DIFFERENTIATED LEARNING AND BODILY-KINESTHETIC INTELLIGENCE:
CONNECTING THEORY AND INSTRUCTION TO ENCOURAGE MOVEMENT IN
THE ELEMENTARY CLASSROOM

By

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Abstract
The purpose of this study is to discover how current teachers are using differentiated instruction to support bodily-kinesthetic learners in the elementary classroom. The research explores the separate meanings of differentiated instruction and bodily-kinesthetic learning and examines how these two concepts both relate to and support each other. Diversities, challenges, resources and theory are examined to uncover the strategies, approaches and goals of the participants in the study. The research findings also include further strategies for teachers in considering how to differentiate instruction for bodily kinaesthetic learners. The research includes connections between successful strategies for bodily kinaesthetic learners, English Language Learners and students diagnosed with attention deficit disorders. A variety of themes and sub themes that arose in the interviews are then considered in relation to the literature. The author shares her own experiences and observations and explores how research validates bodily-kinesthetic learning. Finally, the conclusion connects the importance of differentiating instruction and creating inclusive environments for bodily kinaesthetic learners, and also offers suggestions for further areas of exploration.

Key Words: Differentiated instruction, Multiple Intelligence Theory, bodily-kinesthetic learner, strategies & supports
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Chapter 1: Introduction

1.0 Research Context

A teacher candidate's schooling encourages them to consider the variety of experiences and academic backgrounds that each of their students will bring to the classroom. Differentiated learning and Individual Education Plans are two of the many concepts that teacher candidates must consider when contemplating how their classroom will be equitable for their future students. It is what they may consider when deciding how they can make their classroom environment a place where each student has a fair opportunity to be successful.

The importance of differentiated instruction lies in the knowledge that many Canadian classrooms consist of students, representing many genders and multiple cultures. They also contain students with many exceptionalities and different experiential backgrounds (Alavania & Farhady, 2012). Howard Gardner’s Theory of Multiple Intelligences (Gardner, 1993) considers how people might have a combination of these exceptionalities, with nine different intelligences, that are further discussed in the literature review. To make the classroom inclusive and supportive it is important to realize the variations in these intelligences and understand what it is that helps each type of learner succeed. Some might argue that the physicality of learning is a biological and physiological function that engages the whole body, or the ‘body brain’ (Williams, 2012). Considering how differentiating instruction can support the bodily kinaesthetic learner is one way to support the different exceptionalities and learning styles that students bring to the classroom. Gardner’s Multiple Intelligence Theory is a strategic approach to learning that focuses on enhancing strengths and improving weaknesses (Anderson & Rumsey, 2002). Classrooms are no longer faced with the presumption of conventional sameness (in terms of learner abilities, preferences, needs and traits) that one used to dominate the mainstream educational areas (Alavania & Farhady, 2012). This shift requires teachers to be equipped with knowledge of how to successfully educate varying types of learners, especially those who identify with bodily kinaesthetic intelligence.
1.1 Research Problem

This research project will examine how the incorporation of differentiated instruction will support bodily-kinesthetic learners, in the Canadian school system. Western culture is a culture where the kinaesthetic mode of learning has been overshadowed by the visual and auditory modes (Myers, 1998). What exactly is a bodily-kinesthetic learner? Howard Gardner (1993; pg. 9) describes bodily-kinesthetic intelligence as 'the ability to solve problems or to fashion products using one's whole body, or parts of the body.” Tomlinson (1999), however, believes there is a disconnect in pre-service teachers who experience the topic of differentiated learning during university, because there is a lack of context for applying it. In addition, teachers who have had movement instruction in college are much more likely to use movement activities, and use them frequently (Connors, 1995). Unfortunately, the time spent on movement activities in college courses for teachers seems to be minimal and there is a need for increased movement experiences (Connors, 1995).

A healthy classroom is one that is relevant to students, helps students understand themselves, is authentic, can be used immediately for things that matter and makes students more powerful (Tomlinson, 1999). However, changing the mindset of teachers and teacher educators in regards to learning styles is a difficult and overwhelming task (Landrum & McDuffie, 2010). Creating classroom environments that are authentic for bodily-kinesthetic learners is an adjustment that needs to happen in Canadian classrooms, as well as in pre-service teacher education programs.

1.2 Purpose of the Study

My goal for this research is to learn from educators, in order to increase my understanding of how to support bodily-kinesthetic learners through differentiated instruction. My secondary goal is to share what I have learned from both the literature review and interviews with teachers, with the broader educational community. My discoveries of the literature thus far have led me to believe that the incorporation of certain strategies for bodily-kinesthetic learners is minimal, as the amount of literature on this topic is lacking. I hope to gain insight on teacher’s
strategies and approaches for creating inclusive classrooms for bodily kinaesthetic learners and further my understanding on how these opportunities are created across curriculum subject areas. Ultimately, my goal is to learn what can be done to support teachers in pre-service teacher education, as well as current teachers, in their learning about these ideas, by understanding the strategies and approaches of those currently differentiating instruction for bodily kinaesthetic learners.

1.3 Research Questions

Differentiated instruction is a term many teachers in the Ontario Public school system are familiar with. It shapes how educators implement their classroom instruction and inspires teachers to think of ways to reach every student in their class. My primary research question is: How are a sample of elementary school teachers differentiating their instruction to support bodily kinaesthetic learners? The secondary research questions that will help explain and make sense of this main question are as follows:

- What instructional goals, strategies and approaches do these teachers enact to support bodily kinaesthetic learning and why?
- What factors and experiences contribute to these teachers competence and confidence in this area?
- How do these teachers create opportunities for bodily kinaesthetic learning across curriculum subject areas?
- What outcomes do these teachers observe from their students?

1.4 Background of the Researcher/Reflexive Positioning Statement

Throughout my own academic journey I have learned and reflected on many tools and strategies that I feel are important for making a good teacher. My own schooling, leading up to this point, has spanned over many years and during that time I have had both academic and
social experiences that have led me to have certain educational philosophies. Regardless of how long I have been studying to be a teacher I am still and always will be a student, inspired to learn and soak up new information. With that being said, there have been elements in my academic preparation that I have felt were lacking. Perhaps it is just that the more a person learns, the more questions they have, but I feel there has been a slight disconnect in what I have learned in the classroom and how applicable it really is to authentic teaching.

After learning about differentiated instruction and how students learn in different ways I began to wonder how to support bodily-kinesthetic learners in an elementary, core subject classroom. I brought this question up for discussion in one of my Masters of Teaching classes and did not feel the response was adequate enough for me to apply it in a classroom setting. It was recommended that I use my previous experiences and knowledge to support these kinds of learners, but unfortunately I did not have any prior experiences that would enable me to support them. While the response isn't something I could apply in a classroom it inspired me to research what I could do to make my classroom environment a rich place for students who learn through movement.

Furthermore, my practicum experiences have shown me how many students are constantly moving and fidgeting when they're learning. I realize that just because they are constantly moving it does not mean they are bodily-kinesthetic learners, but I was curious to find out if there could be a better place for them, than sitting at a desk. Growing discussions about students with attention deficit disorders and attention deficit hyperactivity disorders is also worth mentioning, when explaining my position on this topic. I wonder, what can educators do to
create an environment conducive to how these students learn, that doesn't suppress their attention differences, but supports it? I approach this topic with motivation to understand these students and continue to be a student myself in my career as a teacher.

1.5 Overview/Preview of the Whole

To respond to the above research questions I will be conducting a qualitative research study, using purposeful sampling to interview two teachers. These interviews will be specific to teachers who incorporate strategies for bodily-kinesthetic learners.

In the second chapter of this research project I review literature and studies in the areas of bodily-kinesthetic learners and the incorporation of differentiated instruction in core subject classrooms and the challenges of incorporating it. The literature review will also examine how preservice teachers are being prepared to support bodily-kinesthetic learners in their classrooms, as well as critiques on connecting differentiated learning and multiple intelligences.

The third chapter will examine the procedure I followed for the research design and further elaborate on the methods used for the two interviews. In chapter four I report my findings and expand on their significance to the information I have found in the literature in the fifth chapter.

Additionally, I will discuss what these implications mean for me as a beginning teacher and how other teachers can make use of the ideas and tools that are spoken of in this research study. I will also discuss my recommendations and suggest areas where further research is needed.
Chapter 2 Literature Review

2.0 Introduction

The following collection of literature that has been reviewed will distinguish the connection between differentiated instruction and bodily-kinesthetic learners and will use this information to support bodily-kinesthetic learners in the classroom. The goal of this literature review is to address the issue of bodily-kinesthetic learners being overshadowed by visual and auditory learners, in the elementary classroom setting (Myers, 1998). Another intention for this literature review is to provide information explaining what the terms differentiated instruction and bodily-kinesthetic learner mean. The literature review will then cover challenges and studies of differentiated instruction and review how it connects to bodily-kinesthetic learning.

Additionally, it will examine current strategies for supporting bodily-kinesthetic learners in Canadian classrooms.

2.1 What is Differentiated Instruction?

Differentiated instruction can be described as teaching from an educational level that coincides with the level of understanding each student is at (Tomlinson, 1999). It also means being responsive to how students learn. This responsiveness contrasts against a more standardized approach, that presumes all learners of a certain age or grade are all alike (Tomlinson, 1999). With differentiated instruction, most students focus on the same concepts, principals and curriculum objectives, but the instructional process toward understanding key concepts varies. The teacher learns how each students' learning styles differ from one another and attempts to create an environment where everyone can thrive, despite their differences. This can include offering a variety of assessment options and alternating group work with individual work. By matching student's individual needs the responsiveness of the teacher is altered through rate and degrees of complexity (McAdamis, 2000).

Howard Gardner (1993) believes that school should be a place where teachers strive to develop intelligences and help students reach goals that are appropriate and suited to their particular intelligence. This leads to an individual centred school, that is geared toward the
development of each student's cognitive profile. Gardner (1993) suggests this kind of school with the mindset that not all people have interest in the same things and that people have different abilities. He continues that this type of school would encourage teachers to think critically about students individual abilities and would match individuals to particular ways of learning the subjects (Gardner, 1993). In other words, Gardner's Multiple Intelligence Theory is a strategic approach to learning that focuses on enhancing strengths and improving weaknesses (Anderson & Rumsey, 2002). The Multiple Intelligence's Theory focuses on nine different types of intelligences: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, natural and existential. The idea is that students have strengths in one or a few of these intelligences and these are the strengths that should be developed (Akbari & Hosseini, 2008). The first part of understanding the importance of differentiated instruction is in knowing that people are capable of changing their own individual behaviour. In order to change a student's behaviour that is disruptive, aggressive or off-task, the educator must first change their response to it (Anderson & Rumsey, 2002).

2.1.1 Challenges to Differentiating Instruction

Differentiated instruction requires teachers to be responsive to how their students learn. Gardner's ideas on creating a classroom that reflect and encourage each students differences and varying learning styles indeed corresponds with the intentions of differentiated learning. By teaching in ways that help all learners bridge the gaps in their understanding and skill teachers hope to reach the goal of maximizing the capacity of each learner (Cox, 2008). What difficulties do teachers have to overcome if they truly hope to achieve this goal of supporting each learner in their Multiple Intelligences’ growth? Carol Ann Tomlinson has been a strong voice in the discussion of differentiated instruction, what role it requires in the school system and the challenges that come with this role. She believes that while teachers can explain how they teach for student differences “they aren't comfortable enough with managing the classroom to do the things that they envision and the management piece is the barrier” (Wells & Shaughnessy, 2009: p. 644). Tomlinson does not place doubt in a lack of specialty instruction for teaching differentiated learning, but doubts the certainty that these classes mean participants will absolutely go forth and implement differentiated instruction (Wells & Shaughnessy, 2009).
Furthermore, Tomlinson believes that there is a disconnect in pre-service teachers who might experience the topic of differentiated learning during university. A lack of context for applying differentiated learning makes it challenging for some pre-service teachers to truly understand when and where to apply it. While the information is still worthwhile, it has more meaning when the use of it is clear and can be applied in a classroom situation (Wells & Shaughnessy, 2000). There is still a great deal to be done toward the diversification of instructional materials and techniques (Alavinia & Farhady, 2012). As early as 1993, Gardner reiterated that people have very different minds from one another.

Education ought to be so sculpted that it remains responsive to these differences. Instead of ignoring them and pretending that all individuals have (or ought to have) the same kinds of minds, we should instead try to ensure that everyone receive an education that maximizes his or her own intellectual potential (Gardner, 1993: pg. 71).

Over twenty years later the discussion of differentiated instruction and responding to individual's strengths in the classroom is something educators and pre-service teachers are still contemplating.

Implementing differentiated instruction in the classroom requires teachers to be committed to the perspective that their students experiences and levels of understanding are not uniform. Differentiated instruction asks for more of a teacher's time outside of the classroom, than non-differentiated instructional teaching already does, especially when first starting to design these types of lesson plans. It's important that all teachers and support staff be willing to devote the time, energy and resources to create and implement a program that will benefit the students (Alavinia & Farhady, 2012). It is crucial for the support of professional development to continue, while teachers are learning how to educate this way. Including other teachers in the endeavour to create a differentiated classroom can help all those involved stay motivated and find success. Meeting with them regularly, planning together, troubleshooting and sharing material can help create a supportive synergy (Tomlinson, 1999).
In 1995 the Rockwood Board of Education, located in Missouri, USA, experimented with implementing differentiated learning in their classrooms, in schools across the Rockwood School District. The changes began with the school adopting a policy stating that “equality consists of providing equally well for all kinds and levels of individual differences,” (McAdamis, 2001: pg. 48). The district saw improvements in many students, including those among the highest-performing and the change enabled a significant number of Rockwood students to move out of the lowest-scoring categories on Missouri standardized tests. Teachers reported a higher level of motivation and enthusiasm when they provided their students with acceleration for certain topics and differentiation. McAdamis (2001) reports that the classroom implementation came about slowly and many of the teachers were resistant to the change being asked of them. Serena Crisp, a seventh grade science teacher admitted she was “still not convinced that differentiation was the right thing for her as a teacher because it took so much work to plan for an assignment,” (McAdamis, 2001: pg. 49). She did, however, try again after another training session and became more comfortable with the process. She also gained motivation and excitement at the opportunity of developing other differentiated lessons over the summer to use with her students, for the following school year (McAdamis, 2001).

There can be many challenges when initiating an effective new program. Participants can alternate between optimistic and pessimistic perspectives and unexpected obstacles can arise frequently (Gardner, 1993). Because of these obstacles, when such demanding changes are asked of educators it is important they are supported through the process. While the Rockwood Board of Education implemented this type of learning district administrators were designing a professional development plan to help teachers gain the additional skills needed to put the new instructional approaches into action. Elementary, middle and high school teachers were all provided with this training in differentiation and supported with follow up training including workshops, study groups, peer coaching and work days for lesson development (McAdamis, 2001).
Alavinia and Farhady (2012: p. 74) argue that “differentiation constitutes an innovating, constant reflective procedure of effective teaching and learning that cannot be met by readymade lesson plans.” Alavinia and Farhady include McAdamis's account of the implementation of differentiated instruction by the Rockwood Board of Education and continue to break down the results in their own study. Their study aimed to discover whether differentiated instruction had any impact on Iranian EFL learners' vocabulary learning, among other research questions. Their research found that the application of differentiation had a positive impact on the learner's performance. They also observed that participants in the experimental group felt more comfortable and confident in their capability for achievement. Differentiated instruction and working in small groups helped them feel more empowered as learners (Alavinia & Farhady, 2012).

The outlook on differentiated instruction in the classroom is mostly a positive one. However, not all researchers agree with connecting it to learning styles. Differentiation is very much necessary, especially with the increasing diversity in classrooms, but changing the mindset of teachers and teacher educators in regards to learning styles is a difficult and overwhelming task (Landrum & McDuffie, 2010). Landrum and McDuffie (2010) encourage readers to maintain a critical eye toward methodological soundness when reviewing literature on learning styles because of incorporations of unpublished dissertations and reports. “Differentiation provides one framework for individualizing in the context of a heterogenous classroom. Focusing on students' learning styles adds little, if anything, of educational benefit to this process” (Landrum & McDuffie, 2010: p. 16). Additionally, some critics question whether Multiple Intelligence Theory is truly a valid representation of the human mind/brain (Shearer, 2004). There are also questions of how effective Multiple Intelligence Theory is for improving educational outcomes, learning and personal achievements (Shearer, 2004).

The connection between differentiation and learning styles may not always be beneficial when looking at learning styles as a whole. However, for bodily kinesthetic students who require drastic alterations to a visual and auditory based classroom, examining learning styles helps create an equally accessible environment.
2.1.2 Differentiating Instruction and Attention Disorders

Many teacher education programs introduce the idea of creating a classroom where every student has an opportunity to learn and be successful. Understanding exactly how to do that for each student can be difficult, especially with the frequent diagnoses with disorders such as ADHD (Attention Deficit/Hyperactivity Disorder). What is simpler than understanding how attention disorders affect a student's learning is categorizing them into a learning intelligence that makes sense to the teacher. While teachers can identify students' kinetic compensations when observing them it is less easy to identify the reasons a student cannot sit still (Abramovitz, 2009). The energy a child exhibits through difficulty sitting still, falling out of the chair, being restless and active and getting out of their seat does not necessarily mean they are a bodily-kinesthetic learner, but it is still a message from their body that is waiting to be heard (Abramovitz, 2009). However, while their main intelligence (according to Gardner's theory) may not fall under bodily-kinesthetic, activities that are directed towards bodily-kinesthetic learners could very much be beneficial for students with attention deficit disorders as well. Co-operative games involving kinaesthetic activity can help both the kinaesthetic learner and a child with ADHD to use their energy in the development of other intelligences (Anderson & Rumsey, 2002). Programs centred on the development of the bodily-kinesthetic intelligence creates a beneficial learning environment for both the ADHD child and the bodily-kinesthetic learner by harnessing their energy and using it in a positive and constructive way (Anderson & Rumsey, 2002).

In an educational system that is growing to be more enhanced, or dictated (depending on the perspective) by the diagnosis of learning disorders there are scholars that believe these diagnoses might not be the actual issue. Myers (1998) voices a concern that Western culture is a culture where the kinaesthetic mode of learning has been nearly completely supplanted in our educational system, by the visual and auditory modes. While there is some depth to this idea Myers (1998) furthers that there is some kinaesthetic learning that takes place in schools, but it is mostly restricted to the performing arts, athletics and rehabilitation. Teaching and learning that is informed by Multiple Intelligence Theory is an inclusive pedagogy because it incorporates a wide view of intelligence and works towards teaching and assessing students in more than just two intelligences (Barrington, 2004). As a result, this allows students to “use their own strengths
and not be marginalized by having to focus on traditional ways of learning,” (Barrington, 2004: pg. 423). A healthy classroom is one that is relevant to students, helps students understand themselves, is authentic, can be used immediately for things that matter and makes students more powerful (Tomlinson, 1999). For some students that means incorporating certain elements that support them as bodily-kinesthetic learners. Unfortunately, Myers (1998) argues that beyond the age of six years old education attempts to hold the kinaesthetic sense still, while students sit at desks and have their eyes and ears over-stimulated with knowledge. Connors (1995) wonders if this might be because teachers might have a potential fear of classroom control problems? Or could it be because teachers are just not sure how to implement this strategy in their classroom? One extreme concern is that because of the lack of understanding in how bodily-kinesthetic learners learn they are being labelled as 'learning disabled,' when it is actually the education system that is creating unfair challenges for students (Myers, 1998).

Ultimately, the mere belief in differences is not adequate and teachers need to adjust both their instructional and evaluative methods to suit these varying learner needs and preferences (Alavinia & Farhady, 2012).

2.2 Connection Between Differentiating Instruction and Bodily-Kinesthetic Learning

As recently discussed, differentiated instruction encourages the opportunity for a variety of ways to learn and for students who understand things differently than others. Howard Gardner's Multiple Intelligence Theory is rooted in the belief that people have different cognitive strengths and contrasting cognitive styles (Gardner, 1993). Multiple intelligences based teaching recognizes that students might have elements of the nine intelligences Gardner describes, but these elements might not be developed well, or effectively. These students also might have strengths in more than one category of intelligence (Ozdilek, 2010), so understanding a students strongest intelligence as their only intelligence can be harmful to their learning. Teaching to only one or two kinds of intelligence is common, but does not take advantage of the potential students have (Nemirovsky, 2004).
Gardner (1993: pg. 9) describes bodily-kinesthetic intelligence as “the ability to solve problems or to fashion products using one's whole body, or parts of the body” and suggests dancers, athletes, surgeons and craftspeople as people who exhibit bodily-kinesthetic intelligence. Some students are successful with memorization and rote learning, but bodily-kinesthetic learners require a different kind of learning environment that many teachers have not been equipped to support. It may be too drastic to consider teaching methods such as memorization and rote learning useless because some knowledge should be learned in a purely mechanical way (Airasian & Walsh, 1997). However, the importance of kinaesthetic learning is confirmed by research into the physicality of learning, which has proved that learning is a biological and physiological function that engages the whole body or the 'body brain' (Williams, 2012). The idea that some teachers may not be equipped to support bodily kinaesthetic learners raises the question of why and how that could be true. Further research into teacher education programs is necessary to understand where pre-service teacher education programs might be lacking in this preparation. However, it should be noted that teachers who had instruction in movement in college were much more likely to use movement and activities and use them frequently (Connors, 1995). These teachers were also more likely to use a variety of movement activities and make use of movement to a greater extent in middle and upper grades (Connors, 1995).

Secondly, those who have been introduced to movement instruction in method classes have more success in incorporating movement experiences into their teaching style, as opposed to those who try to add movement after they have already developed their teaching style (Connors, 1995). Understanding the difficulty teacher's have in the addition of movement into regular curricular activities can be partially explained through the knowledge that the time spent on movement activities in college methods courses for teachers seems to be minimal (Connors, 1995). Connors (1995) continues the discussion of movement instruction in stating that there is a need for increased movement experiences, especially in teacher related music education programs. Consequently, preservice elementary music methods courses should include
movement instruction because of the relationship between the frequency that teachers provide movement opportunities as well as their interest in additional training (Connors, 1995).

The reason movement is so important in the discussion of bodily-kinesthetic learners, as well as students with ADHD, is that these students are described as high energy and who always seem to be moving in some way (Anderson & Rumsey, 2002). This movement can be as little as swinging their legs and tapping their feet (Anderson & Rumsey, 2002), or getting up and needing to walk around. Learning how to incorporate movement can be challenging and is something that will be addressed with varying strategies further on in this literature review.

Surprisingly, a lack of focus on kinaesthetic awareness can provide challenges for some people in their elementary career, as well as later on in life. While the focus of this research is how differentiated learning and bodily-kinesthetic intelligence interact in the elementary classroom, some literature expresses concern that the general lack of attention to the kinaesthetic sense actually carries on consequences into the adult life (Myers, 1998). Myers (1998) refers to what is called kinaesthetic dystonia; it is described as muscle tension and structural pain, early degeneration, alienation from free emotional expression and a reliance on what can be seen or heard over what can be felt. The lack of being able to make oneself felt is a prime cause of depression in certain individuals, but there is a concern and curiosity of how individuals can make themselves felt by others when there is a severe lack of kinaesthetic awareness in Western society (Myers, 1998). Research on the general lack of attention to the kinaesthetic sense is needed to make sense of the repercussions that occur in later life.

2.3 Literature and Strategies on Implementing Movement in the Classroom

In the early 1990's, Connors completed a study with the hopes of finding out some knowledge and answers for many curiosities about movement in education. These curiosities included finding out the role of movement in written curriculum documents for the district and individual schools, in the Los Angeles Unified School District. Connors also hoped to answer the question of what type of preservice preparation the teachers received in movement and how much time was spent on those activities. How did these teachers implement movement in their
classroom? By surveying multiple elementary general music teachers in the Los Angeles Unified School District Connors was able to uncover some information towards movement in the classroom. Many of the teachers saw the use of movement as a way to bridge the language obstacle for classes with ELL students (Connors, 1995). Movement was successful when the movement was being used to increase specific musical understandings. Furthermore, the students showed deeper musical understanding when the movement quality was addressed (Connors, 1995). Students' early school experiences in the elementary years have a profound impact on their views of school, understanding of learning and their view of themselves as a learner (Cox, 2008). Incorporating differentiated learning into the classroom at an early age provides the opportunity for students to have a deeper understanding of how they learn. Connors observed that movement activities were emphasized more in the elementary grades and that the inclusion of movement declined in the middle and upper grades (Connors, 1995). Connors observed successful implementation of movement in the elementary music classroom throughout the study, yet also found that the teachers being observed were “not accustomed to talking about the teaching process and were unable to articulate what it was they did to ensure quality movement responses” (Connors, 1995: pg. 228). For the continuation of teachers learning how to incorporate movement in their classrooms it is important that other experienced teachers who know how to incorporate movement also know how to explain the process. Guidance for differentiated learning is something that research shows essential for continued success in incorporating this type of instruction in the classroom (Tomlinson, 1999). Ensuring that preservice teachers are also being taught to communicate why and how they incorporate successful movement implementation, as well as what they do, provides the opportunity for newer teachers to gain support systems in each other.

The use of bodily experiences in classrooms depends on teachers being able to articulate how it relates to the subject it is incorporated in. Some subjects, (unlike some music classes, which are more movement based than most classes) seem like strange environments for incorporating movement, because of the usual focus on visual and auditory elements. Explaining how a movement based activity could perhaps be legitimately mathematical (for example)
depends on this communication (Nemirovsky, 2004). Consequently, many mathematical ideas are expressed in visual forms, such as symbols, graphs and diagrams, so when there is a lack of communication on the legitimacy of movement, the movement appears to have little significance (Nemirovsky, 2004). Movement in the classroom can consist of small or large movements, depending on what will benefit the students and the content material. Nemirovsky (2004) describes educators that observed students engaging with manipulatable materials, through moving them around physically, with such an intensity and insight that did not seem to be present when they were observing a visual display on a blackboard or in a textbook. Most students enjoy the opportunity to be fully involved in their learning and can even be enthusiastic about exploring mathematics through movement (Touval & Westreich, 2003).

The Kinematics Teaching Strategy (KTS) is an approach for stimulating kinaesthetic intelligence and was developed to respond to the unmet needs of students who had difficulty learning through auditory and visual methods (Touval & Westreich, 2003). This approach allowed students to explore mathematical concepts through movement and students enjoyed the experience of being taught through diverse teaching methods, that they may not have normally come in contact with (Touval & Westreich, 2003). A program that is centred on the development of the bodily-kinesthetic intelligence truly optimizes the opportunities for students to put their energy to good use (Anderson & Ramsey, 2002).

Learning how to put their energy to good use is a skill students will need to work at, especially because it could potentially be quite different than what they are used to in their classrooms. Allowing certain children to be 'the traveller' for their group activities would allow them the flexibility to move between groups, get supplies for activities and handle the manipulatives, when in use (Reid, 1999). Many students, particularly those with ADHD or the bodily-kinesthetic learner feel the need to experience abstractions and move them or manipulate them (Chapman, 1993). Incorporating manipulatives in the classroom allows for students to experience hands-on learning and are more likely to maintain their attention than a worksheet or a lecture (Chapman, 1993).
Another kinaesthetic idea that is more group oriented is the incorporation of mind mapping, in a kinaesthetic sense. Mind maps were initially a two-dimensional paper tool, created with lines that were drawn outward from the centre, in all directions, to connect main ideas and sub-ideas to one topic (Williams, 2012). Instead of keeping this an activity that requires paper and pen, the idea is that the students would create a physical web, with manipulatives. The physical web requires students to use participatory manipulatives to make it more bodily-kinesthetic and three-dimensional (Williams, 2012). Furthermore, the students could even use their bodies and limbs as the links between the points and be involved physically, as well as mentally.

Some schools are fortunate enough to have up to date technology in their classrooms. Staying up to date on technology is another challenge, but certain equipment can really be of benefit for including bodily-kinesthetic learners when creating lesson plans. Kinect is a motion sensing input device for the Xbox 360 video game console that can capture, track and decipher body movements, gestures and voice (Hsu, 2011). In order to operate Kinect, classrooms require a projector and a computer (Hsu, 2011). Fortunately, many classrooms in Ontario are equipped with this technology already and Kinect has the potential to be an inexpensive add-on. However, even though some classrooms have this technology, not all classrooms do, so this device's capacity is limited to those schools fortunate enough to have the required equipment. While Kinect sounds like a great tool for incorporating new types of learning, without changes in educational practices and belief, the adoption of Kinect may end up being superficial as many educational technologies are left in the storage room after the excitement fades away (Hsu, 2011).

Incorporating hands on activities will help active students stay interested and invested in what they are learning. Furthermore, these activities are a way of helping the bodily-kinesthetic learner understand concepts, in their own way. Hands on activities can include (Chapman, 1993):

- Practice writing letters and numbers in salt trays, pudding, or shaving cream.
- Learning spelling through dance.
• Role playing characters from stories, history or current events.

• Building objects that reflect concepts.

• Doing hands-on science experiments.

• Playing cooperative games.

Co-operative games involving physical activity help the bodily-kinesthetic learner and a student with ADHD use their energy while developing other intelligences (Anderson & Rumsey 2002).

Another important thing to consider is how the classroom is set up for children to achieve. Having an area where a student can release energy (with a skipping rope, or stretching) can make a difference for some students (Anderson & Rumsey, 2002). Variations in seating arrangements and types of seating (stand-up desks, taller tables and chairs) and learning centres can also be of benefit (Anderson & Rumsey, 2002).

The idea of stand-up desks brings up an important discussion and one that is currently happening throughout some media outlets and schools, across Canada. A Toronto classroom and Saskatchewan classroom are mentioned in an article from CTV News (Favaro & St. Philip, 2015) for bringing in standing desks, to their classrooms. The article mentions health benefits (burning more calories) for students as well as parents that mention their kids are sleeping better.
As for the students themselves, the students use the desks as a space to migrate to, when they’re feeling the need to move and get rid of some extra energy. This is a positive direction to be going in that gives those students who feel the need to move the opportunity and choice to do so.

2.4 Conclusion

Differentiated learning and bodily-kinesthetic intelligence connect through the knowledge and understanding that learning needs to be and is specific to each student. Both ideas have the opportunity to have positive influences in the elementary classroom, yet some scholars highlight the challenges and oppose their supposed strengths. Further research on the goals and approaches current educators implement for supporting bodily kinaesthetic learners with differentiating instruction would be of benefit for other current teachers, as well as those in pre-service education programs.
Chapter 3: Research Methodology

3.0 Introduction

In this chapter I describe the research methodology. I begin by reviewing my research approach, procedures and instruments used to collect the data. This is followed by an explanation on participant sampling and recruitment. The data analysis procedures and ethical considerations are explained and methodological limitations of the study are examined. Strengths of the methodology are also considered and the chapter is concluded with a brief summary of key methodological decisions and my rationale for these choices.

3.1 Research Approach & Procedures

This research study aimed to discover how a sample of teachers and education specialists differentiate their instruction to support bodily-kinesthetic learning. Specifically, what strategies are teachers implementing to create an inclusive classroom for bodily-kinesthetic learners and how? This qualitative research study was implemented by first reviewing the literature, which will be followed by face to face, semi-structured interviews with teachers and education specialists that meet the established criteria. To be a qualitative researcher the interviewer relies on the participant to offer in depth responses about their constructions and experiences. This is in comparison to relying on strict questions that might promote forced responses from participants that quantitative approaches can encourage (Jackson, Drummond & Camara, 2007). Interviewing participants in a semi-structured manner promotes in depth responses and flexibility in the process.

This research project began with the idea that bodily-kinesthetic learners were not being supported in Ontario classrooms. My assumption has been challenged and researched through literature reviews and was continually researched as I interviewed two participants for the study. To admit my assumptions and what has been challenged seems to be of value, as a reflexive approach attempts to make the whole process transparent and open (Hand, 2003). The significance of this lies in the attempt of being transparent enough for readers to understand the perspective in which a research study is created. The difficulty of this transparency comes in
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attempting to be transparent enough as a researcher, but not to the extent that previous experiences and personal opinions manipulate the final conclusions of the study. Hand (2003) believes that interpretation is at the heart of all research practice. Furthermore, these interpretations are driven by the values, interests, beliefs and history of the researcher. The qualitative approach is both appropriate and supportive of this, as it begins with said assumptions and the use of interpretations that inform the study of research problems (Creswell, 2013). This approach allows for the voices and ideas of participants, as well as the reflexivity of the researcher (Creswell, 2013). The opinions of my interviewees are crucial for finding strategies to address bodily-kinesthetic learners in the Ontario classroom. Creswell’s interpretation (2013) speaks specifically to the process of research that flows from philosophical assumptions to an interpretive lens. This process then moves on to enacting the procedures for studying the research problem.

Overall, the magnitude of this research project is quite limited. With the limitation of having two participants and no opportunity for observations or surveys, the qualitative study process Creswell (2013) describes truly coincides with the opportunity this research project does allow for. Furthermore, because the interviews are the main source of data collection within this project it is important that they be as true to the study, as possible. The interview questions were developed by myself, the researcher, with guidance by course instructors. In a qualitative study the researcher is the main instrument and they do not rely on questionnaires that have been developed by other researchers (Creswell, 2013). The direction I intend this research study to take is one that reflects strategies and useful knowledge for people wishing to take action in supporting bodily-kinesthetic learners. What is of utmost importance is the meaning that the two participants hold about this issue. Throughout the qualitative research process, the researchers stay focused on learning the meaning the participants hold, not necessarily what the writers in the literature say (Creswell, 2013). As a result of this, there is opportunity for new themes to emerge that might not have been covered or explored within the literature that was reviewed.

Ultimately, the research process of a qualitative study is an appropriate approach because of what this particular study intends to discover and how it intends to do so. The emphasis that a
qualitative approach has on reflexivity and importance of the researcher, the process from changing assumptions to conclusions and the significance of the interviewer’s strategies makes the qualitative approach a suitable one for the goals of this study.

3.2 Instruments of Data Collection

To deepen my understanding of this research problem I conducted an initial review of the literature and research on bodily-kinesthetic learners and differentiated instruction. My primary instrument of data collection was two semi-structured interviews with teacher/education specialists who work in Ontario and my secondary instrument being a thorough literature review. Reviewing multiple facets connected to bodily-kinesthetic learners inspired me to consider where this concept grows from and how other students might be impacted by this research. Consequently, I reviewed a wide variety of literature on Howard Gardner's (1993) Multiple Intelligences Theory and Carol Tomlinson's (1999, 2006) concept of a differentiated classroom. The term 'differentiated instruction' is one I have become familiar with throughout my courses in OISE's Master of Teaching program. I have built on the discussion and literature covered in many of the classes, including Child and Adolescent Development, as well as the Fundamentals of Teaching course.

To understand up to date practices of bodily-kinesthetic focused teachers, interviews were the most efficient and practical way to access the information. The interview questions were developed independently, but were further shaped by my course instructors. The specificity of this project was also collaborated upon with my course instructors and numerous colleagues in the Master of teaching program.

After the interviews were completed I transcribed them to help discover recurring themes and ideas that occurred throughout the interviews and both quoted and paraphrased my participants. My interview protocol allows for specific focus on my main and subsidiary research questions, but also provided the flexibility for participants to make their own interpretation of what I ask. My hypothesis and hope for the interviews was that I would encounter some themes and ideas I had not previously explored or thought of. Semi-structured interviews allow all
participants to be asked the same questions within a flexible framework (Dearnley, 2005). Pathak and Intratat (2012) believe that because semi-structured interviews are not strictly journalistic the interviewer should be encouraged to use thought provoking interjections during the interview. This allows for the participant and interviewer to transition into themes and ideas that might otherwise have been missed. Furthermore, Intratat and Pathak (2005) suggest it useful to focus on the recurring themes and issues throughout the responses. This helps the interviewer notice which issues the interviewee truly finds significant. If used carefully this interview method can provide rich data for research studies (Intratat & Pathak, 2005). This research method provides a structured yet open ended opportunity for further themes to emerge in what can otherwise be described as a limited research study. Throughout the progress of my MTRP I continued to research new ideas and themes that arose from the semi-structured interviews and literature that I discovered.

### 3.3 Participants

In this section, I review the sampling criteria I created for participant recruitment, as well as the variety of ways for recruiting the interviewees. The two interview participants will also be introduced in this section.

#### 3.3.1 Sampling Criteria

Each participant meets the following criteria:

- Each participant is a teacher in Ontario, with a full-time position OR works with students in Ontario (for example, education specialists), implementing strategies for bodily-kinesthetic learners.

The inclusion of teachers who work both within and outside the Ontario Public School System is important for the opportunity to hear ideas that may not currently be circulating within the public school system. Teachers that work outside this system could potentially experience more freedom when creating opportunities for bodily-kinesthetic learners in their classrooms and this information is of value to this study. Including teachers who work within the public school system is also important for connecting this study to the overwhelming amounts of new teachers
that graduate, with the hopes of finding a career within the public school system. Understanding how public school teachers are working within both the limitations and opportunities their classrooms allow for bodily-kinesthetic learners is a crucial aspect for learning to apply these strategies.

- Participants have demonstrated commitment and/or expertise in the area of bodily-kinesthetic learning as a cross-curricular approach.

In order to ensure this study is acquiring the most relevant strategies and expertise, it is a requirement that the participants be actively trying to incorporate specific instruction for bodily-kinesthetic learners in their classroom. This is not specific to one type of instruction and can include anything from changes in their physical classroom environment to specific lesson plans or strategies they use for bodily-kinesthetic learners. Including educational specialists along with teachers helps the possibility of finding the most keen and active participants.

- Participants are from varying grade levels (For example, not all participants are primary teachers)

As a researcher it was ideal to find interviewees to participate that are from a variety of backgrounds, communities and school boards. However, because of the specificity of this project, finding individuals that were actively working to create inclusive classrooms for bodily-kinesthetic learners has more importance than requiring participants to be from different school boards. Additionally, maximum variation sampling is a popular approach in qualitative studies where participants are selected because they are differentiated from one other (Creswell, 2013). In this situation, what would differentiate the participants is the grade level they teach at. This one difference creates even more variation because it might mean they are also working for different school boards and would experience different limitations and supports.

3.3.2 Participant Recruitment

The teacher/education specialist participants in this research study were discovered through recommendations, as well as through connections made within the Master of Teaching program. Past volunteering experiences have provided me with the opportunity to connect with
educators at varying grade levels and schools across Ontario. I contacted the classroom teachers that I volunteered with and investigated whether they themselves or any other teachers/education specialists they knew fit the purposeful sampling criteria for this study. Ironically, one of the experiences that motivated me to consider teaching for the bodily-kinesthetic learner is one that happened during a class at OISE and I had planned to get in contact with the specific guest speaker who inspired me to consider researching this topic. Additionally, searching online for names of teachers who have led professional development or curriculum development in this area was very beneficial. Occasionally, I found newspaper articles about teachers implementing movement in their classroom and following up on these articles might lead me in a direction where I find participants that fit the sampling criteria. Lastly, I attended professional development opportunities within this subject area, with the hopes of connecting with other like minded individuals that may have been interested in participating for this study.

Through purposive sampling I selected two teachers/specialists that matched the criteria for interviewees. Creswell (2013) explains that the report of multiple perspectives that range over the entire spectrum of perspectives is a hallmark of qualitative research. The individuals that were selected were also chosen because of the variety of valuable insight and knowledge they contributed, that brings myself, as a researcher and educator, closer to my end goal of implementing this new knowledge in the classroom. To the best of my knowledge, these participants were able to best inform me about the research problem I am examining. Classrooms are no longer environments of conventional sameness (in terms of learner abilities, preferences, needs and traits) that used to dominate the mainstream educational system (Alvania & Farhady, 2012). Consequently, interviewees were chosen because of their focus on instructional goals, strategies and approaches for supporting bodily-kinesthetic learning, in such unconventional classrooms.

3.3.3 Participant Biographies

Two interview participants were recruited for this study. The rationale for interviewing two participants was due to the limited amount of time to complete this study. To be eligible to be a participant in the study, participants had to be a teacher in Ontario, or be working with
students in Ontario as an education specialist. Participants also had to be committed to bodily-kinesthetic learning, across curriculum material and be teaching at varying grade levels, compared to the other participants.

Each participant was given a pseudonym. Holly currently works as an arts educational specialist and has for over twenty years. Her previous experience includes training in creative movement and working with students of all ages, previously at her creative arts centre, as well as currently in schools. She has worked with students all over the Greater Toronto Area, both individually, in groups, and in full class settings. She describes herself as always being drawn to movement in the arts and completed a fine arts studies degree, at York University. Holly has experience teaching movement in a variety of subjects including math, the arts, social science, science and literacy.

Melanie began her teaching career with a Bachelor of Music Education, from Memorial University. She has experience working as a choral conductor in both Newfoundland and Ontario and has taught social studies, health, religion and music. Melanie has taught from preschool up until grade nine, in both the public and private education system, for over eleven years. These teaching opportunities have given Melanie a deeper understanding of what it is like to teach in both a small community, as well as in a higher socioeconomic school. Melanie is currently teaching music at a private school, where she has been for over 3 years. Her classes focus on big ideas inspired by the curriculum, including movement and social justice.

Overall, the participants had a variety of experience teaching for bodily-kinesthetic learners, across grade levels and in different communities, in both the public and private education systems.

3.4 Data Analysis

Before the analyzing of the data from the two interviews began, each interview was transcribed. Afterwards, I began coding the ideas using my research questions as interpretive tools. These questions helped to guide the themes that I searched for within the transcriptions. I identified categories within each individual interview and searched for themes within those
established categories. These themes were then analyzed and discussed regarding what was of utmost importance and how that compared to the reviewed literature. Qu and Dumay (2011) mention how one of their studies was not used just to gather empirical evidence, but was used to collect insights as to how their interviewees viewed the future direction of their organization. Relatedly, the following interviews were not employed to gather empirical evidence, but were completed to gather insight into how the interviewees viewed the direction at which differentiated instruction for bodily-kinesthetic learners could be taken. My data analysis seeks to understand the recurring themes and ideas, but also hopes to make sense of what the interviewees suggest for the future of bodily-kinesthetic learners.

3.5 Ethical Review Procedures

The interview process is one that strictly abides by the ethical review procedures of the OISE Master of Teaching program. Participant’s anonymity is protected through the use of pseudonyms for names, schools and organizations or any identifying markers. There are no known risks involved with participation. Throughout the interview I continued to remind participants that they have the choice to decline certain questions and the right to withdraw from the project altogether, even after they had consented to participation. Participants were able to read through their answers and revise their comments if they felt necessary, after the interview and transcription. All data related to this research project will be stored on my password protected computer and will be destroyed after 5 years. It will only be accessible to myself and my course instructor. Lastly, participants were asked to sign a consent form that confirmed their participation and allowed for the use of an audio recording. This consent letter provided an overview of the study, addressed any ethical implications for the participant and specified what was expected of the participant (one 45-60 minute semi-structured interview).

The inclusion and discussion of ethical procedures is necessary for maintaining a comfortable and safe research environment for all people involved in the research study. As researchers we try to be transparent with our limitations and opinions and we hope to encourage...
the same transparency from our participants. Making sure pseudonyms are used to protect the identity of a participant is crucial. However, giving the participant choice within the interview process is important as well. Dearnley (2005) describes an issue that arose after her decision to give interview participants the choice of self-selected pseudonyms. This decision was based solely on the philosophical principle of participation and collaboration, yet ended up creating a lack of anonymity with a small number of participants.

The semi-structured interview process is indeed a collaboration. Giving participants the opportunity to read through the transcripts and potentially revise what they previously said encourages that partnership between interviewer and interviewee. However, this can also create difficulties when participants are unhappy with what they have said. Dearnley (2005) describes the challenge of dealing with upset participants, after they had read through their interview transcripts from their particular study and had been dissatisfied with how they felt their answers represented them. By asking participants at the beginning of second interviews whether they had read their previous transcripts Dearnley provided an opportunity for transparency and collaboration in a way that protected both her, the researcher, and the participant, ethically. Trouble shooting and practicing being open and truthful with participants will ensure a healthy level of collaboration and complete anonymity can be reached.

3.6 Methodological Limitations and Strengths

The nature of this research project is small in comparison to the topic of bodily-kinesthetic learning and differentiated instruction. Therefore the themes and results are limited. Additionally, this research study prohibits the inclusion of anyone, except educators. This diminishes the opportunity for input from other people such as students, teacher candidates and parents of students, who might all have valuable input.

An initial question that I had during the early stages of my research was to understand how teacher candidates were being prepared to support bodily-kinesthetic learners in the classroom. I felt this knowledge could help prepare new teachers for differentiated instruction and to help figure out where and if this topic might be lacking in teacher education programs.
However, because the goal of the research is to learn from teachers and education specialists already implementing differentiated instruction for bodily-kinesthetic learners, teacher candidates were not included in the sample. While understanding how preservice teachers are prepared for differentiated instruction is important, it is not the main focus of the research study and would not support the primary and subsidiary research question.

In a topic as broad as this there are many competing ideas and opinions. Creating a well-rounded perspective while covering competing perspectives is challenging. However, a strength of this project is that it allows for competing perspectives. With carefully selected, open ended interview questions, participants have the freedom to explain their opinions without being directed to a certain answer. Also, having the opportunity to witness the strategies mentioned by participants being implemented in their classroom would be of great benefit and would enhance my understanding of their strategies. However, the research method for this project does not allow for observations, surveys or focus groups, all of which could provide extremely valuable insight into this research study. As mentioned above, being able to see such approaches and strategies being implemented in the classroom could provide a greater sense of context of how such strategies actually work. Additionally, surveying students or discussing the idea of movement in the classroom with focus groups could provide insight on their experiences and what they feel has worked well, or might be missing from their classroom environment.

Finally, creating classrooms designed to enhance learning for bodily-kinesthetic learners seems to be a new discussion happening in school boards across Ontario. A strength of this topic is that it is sparking an interest in educators in learning how to create these environments. However, because differentiating instruction for bodily-kinesthetic learning is only newly gaining interest and attention, at the time of this project the variety of options for resources and research participants were limited.

3.7 Conclusion

This chapter explained the rationale and value in using a qualitative research method and semi-structured interviews for researching differentiating instruction for bodily-kinesthetic
learners. I described my research approach and procedures, along with my intention for maintaining reflexivity and transparency as a researcher. The two instruments used for data collection (semi-structured interviews and literature reviews) were also included in this chapter. This chapter established the criteria for valid participants, explained how purposeful sampling helped in deciding on interviewees and will end with brief participant biographies. Data analysis and ethical review procedures were established. Lastly, the limitations and strengths of this study will lead into the report on the research findings.
Chapter 4: Research Findings

4.0 Introduction

This chapter is comprised of research gained from one on one interviews, with two participants. Bodily-kinesthetic learning and differentiated instruction are two complex concepts and the following research seeks to connect them and make sense of their intertwined roles in the classroom. The transcripts from these interviews, with Holly and Melanie, were coded and compared with each other to find the most relevant affirmations of the following themes. The interviews provided insight on how language capabilities are positively affected by differentiating instruction for bodily-kinesthetic learners. Participants also discussed the challenges for incorporating movement in the classroom, such as a lack of time, inadequate preservice teacher education and social limitations. The research gained from these interview included resources and strategies and finally, personal beliefs and educational theories that support the participants' practices. The research findings are organized into the following four overarching themes that emerged during the data analysis:

1) How diversities in the classroom affect participants' ability to differentiate instruction for bodily-kinesethetic learners

2) Challenges for incorporating creativity and movement in the classroom

3) Resources used to support bodily-kinesthetic learners

4) Theories behind the practice.

Furthermore, I report sub themes that exist within each theme, which connects the participant voices to the main research questions and reviewed literature. The final chapter will examine the implications of this topic and how further research will benefit and address any remaining questions.
4.1 How diversities in the classroom affect participants’ ability to differentiate instruction for bodily-kinesthetic learners

In this section I reported data regarding how participants differentiated with physical and language requirements in the classroom and how these elements interacted with each other. Participants shared similar perspectives when discussing the levels of focus in students and considered strategies to create inclusivity.

4.1.1 Physical Responses

Incorporating movement in the classroom is a strategy both participants mentioned as a way of being responsive to what their students needed to help their learning. However, recognizing what supports a student's ability to benefit from movement in the classroom and when to incorporate it is instrumental for eliciting a positive response. Melanie commented on how challenging it is for some students to sit still and how she “definitely has to be more aware of it with younger kids because you can sense that they have more engagement to moving.” All their energy is expended on staying still, so their focus and everything else is secondary. When teachers are flexible it helps each student be more open to hearing, doing and learning through whatever way works best for them. Melanie demonstrated how movement can be incorporated by describing a specific lesson that focused on the concept of inner hearing. This activity required the students to sing a song and consequently substitute certain sung parts of the song with body percussion. By incorporating movement Melanie was able to consider the diverse learning needs of bodily-kinesthetic learners in the classroom, while engaging other students with a concept that provided a challenge for them. She explained that the students really liked the activity, seemed focused to understand it and overall had a positive response.

Holly echoed a similar perspective when describing how many teachers constantly redirect students who do not seem focused:

I've been into so many classrooms where teachers are always telling children to focus and to stop fidgeting but they can't. Physically, just, they can't. We're asking them to do the impossible. Why would you do that? Then we give the instructions and then we wonder why we spend more time disciplining and less time teaching.
Anderson & Rumsey (2002) believe that in order to change a student's behaviour that is disruptive, aggressive or off-task the educator must first change their response to it. Both participants recognized how many students who are trying to stay still, but that struggle to do so, are not doing this to be disruptive, but because they are more engaged while moving. Teachers who understand this and are responsive to their students' physical needs create an environment conducive to the bodily-kinesthetic learner's needs.

4.1.2 Diversity with English Language Learners

Melanie described experiences where differentiating for bodily-kinesthetic learners also had a positive impact on a diverse student population. Out of twenty-two students in the class she was working with, eighteen students were new Canadians, with English as a second language. Everything they did, including storytelling and the thinking around respect was done through movement. She explains further:

> Think about how we communicate. It's all through our body, when you feel your instincts, your intuition. The difference between do I want to say yes or no or make a decision, all those things are really embedded. We feel them first before we can intellectually say what they are.

Holly considered the effect of how students who are on Individual Education Plan's and who are just learning to speak English can benefit from bringing movement into the class more regularly. Not that it has to be every single lesson of every single day, but she believes it would give opportunities to those who struggle to learn in the more traditional way.

Alavinia & Farhady (2012) explained how differentiated instruction and working in small groups can help ELL (English Language Learners) feel more empowered. However, more research is necessary to discover more about how movement helps English language learners in the classroom.
4.2 Challenges for incorporating creativity and movement in the classroom

Overall, the first theme mostly focuses on the positive outcomes, but does mention some of the challenges associated with differentiating instruction for bodily-kinesthetic learners. This next theme further discusses the three ideas that challenged the participants when differentiating instruction for bodily-kinesthetic learners. While the specific content varied between the participants, the challenges they spoke about focus on a lack of time in their daily schedules, preservice teacher education and social limitations of their students.

4.2.1 Participants include a lack of time in their schedules as a challenge for differentiating instruction for bodily-kinesthetic learners.

When addressing the challenges that arise when differentiating instruction the issue of not having enough time was a concept mentioned more than once by Holly, but not at all by Melanie. Holly and Melanie have both experienced a variety of environments in their teaching careers. However, Melanie's current environment, in the private school system, might have other challenges that do not include lacking time. Holly reflected on how teachers feel pressed to get through certain concepts within the Ontario school system:

[They] have to get through these units because [they] know [they] have a progress report or [they] know that the report cards are due. I know it's really challenging for elementary teachers with what the expectations are whereas I think if they had more time a lot more would implement some of these creative ways for [their] students to learn.

Furthermore, Holly expressed that there are plenty of advantages and disadvantages to incorporating bodily-kinesthetic movement in specific subjects. She believes successfully incorporating bodily-kinesthetic movement really depends on the person teaching and their ability to think outside the box. However, the difficulty is not solely with the teacher, but also with the amount of time that is dedicated to all the other aspects of teaching.

There's so many different ideas, it's just... Part of the issue is time. People are always crunched with time and worried about there never being enough. There is
never enough time and I just have to get through this curriculum because assessment is so important.

Holly expressed her understanding of how challenging it is for elementary teachers with what is expected of them and believes if they had more time many teachers would implement some of the creative ways for their students to learn. Holly also recognized that while she appreciates the time argument, she is coming from the perspective of being in many classrooms as a guest artist, volunteer or doing practical supervision. She recommended finding a balance because children really need to have a broad way of being taught and that includes utilizing the body.

Alavinia and Farhady (2012) explained how important it is for teachers and support staff to be willing to devote the time and energy in creating a differentiated program that benefits the students. By explaining that the lack of time is an issue Holly implied that time is an essential component when coming up with creative ways for students to learn. However, children might be much more willing to get started with a kinesthetic lesson and be engaged, which would require less focus on disciplining and redirecting the child. She stated that with bringing the kinaesthetic aspect into the classroom teachers will have students that are much more engaged and this might actually save teachers' time.

4.2.2 Participants describe the positive and negative effects of their preservice teacher education programs

Participants shared their ideas on preservice teacher education and how it supported their capabilities of differentiating instruction for bodily-kinesthetic learners. Each participant reflected on their educational experiences and one reflected on current preservice teacher education that she observes today.

Melanie explained that she did not remember having a lot of specific instruction about kinaesthetic learners, but thought that it might be useful. When discussing the challenges of differentiating instruction she mentioned that she did not think differentiating instruction for bodily-kinesthetic learners in music was difficult. However, she mentioned that in the band
classroom, where students are more confined to a chair and where it's more of a different environment, they might benefit from this. She recognized some of the learning opportunities in her post-graduate education program:

Some of my masters courses were maybe more focused on differentiated, but it's been a time gap, so I think research and everything has changed too. If I went back to undergrad now they would probably be more specific about it.

Holly's preservice education included a full year's training on creative movement, where there were two courses for two different age levels. While she felt that creative movement has stayed similar in terms of the elements, the curriculum within education has evolved. She reflected on her fine arts studies and dance minor in her undergrad as a positive experience. This experience provided her with an opportunity to teach something specifically for children that was more than just dance and more focused on creative movement, where there was no right or wrong. These creative movements looked at the body, space, time and energy and how the body can express these different elements. This career led her to working in different schools and preschools and eventually to a university program where she developed elementary education for a variety of subjects including math and literacy. Holly reflected on current teacher education practices:

If we brought movement into the class much more regularly it would really support children differently. For me, I think it's a real tragedy that at the sort of education level in teachers' college that it's just not important enough, unfortunately. There is no one really talking about how do you utilize your body in the classroom.

Carol Ann Tomlinson, a strong voice in the topic of differentiated instruction, supports the belief that there is a lack of specialty instruction for teaching differentiated learning. Instead, she has doubted the certainty that having these classes would mean participants would go forth and implement differentiated instruction (Wells & Shaughnessy, 2000). The lack of context for
applying this specific type of instruction makes it challenging for pre-service teachers to truly understand it (Wells & Shaughnessy, 2000).

Pre-service teachers might find incorporating differentiated instruction for bodily-kinesthetic learners a challenge because of the lack of movement instruction in preservice teacher education programs. Some literature (Tomlinson, 1999) suggests that the lack of context might make it difficult for pre-service teachers to fully understand it and other research suggests that it might be easier to teach in some subjects, than others. Participants described a variety of personal educational experiences that influenced their reflections on how important or not important the topic of differentiation for bodily-kinesthetic learners in preservice education programs actually is.

4.2.3 Social Limitations

Another aspect that Holly reflected on is how people tended to feel less comfortable being in their bodies and moving. A lot of her students were intimidated by movement and while she was not trying to speak for everyone, as they got older she found that a lot of them lose that comfort of moving in their bodies. She also explained what she thought might deter students from being involved in her movement oriented approach:

They feel silly, it's embarrassing. A lot of it has to do with sort of puberty and things. Unless we really encourage children to still stay connected as they become adults [...] a lot of people are really like “I don't dance. I don't do it. Then you put them with their peers and they're like “Oh my gosh, somebody's going to totally laugh at me. I'll look like an idiot.” People become really silly and overcompensate.

To overcome the silliness and discomfort Holly addressed social limitations and the challenge of students being in their own body throughout movement activities. Another part of her approach was to do a brief survey of the room and ask which students felt totally and amazingly comfortable and which ones felt somewhat comfortable. She used this opportunity to acknowledge that movement is a challenge, but that she just wanted them to participate in some
way, even if they stayed within their comfort zone. By giving students of all ages permission to listen to their bodies she was consistently amazed at how many people did almost come out of their shell and how by the end of the activity people were usually in a very different space.

It is important to note that while Holly discussed the hesitations her older students experienced with movement activities this was not something that came up in the interview with Melanie. However, implementing movement activities in primary versus elementary/intermediate classrooms might require more preparation to overcome hesitations. Connors (1995) writes that movement activities are emphasized more in the elementary grades and that the inclusion of movement declined in middle or upper grades. Further research would be beneficial to help discover how social limitations affect students in different age ranges and grades. Additionally, pre-service teacher education programs that address social limitations in students would employ a proactive, rather than reactive, approach for inclusion in the classroom.

4.3 Resources used to support bodily-kinesthetic learners.

In addressing how they differentiate for bodily-kinesthetic learners the participants discussed how making use of their environment and the physical body helps them support bodily-kinesthetic learners. When describing how the environment can be used participants recognized the environment within the actual setup of the classroom and the environment in the surrounding community. Participants also described the body as a resource and this theme addresses how teachers can help students realize the intellectual supports the body provides.

4.3.1 Environment

In this sub theme, participants described how the surrounding environment of their communities can be used as a resource to support movement outside the classroom. The participants also discussed how they would choose to organize their own specific classroom to create an atmosphere inviting of movement. Melanie explained how there is more of a movement of being aware of the importance of being mindful and being in the environment, such as going for walks. She said that exploring the environment and being physically active helps a person's mind to reset and think about problems in different ways than they might have before. While
wondering about how this could be true for a lot of people she reflected on the fact that this would be true in class as well and that it is “not natural for a child to sit for six straight hours in a desk”.

Melanie explored this idea of being in the environment with her junior kindergarten students and brought the ideas back to the classroom where a project was created. After the students explored a ravine close to their school the students decided to use this as inspiration for their music class:

They decided together, with us, to use instruments to recreate the sounds that they hard and then we collaborated with the physical education teacher and they used body movements to interpret the sounds of what they created. We put it all together in a video, so the soundscape was there and it told the story of what they would hear when they were in the ravine.

Holly described similar ideas from a literacy perspective and suggested taking the students to explore their own community. One of the primary junior classes she taught had studied a book that had nature as one of its themes. She described how students can use this theme to explore their bodies by pretending to be the leaves and trees they witnessed in their community environment. In particular, the students used their bodies to make those shapes and recreated the landscape they saw. Holly mentioned how measurement between the trees, angles and positive and negative states can also incorporate cross curricular references.

Both participants described classrooms that have room for the students to get up and move around. Holly believed that this should be available to all students, regardless of their grade and that the opportunity to do work on the floor would be really amazing. She suggested that some students do better when they have the freedom to move and shift, because it allows them to keep their brain alert. As previously mentioned Melanie also explained how moving around helps a person to reset. Holly wondered aloud about student alternatives to sitting:
I would probably really want to rethink sort of the structure. How often do they have to sit? That would be really, really important to me. I just saw something about students on exercise bikes reading books. It was this idea that by using your body and moving and pedalling that their brains were more alert and they were more focused on the book. Again, I really like that idea of providing a space for movement in general.

Melanie's views presented echoed similar sentiments as she described having a classroom with lots of open space. There would be places to sit down, places to have a conversation and open space where her and her students could move out when they were doing bodily kinesthetic activities. However, she explained that options might sometimes be limited because of student expectations.

Maybe some people come to school to go right into a classroom, that's setup with a desk. I mean, free movement through space – you couldn't do that.

The literature provided a brief explanation on how classroom setup can support bodily-kinesthetic learners. Having an area for students to release energy is one way of supporting students who might benefit from freedom to move around their environment (Anderson & Rumsey, 2002). There was no literature found describing how teachers could use their community environments as a resource.

4.3.2 Physical Body
Gardner (1993: pg. 9) describes bodily-kinesthetic intelligence as “the ability to solve problems, or to fashion products using one's whole body or parts of the body.” Using the body as a way to learn was a sub theme that both participants connected with. Holly stressed the importance of remembering that we have a body, as well and that it has a purpose.

By using the body in our space within our schools, it allows for creativity and imagination to flourish. It allows for us to feel and to communicate in a way that
we don't when we don't use them the same way. The whole bodily-kinesthetic is just not utilized enough for helping students in a very well rounded way of life.

Holly also described how, from not using the body enough, people detach from what they know about their bodies and how they feel about and within their bodies. She described how once she gets a sense of how she feels, then she can start making intellectual decisions.

Holly connected the use of the body as a resource back to the math curriculum, through a lesson plan where she talked about lines of the body and where people were in relation to each other, in space. Her objective was to make the math connections to the bodies through spatial sense in geometry, so that her students could recognize that they could feel it in their body's as opposed to just learning it on paper.

Melanie addressed how in music classes the body is used as a resource before using specific instruments or writing. Using the body helps the students connect with and interpret the music. Whether it's responding through creative movement or through an organized dance, it helps the students build the connection to what the meaning or the purpose of the music is. Another way Melanie encouraged physical involvement is by using the body as notation. She described an activity that required students to figure out a specific rhythm, in a song they were playing on their instruments. To help the students feel how many sounds were to be on the first beat she had the students use their bodies to represent the sounds. Connors (1995) perspective supports this idea as he says that movement is successful in music when the movement is being used to increase specific musical understandings. The physical body is a great resource for helping bodily-kinesthetic learners understand.

4.4 Theories behind the practice

Throughout the interview both participants mentioned a variety of theories that impact how they approach bodily-kinesthetic learning. The first sub-theme categorizes school and subject specific theories and the second sub-theme examines participants personal theories. Some of the theories could also be considered as resources available for further and future use.
4.4.1 School and Subject Specific Theories

Melanie mentioned a variety of resources she consulted when asked why she thinks bodily-kinesthetic learning is important and how this type of learning and musical intelligence are connected. She introduced Kodaly (Choksy, 1999) and Orff (Thomas, 1974) as two resources that consider movement as an essential part of music. Specifically, because the body is responsive to music, using body percussion and movement to interpret what is happening with the music helps a student to understand the music in itself.

Melanie then considered how Howard Gardner's Theory of Multiple Intelligences (Gardner, 1993) can help with this, as music and using the body are both intelligences in his theory. Reggio Emilia is another philosophy this participant was familiar with, as her current school is self-described as Reggio Emilia inspired.

Reggio Emilia philosophy talks about the hundred languages, like writing and learning the words are just one way of seeing the world, so movement, dance, using your body – you understand things. It's just another language, just the same as reading and writing.

In terms of what's practical according to developmental abilities and age range Melanie indicated that Kodaly (Choksy, 1999) has recommendations for what types of movements and dances to use. Developmental abilities of students are also a consideration of the big ideas at her school, as students have a voice in dictating how they learn about certain concepts and ideas. The students themselves recognize their abilities and with the support of their teacher learn responsibilities and concepts appropriate to their developmental levels.

Melanie described the bigger ideas that guide what happens in her school as essential questions specific to each grade, every year. While the school pays attention to the Ontario curriculum they have more of an emergent curriculum that responds to what the students themselves are interested in and what kind of observations they are making. These big ideas are flexible and take on different interpretations every year so the understandings and core principles that the students take away are learned through an approach dictated by themselves.
This idea of having big ideas specific to each grade, but that have the flexibility to be learned through choice of the students is correlated to Gardner's (1993) belief that not all people have interest in the same things and that people have different abilities. Giving students the opportunity to recognize the ways in which they thrive in their learning is a beneficial way to encourage their success. However, for students to experience different ways of seeing the world teachers might benefit from flexibility of learning styles in their classrooms.

### 4.4.2 Personal Beliefs

The discussion with Holly had more of a focus on personal beliefs that have emerged from her personal and teaching experiences. Her personal philosophy connects with Gardner's belief that people have different abilities, as she believes we all have different ways in which we learn. For the first time students she has the philosophy that it's important that when teachers teach the children, they teach to the whole child.

We don't just teach to assume that either they need visuals or they need auditory learning, but that they really need to take it into their bodies. For me it's really important that there is an embodiment, an internalization of what it is that we're learning, as well. If we're only teaching to one aspect of the child then there's parts that they may not be actually grasping or understanding.

As someone who describes herself as an individual who was always drawn to movement in the arts her deep appreciation and knowledge of how movement can help someone understand seems to be internalized from personal experiences. It's important to hear the perspective of people and past students that vouch for the incorporation of differentiated instruction for bodily-kinesthetic learners. It is from their experiences where teachers can gain information that solidifies the fact that this specific type of instruction makes a crucial difference in a bodily-kinesthetic students learning.
4.5 Conclusion

In this chapter I reported the research findings and relevant interview quotes from the two participants. Through this research I learned of many resources and strategies that the participants implemented in their respective classes and of the beliefs and philosophies that positively affect their ability to do so. The data analysis also provided insight on the challenges of bodily-kinesthetic learning that the participants have observed and specifically, how language and physical diversities interact with this. A challenge that arose when specifying the themes was realizing how many of the sub themes were related to more than one theme. For example, when discussing the physical capabilities of the students, the challenges that accompany these physical capabilities were included in the discussion. Another theme in this chapter focuses on said challenges. However, the main focus of the first theme was explaining how diversities in the classroom affect participants ability to differentiate instruction, specifically for bodily-kinesthetic learners.

Certain themes were also more present in some participants than other. This can be attributed to their diverse academic histories and experiences, as well as their current places of employment. Also, some participants have studied specific subjects, while others have focused on a variety. The differences in participant reflections can also be attributed to the demographics and communities that their interview answers are inspired from.

A positive difference that this research enlightened was information specific to schools in Ontario. While the literature review has plenty of suggestions and opinions on bodily-kinesthetic learning, none of it was specific to the Ontario education system. Also, this research is gained from participants in both private and public schools, which helps provide insight from more than one educational system. When conducting the literature review finding literature specific to bodily-kinesthetic learning and movement did prove to be somewhat of a challenge. However, Connors (1995) described how even talking about incorporating movement can be difficult as some teachers find it challenging to articulate exactly what they did to ensure quality movement responses.
The literature also explained how classroom teachers reacted when they had the opportunity to learn about differentiating for bodily-kinesthetic learners and how they required a lot of continued support after the initial training. While the participants in this study have notably more experience with bodily-kinesthetic learning than the teachers in the McAdamis (2001) study, a similar experiment could provide useful information for the Ontario school system. Specifically, a study designated to understand how classroom teachers feel and respond to training for differentiating instruction for bodily-kinesthetic learners could be of great benefit for future students.

One of the similarities between the literature and this research study was how both included themes on how English language learners can benefit from incorporating movement into the classroom.

One of the final observations that can be made about this research is that there are many students who would benefit from the inclusion of more creative and movement inspired elements, in the classroom. It is concerning to learn that many students are confined in their classrooms, because of their need to move and their ability to learn in a way that might be somewhat misunderstood. Further research on how movement can be incorporated into specific subjects and how teachers can benefit from professional development specific to bodily-kinesthetic learners would be a positive advancement.

The following chapter will conclude the study with descriptions of how the research will affect my practice personally, further implications and recommendations and any other questions stemming from the research.
Chapter 5: Implications

5.0 Introduction
The purpose of this study was to examine how a small sample of Ontario teachers are differentiating instruction to support bodily-kinesthetic learners. My motivation for conducting this research was to become better equipped to create an equitable classroom that is supportive of all students and to learn what that might mean for a bodily kinaesthetic learner. The following chapter explores how the research findings from the sample of interviews relate to what other researchers in this field have found. This discussion describes positive implications for English language learners, social limitations for students and teachers and how a lack of time and preservice teacher education proved to be obstacles. Implications for myself as a teacher and researcher and implications for the educational community are considered and further areas of study will be suggested, in the final section of the chapter.

5.1 Overview of key findings and their significance
5.1.1 Positive Implications for English Language Learners
One of the two participants in this research study reiterated how experiences she had had differentiating instruction for bodily kinaesthetic learners had also been positive for ELL learners. She stressed that we feel our instincts and our intuition in our body and that it is how we communicate. In a class of twenty two students, she was working with eighteen students who were new Canadians and were learning English as their second language. Everything they did, including storytelling and thinking about respect was taught through movement. Alvania & Farhady (2012) also found positive results for English language learners when incorporating activities with differentiated instruction and discovered that working in small groups can help
ELL feel more empowered. Melanie perhaps provided a simple explanation for this when she suggested that learning through writing and learning words are one of seeing the world, so incorporating movement and using the body is another way of helping to understand things. It could even be considered another language, just the same as reading and writing (Melanie, 2015).

5.1.2 Lack of Time
The concept of time for differentiated instruction and incorporating activities for bodily kinaesthetic learners and not having enough of it was discussed in the interview with Holly. She reflected on how people are always crunched with time and worried that there is never enough. There are other more pressing things to do, such as assessment, so it is more difficult to implement some things. Holly also mentioned how challenging she knows it is for elementary teachers, with what the expectations are and that if they had more time she believes more would implement creative ways for their students to learn. Research showed the importance of the devotion of time and energy from the teachers and support staff in creating a differentiated program that benefits the students (Alavinia & Farhady, 2012). There was no further research discovered that directly addressed the issue of amount of time that is needed for learning to, or incorporating differentiated instruction for bodily kinaesthetic learners.

5.1.3 Social Limitations of Students
The concept of social limitations and student hesitations was something not covered within the literature in this research study, but was mentioned by one of the participants who works with students in the intermediate and senior school age range. Holly described how people tended to feel less comfortable being in their bodies and moving and that a lot of her students were intimidated by movement. Furthermore, as they got older, she found that a lot of them lose
the comfort of moving in their bodies. They feel embarrassed and a lot of it has to do with puberty. She stressed that “unless we really encourage children to still stay connected as they become adults, then they won’t do it because they feel like someone will laugh at them and they become silly and overcompensate (Holly, 2015).

However, while the literature did not discuss student limitations it did discuss related teacher limitations. One district in Missouri, USA experimented with implementing differentiated learning in their classrooms, where the district saw improvements in many students (McAdamis, 2001). Regardless of the positive results many teachers were resistant to this change being asked of them, some of them because of how much extra work it took to plan assignments. At this time administrators for this district were designing a professional development plan to help teachers gain these additional skills needed. This training also included workshops, study groups peer coaching and work days for lesson development (McAdamis, 2001).

Myers (1998) believes that Western culture is a culture where the kinaesthetic mode of learning has been nearly completely supplanted in our educational system by the visual and auditory modes. Further literature questioned whether this might be because teachers have a potential fear of classroom control problems or or because they are unsure how to implement these strategies (Connors, 1995). The next section will explore connections in the literature and research of this study as to why teachers might have these hesitations.

5.1.4 Inadequate Preservice Teacher Education

The literature discovered that teachers might experience limitations with both differentiated instruction and bodily kinaesthetic learning, on their own. Tomlinson (1999) believes there is a disconnect in pre-service teachers who experience the topic of differentiated
learning during university because there is lack of context for applying it. Because of this lack of context teachers cannot truly understand when and where they need to apply this type of instruction (Wells & Shaughnessy, 2000).

Connors (1995) discovered that teachers who had instruction in movement in college were much more likely to use movement activities and to use them frequently. These teachers were also more likely to use a variety of activities and make use of movement to a greater extent in middle and upper grades. One participant expressed how at the education level in teachers’ college in Ontario, movement is not important enough, unfortunately and that there is no one talking about how a student can utilize their body in the classroom.

The two participants in this study both reflected on differentiated instruction in varying subjects, including music, literacy and mathematics. Connors (1995) reflected on the importance of having movement instruction in preservice elementary music methods courses because of the relationship between the frequency that music teachers provide movement opportunities, as well as their interest in additional training. Further research could prove beneficial to discover how movement opportunities are being explored in other parts of the curriculum, if at all.

While classroom management was not an issue that either of the participants mentioned the literature briefly questioned how comfortable teachers might be with managing the classroom to do the things they envision and how management might be the barrier (Tomlinson, 1999). Continuing research on how classroom management interacts with the incorporation of differentiated instruction for bodily kinaesthetic learners could prove to be beneficial for the educational community.
Additionally, analyzing why all teachers are not differentiating instruction for bodily-kinaesthetic learners could help teacher’s colleges and education programs decipher what else they might need to incorporate into their programs. Landrum & McDuffie (2010) believe changing the mindset of teachers and teacher educators in regards to learning styles is a difficult and overwhelming task. However, if this task is implemented before preservice teachers are in their own classrooms the challenge might not be as overwhelming.

5.2 Implications
5.2.1 Broad: The Educational Research Community
The two stories of what my two participants are doing to differentiate instruction for bodily-kinesthetic learners enlightened readers on what some of the possibilities are. The combination of the literature and the interviews can provide future educators with ideas, tools and some strategies for how they can alter their practice and classroom environment, both generally and specific to certain subjects. The research also discovered different outcomes that teachers see in their students, when they incorporate this type of differentiation. Specifically for principals and school boards, understanding that this change in mindset and different way of thinking for teaching kinaesthetic learners requires a lot of time for planning and implementation will be a positive thing for teachers. It would be a step in the right direction if teachers could gain more assistance in this type of planning, classroom support and administrative support, as a result of this forthcoming research.

Furthermore, knowing that movement is underrepresented in preservice teacher education is an implication that cannot be ignored. For preservice teachers to have an accurate
representation of what will be required and to be prepared for the actual classroom something
will need to be changed within preservice education programs.

Holly stated something incredibly thought provoking in her interview that would be
really helpful in teaching educators why certain students might not be retaining information or
are having difficulty in the classroom. She described how, for some students, all their energy is
expended on being still, so their focus and everything else is secondary. She reflected on past
experiences when she mentioned how she knew of teachers that would constantly redirect
students who did not seem focused and would tell them to stop fidgeting, even though they
couldn’t. The student would be unable to and then the teacher would wonder why so much time
was spent on disciplining and less on teaching. There is a stereotype of what a ‘good student’
should look and sound like and fortunately, this research is attempting to deconstruct this image.
This research has the potential to have such positive implications for both teachers and students
in their relationship and the teacher’s understanding of what their student needs. This is
important because it might help teachers be aware of students in their class who fidget, or need to
move and understand that it is not because they are intentionally trying to be distractive. All
students have different learning styles and needs and it is the role of the teacher to create an
atmosphere that is supportive of this.

Another way schools can utilize this information is through the explanations of how
classroom environments can be altered and how outside environments can be used. Anderson &
Rumsey (2002) described how having an area where a student could release energy (with a
skipping rope or stretching) can make a difference for some students. Also having variations in
seating arrangements, different types of seating (stand-up desks, taller tables and chairs) and
different learning centres can be of benefit (Anderson & Rumsey, 2002). Both participants described how an adequate environment can make a difference for the bodily kinaesthetic student and how using the surrounding environment outside of the classroom can be a great way to explore and change the scene. Melanie described how within the classroom, having room to move around helps students keep their brains alert and having open spaces for different things like conversations or activities is another asset. For an educator that might find a giant shift in their teaching practice overwhelming, subtly changing the classroom environment is a safe place to start.

5.2.2 Narrow: My Professional Identity and Practice

Being a student that has grown up in the public school system I grew very accustomed to teachers directing distracted students to sit back down in their assigned seat and pay attention. Over time this was no longer a distraction, as it was just a regular part of our classroom and routine. It was usually a specific group of students that this order was directed to and was a constant thing that none of us other students really thought as unusual. Occasionally I was a part of the group that was told to be quiet, stop fidgeting and to pay attention and I had never second guessed that I was the issue in the classroom. I was being distracting to others, so of course I was in the wrong. However, after other experiences in a variety of school systems and boards, an undergraduate degree in music education and a Master of teaching degree later I realize that the exact opposite of this supposed understanding has become a part of my teaching philosophy. I strive to be a teacher who is not constantly redirecting my students to sit down and listen to me teach to them. A recent discovery of Paulo Freire has helped me summarize and give a title to
this type of teaching. The banking method of teaching is where a teacher deposits information in the students brain and the student lets them do so (Freire, 1997). Instead, my goal is to learn with my students and have them be autonomous with their learning, while I encourage and support them in any way that suits their academic needs. Additionally, constantly redirecting students to sit and listen is not something I see helpful in suiting a students academic needs. This belief of mine was mirrored in the philosophy of one of my interview candidates when she questioned how teachers constantly redirect students who don’t seem focused and who tell students to stop fidgeting, even though they can’t. She stressed that by doing this we are asking them to do the impossible and we wonder why we spend more time disciplining and less time teaching (Holly, 2015). Further research reiterated to me that if we want to change a students’ disruptive, aggressive or off-task behaviour, educators have to change our responses to it first (Anderson & Rumsey, 2002).

Additionally, both participants, along with some of the literature described how a learning environment can be prepared to benefit bodily kinaesthetic learners. These ideas and descriptions of what an inclusive atmosphere might look like have really helped me shape a concept of what I would like my future classroom to look like. This discussion has also helped me understand what sort of resources I might have and how I might utilize regular desks or standing desks. Furthermore, the minimal amount of literature on classroom environments supportive for bodily kinaesthetic learners suggested to me that this is still a fairly new concept with limited research conducted on the topic. Therefore, I would not be surprised to find a variety of curiosity, confusion and reactions from parents and students with how I might organize my classroom because of the differences it would have from a traditional, Western public school classroom.
Classroom environments will be further discussed in the recommendations for the educational community section.

Lastly, conducting this research study has taught me that even though I thought I had had a fairly precise direction and research question for looking into bodily kinaesthetic learning I realized the multitude of directions that this topic can be explored. Fortunately, the information that I have found has consolidated my assumption that there are a variety of ways to support bodily kinaesthetic learners, with strategies, classroom setup, tools and differentiated instruction. However, compiling all this information in a research project as limited as this proved to be challenging and leaves much room for further investigation. As a researcher there is much more information to be investigated and as more attention is brought to differentiating instruction for bodily kinaesthetic learners I believe the information will continue to change and grow.

5.3 Recommendations and areas for further research

One of the discoveries I made as I conducted this research study is that the bodily kinaesthetic learning is an extensive, growing topic of conversation that requires much more research to be facilitated. There are a variety of facets to differentiating instruction for this type of learner and some of the sub themes that are explored in this research study and specifically the fourth chapter could very much benefit from further studies. However, there was minimal Canadian literature specific to Ontario school boards that was found, which encourages the question of whether there is an interest or focus on improving equity for bodily kinaesthetic learners in Canadian classrooms. The research found did have a variety of elements, including
strategies, ways to set up the classroom environment for the kinaesthetic learner and teacher limitations; three topics that could be discussed even more, in a deeper study or thesis.

In the early stages of this research project there were connections found in the literature that positively linked activities for bodily kinaesthetic learners and students with attention deficit disorders. Unfortunately, due to limitations and the scale of this project this research, while important and beneficial for teachers to know, had to be forfeited. Further studies on this connection could prove to be very helpful for teachers who are trying to create inclusive classrooms for students with all different needs and abilities.

Additionally, discovering the differences in the private versus public school system and how they differentiate for bodily kinaesthetic learners would be helpful. Also, learning how technology is used to support bodily kinaesthetic learners and why movement is more common in elementary grades than middle and intermediate grades (Connors, 1995) would be useful in creating equitable classrooms.

5.4 Concluding Comments

For all classroom teachers creating a classroom that is supportive and conducive to the learning of bodily kinaesthetic learners is important. The concept of teaching to the whole child includes teaching to children who may be academically strong in different ways than others but many students would benefit from inclusion of more creative and movement inspired elements in the classroom. The implications of how students are benefitting and reacting to movement in the classroom is encouragement for teachings hoping to incorporate this into their classroom and for anyone doubting its credibility. Through utilizing strategies, different tools and their
environments there is a plethora of options for teachers hoping to make a change. Furthermore, teacher education programs would benefit from the inclusion of more movement based education for preservice teachers.

For my own personal teaching philosophy the literature and research have inspired me to continue expanding my knowledge of differentiated instruction, specifically for bodily kinaesthetic learners. I will continue to strive to be a teacher that challenges the banking method of teaching (Freire, 1997) and that continues to seek out new information on the growing discussion of kinaesthetic learning.

Many connections were made between the findings in the literature review and the two interviews with the participants. Teaching for bodily kinaesthetic learners has found positive results for English Language Learners. Also, the social limitations of students and the limitations of teachers discussed previously are beneficial in helping teachers understand what may be preventing successful implementation of differentiated instruction for bodily kinaesthetic learners. A lack of time and preservice education prove to be two overarching challenges that continue to inhibit the potential of a classroom that’s inclusive for this type of learner.

Further studies that focus specifically on Canadian schools will help to increase awareness of what a bodily kinaesthetic learner is, how they can be supported and how teachers themselves can be supported as well. The two teacher participants provided a glimpse into the many ways a teacher can create and teach a classroom where the bodily kinaesthetic individual can thrive.
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Appendix A: Letter of Signed Consent

January 19, 2016

Dear _______________________.

My name is Kayla Schnarr and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research will focus on how Ontario teachers are differentiating their instruction to support bodily kinesthetic learners. I am interested in interviewing Ontario teachers/education specialists who are actively implementing and seeking out strategies to support bodily kinesthetic learners. The participants will currently be full-time teachers or education specialists, who work/have worked within the Ontario school system, who have experience supporting bodily kinesthetic learners across curriculum and grade levels. I believe that your knowledge and experience will provide insights into this topic.

Your participation in this research will involve one 45-60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a research conference or publication. You will be assigned a pseudonym to maintain your anonymity and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. This data will be stored on my password-protected computer and the only
people who will have access to the research data will be my course instructor. You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are no known risks or benefits to participation, and I will share with you a copy of the transcript to ensure accuracy, if you would like.

Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,
Kayla Schnarr

kayla.schnarr@live.com
Course Instructor’s Name: Eloise Tan Contact Info: Eloise.tan@utoronto.ca

Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw from this research study at any time without penalty.

I have read the letter provided to me by Kayla Schnarr and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ______________________________________

*Please place an X on the line above if you agree to the conditions of this consent form.*

Name: (printed) _____________________________

Date: ________________________________
Appendix B: Interview Protocol/Questions
Thank you for agreeing to participate in this research study. The goal of this study is to learn how Ontario teachers and education specialists differentiate their instruction to support bodily-kinesthetic learners, in the Ontario classroom. Specifically, what strategies and approaches are they using and what factors contribute to their confidence in this area?

This interview will take approximately 45 minutes to one hour. I will ask you a series of questions about your background, your educational beliefs, your practices and the supports and challenges of differentiating instruction for bodily-kinesthetic learners. As a reminder, you have the right to refrain from answering any question I may ask. Do you have any questions before we begin the interview? Let’s begin!

Background

How many years have you worked as a teacher/specialist?

What grades and subjects have you previously taught and what are you currently teaching?

Can you describe the community where the school is located?

• How many students attend this school?
• Approximately how many students did you have in your classes?
• How can the student population be identified by demographics?
• What are the main program priorities at your school?

Teacher Beliefs

What would your ideal classroom look like, for bodily-kinesthetic learners?

What does bodily-kinesthetic learning mean to you? Why is it important to you?

Why do you believe that opportunities for bodily-kinesthetic learning are important?

What do you believe are the benefits of this form of learning?

What experiences have contributed to developing your interest and preparedness for creating opportunities for bodily-kinesthetic learning?

What professional and educational opportunities (such as workshops, seminars, conferences) have you experienced that have developed this preparedness?
What experiences outside of the educational system have motivated you to develop and further your preparedness for creating these opportunities?

How do you feel your teacher education program or post-graduate program prepared you for differentiated instruction? Was there anything specific for teaching bodily-kinesthetic learners?

**Teacher Practices**

How do you create opportunities for bodily-kinesthetic learning?

What instructional approaches do you use?

What strategies do you use and why?

What resources do you draw on?

How do you utilize your classroom space?

How do your students respond to these strategies and approaches?

How, if at all, do you assess students’ bodily-kinesthetic learning?

Could you provide a specific example of a lesson you did, with bodily-kinesthetic learners in mind?

- What were the learning goals of this method?
- What subject was it?
- What activities were included and how did you assess the students?
- How did the students respond to this particular lesson plan?

Would you feel more inclined to teach for bodily-kinesthetic learners in a specific subject?

- Which one and why?

What strategies do you use to make an inclusive classroom for bodily-kinesthetic learners?

What outcomes do you observe from students? And from students that you consider to be bodily-kinesthetic learners?

What kind of classroom environment do you find supportive for bodily-kinesthetic learners and how do you create that environment?

**Supports and Challenges**

What are some of the challenges you face within the school, specifically, when teaching for bodily-kinesthetic students? (Budget, lack of assistance?)

What range of factors support you in creating these opportunities for learning?
How have parents and colleagues responded to this focus of your instructional approach? What feedback have you received from them, if any?

Do you find certain subjects more challenging for incorporating differentiated instruction for BK learners? Why?

What challenges, if any, have you encountered creating opportunities for bodily-kinesthetic learning and how do you respond to these challenges?

- How are these challenges reflected across the curriculum?
- How are these challenges reflected in availability of resources?
- How are these challenges reflected in creating equal opportunities for all learners in the classroom?

What are some of the challenges that arise from teaching students with all different learning styles?

Are there strategies you are hoping to implement but have not, yet? What might they be?

What advice would you give to teachers who are new to differentiating instruction for bodily-kinesthetic learners?

Do you have any follow-up questions for me? Thank you for your time and participation!