page easy to understand include the clip of the song embedded and easy to play, making music reading not necessary. The music for this short song is included for those that do read music. Also embedded on this page is a short video explaining how the activity works with a classroom example. Participant

observation is often an experience with which teachers have little opportunity to pursue (Connelly & Clandinin, 1988, p. 56), so this addition to the page may be especially beneficial for teachers. Pictures at the bottom of the web page show how the picture book is constructed.

The listening song. This song can be used as a very powerful transition tool, which research suggests is a very common and effective use of music in an early childhood classroom (Gillespie & Glider, 2010). Singing this song can get the students' attention and bring closure to the current activity. By using it consistently to change activities, the children begin to expect and anticipate it, establishing routine and fostering confidence. Use of the song also explores number sense, a steady beat, and creativity as the lyrics are changed.

This web page for this activity contains a clip of the song and bright printed lyrics so that music reading is not necessary. It also lists, in blue font, some reasons why using this song may be effective. From the page listing the student-learning outcomes, there are various links directly back to this listening song, showing which outcomes this activity will meet.

Parachute rhyme. I wrote this rhyme to be used with a parachute, which in my experience, young students love. This activity can be a fun way to break up the class or release energy, and it provides a way to illustrate the meaning of words through movement. It explores loco-motor and non-loco-motor movements. It was mostly added for fun, but aligns with the research saying that labeling vocabulary with movement increases understanding of those words.

Technological considerations on this page include the short video embedded through YouTube with a classroom example. Also included is a picture slideshow highlighting the movements, and showing how much the children enjoy playing with a parachute. Teachers can easily read the lyrics right on the page.

Rich multi-media content and visual appeal. In this study, visual design was also an important consideration as a way to drive prospective members to the site. Researchers note that this could directly reflect how “personally relevant, meaningful and engaging” (Brooks & Gibson, 2012, p. 3) a virtual resource is. Hadjerrouit (2010) does note that this could be related to technological usability in that the visual appeal of a site may determine if an individual is drawn to use a virtual resource. He defines content, page and site design as the three usability criteria (p. 58). Since the parameters in this study were predetermined that early childhood educators should be the target user, the design was purposely friendly and cute. This banner and horizontal menu was used as the common, connecting fixture on every page.



Figure 1. Screenshot of *Music for Learning* website banner. Taken October 10, 2012.

Specifically, targeted members were practicing public school teachers in Alberta, so for pedagogical usability, it was essential to include a summary of the appropriate

Alberta kindergarten student-learning outcomes with links to the resources. This afforded an efficiency for members to “work out which resources to use and how to use them” (Chambers et al., 2012, p. 415). The following table is the exact content included on the website, summarizing specifically the core themes in the Alberta kindergarten student-learning outcomes. The website content, as seen here, includes active links (in uppercase words) beside the outcome to show which music integration activity will meet those outcomes.

Table 1

Website Excerpt: Summarized Alberta Kindergarten Student-Learning Outcomes

Retrieved from www.education.alberta.ca, this page summarizes the Alberta student-learning outcomes, and provides links to activities within this site that can assist in meeting these outcomes.

English Language Arts

Explore thoughts, ideas, feelings and experiences (by listening, speaking, reading and writing) - use [EMOTIONS IN MUSIC](#) and

Comprehend and respond personally and critically to oral, print and other media texts - use [SUNG STORIES](#)

Manage ideas and information

Enhance the clarity and artistry of communication - use [SUNG STORIES](#), and [EMOTIONS IN MUSIC](#)

Respect, support and collaborate with others (strengthen community by exploring personal experiences and family traditions related to oral, print and other media texts) - use [EMOTIONS IN MUSIC](#) or [SUNG STORIES](#)

Mathematics

Develop number sense (count up and down from 1 to 10, and subitize arrangements of 1 to 5 objects) - use [TRANSITION SONG](#) and try a different number set each week (1-2, then 3-4, then 5-6, etc).

Use patterns to describe the world and to solve problems (understand two or three elements, sort objects based on a single attribute, determine patterns to make predictions) - use [BEAT BUDS](#)

Use direct and indirect measurements to solve problems (compare two objects based on a single attribute) - use [BEAT BUDS](#)

Describe the characteristics of 3D objects and 2D shapes and analyze the relationships among them (sort, build and describe 3D objects)

Social Studies

Being together: I am unique (value unique characteristics, interests, talents, examine what makes them unique, and explore ways to demonstrate respect based on social, physical, cultural and linguistic diversity) - use [BEAT BUDS](#) and [SUNG STORIES](#)

Being together: I belong (value personal stories and significant people in their lives, and appreciate how participation in their communities affects their sense of belonging) - use [BEAT BUDS](#) and [SUNG STORIES](#)

Physical Education

Loco-motor (involving rhythm of movement); e.g., walking, running, hopping, jumping, leaping, rolling, skipping, galloping, climbing, sliding, propulsion through water - use the [HELLO SONG](#) and [PARACHUTE PLAY](#)

Non-loco-motor (no forward movement); e.g., turning, twisting, swinging, balancing, bending, landing, stretching, curling, hanging - use the [HELLO SONG](#) and [PARACHUTE PLAY](#)

Manipulative: receiving; e.g., catching, collecting; retaining: e.g., dribbling, carrying, bouncing, trapping; sending; e.g., throwing, kicking, striking

Health and Life Skills

Wellness choice: personal health (describe ways to be physically active daily, identify and use positive hygiene, identify physical changes since birth, identify external body parts, recognize nutritional foods)

Wellness choice: safety and responsibility (identify safe and unsafe situations, observe safety rules)

Relationship choice: understanding and expressing feelings (including effective listening) - use [EMOTIONS IN MUSIC](#)

Relationship choice: interactions (ways to make friends, caring attitudes, causes of conflict)

Relationship choice: group roles and processes (sharing, and recognizing that individuals are members of various and differing groups)

Lifelong learning choice: learning strategies (engage and complete independent learning tasks, demonstrate interest in learning)

Lifelong learning choice: life roles and career development (express preferences, take responsibility in home and school)

Lifelong learning choice: volunteerism (identify ways to help)

Music

Enjoyment of music - use the [HELLO SONG](#) to introduces singing as a group, music and movement and manipulation of lyrics.

Awareness and appreciation of a variety of music, including those which represent Canada - use [EMOTIONS IN MUSIC](#)

Insights into music through meaningful musical activities (how the words to a song are meaningful, how music can express emotions) - use [EMOTIONS IN MUSIC](#)

Self-expression and creativity - use [EMOTIONS IN MUSIC](#) and

Musical skills and knowledge (high, low and middle sounds, melodies can be accompanied by harmony, patterns, sections, phrases and repeats in music)

As explained in the literature review, researchers have found that effective online resources need to be dynamic, engaging and interactive. This refers to the research on how multi-media content can assist in creating a successful resource. New technologies can now enhance virtual resources with multi-media content that can open classroom doors and sustain interactions that have the potential to replicate real-time, in-person interactions. These elements can satisfy Wenger's mutual engagement dimension. In the website used in this study, there are numerous classroom videos embedded into pages, and videos of me explaining how each activity works. As well, there are numerous music clips and YouTube clips of music, making the music easy to learn and technologically easy to play.

Pilot tests. Prior to the formal start of the research period, a three-month time frame served as a pilot test period, to optimize the technological usability and searchability of the site, ensuring that the website would be fully functional for all prospective members. During this period, the site was submitted and crawled by Google's spider, and later entered into the Google index and ranked. This phase allowed for content re-writing to improve and optimize the ranking. The revised pages were more concise, with information-rich content, and a clear hierarchy of keywords. It was at this stage that

descriptors were considered, those descriptors then deliberately placed on key pages to optimize the search results. Despite these considerations, it was still of paramount importance that the content be written primarily for the members, rather than the search engine. Pages were examined for broken links and site performance, and opened in multiple browsers to check the appearance and speed. The end result was a website that was technologically very efficient, with optimized search results, and accessible to any potential member who may be looking for music resources. With ranking assigned primarily by popularity, a Google AdWords campaign was created for one month with a budget of \$75. Utilizing a \$4 per day budget and no other advertising or driving force, this website received its maximum hits every day, with as many as 449 clicks in one day. During the period from November 17 to December 22, 2011, this campaign assisted in generating a total of 8,682 hits and thousands of files downloaded from this site. Feedback received through the feedback forum was wholly positive with comments such as “awesome site” and “I’ve tried the activities and my kids love them.” The popularity of the site, and the positive feedback was an unexpected source of data, and a wonderful discovery. The number of visits and positive feedback demonstrate the popularity of search descriptors such as ‘music activities for kindergarten’ and/or ‘music integration’, and the obvious gap in resource development in this subject area. Since the pilot test period, this site continues to receive, on average, 400 hits per week.

Blended interactions. As mentioned, sustained interactions between members were not identified as important elements to consider initially, so only a contact page was included for interaction with the creator. There were no opportunities for synchronous

interactions, other than conventional face-to-face meetings. This was later identified as an important consideration for future expansion of the virtual resource.

Overview of Study

As discussed, this research study is a qualitative, descriptive examination of case studies. A case study approach was taken because the two most important sources of data came from the interviews and observations. The interviews provided “insight into the matter” (Yin, 2014, p. 111) directly from the participants, and the observations provided access to a “real world setting of the case” (p. 113). This study was conducted over 12 weeks with four participating teachers. It included nine observations—three in each participant’s classroom, except for Alicia—and the observations began before each class officially started and ended after the class was over. Emphasis was on how the teachers interpreted and utilized the resources. As well, this study included interviews after each observation, where I asked the participants questions, recorded the results, and transcribed the recordings after each interview to extract additional data and further reflect on participant feedback.

Participant selection and professional contexts. The content of the resources aligns with the Alberta Education kindergarten program of studies, so the most appropriate participants for this study were kindergarten teachers in Alberta. To enlist prospective participants, I asked the opinions of my supervisor and committee, and received suggestions of teachers within this urban area. I also asked teachers that I knew personally and professionally to participate in this study. Initial communication with these teachers resulted in five agreeing to participate. Three were urban teachers and two were rural. As discussed later in this chapter, one rural teacher withdrew from the study,

so observations were only conducted in remaining teachers' classrooms, except Alicia for reasons explained in the next section. This qualitative, descriptive examination of case studies took place in four kindergarten classrooms in Southern Alberta.

Though I observed the dynamics and connections between the students and the teachers and the levels of engagement of both students and teachers during the class, the main focus of the study was how the teachers accessed and utilized the virtual resource and their ability to draw meaning from it. As broker, I wanted to see if the resources on the website would be useful to the participants. And, as the study progressed, a theme that began to emerge was the potential of the virtual resource to function like a community of practice, connecting two like-minded practices. With many resources to choose from on the website, I did not suggest or establish criteria for how the teachers decided, so part of my observation was to see which activities were used and why. I was also cognizant that teachers often draw on their own experience for planning curriculum and instruction, so in my observations, I sought to see how flexible the resources were in their use (Connelly & Clandinin, 1988). In interviews and through the feedback forum on the website, the teachers provided feedback on the quality of the resources that they chose to implement into their lessons, and their ability to interpret and easily access the virtual resource.

Data collection and analysis. Stake (1995) points out that “the function of the qualitative researcher during data gathering is ... to maintain vigorous interpretation. On the basis of observation and other data, researchers draw their own conclusions” (p. 9). Drawing from statements like this, the observation data for this study was collected over 12 weeks, between March 25, 2012 and June 11, 2012, and involved a total of nine observations—three in each of Brynna, Pam and Carol’s kindergarten classrooms—as

well as three interviews each with all four participating teachers. Also included in this study is data obtained from the one interview conducted with the rural teacher, Brenda who later chose not to participate in this study.

Observations. For each observation, I arrived before the students entered the classroom to minimize the disruption and distraction that I might cause to the students, and to examine similar routine activities among all of the participants. In doing so, I established a commonality across all observations, enhancing the reliability of the data. Mindful of maintaining trustworthy record keeping, I created a check list which I persistently consulted to ensure similar observations were made for each teachers' curricular progression, bearing in mind that "the more details captured, the richer will be the data source for reflection" (Connelly & Clandinin, 1988, p. 57). In this regard, record keeping included constant reference to the following checklist, referred to later as the observational checklist:

1. Record keeping that starts as the students enter the room, and finishes after they leave. It will include start and end times for all activities and major transitions, with the times written in the left hand column of the page, for easy reference.
2. Detailed descriptions of each activity, including names of resources, and melodies used (include transcriptions if the melodies are not immediately recognizable).
3. Observations of facial expressions and reaction to all activities, and comments from students to their peers on their opinions of activities.

4. Avoid interpretive opinions or judgments, or include them in the right hand column only to keep them separate from other field notes.
5. As soon as possible after finishing the observations, “try to reconstruct the day”. (Connelly & Clandinin, 1988, p. 57)

These multi-modal considerations in the data collection process generated rich data used to reflect on my research questions. And it was through this process that I discovered that “one of the most useful tools for reflection...[was the] participant observation” (p. 54).

With a blank, coil bound research journal in hand for each visit to a classroom, I took careful, detailed field notes on the teacher’s interactions with the students, the teaching materials consulted, as well as the specific resources and activities conducted. My observations began even before the children entered, noting the teacher’s demeanor and levels of engagement with the children as they entered the room. These initial observations included facial expressions, bodily movements, conversations and rapport (Connelly & Clandinin, 1988, p. 56).

Before the classes began, detailed sketches were made of the classroom environment, specifically noting the dimensions and placement of furniture, decorations in the room, technology available for use, and the types of resources placed throughout the space. Of particular significance and relevant to the research question was the use of music as an integrative teaching strategy, so specific notes and descriptions were written down each time music was used. This included reference to the song or melody used in the activity if it was recognizable to me, or I transcribed the melody if it was not. Most importantly, I recorded all instances where resources provided on the website were used

in the classes. As noted, the focus in this study was not as much on how the participants used music to teach toward a musical understanding as it was on the ways that music could be used to meet other student-learning outcomes, so it was relevant to make notes of what curricular area was being taught when music was being used. For this, the interviews were a more significant and reliable source of data. Lastly, I persistently kept notes on the rhythm of the class and on each specific activity conducted in class. I also tracked the amount of time each activity took and how the children engaged in the activity from start to finish. Summaries of some typical progressions for each of the participant's classrooms are described in detail in part two of this chapter.

Through this study, I did not dictate which activities from the website should be used. I did not infringe on lessons planning by asking for a particular activity to be conducted on a particular day when I observed a class. In most cases, the teachers were cognizant that my study focused on how they utilized my resources, and specifically planned to conduct my activities on days that I was observing, so in almost all cases, I was present in the classrooms when the participants utilized the specific resources included on the website.

Interviews. The initial outline of the study dictated that the interviews would be conducted before, during and after the resources were utilized. I thought that this would be the best approach to obtain rich data on the participants' impressions and use of the resources on the website. However, it was immediately apparent that this would not be possible because the website address was emailed to all participants before the study began to fully inform them of the details of the study. The contents of the virtual resource and terms of the study were reviewed by the participants, and used in their planning

before I could even schedule an observation. Because of this, I adjusted the scope of the study and scheduled the interviews concurrently with the three observation dates.

Kvale and Brinkmann (2009) notes seven stages of an interview investigation: “(1) thematizing an interview project, (2) designing, (3) interviewing, (4) transcribing, (5) analyzing, (6) verifying, and (7) reporting” (pp. 19-20). During stage three, the interviews were recorded so that they could later be reviewed and reflected on, extracting additional data for the later stages: transcribing, analyzing, verifying and reporting. I kept the questions purposely “open-ended, personal and concrete” leading to answers that were “rich in the details of practice” (p. 51). Referring to Kvale and Brinkmann (2009), I was aware that “the knowledge produced by [the interviews] depends on the social relationship of interviewer and interviewee, which rests on the interviewer’s ability to create a stage where the subject is free and safe to talk of private events recorded for later ... use” (p. 16). So, for each interview I asked questions like “tell me more” without leading a particular response, and by doing this, I invited the participants to delve deeper and reflect on their answers. I recognized the importance of keeping the questions identical in all interviews, and made notes of any deviations or tangents that spontaneously occurred with one participant, so that the same could be duplicated with the others. This contributed to the trustworthiness of the study. The predetermined questions fit into three categories and allowed a plethora of details and information about the participant’s personal practical knowledge (Connelly & Clandinin, 1988, p. 55) as well as specific details about their classrooms. Attached as Appendix B is a listing of the prepared questions used during the interview processes. The questions were based on

main categories that endeavored to illicit information on the following topics, relevant to this research study:

1. Classroom specifics, i.e. number of children, demographics, support from aides, assistants and staff.
2. Music background, aptitude, beliefs and uses across the curriculum as integrative strategies.
3. Technology background, aptitude, accessibility and support. Also specific virtual resources used in lesson planning and feelings about virtual resources as a place for professional learning, for building networks and for sharing resources.
4. Feedback, thoughts and specific uses of resources from the website designed for this study.

The process of including two modes of data collection—interviews and observations—shaped a clear picture of what the teachers’ practices looked like, as well as the knowledge, attitudes, opinions and background that shaped those practices. And, in a sense, the observations often acted like a verification process, which continued through to the interpretive analysis of the data. The prolonged research period spanning several months, including several face-to-face meetings, allowed the development of a friendly relationship between researcher and participant, and this translated to more detailed answers in the interviews and a heightened comfort to reveal candid answers.

Coding. Using inductive and deductive thinking, open and axial coding was used to relate the interview and observational data from all four participants. The data was

chunked as main themes began to emerge, and those are discussed in detail in chapter four.

Conclusion

This chapter explored the construction and design of the virtual resource, as well as a description of each resource and how and why each resource was created, with reference to the research that impacted the development. The second section of this chapter provided an overview of the study, the data collection methods and the participant selection process. Chapter four will now provide a detailed description of the participants and their classrooms, as well as a summary and discussion of the findings from the interviews and observations.

Chapter Four: Findings and Discussion

This study used a virtual resource to encourage productive knowledge sharing and membership across professional communities. The structure of this chapter is divided into three sections. First is a detailed description of the classroom contexts and of the participants. Next, a summary of the participants' use of the resources, and their responses to the resources. Third, this study set out to create a virtual professional resource for early childhood educators, and through this, also realized the importance of a community, so the last section will refer back to Wenger's community of practice model.

Classroom Context and Descriptions of Participants

The following is a description of the classrooms and teachers that participated in this study.

Pam. I was intrigued to spend time with Pam. Our professional relationship began when she registered to attend one of the free classical concerts that I organize for schools in our area. As I described in chapter one, these concerts serve to assist public school teachers in introducing students to classical music performed live. Pam is one of the dedicated kindergarten teachers who brings her class to the concerts every year. She organizes transportation, and prepares her students for the concert so that they get the maximum benefit from the experience. Over the last four years, she and her class have attended productions of *Peter and the Wolf*, *Carnival of the Animals*, *Rocky Mountain Fairy-tales*, *Beethoven Lives Upstairs*, and most recently, *Mozart's Magnificent Voyage*. She is always appreciative of the opportunity, and has commented on the importance of music in her students' lives. Although this was the only contact that we had had up until this study, I deemed her to be a committed teacher, open to exploring new resources and

forms of professional development. I emailed her to see if she would be interested in the study. Soon after sending the email, she responded “this looks very exciting and I would be happy to be part of the study” (Pam, personal communication, November 29, 2011).

The private kindergarten that she runs is well known in the community as Pam’s Kindergarten. It has no website and is not linked specifically to any school division. Pam does not maintain ties to any communities of practice, not even the Provincial Teachers’ Association and she does not attend regular conferences. This private kindergarten is run by a parent board consisting of eight members, and mostly funded by Alberta Education. Although she is seemingly isolated, her full time teaching assistant—an equal in Pam’s eyes—assists many of the classroom activities. Pam’s education background is extensive, with a Masters in Early Childhood education and 39 years of teaching experience. Pam also works at the public library in the afternoons. She has very little experience in music, but understands the research and practical uses of it in her classroom, so songs and recordings are immersed in the classroom routines. Pam’s program aligns with the curriculum defined by the Alberta Program of Studies although Pam admits that she has not looked at the student-learning outcomes for many years. With no technology support, she has limited understanding and experience with modern technology. Nonetheless, she recently purchased a new computer with reliable access to the Internet, and does utilize the web to send and receive emails. She can also look at websites that are forwarded to her, but does not bookmark or remember web addresses.

The physical location where Pam teaches her students is the basement of an old church. The room is a reflection of the age of the building. With dated, cold, tiled flooring, this large rectangular space is divided lengthwise by a long, beige folding door.

On one side is her classroom. Being in the basement, the only windows sit high on the walls. Despite the dim lighting and brown walls, the classroom is welcoming with lots of bright, primary colors, age appropriate decorations and picture books. In this room sits the Mac computer, tables of different shapes, a playhouse, and the most integral part of the classroom, the brightly colored carpeted area where the children and teacher gather. There are no white boards or Smart Boards, but a few large paper easels scattered around the room and a well-used, primitive tape-recorder/CD player. Along the walls, there are many bookshelves lined with resources that represent decades of work, including cassettes, VHS and CDs, binders, and yellowing books.

The children who attend this program come from all sides of the city, and many of them are siblings of older children who have attended in the past. Pam's reputation precedes her as her classes fill each year by word of mouth. In 2011-2012, her class had 15 boys and four girls. Four of those students had regular speech pathology sessions and two had mild learning disabilities. There is just one kindergarten class per day, which runs from 9:00-11:45am. The dedicated parents drop-off and pick-up their children from class, creating a unique routine in this program as the children line up and wait for their parents to arrive. The parents coordinate snack time.

A typical day in her classroom is guided by familiar routines; the children understand the structure as soon as they enter the room. There does not seem to be opportunity for deviation in how the day is organized. With importance placed on reading in the home, even before the day begins there is a self-guided book exchange. The children sign out storybooks, meeting with Pam individually as they choose their book. Once finished, all the children go to the gathering carpeted area, and the routine continues

with attendance. Children say “present” when their name is heard, and are able to share during circle time by responding to *do you have anything to tell us?* with *yes I have* or *no I haven't*. A typical sequence of activities in this classroom would include about 30 minutes on the gathering carpet, with attendance, sharing, days of the week, months, weather, and the “Hello Song”. This is followed by a movement activity sustained with rhyme and music in the church’s gym, a daily favorite among the students. To transition from the gym to the room, the students line up in two groups and one group goes to the bathroom while the other reads a story. They then switch. In a disorderly moment, you will hear Pam say “Aloha” in varying inflections or rhythms—heard above the crowd—followed by a group echo, immediately restoring harmony. By 11 am, the children are ready for their snack, usually delivered by a parent, and after this, they may return to the gathering carpet for a story or musical activity. Many of the musical activities are taped songs played for the children to sing and move to, with themes relating to the letters of the alphabet. In some cases, the students will spend the remaining time at stations, such as the computer, hands-on puzzles, an art station, a playhouse or something relating to the theme, like a large wooden yacht to fish from, or a Polynesian cultural center.

Many of the themes and activities are perennial traditions that span almost four decades. Mondays, for example, are celebrated as the day when a child gets to sign out Grey, the stuffed bear, to keep for a week. Grey has a journal, and it is with hopeful anticipation that the children wait for their turn to keep Grey so they can write about their adventures and share them in class. Another custom is the Mother’s Day tea, beginning with an invitation sent home, marigolds planted and decorated as a gift, and even a country-dance and song rehearsed and performed in the gym. A tradition that particularly

exemplifies the dedication of this teacher is the trip to Hawaii. Organized by a truly committed teacher, the children begin by fundraising through the school year, studying Hawaiian culture, and then preparing for a holiday to their version of Hawaii. When they get to “E” in the alphabet, they also send an e-mail to a kindergarten class in Hawaii, synchronized by a Hawaiian friend/teacher known personally to Pam. I discovered this class tradition by accident. On a morning that I happened to be observing this class, the children arrived with overnight bags, and loaded them on a cart to the “baggage check.” The children ‘checked’ the bags, and gathered in the classroom that had been transformed overnight to a Hawaiian resort with a life-size palm tree and pictures of Hawaiian culture throughout the room. With palpable anticipation, the children sat quietly as Pam and a member of the parent board announced that their fundraising goal had been achieved and they would be flying to ‘Hawaii’ on Monday morning. Celebrating this success and building the excitement, she also gave each of them a seashell necklace to wear on their holiday. After class, I asked Pam the details of this trip, and she confirmed that they had booked an actual flight around the city. No, they were not flying to Hawaii, but were using their imaginations to create this magical adventure. This would be the first flight for many of the children in this class. After the flight, volunteer drivers would pick them up from the airport and drive them to a local hotel with a tropical atmosphere for a luau and overnight stay. This dedication, enthusiasm and obvious commitment to her students overwhelmed me. In later observations, I also heard a small girl proudly say at sharing time “Pam is going to attend my ballet recital tonight” and that poignant statement by that little girl spoke volumes to me about Pam as a teacher.

With only two adults ever in this building with the children, my observations in Pam's classes could not go unnoticed; however I soon discovered that she had talked about me to her students long before I ever visited her class. I knew that this was Pam's first experience with a virtual resource but I could not have anticipated that she would confess her insecurities about music and technology to her students and bring them along on this cumulative journey of discovery. I learned that, with trepidation, she and her students had listened to the sound clips and learned the songs together. This meaningful learning experience became a collective celebration of success, and because of this my attendance was anticipated and also celebrated. They knew all about me, and welcomed me into their classroom community by sharing their snacks, singing hello to me and asking me questions about my life. Looking back at my research notes and interviews, I can summarize the essence of Pam as a teacher not only willing to seek lifelong professional learning opportunities, but also willing to be vulnerable, inspired and allow her students to travel beside her on the journey.

Carol. My thesis committee recommended that I approach Carol, a teacher at an economically and culturally diverse public elementary school in an urban area. I emailed her the specific details of the study, and within hours of sending the email, she responded:

Hi Breeanne. I reviewed the website and talked with the principal of our school and I would love to be a part of your research project! This will be a new experience for me so please let me know what you need from me in order for my classes to take part (Carol, personal communication, November 22, 2011).

By the end of the 2011-2012 school year, Carol had been teaching for 13 years. Of all the participants, Carol was the only teacher who taught two kindergarten classes in the same day. The afternoon class that I observed, from 12:15 - 3:30 p.m., had 15 male and nine female students. Seven of her students were ELL, three had mild learning disabilities, and three had speech difficulties. Carol had a full time assistant, a Program Unit Funding (PUF) aide for the children with disabilities and a speech pathologist regularly in her classroom. In addition, her classroom was full of activity with parents stopping by with snacks or to observe their child's special day. On occasion, even other teachers from the school dropped by to visit or ask a question. It was immediately apparent that this school celebrates connections between grades and encourages cohesiveness and collaboration among the staff. The smell of fresh coffee fills Carol's room and her open-door policy invites everyone to celebrate in the happy, busy classroom atmosphere. Because of the business of this room and the number of adults coming and going, my observations in this school went practically unnoticed by the students.

The kindergarten room at this school is bright, modern and organized, mirroring Carol's personality. Colorful posters, quotes and learning aids line the walls, as well as individualized decorations like current pictures of students during fieldtrips, assignments or artwork to personalize the room. The room is spacious so the children feel the freedom to move around, and there are large age-appropriate stations at each corner. In the center of the room are the child-sized round tables for journaling and worksheets, and hand-sewn, cloth folders on the back of each chair for homework. Perhaps the most integral feature in her classroom is the Smart Board, displayed as the focal point of the gathering

area. A precisely placed computer sits in close proximity to the Smart Board for easy access of files or resources to show the students.

There is a palpable rapture when her students enter her classroom, invited warmly by Carol with a joke or a hug. Carol has a strong background in early childhood education, and the students seem drawn to her youthful and carefree demeanor. Carol takes the role of a facilitator, guiding her students' learning, but allowing for disruptions and deviations to the routine. Her students seem to understand and adhere to the routine because of their eagerness to learn and her positive sanctions. And, while the children interact personally and informally with her, they recognize that she is the authority figure in the classroom. There is contagious laughter within these walls and everyone looks confident and comfortable in this casual, almost whimsical environment. One example is the entertaining 'pretend-intercom' announcement Carol makes, calling the ER doctor to the room whenever a student needs a Band-Aid. She is very friendly, and this setting contributes to prolonged conversations and spontaneous divergences that impact the course of the class in very meaningful, positive ways.

When the students enter the classroom they engage in a fun, interactive attendance activity on the Smart Board that is thematic and ever changing with her lessons. On each of my three observations, the attendance activity was different. The most unique and technologically challenging was the beach theme. Each child's name was on a beach ball, seagull or crab, and when the students found and tapped their name on the Smart Board, the text disappeared, leaving only the picture behind. The remaining names on the board were those who were missing from class that day. I found myself captivated by this simple activity, which Carol admitted took hours to craft. She

commented that simple activities like this purposefully satisfy many learning outcomes, illustrating her emphasis on integrative teaching strategies.

A typical sequence of lesson development would include the unprompted attendance activity as the children enter, followed by activities on the gathering carpet. With Carol as the facilitator, the special student of the day would take charge of the routine by first leading the “Days of the Week” (to the melody of the “Adam’s Family”) and then a song in unison prompted by a YouTube video about the 12 months. A unique and very effective estimation activity follows where the students each guess the number of buttons in a jar, and then determine the difference between their guess and the answer. This gathering time lasts for about twenty minutes in total, with the “Hello Song”, patterns, YouTube videos (like “Let’s Do the Numbers March”, “Count Down from Twenty”, and others), and letter recognition activities on the Smart Board. After this time, they may do journal writing, worksheets, or a story, often divided by movement songs or videos, which the children know and sing fervently. After almost two hours they have a snack while singing a song composed by Carol about the four food groups. This may be followed by another child-directed activity such as sharing time when the student helper showcases something special brought from home. The day may close with center time, which would include typical kindergarten centers such as stories, puzzles, playtime, interactive computer games or writing activities. Before the children leave, Carol reads a very powerful poem to them about their importance to her, and their place in the class and in life. The routine in this classroom comes from a foundation of well-planned lessons that deviate spontaneously with the mood, energy and needs of the students. But,

because Carol has so many resources and a vast knowledge of early childhood education, these deviations seem seamless.

Carol is a teacher who uses current trends and technology to engage her students. At the beginning of each year she sends home a questionnaire to obtain information about her students' interests. She then modifies her lesson plans and looks for new resources to fit those interests. Her school makes allowances for her so she can hand in her long-range plans in October, giving her the opportunity to get to know her students. She relentlessly researches contemporary resources and seamlessly adapts her teaching style, personalizing her lesson plans to make meaningful connections with her students. She has technology support available in her school, and also considers herself to be tech and web-savvy, using technology in her classroom daily. Her limited music background does not inhibit her. She believes in the benefits of music as an integrative teaching approach, and suppresses her feelings of self-consciousness to include music in many of the daily activities.

As a teacher, she balances pedagogy and rapport, placing importance on her relationship with the children and their families. She knows the parents' names and remembers details about her students' families. She engages in friendly, social conversation with them as they arrive and asks questions about their lives. She even creates individual, detailed scrapbooks for each child with pictures, dates and memorable events for each child's lived experiences in their first year of schooling. I perused these powerful keepsakes one afternoon, and was moved at what a magical and meaningful souvenir this would be for the students in her class.

Brynna. With large coalmines as the primary employer, there is a strong union mentality that resonates through the small rural town that Brynna teaches in. Drawing European immigrants, this rural town also boasts an ethnic and cultural diversity that has lasted generations. As the economy changes, many of the big mines are closing their doors and leaving the employees no other option but to move, resulting in smaller and smaller class sizes every year. Locals joke that the last one to leave the town will be responsible for turning out the lights. Located in the mountains, the nearest urban centre is about 90 minutes away, close enough for face-to-face meetings for teachers, but often too far for student fieldtrips. When I approached the two part-time kindergarten teachers at the public elementary school in this rural community, both were very interested in participating in this study and responded enthusiastically to my email. I wanted to include them because they were teaching at a rural school located in a unique setting, with dynamics and challenges that differ from those in urban centers. I also felt that their feedback would contribute invaluable to this research because they have full day kindergarten classes on Monday-Wednesday and Tuesday-Thursday (and every other Friday), fostering a unique kindergarten classroom experience.

In 1985, I attended kindergarten at this very same public elementary school, among about 100 other students. I remember my warm, friendly kindergarten teacher and I remember the bright primary colors that decorated the walls of the classroom. It was a reflectively reminiscent experience for me to enter this school again almost three decades later. The kindergarten room is now in a different wing of the building and everything seems to have shrunk from the expansive rooms that I remembered as a small child. With

only 5,500 people left in this town, the kindergarten program is less than half the size of what it was when I went to school.

Brynna and Brenda's shared classroom is long, rectangular and spacious, with age appropriate stations in each corner, tables lining the center of the room, and a gathering carpet with a Smart Board. There are big windows lining the outer wall, enhancing the brightness of the space. Picture books are stacked in open bins for the children to peruse, and art easels are set up along a wall for station activities. The decorations on the walls include brightly colored letters, numbers and socially responsible phrases such as *be kind, work hard* and their three school rules: *Take Care of Yourself, Take Care of Others* and *Take Care of your School Environment*, chanted every morning during announcements. There is a CD player and computer in the room that Brynna readily utilizes, but the school offers no technology support. A guitar leans against the desk, close to the gathering area and easily accessible by Brynna, who plays it regularly to accompany many classroom activities.

Brynna teaches on Monday and Wednesday and every second Friday. She has a Bachelor of Music, and six years of teaching experience, though only three years in a kindergarten classroom. In the 2011-2012 school year, she had 20 children in her class evenly split between boys and girls with no special needs children in her class. Her class runs all day, from 8:40 a.m. - 3:30 p.m., so the kindergarten students participate in recess and lunch hour routines. In my observations, it was apparent that the longer days scheduled for the kindergarten students at this school seem to invite longer individual activities than the half day programs I observed.

As parents drop children off (some are bussed), Brynna greets them cordially and professionally. Before each class begins, Brynna sits on a small chair outside of the door and the children line up to enter the room. She greets each child with a handshake and warm smile. This formal ritual is followed by the children going straight to the gathering carpet and sitting on what she calls an island surrounded by water, a way to guarantee they are not touching each other. There are no assistants or aides in this room, although the librarian has been assigned to assist the class on occasion. The children bring their own snacks and lunch.

Once the children are sitting quietly, she uses the Smart Board and laser pointer to seek out each child's name on her projected spreadsheet. She calms the energy of the class by whispering *who is this?* allowing each child to respond by waving or saying hello in the language of their choice. The Smart Board is the focal point of the gathering area, covering the majority of two whiteboards, hidden beneath. She uses the sides of the whiteboard that are left visible for most writing and drawing activities, as well as one of the easels located near the tables. The gathering time lessons run from left to right across the white boards, seemingly on purpose to replicate the structure of reading.

A typical gathering time sequence would include routine activities such as school announcements including "O' Canada", attendance, the "Hello Song", the "Days of the Week" song (sung to the melody of the "Adam's Family"), pattern recognition done by writing shapes on the whiteboard, reading and writing of small words such as dad or mom, a story, and a hanging day planner with pictures and/or words of the day's activities. This tells a story to the children and allows them to recognize and recite the structure of the day. On a day that I observed, the children recited in unison the words on

the hanging planner, understanding that they would have carpet time, table time, snack, recess, fire drill, craft, lunch, *DEAR* (drop everything and read), centers, snack and home, in that order. On a day without the fire drill, words like gym time or library may take its place. The total time spent on the carpet during my observations was one hour, and was almost exclusively supporting language arts. The children understand the routine of the classroom and are eager to participate. Sharing time is limited to focused conversation directed by Brynna, and does not invite prolonged or spontaneous divergence of topic. Talking out of turn is not tolerated. Her lesson planning seems to follow the program of studies with precision.

Brynna definitely thrives in a controlled classroom community, ensuring she achieves the optimal learning environment for her students. She speaks through a microphone that hangs around her neck so that her students can all hear her without straining her voice. With the full day system and longer activities, this kindergarten atmosphere mirrors the structure of a traditional elementary classroom. Achieving learning outcomes drives her lessons forward, and in interviews she reveals her meticulous knowledge of the Alberta Program of Studies, both the general and specific learning outcomes. She acknowledges that her year plan is finalized and submitted in June for the following September. Then, when her lessons are put into practice, she makes notes of which activities are not successful so that changes can be made for the next year's plans.

This small rural school seems to support collaboration and connections between grades, with many activities scheduled throughout the whole school. This connects students of all ages, and creates lasting mentoring relationships. On one of my

observations, Brynna read a story called *Hairheads*, shared and read by all of the grades. After reading this story, the grade three class—their reading buddies—came in and helped the kindergarten students plant seeds with dirt and water, and decorate the pots. Another collaborative activity I observed was a music class for all grades in this elementary school on the first Friday of each month. Lasting about 40 minutes, this class is for all teachers and students. They gather and sit in lines in the gym, and Brynna leads the school in songs and instrumental activities, sitting behind a microphone, guitar, xylophones, boom-whackers and an overhead projector. All of the teachers are present and sing along, and the repertoire chosen includes a wide variety of topics (such as “I Like Sandwiches”, and “I’m Having a Bad Day”) with many options for instrumental accompaniments by the students.

Although it was my intent to observe and interview both of the part time kindergarten teachers in this rural community, on the first face-to-face interview with Brenda, she said that she did not have the time to thoroughly review the resources. In a short interview, I asked her about her initial opinions of the website, and she had some positive feedback as well as constructive suggestions to improve the site. Generally, she felt that she belonged to many other communities of practice, both conventional and virtual, and that the timing of the study was not ideal, given that her preparations had been done since June, 2011. Without being able to observe her use of the resources that I developed, I decided to continue the full study with Brynna.

Alicia. The journey with Alicia participating in this study began with casual discussions about my research to parents of children that I taught. More than one parent mentioned Alicia, a teacher who used music and signing extensively in her classes and

was very well known in the community as an advocate for the arts and a very experienced kindergarten teacher. I emailed Alicia, and she responded soon after that the site looked great and she would love to take part. She also commented that she would begin using the “Hello Song” right away, as it was very catchy and the children would love it (Alicia, personal communication, November 22, 2011). In later emails after Christmas, she commented:

I have had a few developments since Christmas ... sadly, my classroom assistant broke her leg so badly that she will not be back this year. The class I have was already very full and not maturing very fast and now we are getting another child in our class. I love your songs and methods, but I really don't think I would like any classroom visits this year in such a full class that has experienced too many changes this year. I don't know if that would work for you and I am sorry about this. Please let me know if just my input would work for you. Take care and I look forward to hearing from you, Alicia (Alicia, personal communication, February 24, 2012).

I appreciated that the classroom climate changes had upset the balance in her classroom and her comfort in creating an optimal learning environment, so I adjusted the scope of her participation so that she could continue to utilize the resources and then provide what I knew would be valuable feedback. What follows is a short description of her interactions with her students from the few minutes that I observed of her teaching before or after our interviews, as well as a detailed description of her classroom.

Alicia teaches in a small urban elementary school. Her classroom is very small and overstuffed with age-appropriate stations, toys and years of teaching materials. Old

computers line the walls as you walk in and lead to a gathering carpet just big enough for the 24 students in her class. Shelves full of craft supplies, books, and games cover an entire wall on one side, and a little cove is hidden on the other side which houses Alicia's desk and many teaching resources. Child-sized tables fill the left over space, as do the stations such as the sand box, play house and art easels. There are colorful posters covering the walls, some yellowing with age. The room is packed with teaching resources that span three decades of teaching. Alicia's cassette player sits close to the gathering area, regularly used and in opposition to the songs she also downloads from iTunes and plays from her computer. In passing, she comments that she guards all of her resources—especially the cassettes—as many have not been replicated in modern modes of transmission.

When her students enter her classroom, she greets them warmly and enthusiastically, and they seem to adore her. They understand the routine, and join her on the carpet to sing hello and participate in many signing rhymes and songs during the gathering time. Many of the gathering activities involve movement, both standing and sitting. Signing is a very important mode of communication in her classes, primarily to engage the children with movement. Many of the students become very fluent in the art of signing, which she bases on real signs from the American Sign Language (ASL).

Alicia has a casual but extensive music background, and her family is very musical. This explains her musical aptitude and beliefs in the benefits of music in her classroom. She has countless songs in her repertoire, and integrates them throughout all of her class routines. From the few minutes that I saw her engaging with her students, she seemed to sing more than she spoke. Some of her songs have lasted decades in her

classroom, such as the alphabet book and accompanying songs, forming a staple across years of teaching. This book is copied and distributed to each child at the beginning of every year. Each letter has its own page and picture and is sung to a part of the melody “Skip to my Lou”. The students continuously use this throughout the year:

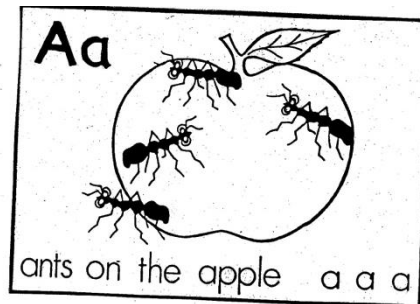


Figure 2. Page 1 of the alphabet book (from Alicia, 2010).

Blended in with these well-used resources, Alicia also researches current trends and devises activities that appeal to the children’s interests. On a day that I happened to see a few minutes of her teaching, her class stood in a circle and proudly sang the entire Miley Cyrus song, “The Climb”, complete with accompanying signs. Alicia later remarked that she searches out songs with meaningful lyrics that are trendy and that might be heard on the radio. In doing so, the children are able to make meaningful connections to the activities. In addition to the regular thematic units such as weather that are consistently used, she also weaves in themes that have significance in history and are very significant events to her.

During the research period (the 2011-2012 school year), Alicia had 16 boys and eight girls in her class, and no special needs children in her class. She had been teaching for 31 years, and had a full time temporary aide to replace the one who broke her leg. She had technology support in her school, and used her Smart Board and computer sporadically in class. Alicia is a very well respected teacher in the community and uses

music as a primary vehicle for teaching, seamlessly integrating song and movement throughout the majority of her teaching. With decades of teaching experience and the animated, dramatic way that she engages her students with music, rhyming, signing and dance, she is an inspiring teacher that is loved by her students. In our interviews, Alicia noted that she has seen her students perform later in high school jazz choirs, and wonders whether their early exposure to music has helped them ‘feel the music’ more than some of the others. Reflecting on her career, she astutely commented that she believes students from her class are more comfortable with music and more naturally drawn to music because of the integrated way that they are exposed early on in her classes.

Participants’ Use of and Response to Resources

The former descriptions provide the context of the participants and their classrooms, and that information assisted me in answering the following questions:

1. How did the participants use the resources from the website? Who are the participants? Did their attitudes, interests, experiences and specific circumstances impact their use of the resources?
2. To what extent did the use of this website impact their willingness to use online resources for professional learning, networking and sharing?

To answer the first question, the following table provides a summary of the participants’ use of the resources in the classrooms. This information was gathered from my observations, and also from interview data:

Table 2.

Use of Website Activities by Study Participants

	Pam	Carol	Brynna	Alicia
Hello Song	Yes, every day by request	Yes, about 2-3 times per week	Yes, every day	Yes, at least once per week
Emotions in Music	Yes, on several occasions	Yes, on several occasions and in varying ways (with colors, faces, stories)	Yes, on several occasions	Yes, on several occasions in varying ways
Sung Stories	No, she already has stories that have music	Yes, once	Yes, on several occasions	No, not needed. She has a tape of sung fairytales
Beat Buds	Yes, in multiple ways, on several occasions	Yes, a few times	No	Not exactly, but used a very similar activity
The “Listening Song”	No	No, but wants to try it in the fall, 2012	Yes, on several occasions	No, song will not stick with me
Parachute Rhyme	Yes, on several occasions	Yes, several times, by request	No	No

Combining field notes from both the observations and interviews of Pam, Carol, Brynna and Alicia’s classrooms, the following is an interpretive analysis of how the teachers utilized the resources during the research period.

Hello song. All participants made use of the hello song, and it formed a regular part of their routine. In Pam’s classroom, the children enjoyed the “Hello Song” so much that they would request it if she ever tried to skip this activity. In the closing interview,

Pam commented that she would use the “Hello Song” for years to come. She noted that she was not a great singer, but that the children did not mind. She delighted in using the variation of addressing the children specifically, commenting that even half way through the school year, this specific class could not remember their peers’ names. In this case, the resource solved a classroom dilemma. She noted that she valued music as an integrative tool for teaching before this study, but after the study was over, she began to value it more. She already used music extensively in her classroom, but commented that this study reminded her to continue using it even more.

In Carol’s classroom, in all three observations, the children requested to hug hello, and enjoyed the physical contact. They also chose many other movement words. She used this resource as just one more fun integrative activity that the children thoroughly enjoyed, and also as a way to get her students’ attention and begin the formal instruction part of the class. Carol was a very confident singer, and although she recognized that her singing was not always in tune, she did not think the children minded. In interviews, Carol commented that she uses music for everything, and is familiar with the research that supports music use for many different approaches such as transitions, activity breaks, games, and to teach concepts: “We trick them with music!” (Carol, interview data). She loved the website, found it easy to navigate, and asked for more resources to be added. She commented that she appreciated that there was not much reading which can bog a user down.

Brynna, with a specialized music background, sang the “Hello Song” perfectly in tune, and the children seemed captivated and enjoyed the opportunity to match the pitches and listen to her sing. This could be because, as mentioned in chapter two,

“singing together ... engenders feelings of trust and bonding” (Levitin, in W-FIVE, 2011) which is almost certainly heightened by the underlying purity of a melody, sung by a trained vocalist. As expected, under Brynna’s tutelage, the children also sang this song more in tune. Brynna used this song with many skilled variations, including weather (Let’s Sing Hello, it’s Cloudy Today), days of the week and names of the students. The variations were very organized and well planned. Brynna stated in interviews that she uses music in everything she does, seeking out resources that are very diverse and applicable to all grades. She noted that this study reminded her of the power of music.

Alicia used the “Hello Song” two or three times a week to vary the hello activities she already used as part of her morning routine. She said she thought it was ‘catchy’, and a welcome variation to her current repertoire. In interviews, Alicia noted that she is very confident singing and signing, using it extensively in class. She said she believed that music and movement go very well together. Because she had so many songs in her repertoire, she would often give a specific student the opportunity to choose a morning routine song. In this way, the “Hello Song” enhanced the strategy/situation in Alicia’s classroom where she allowed the students to have a sense of voice, and make meaning of their unique identities. To help her remember the song, she recorded the media clip from the webpage onto her iPhone, allowing her to easily listen to it before class. She commented in interviews that she loved that the resources were applicable to Alberta curriculum, and that there were no other sites like this one. Brynna also appreciated that the website was specifically designed for kindergarten teachers in Alberta and suggested that the resources be tied more directly to specific curriculum, especially in early literacy.

She also suggested that each activity have more variations included, with suggestions such as pausing for rhyming words.

Emotions in music. All four participating teachers, in a variety of ways, also used the sound clips activity. In one instance, Brynna chose to use this resource on a day where they expected a fire drill because she had a student in her class who was very afraid of the siren. She first explained that music can evoke different emotions, and then played the clips to help the students identify the emotions. After each clip was played, she attempted to build on their capacity to support their peers and asked them to communicate and describe situations or circumstances that lead to certain emotions. Students were engaged in this discussion through listening, speaking, interpreting, and finally, resolving how to overcome some of the emotions. One student commented that he would think about his new puppy whenever he got sad. Another said he was always mad when his brother picked on him, and one of his peers suggested he just ignore him and he would go away. In the interview after class, Brynna commented that it was a very successful activity for her that day, because it created an avenue for discussion before the fire drill, using examples that the children could understand. In this way, Brynna used this activity to specifically solve a dilemma with a strategy that was meaningful and fun for the children. Brynna mentioned that a very convenient aspect of this virtual resource was the multi-media additions, including the sound clips and the voice recordings for teachers to learn by imitation.

By the time I observed Pam's use of the sound clips, she had already played the resource for the children on several other occasions. In my observation of this activity, the children began by sitting quietly with their heads on their desks, and as each clip was

played they identified, in unison, the exact wording of each emotion, such as ‘anxious’ or ‘mad’. This was an exercise in active listening and self-regulation for Pam’s students. Carol implemented this activity by photocopying the faces from the website and allowing her students to explore the emotions by drawing how they felt. The students vocally gave examples of other instances when they would feel like this, exploring their own narrative sense of voice and personalizing their connection to the activity. She then put her personal stamp on this activity by bringing in samples of children’s movies and asking the children to actively listen to the background music. She liked that on this website, the resources were easy to adapt. She explained later that by building and repeating a lesson with variation, it further solidifies the learning outcome—in this case, the children’s understanding of their thoughts, feelings and experiences. This aligns with research that music can facilitate teaching by repeating tasks; music “allows for repetition that is not perceived as a drill” (Standley, 2008, p. 29).

Alicia described her use of this activity in detail. First, she downloaded the blank faces worksheet and talked about how the students would be listening and personally interpreting the music. The students numbered the faces from one to eight and then filled in the faces with appropriate representations of the feelings. She emphasized that all answers would be correct because all emotions are acceptable. Playing each clip, she allowed the students ample time to make personal interpretations of the music and then walked around the room to assist them in connecting to the music through narrative recall and visual representation. She asked questions to the students like how do you feel when you listen to this music, and when have you felt like this? She said this was an excellent activity, commenting that the website was unlike any others she had seen. In anticipation

of our meeting and interview, she erased the names of her students and copied the worksheets for me, substantiating for me the meaning of this activity. Ordered one through four, Alicia played the happy, sad, anxious and calm clips, and the following is one of 24 visual responses.

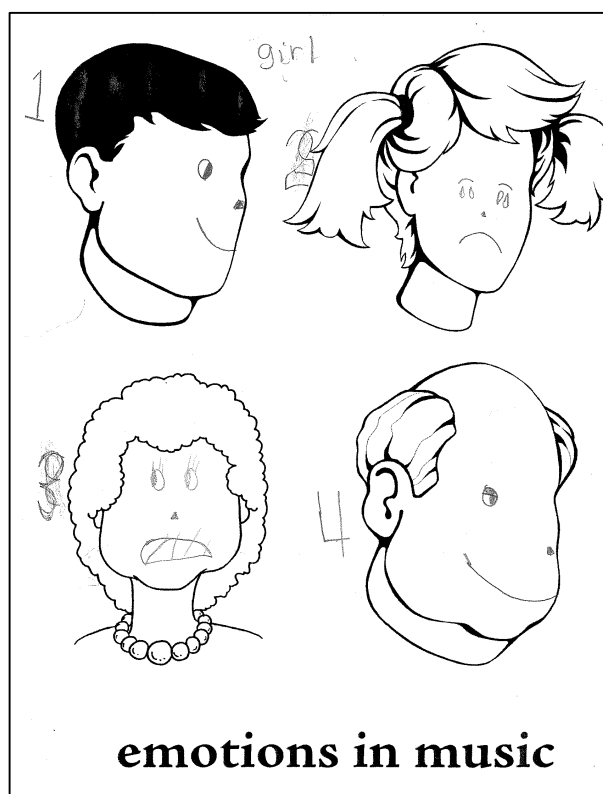


Figure 3. A female student’s meaning making of the *happy, sad, anxious* and *calm* sound clips (given to me on June 21, 2012).

Sung stories. There are very few picture books that are written with the intention that they are sung. And, there are even fewer that are easily learned by non-musicians. Because of this, most sung stories that kindergarten teachers utilize are recorded and played for the students. In one study, the researcher found that “if storybooks are orally sung ... participants may feel more of a one-to-one interaction with the reader and be more willing to insert comments or generate discussion as a story is read” (Kouri &

Telander, 2008, p. 342). With this in mind, the goal of adding this activity to the website was to reveal how almost any story can be transformed into a sung story.

Of the four participants, only Brynna and Carol attempted this activity. Both Pam and Alicia commented that they already had books set to music. Alicia talked to me about her fairy tales picture books and accompanying cassettes, sung to original melodies. Pam also had resources similar to this, like “Baby Beluga” and “I am a Bubble”, both of which were played on a day I observed when the students were studying the letter B. She stood at the center of the room and turned the pages while the children listened and sung along to the cassette. Carol used the suggestions on the website, and sung the book *I Like Myself*, by Karen Beaumont, to the melody “Twinkle Twinkle”. Before class, in her interview she commented that she rehearsed this activity many times and was very intimidated at the thought of singing and reading at the same time. Nevertheless, she wanted to support the study, commenting that she felt that it was her professional obligation to try to improve education. In my observation of this activity, Carol often lost the melody and commented that she felt that she could not even stop to talk to the children about the book, for fear of forgetting the melody. Despite this, the children seemed to enjoy her rendition of the story, and often attempted to sing the ends of the lines and guess the rhyming words. The content of the book met specific learning outcomes related to identity and belonging and the format of the story allowed the children to attend to print cues, possibly heightened by the use of a melody.

With Brynna’s musical background, she was able to integrate this strategy easily into several books. On a day that I visited her classroom, she sang *The Crayon Box that Talked*, By Shane DeRolf, to the recommended melody “Old MacDonald”. During this

story, she was easily able to stop and talk, asking questions about the story without losing her place in the melody. She later remarked that using a recorded story does not allow this type of flexibility. The students softly hummed along and bodily movements suggested they were captivated, sitting motionless and making eye contact with Brynna. She relayed to me that the purpose of this activity was to foster language prediction skills and foster an appreciation for the sounds and rhythm of language—specific learning expectations—attended to by pausing at the ends of the lines and inviting her students to guess the rhyming words.

Beat buds. Included on the website was an activity that used beats in music to represent syllables. With a personalized picture book and a song or chant, this activity resonated most with Pam. Again satisfying her need for resources to reinforce her student's names, this activity was used on multiple occasions and in varying ways. Pam began by creating the personalized book and singing the melody on each page. In my observations, the children were already well versed and knew exactly what to do when each window was opened. She commented that within a few repetitions of this story, together with the implementation of the "Hello Song", she had solved the names issue. The students eagerly clapped the names as each page turned with a steady beat, attending to the syllabic breakdown and enunciating their peer's names appropriately. As an observer, the students appeared proud and confident of their role and their teacher's expectations. For Pam, this activity served to drill the names of her students in a fun, interactive way. Pam also used this song as the children lined up at the end of class, singing as each parent arrived. In one instance, she even used this song to divide the children into lines by those who had the same number of syllables.

Carol attempted this activity with her morning and afternoon class several times. After all of the children had been revealed in the story, she asked the children to stand in opposite corners of the classroom. Those names with one syllable in one corner, two syllables in another corner and so on. The children looked around, making sense of this activity by vocalizing the groups that were larger and smaller than theirs. Interpreting this activity as an outsider, the classroom was bursting with energy as the engaged groups talked about what they had in common and what made them unique. This activity presented an avenue to engage the children in discussion about belonging and would be especially important in a culturally and economically diverse classroom setting. I wondered if this activity might have forged new friendships as well, noting that some of the children ended the activity in a hug. As noted in my observations and also in interviews with Carol, the children became restless after about ten pages of the story. Likely due to the large class size and thus the longer book, the attention spans of the children with language learning difficulties and behavioral issues could not sustain 24 pages. Carol was very attentive to this, however, singing the song with varying inflections and speeds and this seemed to engage them long enough to finish the picture book.

Both Alicia and Brynna did not try this activity, and in interviews, both commented that this would be better utilized in September when the students are first learning their peers' names. Brynna noted that she had recently attended a literacy workshop and had already implemented many activities that satisfied these types of learning outcomes.

The listening song. The kindergarten classroom lends itself naturally to a busy environment, with activities that move quickly and often include movement or peer interaction. Because of this, transition or redirecting routines are essential teaching tools. All of the four participating teachers utilized their own transition routines as part of the progression of their classes, such as songs, rhymes, or chants. In each case, the students knew exactly what to do when they heard the song or chant. Some examples that I observed were Brynna and Carol's use of the melody "If You're Happy and You Know It", substituting the words "Put your finger on your lips, on your lips. Put your hand on your hip on your hip. Put your finger on your lip and your hand on your hip. Put your finger on your lip, on your lip." Brynna had many other redirecting songs, each used for a very specific purpose, such as the popular Jackson 5 song "A-B-C" and replaced the lyrics with "1-2-3, please put your eyes on me." Each time, the students were quiet and attentive when they heard the song. Brynna chose to also integrate the listening song from the website into her repertoire, using it repeatedly in all three observations. She used it to engage the children, combining movement and patterns such as "let everyone move hands like this" touching shoulders to waist quickly in rhythm with the song. She also used it to practice consonant sounds, like "let everyone say this sound twice – ch, ch." Her use of this song was more for specific language outcomes than a teaching tool to redirect the energy of the classroom.

General feedback from Brynna was that the study started too late in her school year since she spends the current year tweaking long-range plans with next year in mind. In this way, it was difficult for her to integrate the activities into her lesson plans for the current school year. She said that in team meetings, they often realize they need more

resources on a specific topic, but those are not usually implemented until next year.

However, she commented that this resource reminded her that singing will always engage children, and with her extensive music background, it was easy to add the additional music activities into her lesson plans so that she could participate in the study.

Alicia gave many examples of transition songs that were already in her repertoire and circumstances where they would be used. She stated that she believed strongly in the benefits of music integration, and used music a lot for transitions; “almost every transition to a new activity is first initiated with a song”. In many cases, the songs were variations to common melodies, like “Skip to My Lou”. One illustration was a variation on this melody with the words “Children, Let’s All Sit Down. Children, Let’s All Sit Down, Children, Let’s All Sit Down. So that we can listen.” As shown here, she made up the lyrics spontaneously to connect to the specific circumstance. In every case, the children made meaning of the lyrics and were able to become reengaged through the use of music. Pam, on the other hand, consistently used the same strategy to redirect her class. Using the word “Aloha” in varying inflections was a routine that was ingrained in the rhythm of the day, immediately calming and redirecting the children and prompting a response in unison. It complemented the Hawaii theme and had proven longevity. Also given Pam’s limited music background, she found the listening song difficult to learn and remember.

Strategies to redirect busy kindergarten classrooms seem to be a necessity in early childhood classrooms. Because of this, early childhood educators identify the need to introduce these routines early in the school year. All of the teachers had transition activities engrained heavily into the classroom routines long before this study began.

Only Brynna was able to specifically identify a use for this type of activity, and found it useful in her lesson planning. Of importance, Pam, Alicia and Brenda all commented that the listening song was difficult to remember, and required a large vocal range that was daunting for non-musicians. This data indicates that a more suitable song should be substituted, accounting for flexibility in lyric substitution and the ability to use it across many curricular plans. Given that the teachers did all utilize various transition music resources, an assumption can be made that a more musically suitable resource, available early in a school year, would likely be utilized by early childhood educators as a transition or redirecting strategy.

The parachute rhyme. This resource was added to the study because young children seem to be drawn to the parachute. In all of my observations and personal teaching experiences, any use of the parachute seems to be successful, albeit the children are easily overexcited! Knowing this, my experience has been that the activities are best if they progress quickly and stay organized. Though its popularity with children is well known among educators, there seem to be very few parachute resources available for teachers. With this in mind, I wrote a simple poem that represents language through movement and also helps foster many physical skills that are vital in all aspects of growth and development (Alberta Education, 2008). Observing Pam's organized gym time, this activity seemed to work well for a short time before the children became uninterested, demonstrated through increased movement and less focus on the activity and on Pam's instructions. She was attuned to this and quickly moved on to a rehearsal of their country dance for mother's day. Carol also tried this activity, and although I was not able to observe it, she mentioned that it was a very useful resource and that she would continue

to use it. In reviewing interview data, I noted that Carol and Pam had matched responses, stating that children love the parachute and using this rhyme provided much needed variation. Alicia mentioned that she had many parachute songs and rhymes in her repertoire, so this additional activity was not as appealing to her.

Participants' Range of Considerations

This information highlights exactly how the participants used the resources from the website, answering the first question noted at the beginning of this section. The next part of that question is “who are the participants, and did their attitudes, interests, experiences and specific circumstances impact their use of the resource?” Data from the description of participants, classroom contexts, interviews and observation data all contributed to answering this question. It was surprising to me that there was such a range of considerations that impacted which resources the participants chose to use. What I mean by this is that the participants seemed to weigh many factors when planning their lessons and deciding which resources to use. Some of these considerations caused decisions to be made spontaneously during class, which Kennedy (2004) says is because “teachers interpret classroom situations and decide how to respond to them” (p. 3). Others considerations were done in advance, based on the specific learners in their class, the number of children, the length of time left in the school year and many other factors. Specific to this study, the teachers seemed to consider music resources that suited their own musical aptitude and probably on their perception of it being successful in their class. From my observations and interviews, it seemed that their considerations could be grouped into themes such as: participants’ musical abilities, adaptability of the resource to classroom context, curricular outcomes, the participants’ intentions, and management

of environment. This demonstrated to me that there is a complexity of teacher thinking and decision making when choosing which resource to use and these will have implications on my thoughts for future expansion of the virtual resource. For example, feedback from all of the participants, except Brynna, indicated that the “Listening Song” was too complicated and difficult to learn, so musical abilities is a major consideration in choosing which resources to use. Similarly, all of the participants utilized the “Hello Song”, possibly because of the adaptability of the song and the ways it could be used as a management tool. Kennedy (2004) notes that a teacher’s intentions and actions “span a much wider range of issues or concerns” (p. 10) than researchers think. This became apparent in this study. For example, from my observations and the answers given to interview questions, it became clear that the isolated nature of Pam’s private teaching setting seemed to contribute to a great appreciation and willingness to participate in this study. On the other hand, Alicia’s extensive music background and many years of teaching experience contributed to a great appreciation for the resources, but they became just one more of many already in her repertoire. Carol, due to the nature of her constantly updating her lesson planning was very keen to use the resources and was most comfortable navigating the website. Brynna had a very strict lesson planning policy, so it was more difficult for her to implement new resources halfway through the school year. Kennedy also notes that although “there are a number and variety of things that can influence teachers’ intentions and actions ... these ideas can contradict one another” (p. 15). This was also apparent in this study. For example, all of the participants said they valued music integration as a way to meet many curricular outcomes; this was not surprising as this knowledge likely impacted their desire to participate in this study.

However, most of them utilized music largely as a classroom management tool. This was interesting because it supports Gillespie and Glider's (2010) observations, suggesting that the most useful music activities for early childhood educators—and specifically kindergarten teachers—are resources that can be used for transitions, routine activities, and scaffolding. Perhaps this is because of the sheer number of children in early childhood classrooms, and the ease with which music can redirect attention, change the classroom energy and encourage participation. These findings have great implications for expansion of the virtual resource.

The second question, “to what extent did the use of this website impact the participants’ willingness to use online resources for professional learning, networking and sharing” was answered from the responses to these types of questions in the interviews. Pam said she loved being involved in the study and having the website as a new resource and she looked forward to finding new, similar resources to use. She commented that handouts from conferences are not as convenient as a website that has multi-media enhancements such as classroom examples, music clips and other interactive tools where you can learn or refresh your memory at home. She was excited to begin looking for more resources. Carol already used the Internet for most of her research and lesson planning and said she spends a few hours every week researching new resources on the web. She said she believed that early childhood teachers are lacking Canadian content to access online, so she was very grateful for a resource designed specifically for teachers like her. Brynna also stated that she used the Internet, but mostly as a communication tool to keep parents up to date. She felt that because she already had too many resources, she did not need to look for more. She said she preferred conventional

workshops and conferences, commenting that she still had worksheets and handouts from them that she was trying to integrate into her teaching. Alicia was very attached to the resources that she had used for many years, and commented that her themes usually stayed the same each year, allowing her to reuse many of her handouts and class materials. She said she did not use technology much in her lesson planning, but did appreciate the resources from this study and thought that if there were more available like this one, she would be more inclined to use the Internet for professional learning.

Potentially the greatest factor impacting these teachers' willingness to use online resources to share and retrieve new resources for future teaching is lesson momentum. Kennedy (2004) notes that lesson momentum may be among one of the most important factors that teachers consider when lesson planning (p. 31). This is noted above as a teacher consideration, but requires special attention because of its potential to have the greatest impact on the teachers' willingness to do professional learning on the Internet. Lesson momentum is an issue rarely addressed by curriculum reformers (p. 22), but a very important consideration to teachers. Kennedy (2004) says, "many teachers seem to believe that maintaining momentum [is] an important step in achieving [students'] learning goals" (p. 23). In my interviews with participants, almost all of the teachers shared with me examples of their own successful activities that they used in their teaching. They seemed very attached to them, and the examples that they shared could meet the same curricular outcomes as the resources on my website. I suspected that they would continue to choose their own resources rather than try to find new ones or search for new ones on the Internet. I wondered if this was because they could predict how the students would respond to activities they had done in the past, whereas new ones such as

the music activities on my website had the potential to upset their classroom balance and disrupt their lesson momentum. For example, Alicia did not even want me to observe her classes because of the change in her circumstances and the possibility of me upsetting her class environment. And, in our interviews, she spent much of the time showing me the music resources that she already had, and telling stories about her experiences using each resource. She seemed less inclined to turn to web-based professional learning for new resources, possibly because she knew how her students would respond to the resources she already had. Brynna as well seemed more inclined to use her own resources rather than search out new ones or use resources from websites. She also seemed to prefer resources from conferences where she knew the material was classroom tested and specifically endorsed by Alberta Education. Carol, on the other hand, had a very casual classroom environment so disruptions to her lesson momentum may have been more tolerable to her; she seemed the most inclined to try activities that she sourced out from the Internet. This was a surprising revelation to me and not addressed until after the study was over. If this is truly the case—that teachers may be hesitant to integrate new resources into their lessons if they have not been classroom tested specifically in similar environments—it will be difficult to “connect local pockets of expertise and isolated professionals” (Wenger et al., 2002, p. 14), a major advantage of communities of practice, since these specialists would be sharing resources from experiences in different professions. For the future expansion of this virtual resource, it might be helpful to have classroom videos where the resources are tested in an actual Alberta kindergarten class, showing teachers that they can be successful in a similar environment. This might make them more comfortable to try a new resource in their own classrooms. I did include

classroom videos, but there were only eight students in the class and the room was slightly different than most Alberta kindergarten classrooms.

Overall, the data on the participants' opinions of music activities shared through a virtual resource indicated that they all found value in the resources supplied to them, and commented that they wanted more for future learning. Carol and Pam seemed to value music integration more than before the study began, while Alicia and Brynna were already very aware of the benefits of music integration. Alicia and Brynna both commented, however, that this study reinforced and reminded them of the benefits and potential of music integration. In summary, the four participants in this study seemed to find the resource useful and appreciated the contact with a professional in a similar but different field.

Communities of Practice

The last question is “to what extent did this resource function like a virtual community of practice, connecting two like-minded communities”, and this requires a look back at the study and the relationship with the participants, as well as the essential traits that define a community of practice. What follows is a reflection of my time with the participants, the relationships developed, and my thoughts and realizations on the process of conducting this study. Then, I will discuss how the virtual resource and the blended interactions with participants compare to a community of practice, by connecting early childhood educators and private music teachers.

Spending time with each participant allowed for a rich and comfortable relationship. I developed a respect, admiration and attachment for each teacher that was very unexpected to me. After each observation, we sat together in a casual interview

setting, lasting approximately 45 minutes each time, and communicated by email and over the website during the research period as well. All of this time spent together and communication between us furthered the development of our relationship. For example, in our last interview, Pam and I sat with tears in our eyes, and she commented on what a wonderful experience the study had been for her, and openly admitted that before this experience, she had no idea about the possibilities of the Internet for professional learning and finding resources. Reflecting on how these relationships impacted the study, I believe the thoughtful, casual and friendly time spent with each participant allowed them to feel at ease, as Connelly and Clandinin say, to “consider their practice in detail, and those considerations reflect[ed] the emotional ... the moral ... and the aesthetic ... dimensions of personal practical knowledge” (1988, p. 52). Notably, although I believe this personal and friendly relationship was largely an advantage in this study, I am also cognizant that it may have impeded the participants’ comfort to be candid in relaying negative feedback.

Throughout this study, I was very cognizant of my observational checklist (chapter three), taking care to keep detailed descriptions and avoiding interpretive opinions or judgments. However, after I had summarized all observations, I realized that I had strong reactions to much of what I was observing and many of my field notes contained judgments despite my attempts to remain objective. I came to realize that in many ways, I had approached this study with an evaluative eye, and wondered if my reactions restricted my ability to remain objective in my field notes? For example, I could not help but compare Brynna’s teaching strategies to Carol’s—two teachers on opposite ends of the spectrum: Carol allowed the students’ interests to dictate the lesson plans, while Brynna constructed her lesson plans even before she had met the students. Also,

unintentionally, I critiqued those teachers who used older modes of technology such as cassettes rather than pursuing newer technological resources suggested on my website. Further, I came to see through observation that as much as I tried to dictate exactly how each resource should be used by writing specific notes on each resource page of the website, the teachers did not always use them exactly as prescribed. In interviews, all of the participants, in one way or another, reiterated that resources needed to be easy to adapt. I came to realize through this study that teachers need to select, organize and adapt resources for their own purposes (Connelly & Clandinin, 1988, p. 139), so effective teaching resources should be flexible so that they can change with circumstances, objectives, the climate of the classroom, and the many other teacher considerations discussed above. Observing the teachers adapt my resources for their own purposes was very valuable to me as a teacher, as well, enabling me to reflect on my own practice (Connelly & Clandinin, 1988, p. 56). I gained new insights into my own Kindermusik teaching and my role as Kindermusik coordinator. I discovered that I often critiqued my own Kindermusik teachers on their curriculum choices and their teaching strategy choices because I believed that my methods were successful and should be duplicated. These feelings were due to my years of teaching experience, compared to the younger, more inexperienced educators I mentored. This reflective process allowed me to see that teachers need to make sense of the curriculum themselves and plan their lessons based on their own experiences and curricular plans. Connelly and Clandinin (1988) say that we should not try to “get teachers to teach specific things in specific ways” (p. 139), and give teachers an opportunity to “imprint their personal stamp” (p. 139).

Before my observations began, I expected—as research suggested—that the isolated teachers would embrace a virtual resource as a way to connect with other experts in their field, share knowledge and gather new resources. Studies indicate that demanding schedules and geography may limit the amount of time teachers have for face to face meetings and that they may actually prefer online forms of professional learning (Herrington & Herrington, 2001). Despite this, my data did not indicate that remote educators embraced virtual resources more than urban teachers. Notably, however, the sample of remote educators in this study was too small to make broad generalizations. Brynna and Brenda were the only isolated teachers in this study, in a remote rural town that was 90 minutes away from an urban center. Brenda withdrew from the study because she did not have time to thoroughly review the resources and did not show interest in utilizing the resources and Brynna used the resources in her classroom with great success, but consistently commented in interviews that she had many resources already in her collection. Neither Brynna nor Brenda indicated a need for virtual resources that could connect them with the private music teaching community as a way to integrate music into their classrooms. Possibly, Brenda's very limited music background may have restricted her ability to embrace music integration, and Brynna's extensive music background may have already surpassed the level of the resources on the website. Or, it is also possible that urban teachers are more acclimatized to networking, collaborating and sharing resources, while these rural teachers were used to having less support. If this is the case—although a larger sample would be necessary before making this generalization—bridging a gap with rural teachers to sustain interaction in a combined community of practice may be more difficult if they are accustomed to isolation.

Wenger's essential traits. As I have previously mentioned, this study set out to create a professional virtual resource, and through this, realized the potential and importance of communities of practice. This was not an original area of research focus, but emerged out of the experience of doing the research. The information gathered from the observations and interviews was used to assess and answer question three: “to what extent did this resource function like a virtual community of practice, connecting two like-minded communities?”

The four participating teachers in this study were unique in experience, age, background and the circumstances of their school. All of them said that the materials supplied through the virtual resource www.musicforlearning.ca assisted them in meeting specific student-learning outcomes across many areas of the Alberta program of studies. Further, all of the participants used the resources in unique ways, placing their own personal stamp on each activity. In the next section, I will compare the potential and possibilities of a virtual resource to the essential traits or attributes that Wenger says comprise a community of practice. By comparing the virtual resource model used in this study to the dimensions defined by Wenger, I can assess if this virtual resource has the potential to function like a community of practice and if my role as broker was successful in bridging the gap between the early childhood educators in public and private schools and the private music teaching community.

Joint enterprise. Wenger says joint enterprise refers to the negotiated response of the participants, and creates among participants relations of mutual accountability (Wenger, 1998, p. 78). Everybody does not have to agree or believe the same thing, but matters are communally negotiated. This dimension is an “elusive construct because it is

a mutual understanding, hence largely tacit” (Murillo, 2008, p. 6). It is hard to determine if a member feels accountable to a community of practice. Research does suggest, however, that virtual resources may be able to drive more relevant discussions because they “support rich dialogue, ongoing reflection and flexibility in terms of time and space” (Brooks & Gibson, 2012, p. 5). This may contribute to more accountability and a stronger domain of knowledge that could connect and give an identity to the community.

In this study, the virtual resource was carefully created with keywords and descriptions that clearly identified the subject matter. In addition, important criteria relating to the content and functionality were considered (identified in chapter three) which assisted in targeting a specific user. Feedback from interviews and comments received through the feedback page suggests that the visiting members were interested in the subject area and had an understanding of what was on and off-topic. In addition, as mentioned above, many members downloaded files in addition to simply visiting the pages, which could support the claim that the members understood and were interested in the domain of knowledge. During this study, questions asked to participants included “Do you understand the purpose of the virtual resource?” and “Do you value music integration?” These questions were consistently answered “yes” among all four participants. Carol also stated that she participated in this study because she thought it was her professional obligation to try to improve education, and this would represent accountability to the profession and hence, to this virtual community. Additionally, data obtained in the observations indicated that the study participants understood the purpose of the virtual resource by the appropriate use of the resources in their classes. By the last interview, most of the participants commented that through the use of the resources in

their classes, they gained a better understanding of the benefits of music integration in meeting student-learning outcomes across many areas of curriculum. This supports the claim that the participants felt a mutual accountability and understanding of the purpose of the community. As Wenger says “an enterprise is like a resource of coordination, of sense-making ... ; it is like rhythm to music” (Wenger, 1998, p. 82).

Because joint enterprise is not itself defined by the levels of communication between members, the virtual resource used in this study does seem to meet the joint enterprise dimension as defined by Wenger. As mentioned, careful attention was taken when creating the virtual resource and a clear description was included on the home page with a title explaining exactly whom the targeted members should be. These considerations served to attract specific members who were interested in the domain of knowledge and were accountable to the subject matter. In this case, the pilot test period statistics together with the feedback relating to the specific use of the resources indicate that members were disciplined and focused on the subject matter. In addition, during this study observations showed that the participants used the resources appropriately, and seemed to understand the domain of knowledge represented.

Shared repertoire. Wenger characterizes communities of practice as a shared history of learning and this is often embodied in the resources that are developed over time to allow members to more effectively pursue their joint enterprise. Shared repertoire is the instrumental dimension of the community’s practice. In this study, the shared repertoire was high quality music integration resources that could be used by early childhood educators to meet student-learning outcomes across all area of curriculum. Murillo (2008) identifies high quality documents as the exemplary trait of shared

repertoire. In this study, these resources or documents were disseminated through the virtual resource which “reflect[ed] the history of mutual engagement” (Wenger, 1998, p. 83) of a private music teaching community. Creation of this virtual resource served to bridge the gap between the private music teaching community and the early childhood school teaching community. Wenger calls this boundary crossing, saying that repertoire sharing across professions “forces members to take a fresh look at their own assumptions. As a result, boundary crossing can be the source of a deep kind of learning” (p. 153). He points out that “knowledge has difficulty crossing boundaries” (Wenger et al., 2002, p. 153), so there is a need for ‘knowledge brokers’ to act as translators, facilitating transactions and knowledge sharing to connect the practices.

Mutual engagement. Wenger says that membership in a community of practice is ... a matter of mutual engagement (Wenger, 1998, p. 76), and this involves creating interpersonal relationships with sustained interaction. It does not entail homogeneity, and should “connect participants to each other in ways that are diverse and complex” (p. 77). Murillo identifies two important exemplary traits that are essential to meeting the mutual engagement dimension: “a high-volume of participant interaction ... and a core-periphery structure, reflecting the potential for various degrees of engagement” (Murillo, 2008, p. 5). In the initial one-month pilot test period when online advertising was used to bring awareness to the virtual community created for this study (www.musicforlearning.ca), 8,682 total hits were recorded, with 1,736 unique visits. The latter number represents the total members that were active in the community for the one-month pilot test. With such a large difference between the total hits and the total unique visits, it seems that many members visited more than one page, showing an interest in the website beyond simply

accidentally clicking the Google link. These figures illustrate a high-volume of participant traffic and participant interest. Of the total number of hits, 5,944 files were downloaded—less than the total number of hits—so it seems that some visits did not include downloading the files. This could mean that some of the visits were from what Wenger defines as either peripheral and / or marginal members; these are often the largest groups in a community. These types of users have an interest in the subject matter, but may only observe or be non-participating (Wenger et al., 2002, p. 56). In this case, they may have visited multiple pages, but did not show any evidence of active participation by downloading videos, documents or listening to audio samples.

Wenger says that the smallest group in a community of practice is often the actively participating and interacting core members, who make up only 10 to 15 percent of the whole community (p. 56). In this case, this could refer to those members who not only downloaded files and visited multiple pages, but also submitted feedback to initiate interaction and establish a relationship with other members. In the one month test period, 18 comments from unique email addresses were received through the contact page on the website, making up only one percent of the total unique visits. The comments received were disciplined and focused on the subject matter, ranging from positive remarks on the design and effectiveness of the resources, to questions about the pedagogical and technological usability. Comments were submitted through the website to the broker (me), and this is noted as a serious restriction to the dimension of mutual engagement, where collective problem-solving, sharing information, knowledge and establishing relationships with other members are some of the defining attributes (2008). The contact page did not allow “members to become acquainted with each other” (Murillo, 2008,

p. 25) because sustained interaction was only possible between the website creator and the member. Wenger notes a major advantage of a community of practice is the opportunity to “connect local pockets of expertise and isolated professionals” (Wenger et al., 2002, p. 14), so restricting member interaction was a huge limitation to this resource.

As I have shown in the literature review, scholars posit that people will most likely prefer to engage in person rather than over a computer; “internet connections are [often] weaker than ties created through face to face interaction” (Murillo, 2008, p. 4), however, new research is beginning to show that online interactions can in some cases replicate conventional synchronous communication. During the pilot period, members were being drawn from all over the world, and thus conventional interactions would have been very difficult, however, utilizing video-conferencing or Skype could have allowed some of the members to ‘meet’ me, as broker, or connect with other interested members.

When the study period started in January, 2012 and the enlisted teacher participants began utilizing the virtual resource, they became the most active core members of the community and sustained the most interaction with the website creator. During this period, their feedback was consistent with research: participant support was requested to assist in utilizing the virtual resources, and a more intimate relationship formed as a result of the face-to-face interviews. This is said well by Reese et al. (2002), who concluded their study saying that “websites as a single source of learning may be less effective than our initial enthusiasm led us to expect. ... It appears that face-to-face personal interactions ... may be necessary for many teachers to have sufficient motivation to turn to the web resources for additional learning in the context of demanding workloads” (p. 35). For example, Pam had the least technological

background, and required assistance in getting the YouTube clips to play; she had no technology support in her classroom. For this resource to be beneficial to her, she needed a blending of face-to-face and online interactions. This is an area that was not identified as an important research question, but became an important insight.

All of this data demonstrates that the virtual resource created for this study did not completely satisfy the mutual engagement dimension. Sustained engagement between members was lacking. Although the test period statistics show a core-periphery pattern and feedback received demonstrates participant interaction, it is clear that there are many restrictions to this virtual resource that limited the potential of high-volume participant interaction. Participant interaction is most beneficial because it can elicit knowledge sharing, debating issues, sharing personal experiences and collective problem solving with other members in the community (Murillo, 2008, p. 22); “communities are a place where people can make a contribution and know it will genuinely be appreciated” (Wenger et al., 2002, p. 44). The feedback page on the virtual resource used in this study did allow participant interaction, but it restricted any type of sustained, community interaction and restricted the members’ ability to feel like full participating members. As well, research and participant feedback indicated that a blended approach of face-to-face (conventional or innovative) and other interactions may be most preferred to build the strongest mutual engagement. For the purposes of gathering data, this study was conducted with a blended approach, but this was not identified as an important component to the functionality of the virtual community of practice.

Brokering. In this study, I assumed the role of broker, using the virtual resource to connect the practices and encouraging early childhood educators—specifically

kindergarten teachers in Alberta—to pursue music integration in their classrooms.

Murillo says that a benefit of using virtual communities of practice to pursue boundary crossing is the potential of reaching experts in other fields (2008). In education, scholars suggest that online resource repositories for teachers “offer an opportunity for improvement in teacher education by enabling the development of, and access to, a high quality professional knowledge base” (Leask, 2011, as cited in Chambers et al., 2012, p. 411). It seems plausible that the opportunity for improvement in teacher education would be even more enhanced if appropriate resources from other professions were explored and made available to teachers. This idea was explored in this study and I believe that the feedback and observations indicate that the participants benefited from this virtual resource and were open to the possibilities of exploring music integration as a way to enhance their practice. Even those participants who already used music in their classrooms commented on the effectiveness of the activities on the website, and on their appreciation in networking with a private music educator. This study demonstrates that a virtual resource can meet the shared repertoire dimension as defined by Wenger because it can be a convenient and innovative way to cross boundaries and share repertoire across professions.

Conclusion

In summary, I believe this study answered the questions it set out to answer, but that there is much more work to be done. Wenger’s (1998) community of practice framework has the potential to extend to the virtual resource used in this study with some slight modifications to the resource to meet the mutual engagement dimension to its fullest potential. In many ways, the website in this study functioned more like a

dissemination tool, allowing the broker to cross the boundary into the early childhood teaching community and share resources that could enhance their practice.

As I have already mentioned, this was a rich experience for me as broker, and I learned so much from the participants about my own practice and about the future expansion of this virtual resource. I learned that teachers have a wide range of considerations that impact their engagement with professional learning resources, and this complexity of teacher thinking and decision making will have implications on my thoughts for future expansion of the virtual resource. An effective virtual community of practice should allow all members to feel mutually engaged, so another consideration would be how more private music teachers could become members of a combined community of practice with the early childhood educators in public and private schools, in a mutually beneficial community. Certainly, public elementary school teachers have much to share that could benefit private music teachers. In many cases, private music teachers are performers before educators, so there are many early childhood teaching tips that could enhance their practice.

In this study, I attempted to bridge the gap between the private music teaching community and the early childhood educators in public and private schools. The goal was to share the knowledge and resources from the private music teachers with early childhood educators to use music integration to meet other student-learning outcomes. In the following chapter, I will discuss the implications for classroom practice and the significance of the findings.

Chapter Five: Implications for Practice

This study set out to create a professional virtual resource, and through this, realized the potential of creating a community of practice. This chapter is divided into two sections. First, it will explore some of the changes that could be made to the virtual resource because of what was learned about the considerations the participants used for choosing resources. Next, it will discuss some changes that might assist in fostering a more constructive relationship among all members and in recruiting more members to join or participate in the community. To explore the potential enhancements and changes, I will refer back to the original research questions and the answers explored in chapter four:

1. How did the participants use the resources from the website? Who are the participants? Did their attitudes, interests, experiences and specific circumstances impact their use of the resources?
2. To what extent did the use of this website impact their willingness to use online resources for professional learning, networking and sharing?
3. To what extent did this resource function like a virtual community of practice, connecting two like-minded communities?

Changes in Resource because of Participants' Considerations

A very important facet to the success of this study was the music integration research and consideration of my own teaching experiences which provided the background to the music resources used on the website. The intended outcome was for these teachers to realize the benefits of using music as an effective teaching tool and the ease with which they could be accessed through a virtual resource, assisting them in

meeting student-learning outcomes across many areas of curriculum. As noted, I learned through this study that teachers seem to weigh many factors when planning their lessons and deciding which resources to use. Kennedy (2004) found that teachers have “their own ideas about what [is] important for students to learn” (p. 20) and this was definitely apparent in this study. Each participant seemed to have specific student-learning outcomes that they thought were especially important to meet and these varied dramatically. For example, Brynna placed a lot of emphasis on the literacy outcomes, even commenting on their importance in interviews, while Carol focused heavily on early numeracy with many counting and adding / subtracting routine activities done daily. These are insights that I was not aware of before this study began. With such a complexity of teacher thinking and decision making, I believe it was an advantage that the resources were so well researched, that the website was well designed, and that the study was led by a broker with an abundance of experience as a private music teacher. This allowed the participants to feel more at ease, knowing the resources were reliable and created by a credible source. Nevertheless, the teachers may benefit from some changes to the virtual resource that will address the range of teachers’ considerations. For example, more variations to each resource would make each activity more adaptable to each teacher’s lesson planning, since each have a very different focus. As well, multi-media enhancements on the virtual resource could include classroom examples that are even more similar to an early childhood educators’ school environment. This may give a teacher the security of knowing that the resource has been classroom tested and lessen the chance of disrupting the lesson momentum. Since the participants often chose resources that aligned with their own musical abilities, the activities could have variations that

make each activity easier or more difficult, depending on the musical aptitude of the teacher. These changes would allow this virtual resource to meet the many needs of early childhood educators in public and private schools.

Fostering Constructive Relationships Among all Members

A personal goal in this study was to look for a way to participate in and contribute to the community of early childhood educators in public and private schools. I hoped this would not only help me shape and navigate my own experiences as a teacher, but be transformative to the teachers that I interacted with (Wenger, 1998, p. 56).

The findings discussed in chapter four suggest that a virtual community can be a successful way to share resources and information, to cross boundaries and to expand communities of practice in education. This study offers new support that Wenger's communities of practice have the potential to extend to virtual environments. In this study, virtual resources were used as a convenient and valuable avenue for early childhood educators in public and private Alberta schools, and specifically kindergarten, to learn new skills, find new teaching resources and interact with an expert in another, similar field. For me, the virtual resource was a satisfying way to share specific music resources from my own experiences in an attempt to cross the boundary between my own private music teaching community and the public sector.

This study was a valuable experience, and I learned so much from the experienced early childhood educators that participated. Going into this study, I thought the major teaching goals in an early childhood classroom would be to meet the student-learning outcomes in the Alberta Program of Studies. So, I diligently read the kindergarten program of studies, summarized the contents and created resources that would assist

teachers in meeting those outcomes. Sure, I was aware of other considerations that teachers would have to consider. Having many teachers in my family (my mom, sister, uncle, aunt and many friends), I have often heard discussions of the frustrations of large class sizes, little preparation time, curriculum reform demands, etc. Nevertheless, I did not realize the impact that these factors have on lesson planning until the observations and interviews began. I learned through this study that teachers must juggle many factors such as classroom momentum, disruptions, time, different learners and on top of all of that, the curriculum demands. In my own profession, I do not have those same considerations. If a student is ill prepared for an exam, we schedule extra lessons. I have only one student at a time in private piano lessons, so lesson momentum and disruptions are easily managed. Further, some people might assume that private one-on-one music teachers would have an even wider range of decision-making opportunities, because we can offer differentiated instruction and adapt each piece of music to each student. This is often not the case, however, because of the western music specific performance standards. Ironically, this is at odds with the idea that music should be a way to convey your own emotions. I struggle personally with allowing my students to be themselves, and knowing that if they do not perform a piece exactly right, they will lose marks in exams. For example, too much rubato in a piece by J. S. Bach would not be suitable for the time frame that the piece was written. These professional experiences and challenges likely influenced my views on how classroom teachers might also plan their lessons. I did not fully consider the many additional challenges that classroom teachers must address. Through this study, I learned that teachers, especially when managing such large classes, must be able to take a resource and make it fit their specific circumstance, and even be

able to spontaneously adapt it during the class. And, this study has allowed me to reflect as a teacher on my own practices, and on what I value as a music educator, which is balancing a music education with a love of music.

To summarize, I believe this study provides a useful baseline for further exploration into how communities of practice could successfully extend to the Internet and how two diverse communities with overlapping interests might connect and interact. This study also identifies some enhancements and considerations that should be considered for the future. As research continues to expand in the area of virtual resources for educators, a variety of additional features should be explored that could be included in a modern innovative virtual resource to make it even more functional as a community of practice; the possibilities and potential of the Internet are endless in this digital age.

More sustained interaction. As mentioned in chapter four, after the data gathering stage of this study, I realized that a major flaw in the creation of the virtual resource was the lack of sustained interaction between members. Research shows that a virtual community of practice in education should be constructed with the aim to satisfy the exemplary traits of the mutual engagement dimension, which are “a high-volume of participant interaction ... and a core-periphery structure, reflecting the potential for various degrees of engagement” (Murillo, 2008, p. 5). I was disappointed that I had not considered this before the study commenced because it would have been an easy element to add. An addition of videoconferencing, or a chat room would have undoubtedly added rich data to this study and allowed members to be fully engaged and networked with other members. Other multimedia elements that could be added for future use would be the ability to post comments and responses below each activity, similar to a blog,

allowing members to share experiences for each resource, or offer variations for members to try. Going even further, members would benefit from the ability to rate each resource page. This would provide an easy way for new or existing members to see how other members respond to content, making everyone accountable to the knowledge base and satisfying Wenger's joint enterprise dimension. As technology expands, a virtual community of practice could also extend as an iPhone application, making it smartphone compatible and thus retrievable and usable almost anywhere. These types of communication avenues would allow members to be as involved as they want to be, making the virtual resource like a "permanently running conference" (Murillo, 2008, p. 26). Similar to Wenger's core-periphery structure, some members may access the site (or app) and post every day, while others may choose to use it only when resources are needed. With current research beginning to show that the practice of short-term workshop sessions may not be the best way to sustain growth, a virtual community of practice may be an ideal way to sustain interaction and professional learning. As Brooks and Gibson (2012) say, which I've already mentioned, these new online possibilities offer the ability to "toss a query into the pool and ripples of wisdom will follow in close succession" (p. 9).

Blended interaction. In addition, the findings in this study and current research in this area suggest that an ideal virtual community of practice should blend face-to-face meetings with online interactions. This study discusses the complexity of what is now considered face-to-face interactions. And, likely as technology continues to improve, in-person, synchronous communication may almost be replicated online, so blended interactions may be a combination of written and oral, all done through a virtual resource.

A consideration for this study would be the development of mentoring relationships that could be sustained through blended interactions. This would not only foster constructive relationships among members, but assist the teachers with their decision making process as they choose resources. For example, if a teacher was worried about a music integration activity possibly not being successful and disrupting the flow of a class, a mentor might be able to offer advice, or an alternative back-up teaching strategy in the event of a disruption. This support might make a teacher more likely to try a new activity in class.

Differentiated shared repertoire. In this study, I have mentioned numerous times that it was important to me to include resources usable by non-musician, early childhood educators. So, I purposely included music activities that did not require music reading and songs that were simple to learn and understand. I also purposely included videos with classroom examples, sound clips and verbal explanations of the activities so that technological and pedagogical usability considerations were met. I surmised that this would allow early childhood educators to utilize music integration resources more easily and effectively in their classrooms. However, it would be possible to expand a virtual community of practice to include more appropriate topics for elementary school teachers with music background as well; a virtual resource could include more complicated music resources that could be interpreted and discussed by musicians, thus expanding the member base of the virtual community of practice. This consideration is also mentioned above, to meet the teachers' needs for resources that match their musical abilities.

Digital citizenship of teachers. In this study, I have discussed the plethora of virtual resources already available for educators and the discretion and caution that needs to be taken when choosing reliable resources. Often, companies who create resources for

profit will attend and present at teaching conferences with very convincing presentations, however a teacher, school or child's best interests are not always their top priority. This will become a bigger issue as resources continue to be published online, since anyone can 'publish' on the Internet. It will become increasingly difficult to determine which are reliable, credible resources. As technology continues to be integrated into teacher-learning practices, teachers should become more knowledgeable as to what constitutes a reliable and effective virtual community of practice. This relates to a transparency in both the quality of content and credibility of the author and affects validity and reliability of the resource, aligning with the rhetoric that teaching should be research-informed (Leask, 2011). This idea has many implications as more virtual communities of practice continue to emerge. Ideally, as teachers become more discerning of the quality and credibility of online virtual resources, the 'bad' ones may ultimately be used less often and eventually become non-existent. This will increase the competition and expectation for quality resources and will benefit all educators who are looking to the Internet for professional learning.

Final Thoughts

As a teacher myself, I wholly recognized the privilege I was afforded by being invited inside another teacher's classroom. This is often an experience with which teachers have little opportunity to pursue (Connelly & Clandinin, 1988, p. 56). Aside from the role of researcher / broker assigned in this study, I am first and foremost a teacher and I recognize that the time spent in classrooms was a valuable experience that granted me the ability to "learn a great deal about [my] own practices by acting as a participant-observer in someone else's classroom" (p. 54). During the course of this

study, I met with each of the four teacher participants on three separate occasions, watching their interactions with their students and their approaches to curriculum. This quiet, thoughtful, prolonged observation time led me to a very rich understanding of each participant as a person and a pedagogue. The study became a temporal part of my educational experiences, and interview data revealed that the participants felt the same way.

In the end, I believe the goals of this study—to use the literature on music integration and my own teaching experiences to provide early childhood educators with effective music resources to use in their classrooms and assist them in meeting student-learning outcomes across several areas of curriculum—were met. This study was not designed to show that music integration in public elementary schools should replace compulsory music programs, but to encourage even more music to be used in elementary classrooms. The teachers did seem to benefit from music integration activities, and participation in this study seemed to encourage them to use music more frequently in their teaching. This study provides the baseline for further work toward a united education community—private and public, specialists and generalists—who can work together and connect in a mutually beneficial community of practice.

References

- Adsit, J. N. (2004). *Technology-mediated professional development programs for teachers and school leaders* (ED-99-CO-0007). Retrieved from <http://0-search.ebscohost.com.darius.uleth.ca/login.aspx?direct=true&db=eric&AN=ED484654&site=ehost-live&scope=site>
- Alberta Education. (2008). Kindergarten program statement. Retrieved November 21, 2012, from <http://education.alberta.ca/media/312892/kindergarten.pdf>
- Anvari, S. H., Trainor, L. J., Woodside, J., & Levy, B. A. (2002). Relations among musical skills, phonological processing, and early reading ability in preschool children. *Journal of Experimental Child Psychology*, 83(2), 111-130. Retrieved from <http://0-search.ebscohost.com.darius.uleth.ca/login.aspx?direct=true&db=eric&AN=EJ659812&site=ehost-live&scope=site>
- Armstrong, T. (2003). *The multiple intelligences of reading and writing: Making the words come alive*. Alexandria VA.: Association for the Supervision of Curriculum Development. <http://0-search.ebscohost.com.darius.uleth.ca/login.aspx?direct=true&db=eric&AN=ED475460&site=ehost-live&scope=site>
- Bolduc, J. (2009). Effects of a music programme on kindergartners' phonological awareness skills. *International Journal of Music Education*, 27(1), 37-47. <http://dx.doi.org/10.1177/0255761408099063>
- Bolduc, J. & Fleuret, C. (2009). *Placing music at the centre of literacy instruction* (Research Monograph No. 19). Retrieved from

http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/Placing_Music_en.pdf

Brennan, M., & Noffke, S. E. (1997). Uses of data in action research. In T.R. Carson and D. Sumara (Eds.), *Action research as a living practice* (pp. 23-43). New York: Lang Publishing.

Bresler, L. (1993). Music in a double-bind: Instruction by non-specialists in elementary schools. *Bulletin of the Council for Research in Music Education*, 1-13.

<http://dx.doi.org/10.2307/40318744>

Brooks, C, & Gibson, S. (2012). Professional learning in a digital age. *Canadian Journal of Learning and Technology*, 38(2), 1-23.

Chambers, G. N., Threlfall, J., & Roper T. (2012). Do online web resources help professionals to work more effectively? A case study based on three sites. *Journal of Education for Teaching*, 38, 407-418.

<http://dx.doi.org/10.1080/02607476.2012.707923>

Church, E. B. (2006). Add some music and math to group time!. *Early Childhood Today*, 21(2), 33-36.

Colwell, C. M. (1994). Therapeutic applications of music in the whole language kindergarten. *Journal of Music Therapy*, 31(4), 238-247.

<http://dx.doi.org/10.1093/jmt/31.4.238>

Connelly, F. M., & Clandinin, D. J. (1988). *Teachers as curriculum planners. Narratives of experience*. New York: Teachers College Press.

- Cowan, K., & Albers, P.. (2006). Semiotic representations: Building complex literacy practices through the arts. *Reading Teacher*, 60(2), 124-137.
<http://dx.doi.org/10.1598/RT.60.2.3>
- Dust, T., & Montgomery, A. (2005). Music education in Alberta: The contribution of school music programs. In K. Veblen & C. Beynon (Eds.) with S. Horsley, U. DeAlwiss & A. Heywood, *From sea to sea: Perspectives on music education in Canada*. (Open Access, Peer-Reviewed Electronic Book). Retrieved from
<http://ir.lib.uwo.ca/musiceducationebooks/1/>
- Fisher, D., & McDonald, N. (2001). The intersection between music and early literacy instruction: Listening to literacy!. *Reading Improvement*, 38(3), 106-115.
- Gauthier, D. R. (2005). Children's literature in the music classroom: Finding the music within. *Music Educators Journal*, 91(3), 51.
- Geist, K., & Geist, E. (2008). Do re mi, 1-2-3, that's how easy math can be: Using music to support emergent mathematics. *Young Children*, 63(2), 20-25.
- Geist, K., Geist, E. A., & Kuznik, K. (2012). The patterns of music: Young children learning mathematics through beat, rhythm, and melody. *Young Children*, 67(1), 74-79. Retrieved from
http://elf2.library.ca.gov/training/docs/PatternsMusic_Geist.pdf
- Gibson, S., Moline, T., & Dyck, B. (2011). What are education students' perceptions of the role of technology in social studies pedagogy?. *Alberta Journal of Educational Research*, 57, 73-87.

- Gillespie, C. W., & Glider, K. R. (2010). Preschool teachers' use of music to scaffold children's learning and behaviour. *Early Child Development and Care*, 180, 799-808. <http://dx.doi.org/10.1080/03004430802396530>
- Gromko, J. E. (2005). The effect of music instruction on phonemic awareness in beginning readers. *Journal of Research in Music Education*, 53(3), 199-209. <http://dx.doi.org/10.2307/3598679>
- Hadjerrouit, S. (2010). A conceptual framework for using and evaluating web-based learning resources in school education. *Journal of Information Technology Education*, 9(1), 53-79. Retrieved from <http://www.editlib.org/p/111356/>
- Hanson, M. (2003). Effects of sequenced kodaly literacy-based music instruction on the spatial reasoning skills of kindergarten students. *Research and Issues in Music Education*, 1(1), 1-18.
- Heald, R. (2008). Musicality in the language of picture books. *Children's Literature in Education*, 39(3), 227-235. <http://dx.doi.org/10.1007/s10583-007-9054-4>
- Herrington, A., & Herrington, J. (2001). *Web-based strategies for professional induction in rural, regional and remote areas*. Paper presented at conference of the Australian Association for Research in Education, Fremantle, Australia. Retrieved from <http://0-search.ebscohost.com/darius.uleth.ca/login.aspx?direct=true&db=eric&AN=ED466893&site=ehost-live&scope=site>
- Hill-Clarke, K., & Robinson, N. R. (2004). It's as easy as "a-b-c" and "do-re-mi": Music, rhythm, and rhyme enhance children's literacy skills. *Young Children*, 59(5), 91-95.

- Kennedy, M. M. (2004). Reform ideals and teachers' practical intentions. *Education Policy Analysis Archives*, 12(13). Retrieved from <http://files.eric.ed.gov/fulltext/EJ852298.pdf>
- Kinzie, M. B., Whitaker, S. D., Neesen, K., Kelley, M., Matera, M., & Pianta, R. C. (2006). Innovative web-based professional development for teachers of at-risk preschool children. *Educational Technology & Society*, 9(4), 194-204.
- Knowles, J. G., & Cole, A. L. (2008). *Handbook of the arts in qualitative research: Perspectives, methodologies, examples, and issues*. Los Angeles: Sage Publications.
- Kouri, T., & Telander, K. (2008). Children's reading comprehension and narrative recall in sung and spoken story contexts. *Child Language Teaching and Therapy*, 24(3), 329-349. <http://dx.doi.org/10.1177/0265659008096296>
- Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*: Thousand Oaks, CA: Sage Publications.
- Leask, M. (2011). Improving the professional knowledge base for education: Using knowledge management and web 2.0 tools. *Policy Futures in Education*, 9(5), 644-660.
- Levy, D. L., & Byrd, D. C. (2011). Why can't we be friends? Using music to teach social justice. *Journal of the Scholarship of Teaching and Learning*, 11(2), 64-75.
- Montgomery, A. P. (2002). *Teaching towards musical understanding: A handbook for the elementary grades*. Toronto: Prentice Hall.
- Montgomery, A. P. (2012). 'Over in the meadow' and beyond: Singing for joy with song-based picture books. *Canadian Music Educator*, 53(4), 29-32.

- Murillo, E.. (2008). Searching usenet for virtual communities of practice: Using mixed methods to identify the constructs of Wenger's theory. *Information Research: An International Electronic Journal*, 13(4), 1-35. Retrieved from <http://files.eric.ed.gov/fulltext/EJ837276.pdf>
- Paquette, K., & Rieg, S. (2008). Using music to support the literacy development of young english language learners. *Early Childhood Education Journal*, 36(3), 227-232. <http://dx.doi.org/10.1007/s10643-008-0277-9>
- Peynircioglu, Z. F., Durgunoglu, A. Y., & Oney-Kusefoglul, B. (2002). Phonological awareness and musical aptitude. *Journal of Research in Reading*, 25(1), 68-80.
- Reese, S, Repp, R, Meltzer, J, & Burrack, F. (2002). The design and evaluation of use of a multimedia web site for online professional development. *Journal of Technology in Music Learning*, 1(2), 24-37.
- Salmon, A. (2010). Using music to promote children's thinking and enhance their literacy development. *Early Child Development and Care*, 180(7), 937-945. <http://dx.doi.org/10.1080/03004430802550755>
- Shilling, W. A. (2002). Mathematics, music, and movement: Exploring concepts and connections. *Early Childhood Education Journal*, 29(3), 179-184.
- Shore, R., & Strasser, J.. (2006). Music for their minds. *Young Children*, 61(2), 62-67.
- Stake, R. E. (1995). *The art of case study research*: Thousand Oaks, CA: Sage.
- Standley, J. M. (2008). Does music instruction help children learn to read?: Evidence of a meta-analysis. *Update: Applications of Research in Music Education*, 27(1), 17-32. <http://dx.doi.org/10.1177/8755123308322270>

Statistics Canada. (2011). *Study: Life-path outcomes associated with reading ability*.

Retrieved September 11, 2011 from <http://www.statcan.gc.ca/daily-quotidien/110627/dq110627b-eng.htm>

Trust, T. (2012). Professional learning networks designed for teacher learning. *Journal of Digital Learning in Teacher Education*, 28, 133-138.

W-FIVE (Producer). (March 15, 2011). The musical brain, featuring the work of Daniel Levitin. [video] Retrieved from <http://watch.ctv.ca/news/w5/w-five-presents-the-musical-brain/-clip135228>

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. New York: Cambridge University Press.

Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice : A guide to managing knowledge*: Boston MA: Harvard Business School Press.

Wiggins, D. (2007). Pre-k music and the emergent reader: Promoting literacy in a music-enhanced environment. *Early Childhood Education Journal*, 35(1), 55-64.
<http://dx.doi.org/10.1007/s10643-007-0167-6>

Winsler, A., Ducenne, L., & Koury, A. (2011). Singing one's way to self-regulation: The Role of Early Music and Movement Curricula and Private Speech. *Early Education and Development*, 22(2), 274-304.

Yin, R. K. (2014). *Case study research: Design and methods*. London: Sage publications.

Zachopoulou, E., Tsapakidou, A., & Derri, V. (2004). The effects of a developmentally appropriate music and movement program on motor performance. *Early Childhood Research Quarterly*, 19(4), 631-642. <http://dx.doi.org/10.1016/j.ecresq.2004.10.005>

Appendix A

Annotated List of Picture Books on Website for Sung Stories Activities

- [All Kinds of Families](#). Mary Ann Hoberman (2009). Explores the ways that people, animals and even objects can form families. Notes: not a great rhyming scheme, but does work with *Twinkle Twinkle* melody.
- [And to Think That We Thought We'd Never be Friends](#). Kevin Hawkes (1999). A brother and sister learn that friendship is better than fighting and they soon spread their message all over the world. Notes: this is a great book to add a melody to, because it has 6 sentence stanzas (the same as *Twinkle Twinkle*). It also has a great message about respect, support and collaboration.
- [Being Friends](#). Karen Beaumont (2005). *Two girls share the delights of being best-friends, despite and because of the ways that they are different*. Notes: Also works with *Twinkle Twinkle*, but the stanzas vary in length. It might be fun to speak the repeated phrase "we both like being friends."
- [Bein' with you this way](#). Lisa W. Nikola (1994). This story is meant to be a rap, so it has great rhythmic phrases, and the message in the story is great! Notes: Instead of singing it, you can say it expressively and rhythmically, like a rap.
- [I Like Myself](#). Karen Beaumont (2004). A story about.... Notes: You can sing *Twinkle Twinkle* easily with this story.
- [It's Hard to be Five](#). Jamie-Lee Curtis (2004). This is a book about self-control, as a little boy begins kindergarten, and explains all of the things he is now expected to do, and all of the changes as he grows. Notes: This book works with the melody *Happy Birthday to You* perfectly!
- [May I Bring a Friend?](#) Schenk de Regniers (1971). A very old book with a great message. A queen and king invite their friend to tea, and when he brings all sorts of unique friends, they openly accept them, saying "any friend of yours is a friend of mine." Notes: This book also works with the *Twinkle Twinkle* melody but some stanzas vary in length. It can be fun to speak the repeated phrase "any friend of yours is a friend of mine." *See the example video, below.*

- [Somewhere today: a book of peace](#). Shelley Moore Thomas (1998). A story about what might be happening all over the world. This story has real life pictures of people from various countries. Notes: This story does not rhyme, but has similar sentence lengths, so it loosely works with the first part of *Old MacDonald* (up to "with an oink, oink here").
- [The Crayon Box that Talked](#). Shane DeRolf (1997). Some crayons don't like the other colors, but soon learn that all colors are unique, and all together, they belong. Notes: You can sing the first part of the melody *Old MacDonald* to this book. This one will take a bit of practice to decide where to end the melody for each stanza (e.g. you won't need to sing the part of the melody "with an oink, oink here...etc.)
- [Yay, you! Moving Out, Moving Up, Moving On](#). Sandra Boynton (2001). Notes: this book works with the melody *Happy Birthday to You*. It works well to read aloud the last two pages.

Appendix B

Sample Interview Questions

The Effectiveness of Web-based Music Resources in Meeting the Needs of Early Childhood Teachers

Preliminary Participant Interview

1. How many years have you been teaching? How many kids do you have in your classroom? (include Male/Female Ratio)
2. Do you have any special needs children in your class? If so, how do you anticipate these resources will work on these types of learners?
3. What is your background (education) in music? What is your experience with music (including family history)?
4. How confident/knowledgeable are you with music? How comfortable are you with your own singing voice?
5. Do you remember any instances of music used in your own schooling, other than specialized music classes?
6. Are you aware of the research showing the benefits of using music to meet other student-learning outcomes?
7. Do you currently integrate music into your classroom (distinct from music concepts and music instruction)? If so, how?
8. What is your experience with the internet? Do you feel that you are web-savvy (do you find Google easy to use, and do you usually find what you are looking for)?
9. Which of the following do you frequently use: blog, Facebook, email, tweet, Google and do you have your own website?
10. Where do you tend to go for curriculum resources? How many face-to-face conferences do you attend per year?
11. Do you share your teaching experiences and resources with other educators? If so, how do you share (by email, blog, face-to-face, present at conferences, mentor education students, etc.)
12. What are your experiences with web-based curriculum resources for teachers (distinct from online student learning and online teaching tools)?

13. Are there any other web resources that you regularly access for teaching (distinct from web tools that you access and use during class)? Can you name a few of them (website title, or search descriptors)? Does your school have any subscriptions to web resources? If so, how do you utilize them in your classes?
14. What are your preliminary thoughts on the content of this website (musicforlearning.ca)? What do you like about it? What do you think will be difficult?
15. I am not a public educator, so I realize that there are dynamics in public classrooms that I may not understand. What preliminary recommendations, if any, would you make regarding the content of the site in meeting student-learning outcomes for all types of learners in Alberta kindergarten classrooms?
16. What do you look for in good web resources, and how do you tell unreliable sources?
17. How do you think web-based professional development could be utilized in Alberta's education system? (e.g. funding for teachers to create and collaborate, school district positions that compile and create resources, etc.)
18. Do you have any comments to make that have not been covered in these questions?

Questions Asked During the Study

1. What are your experiences with the website and your implementation into your classroom?
2. Do you feel the activities meet any of the program of studies student-learning outcomes? If so, which ones?
3. Are the resources both technologically and pedagogically accessible? What are the qualities of the website that enhance usability?
4. Do you feel that the purpose of this resource is clear, and that you are an appropriate user? If so, why?
5. Have you noticed any changes in how your students are engaged in the activities? If so, what have you noticed?
6. Since using this website, have you looked for additional resources on the web to meet other student-learning outcomes?

7. What are some changes that you would make to the content of the website? What about the design?
8. Since using this resource, do you value music integration more, less or the same? Why?
9. Do you have any comments to make that have not been covered in these questions?
10. Do your students provide you with feedback that you can share (without using specific names)?

Questions Asked After the Conclusion of the Study (Revised)

1. Now, after using these resources for a few months, which (if any) student-learning outcomes have these resources been able to meet?
2. Are the resources both technologically and pedagogically accessible? What are the qualities of the website that enhance usability?
3. Do you feel that the purpose of this resource is clear, and that you are an appropriate user? If so, why?
4. Have you noticed any changes in how your students are engaged in the activities? If so, what have you noticed?
5. Since using this website, have you looked for additional resources on the web to meet other student-learning outcomes?
6. What are some changes that you would make to the content of the website? What about the design?
7. In terms of music integration, do you value it more, less or the same?
8. Will you continue using this resource? What changes would you make to the content, or structure of the website?
9. Did using this website increase the likeliness that you would look for other, similar web resources?
10. Do you believe your students benefited from the use of these materials?
11. Do you think this resource helped you feel more confident and comfortable in using music in your classroom? Did it make you feel more comfortable in using web-based resources? If so, how?

12. Did using this web resource help you feel more confident in using these types of resources, possibly making a resource such as this, and also give you an idea of what to look for in a good web resource?
13. Would you now consider making a web-based resource of your own, with your own personal teaching resources, based on your experiences in your classroom? If not a web-based resource, how would you share information with other educators?
14. Which of the resources from the website did you use, why and how many times (estimated)? Which did you choose not to use, and why?
 - a. Hello Song
 - b. Emotions in Music
 - c. Transition Song (Listening Song)
 - d. Parachute Rhyme
 - e. Sung Stories
 - f. Beat Buds
15. Did you find the summary of the AB POS helpful with links to activities that satisfy those SLO?
16. Do you have any comments to make that have not been covered in these questions?
17. Do your students provide you with feedback that you can share (without using specific names)?
18. Why did you agree to be part of this study?