The Impact of Physical Activity on Students with Learning Disabilities

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Abstract

The main purpose of this research study is to acquire a better understanding of the challenges and benefits that may arise when working with students with learning disabilities, and how physical activity can impact these students within the classroom. This study was conducted using a qualitative research approach involving a review of the existing literature pertinent to the topic of physical activity and its impact on students with learning disabilities. Three semi-structured interviews were also conducted with Ontario educators in order to support the research. The findings from this study reiterate the fact that PA has a positive impact on students within the classroom, regardless of ability. They also point towards the importance of providing students with ownership over their learning by offering choice during curriculum planning, especially when it comes to PA. This ensures that students receive the full benefits of PA, as they are actively participating and engaging with the content provided. Another key conclusion of this study is that PA interventions are most effective when teachers have strong professional relationships with their students.

Key Words: learning disabilities, physical activity, support, student choice, professional relationships
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Chapter One: Introduction

1.0 Introduction to the Research Study

The impact of physical activity (PA) on students has been a recurring topic of discussion in educational circles. Interestingly, PA has often been considered a hindrance to students’ performance, taking away “valuable” time from more academic subjects such as math or language (Bailey & Diperna, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Kall, Malmgren, Olsson, Linden, & Nilsson, 2015; Sibley & Etnier, 2003). Contrary to these beliefs, studies have shown that quite the opposite is true, and that PA may actually have positive effects on cognition while benefiting students in the classroom (Bailey & Diperna, 2015; Brusseau & Hannon, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Haapala, 2012; Kall, Malmgren et al., 2015; Sibley & Etnier, 2003; Strong et al., 2005). At the very least, teachers can feel at ease knowing that incorporating PA into the school curriculum will not result in any negative effects on academics (Keeley & Fox, 2009; Trudeau & Shephard, 2010).

When it comes to PA and children with learning disabilities (LDs), it seems that these individuals can benefit even more from the effects of PA than their normally-developing peers in an educational setting (Fedewa & Ahn, 2011). A learning disability is a brain-based disorder that results in the impairment of one or more ways through which a person takes in and processes information (LDAO, 2015). There is a wide range of LDs that have been recognized by medical professionals, each with their own unique symptoms and recommended support services. An example of one such disorder is attention deficit hyperactivity disorder (ADHD). This LD is defined as an inability to maintain focus for a prolonged period of time, especially when it comes to learning something new. Children with ADHD often have trouble staying on task with assignments and schoolwork, while also being prone to diverting their attention to other things
happening around them (Grosshans & Kiger, 2004; Mulrine, Prater, & Jenkins, 2008). Looking at the symptoms of ADHD and many of the other LDs like it, one cannot help but wonder about the struggles and challenges teachers might face in the classroom. Fortunately, there is hope and PA may prove to be the bridge that helps students with LDs close the gap between the academic detachment they are in danger of facing and the success their parents, teachers, and they themselves rigorously strive for.

This chapter introduces the research problem which looks to explore how teachers can use PA to support students with LDs, highlights the purpose of the study and why this topic is important to the education community, and identifies the key research question that will aim to guide this paper. In addition, a section on the background and positionality of the researcher is provided in order to situate the author in connection to the study. Following this, a brief introduction to the methods identifies and describes the general data collection and analysis approaches used in this paper. The chapter concludes with an overview of the study and a preview of what the reader can expect from each of the upcoming chapters.

1.1 Articulation of the Research Problem

Students who are identified as learning disabled face many challenges in today’s classroom and these may become more pronounced with age if left untreated early on (Sharma, 2004). Students with LDs are known to have trouble staying on task with assignments and schoolwork in the areas of reading, writing, spelling, or mathematics. They may experience difficulties when trying to explain themselves, while planning, and with executing sequences of actions (Grosshans & Kiger, 2004; Mulrine, Prater, & Jenkins, 2008; IDAO, 2016). Equally as impactful are the social deficits that students with LDs also face. In a meta-analysis conducted by Kavale and Forness (1996), seven out of ten students with LDs rated themselves as possessing
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social skill deficits that distinguished them from non-learning disabled (NLD) peers. These deficits can be found in the areas of social problem solving, self-concept, and self-esteem among others. In addition, the work of students with LDs is often times not considered as carefully as some of their peers, and is not celebrated in the same way. It is also not very clear whether teachers hold these students to the same standards and criteria as higher achieving classmates (Schumm & Vaughn, 1991). To make things even more troublesome, many students with LDs do not think very highly of their own academic abilities when compared to their NLD peers (Chapman, 1988; Kavale & Forness, 1996; Prout, Marcal & Marcal, 1992; Serafica & Harway, 1979). This may make it more difficult for teachers who are trying to provide the necessary support.

Educators, in turn, may find that they are frustrated as they are not reaching as high a level of success with students with LDs as often as they might like. Therefore, it is not a surprise that the compounding effects of these variables may eventually lead to students’ further academic detachment from school. In order to prevent such a situation from occurring, more time has to be spent learning and developing new ways to support and accommodate those with LDs. This could prove to be something as simple as experimenting with the ways in which PA may be incorporated into classroom routines and lessons, in order to see if there are any benefits for students with LDs. We know that PA in the classroom, during school hours, has no negative side effects on cognition and academic achievement (Keeley & Fox, 2009; Trudeau & Shephard, 2010), so why not delve deeper and perhaps explore the implications for those with LDs?

1.2 Purpose of the Study

The purpose of this study is to explore the impact of PA on students with LDs and how it can be used to support them throughout their academic careers. I am interested in exploring
teachers’ perceptions on how PA might be able to help combat the academic detachment faced by many of these individuals and, in turn, add to their overall engagement in school. Through data collected from interviews with teachers of varying levels of expertise working with students with LDs and PA, their individual experiences have been analyzed in order to see what works when it comes to the topic under study. This knowledge may help provide teachers in Ontario with useful PA practices that are effective when dealing with students with LDs, while also assisting them in steering clear of practices that have not been as effective. It is a goal of this research study to alleviate some of the negative stigma that still exists around implementing PA in elementary classrooms, and in turn shed light on the benefits it could contribute to the overall educational experience of students.

As an aspiring teacher, I hope to gain a better understanding, through this study, of the challenges that may arise when dealing with students with LDs and how PA can help minimize these challenges and in turn yield the necessary support required.

1.3 Research Questions

The key research question explored in this study is “What are teachers’ perceptions regarding the impact of PA on students with LDs?” The following sub-questions will help further support the key research question:

1. What are some of the challenges and benefits that teachers face as a result of students’ LDs?
2. Do teachers observe any differences in the behaviour of students with LDs after PA?
3. What challenges and benefits do teachers face as they implement PA with students with LDs?
4. Do teachers observe any differences in the impact of PA on students with LDs versus students without LDs?
1.4 Background of the Researcher

Growing up, I have always been involved in some sort of PA one way or the other. Whether it was learning how to swim with my dad, playing competitive basketball, or making new friends as a young immigrant to the country, I think that PA has been a tremendous benefit to me in my academic and social life. When I was upset, frustrated, or struggling in any aspect of life, I could always turn to PA to get me through it. I knew that I could depend on something as simple as going out for a run to help clear my head, allowing me to refocus on the task at hand. The somatic and psychological effects of PA on the body are numerous and tremendous.

Although I did not know it at the time, throughout my years as an elementary student I had many friends with LDs; however, for various reasons, they were not receiving the appropriate special education programs and services required in order to support their needs. As a result, some of my friends were not reaching their full potential, while others were failing and some even ended up dropping out of school. This led to frustration and constant disputes between students, teachers, and often times parents as well. Looking back on it today, and seeing the same issues come up in some of the classrooms in which I have volunteered, I would like to gain insights into the connections between PA and students with LDs. I want to connect my passion for PA and my teaching to the issue of LDs in schools, exploring how the two interact.

1.5 Introduction to the Methods

This is a qualitative research study, meaning that the data collected is rich in description of people, places, and conversations, and not easily handled by statistical procedures (Bogdan & Biklen, 2007). Thus, the data gathered for this study is in the form of interviews with three educators who have demonstrated a commitment to the area of teaching involving PA and/or students with LDs. These short, focused, and informal interviews have been conducted outside of
schools and school time. Interactions with students have also been used to inform my general knowledge of the topic under study, but specific content has not been included as research data in this paper.

1.6 Overview

Chapter two will contain a review of the literature available on the topic aimed at introducing and familiarizing the reader with any background research and definitions pertinent to the area of study. Chapter three then goes on to highlight the research methodology and procedures used to collect data for this study. Chapter four reports the findings of the study by highlighting the participants, and providing the data garnered through their interviews. In this chapter, we will look at certain themes that have been uncovered, why they are significant, and what we should take away from these findings. Finally, chapter five ties everything together by looking at implications from the findings for the educational community, the individual teacher, and the researcher. In addition, the chapter will explore some connections and trends, areas recommended for future research, and possible next steps for teachers, students, and parents. A list of appendices and references can be found at the end of the paper.
Chapter Two: Literature Review

2.0 Chapter Introduction

The following literature review will address the topic of physical activity (PA) and the impact it has on students with learning disabilities (LDs) in schools. PA has consistently been documented as having positive effects on student cognition and well-being in the classroom (Bailey & Diperna, 2015; Brusseau & Hannon, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Haapala, 2012; Kall, Malmgren, Olsson, Linden, & Nilsson, 2015; Sibley & Etnier, 2003; Strong et al., 2005). Some studies have even reported that these effects are magnified in students with LDs (Fedewa & Ahn, 2011; Haapala, 2012). This chapter aims to explore these notions, and provide an overview of some of the existing literature on the topic.

In order to do this, a definition of LDs will be provided as well as an examination of the research regarding the identification of children with LDs in schools. PA and its effect on students will be explored from a broad, general perspective, while also narrowing in on what the research has found in terms of its implications for those living with LDs. Various classroom intervention and instructional strategies that have been reported by educators to support students with LDs in relation to PA will then be highlighted. Finally, evidence-based, effective, and practical strategies will be discussed, while also looking at some strategies that have not been as effective.

2.1 Defining Learning Disabilities in the Classroom

A learning disability (LD) is a brain-based disorder that results in the impairment of one or more ways through which a person takes in and processes information (LDAO, 2015). As a result, this often creates a “gap” between one’s academic ability and performance (Grosshans & Kiger, 2004). This “gap” however, should never be seen as a limiting factor in the eyes of a
teacher. According to Grosshans and Kiger, a student who has a LD usually has at least an average intelligence, and some may even be smarter than their non-learning disabled (NLD) peers. This means that students with LDs are typically capable of performing at their specific grade level academically. However, this is often overshadowed by the many social, emotional, and academic challenges faced in the classroom.

Depending on the nature of the LD, some students have been shown to have low frustration tolerance, be highly emotional, and unable to handle stress well when compared to their NLD peers (Sharma, 2004). Although it is not completely clear what causes LDs in children, some plausible hypotheses are, but not limited to: inadequate nutrition, exposure to environmental toxins, or complications during pregnancy (Grosshans & Kiger, 2004). With that being said, it is never the child’s fault that they are suffering from such a disability and educators must exhibit care and patience when dealing with these students in and out of the classroom.

2.1.1 Types of learning disabilities.

There are a wide range of various LDs that manifest themselves in different ways, all requiring unique sets of interventions in order to be managed correctly. Some of the LDs that came up in the research include: attention deficit hyperactivity disorder (ADHD), dyspraxia, dyslexia, auditory-processing impairments, and autism spectrum disorder (ASD) (Cornett, 2006; Grosshans & Kiger, 2004; Menear & Neumeier, 2015; Mulrine, Prater, & Jenkins, 2008; IDAO, 2016). ADHD is defined as an inability to maintain focus for a prolonged period of time, especially when it comes to learning something new (Grosshans & Kiger, 2004; Mulrine, Prater, & Jenkins, 2008). Children with ADHD have trouble staying on task with assignments and schoolwork and are easily distracted by other things happening around them. Dyspraxia involves difficulties with planning and executing sequences of actions (Grosshans & Kiger, 2004). This is
also referred to as a motor sequencing based impairment and can come up during many PA tasks. Dyslexia on the other hand, is a language-based impairment and involves difficulties with reading, writing, spelling and pronouncing words (IDAO, 2016). An example of an auditory-processing impairment might be a child who does not understand specific rules in the class that were just explained, and may find it difficult to ask for clarification (Grosshans & Kiger, 2004). Finally, ASD involves issues with social impairment, emotional and physical regulation, and below optimal motor-skills and fitness levels (Menear & Neumeier, 2015). Some research suggests that students with LDs have lower academic self-concept, meaning that they do not think very highly of their academic abilities, when compared to their NLD peers (Elbaum, 2002).

It is difficult enough for a child to live with a LD in their everyday life; however, the effects can prove to be even more overwhelming when you add school and learning to the mix. Thus, as teachers of students with LDs, we have a great challenge and responsibility on our hands – however, it is one that comes with great fulfillment.

2.1.2 Identifying students with learning disabilities.

A challenge that often comes up for educators is differentiating between a child that is truly suffering from a LD and one that is simply unmotivated, lazy, or frustrated – he or she may just be having family problems at home or perhaps they are newly immigrated to the country and are having trouble adjusting. Children with LDs do not necessarily look any different than their peers. There are, however, some signs that teachers can look for. Children with LDs may appear to be inattentive, uninterested, and more fidgety than their peers when exposed to challenges specific to their disability (Grosshans & Kiger, 2004). Through specialized testing, and by presenting students with challenges to an Identification, Placement and Review Committee (IPRC) team, administrators, teachers, and parents are able to work together and identify if a
student has an LD. Regardless of the limitations faced by these children, once they have been identified, a number of professionals (i.e., general education teacher, special education teacher, a school psychologist or other specialist, school administrator) work with the parents of the child to form a team, pooling together their expertise and resources so that students are able to learn, flourish, and receive the necessary academic support.

2.2 Physical Activity and Impact on Students

PA’s impact on the brain has been a topic garnering much interest in the school system. From the 1950s to the 1970s, nearly every physical education researcher conducted a study at some point that explored the relationship between motor performance and academic achievement (Kirkendall, 1985). Everyone was intrigued, and wanted to learn more about the mind-body relationship (Sibley & Etnier, 2003). However, as time went on, a paradigm shift occurred that saw the incorporation of PA into the school day as a hindrance to academic instructional time, and thus it was believed to negatively impact students’ performance (Bailey & Diperna, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Kall, Malmgren et al., 2015; Sibley & Etnier, 2003). It turns out that quite the opposite is true. Current research on the topic suggests that PA may have a positive effect on the cognition and academic achievement of children, without any sign of possible detriments (Bailey & Diperna, 2015; Brusseau & Hannon, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Haapala, 2012; Kall, Malmgren et al., 2015; Keeley & Fox, 2009; Sibley & Etnier, 2003; Strong et al., 2005; Trudeau & Shephard, 2010). Therefore, teachers would be less stressed knowing that the extra time their students spend outside during recess, in PA classes, or moving around their own classroom, will not take away from any academic learning, but rather enhance it.
2.2.1 Recommendations for the implementation of PA with students.

PA is recommended daily for all school aged children from six to fourteen years of age, although elementary aged children have been found to reap the largest cognitive benefit from PA (Fedewa & Ahn, 2011). According to the Canadian Society for Exercise Physiology (2012), children should be participating in sixty minutes or more of enjoyable, developmentally appropriate and varying forms of PA each day. This should include vigorous activity three times per week, and activities that strengthen muscle and bone three times per week. It may seem overwhelming at first, but one does not necessarily have to be at a gym in order to be physically active. Children could accumulate their sixty minutes by taking part regularly in recess, PA class, extra-curricular sports, free-play, and even classroom based activities organized by the teacher. It is also important to note that students can benefit from PA instruction regardless of who is delivering it (Fedewa & Ahn, 2011). Therefore, teachers need not feel discouraged that they are not qualified or ready to incorporate PA into their classes. If students are not explicitly required to be physically active, many of them will not make the choice to be active on their own (Camahalan & Ipock, 2015). It is recommended that inactive time, such as sitting at home and watching television or playing video games, should be limited to less than two hours per day (Brusseau & Hannon, 2015; Strong et al., 2005). Some studies recommend that the PA must be performed at a moderate to vigorous level, or that it must be aerobic in nature (e.g. running, playing soccer, etc.) in order for it to have a positive effect on cognition (Brusseau & Hannon; 2011; Strong et al., 2005). However, the form of PA is not what is most important; as long as students are moving, teachers will be able to notice the benefits (Sibley & Etnier, 2003).
2.2.2 Benefits of PA for all students.

There are vast benefits that have been reported when it comes to PA and its effects on academics. They include an increase in on-task behaviour (Camahalan & Ipock, 2015), being able to pay better attention in class and an improvement in concentration, memory (Strong et al., 2005) and classroom behaviour (Haapala, 2012), among many others. By following a physically active lifestyle throughout one’s life – starting at a young age – it is possible to improve the cognitive decline that is inevitable in older age (Hillman, Kramer, Belopolsky & Smith, 2004). Teachers, starting as early as kindergarten, are in a very valuable and important position in terms of introducing their students to PA and setting them up for a healthy lifestyle in the future. PA has also been shown to result in positive changes in brain structure, function, and neurotransmitter concentrations, all of which facilitate learning and classroom performance (Hillman et al., 2004; Hillman et al., 2006; Trudeau & Shepard, 2010). In research approaches from psychobiology and neuroscience, increased cardiovascular fitness has been shown to lead to increased task-related activity in the regions of the cortex – the area of the brain that plays an important role in consciousness (Colcombe et al., 2004). According to Colcombe, this is thought to be necessary for successful task completion. Colcombe’s research also states that individuals with a high level of aerobic fitness show a reduced amount of activity in the anterior cingulate cortex, which is a region associated with the presence of behavioural conflict. This has huge implications for students with LDs, as exercise can prove to not only aid in keeping them focused and on task, but also provide some assistance when it comes to self-regulation and behaviour issues.
2.2.3 Challenges, limitations and next steps surrounding PA and students.

According to a systematic review done by Kelley and Fox (2009), despite the depth of research that yields positive results regarding the effects of PA and exercise on cognition, there is still insufficient evidence to conclude that additional PA time increases academic achievement. Trudeau and Shepard (2010) would echo these same results by adding that “the introduction of sport or PE into the school curriculum has no striking effect on grade point average (GPA)” (p. 146). Further research is required on the specific effects of various forms of PA such as acute and regular PA in addition to the implication of these effects on the different phases of growth in children (Keeley & Fox, 2009). Studies that have provided positive results typically focused on small, limited populations, and were too short in duration. Thus, more research is needed involving larger, more varying sample groups along with the research being of longer duration in order to produce significant results. In addition, children with behavioural problems and/or LDs, are less likely to be involved, or survive, in a school sport (Keeley & Fox, 2009). This can also be true for economically disadvantaged students whose parents may not have the necessary funds in order for their child to be involved in the required amount of PA (Fedewa & Ahn, 2011). As a result, critical differences may be ignored and a large chunk of potential candidates – who can add value to the research – are being excluded.

2.3 Physical Activity and Impact on Students with Learning Disabilities

In a literature synthesis done by Fedewa and Ahn (2011), findings report that “children who were cognitively impaired or were classified as physically disabled appeared to benefit even more than typically developing children” (p. 531) in terms of their academic performance. This suggests that PA is more beneficial for children with a learning or physical disability than for children without such disabilities. Haapala’s (2012) systematic review similarly found
adolescents with low working baseline memory scores having improved their results after both moderate and high intensity exercise. Additionally, according to a study done by Schunk and Shuell (1986), it was found that blocking out distracting stimuli – something that proves to be very challenging for students with LDs – and improving focus can be made easier through incorporating appropriate types, amounts, and patterns of regular PA. In one study that focuses specifically on the effects of PA on the academic progress of students with LDs, Everhart, Dimon, Stone, Desmond, and Casilio (2012) report improvements in focus along with consistent improvement in language arts and mathematics for students in grades three to five. Lastly, PA and PA class are important in reinforcing effective speaking and listening skills of students with LDs, which is an essential part of literacy education (Wachob, 2014). Thus, the inclusion of PA for students with LDs may be an important and crucial component of their educational experience and future success (Sibley & Etnier, 2003).

### 2.4 Intervention/Instructional Strategies

Teachers typically see themselves as a primary resource when it comes to addressing and accommodating the needs of students with LDs (Johnson & Pugacch, 1990). Throughout the course of a school year, teachers may become very familiar with the tendencies of their students, and some may even realize certain triggers that parents might have missed. Thus, it is important that parents and teachers work together to design and implement strategies that will help with creating an environment in which students can excel and be successful.

#### 2.4.1 Effective strategies implemented by general education teachers.

Energizers are one way that classroom teachers have found to help combat the challenges faced by students dealing with LDs, and improve attention and engagement. Energizers are classroom based exercise breaks that significantly increase participants’ school-based PA, which
has further implications in terms of improvements in cognition (Bailey & DiPerna, 2015). This can be as simple as taking the class outside for a walk around the school, playing a game of “Simon Says,” taking a nature walk or even leading a whole lesson outdoors if weather permits. The benefits of free and spontaneous outdoor-based play and PA have been noted time and time again in the literature (Mainella, Agate, & Clark, 2011; Fjørtoft, 2001). Our outdoor spaces such as forests and parks, provide an environment for play and learning that stimulates motor development and fostering in children (Fjørtoft, 2001). Additionally, outdoor-based play and PA has been shown to greatly benefit not only the physical, but also the mental, cognitive, and socioemotional health and development of children (Mainella, Agate, & Clark, 2011).

According to Bailey and DiPerna, PA energizers do not affect academic instructional time, are very easy to incorporate into the classroom, and are fun for students. Two other intervention strategies that teachers reported as being used most frequently were: employing signals to redirect student attention (which could be something along the lines of saying, “1, 2, 3…” out loud and the students responding, “Eyes on me”) and manipulating tangible rewards (Johnson & Pugach, 1990). There are many arguments that advocate for, and against, the use of rewards in the classroom. According to research done by Witzel and Mercer (2003), when it comes to students with LDs, the need for extrinsic motivation increases. This is where things such as tangible rewards come in. Witzel and Mercer state that, “not only may the use of praise and rewards help these students develop an intrinsic purpose for a behaviour, it will also help them in the short term while they have difficulty maintaining and developing internal control” (p. 94). Although this is a compelling argument, I have not seen tangible rewards being used very often in my observations of day-to-day routines in the classroom. Furthermore, I am unlikely to use them in my own teaching practice because I believe that children should work towards
learning as a goal in itself, versus completing an assignment or a task for an extrinsic reward. If students are simply doing what they are told because they know they will be rewarded for it eventually, then the educational experience is not as valuable as it could be if they were doing it because they were truly interested in the topic, lesson, or subject being taught. Research by Deci, Koestner, and Ryan (2001) supports this notion. The authors state that expected tangible rewards significantly undermine intrinsic motivation in students. I realize that this varies however, and the individual needs of students must be taken into consideration before making a decision as to whether or not such a strategy may be effective.

In addition to these strategies, teachers have also experienced breakthroughs with students with LDs when they maintain a high degree of engagement with them, provide tasks that ensure an increased rate of success, check for understanding, and deliver immediate feedback which is specific (Peterson, 2011). Co-teaching also proves to be an effective strategy as it offers students a wide range of instructional approaches and decreases the student-to-teacher ratio, providing more individualized, intensive instruction and small group work for those with LDs (Peterson, 2011). As appealing as this may sound, it is important to keep in mind that co-teaching is not an option for most teachers, and educators may not always have the same views on how they want to run their classrooms. Peer tutoring also proves to be effective for both students involved. According to Peterson, in addition to the academic skills students get to refine through peer tutoring, they also work on their social skills, build positive relationships, and increase self-esteem. This is particularly important for the student with an LD, as they typically struggle in those areas.

With all of the strategies mentioned above, it is important to keep in mind the idea of student choice. Research has shown choice making to increase student performance, task
engagement, and task completion, all while decreasing problem behaviour (Dunlap et al., 1994; Mithaug & Mar, 1980; Parsons, Reid, Reynolds, & Bumgarner, 1990).

2.4.2 Ineffective strategies.

Students with LDs often describe learning as something that is being imposed upon them. As a result, these same students are more likely to have homework problems than their classmates (Bryan, Burstein, & Bryan, 2001). Thus, teachers must strive to create engaging, thought provoking lessons, that are relevant, and that students can apply to their daily lives. In order to achieve this, teachers must become aware of the need to expand and improve their instructional practices and be willing to make the necessary changes (Peterson, 2011).

Students with LDs require a significant amount of support and attention from the teacher. At times, this may seem slightly overwhelming, and one might be inclined to take a break from the instruction. Despite this urge, teachers must aim to press on and remain consistent when dealing with students with LDs (Drecktrah & Chiang, 1997). It is definitely a process, but all the hard work, dedication, passion, and constant attention that is being put forth, will pay dividends throughout the child’s academic journey.

2.5 Chapter Conclusion

The main question, or questions, surrounding all of this is why? And how? Due to the limited research available on the specific effects of PA on students with LDs, one is not able to draw any definitive conclusions. There is certainly some research suggesting positive effects (Fedewa & Ahn, 2011; Haapala, 2012), but it is not sufficient enough to be able to come to a consensus. As a result, we may conclude that there is a gap in the research at this point in time.

The information focusing solely on the effects of PA on cognition and academic success of regular students is vast and easy to come by, with numerous studies being conducted in that
area. However, when thinking about students with LDs, the amount of relevant material available begins to dwindle. Thus, there is a need for more research in this area; the present study aims to address this gap. Incorporating PA into the school environment for students with LDs offers the potential for being a positive intervention strategy. This study, which focuses on the key question of, “What are teachers’ perceptions regarding the impact of PA on students with learning disabilities?” will contribute to the current discourse involving the effects of such an intervention and hopefully fill the existing gap in the research.
Chapter Three: Research Methodology

3.0 Chapter Introduction

This research study explores the impact of physical activity (PA) on students with learning disabilities (LDs), and the ways in which teachers can use PA to support these students. Data gathered through interviews with teachers will help discover effective and non-effective PA practices that have been implemented in Ontario classrooms when dealing with students with LDs. A look at the behavioural differences before and after implementing PA with these students, along with any challenges teachers may face while trying to implement PA, will aid in gaining an enhanced understanding of the topic.

This chapter describes the research methodology. To begin, a review of the general approach, procedures, and data collection instruments will be highlighted followed by the participant sampling and recruitment guidelines. Analysis procedures and any ethical considerations relevant to the study will then be explained. Lastly, we will look at the methodological limitations, while also making note of some of the strengths of the methodology. Finally, the chapter will conclude with a brief summary of key methodological decisions and a rationale for these decisions given the research purpose and questions.

3.1 Research Approach and Procedures

This study was conducted using a qualitative research approach involving a review of the existing literature pertinent to the topic, as well as semi-structured interviews with teachers. A qualitative research approach was chosen for this study because it enables the researcher to consider experiences from the informants’ perspective and provides the opportunity to delve deeper into how people, such as teachers, think regarding the topic at hand (Bogdan & Biklen, 2007). Qualitative research involves the recognition and analysis of different perspectives, the
researchers’ reflections on their research as part of the process of knowledge production, and the variety of approaches and methods (Flick, 2009). Given the research purpose and questions, this was a suitable approach for this study as it allowed for continual contact with teachers who dealt with students, with and without LDs, in settings they are normally familiar with.

Various factors can affect students’ behaviour and performance inside the classroom. Thus, in order to fully understand how PA impacts students with LDs, a qualitative approach was adopted. Such an approach assumes that nothing is trivial and everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied (Bogdan & Biklen, 2007).

3.2 Instruments of Data Collection

The primary instrument of data collection used in this study was the semi-structured interview protocol. This involved composing a list of open-ended questions and meeting with three teachers outside of schools and school time, only after having completed a placement in their classroom, having volunteered with them in the past, or having been introduced to them through the professional social networks that I was fortunate enough to develop during my practicum and volunteer experiences.

Interviews provide in-depth information relating to participants’ experiences and viewpoints of a particular topic (Turner, 2010). The semi-structured, open-ended nature of the interviews and the questioning format used in this study allowed the teachers to contribute as much detailed information as they desired. According to Turner, this often brings to light areas that might have been left behind by the interviewer. These informal, focused, and relatively short interviews involved questions that were open-ended; this gives way for a natural conversation to occur, allowing the interviewer to develop a relationship with the interviewee that goes far
beyond that of “subject” and “researcher”. The data collection process used in this study was sensitive about the nature of the interview process, and aimed to eliminate the power imbalance often created through a hierarchical relationship between the researcher and the participant (Creswell, 2013).

3.3 Participants

This section of the chapter provides the criteria established for participant recruitment, as well as the procedures that were undertaken in order to gather the participants for this study. The participants in this study have been practicing in the Toronto and York Region District School Boards and all have various levels of experience both with PA, and students with LDs.

3.3.1 Sampling criteria.

The criteria applied for the participants in this research study were as follows. Participants must have been teaching for at least five years in order to get a better sense of the different ways PA has, or has not, been used to support students with LDs over time. Additionally, participants involved were required to have a level of experience working with students with LDs because they have a better sense of the challenges and the realities of supporting such students, than a teacher who has never been involved with this population. Also, the participants were required to have some knowledge of, and prior experience with PA either in the classroom, during structured PA time, or in their personal lives. This was important because if participants had no prior experience with PA, then they would not be able to speak on the benefits, or lack thereof, of such an intervention with students. The criteria outlined above were chosen for this study so that concrete, first-hand, data can be collected from individuals who had dealt with students with LDs, and had some sort of PA experience. As a result, I was able to
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extract the essential information regarding what works and what does not when faced with the topic of PA and supporting students with LDs.

**3.3.2 Sampling procedures.**

In order to locate participants for this study, the snowball sampling technique was used. This technique is a form of purposive sampling which involves grouping participants together according to preselected criteria that is relevant to the research study (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). In this case, grouping participants that have experience working with students with LDs and have some background knowledge, or experience around PA. Through snowball sampling, I was able to utilize the social networks that I created during my practice teaching and volunteering experiences in order to locate prospective participants for this research study. I presented my research topic to teachers that I previously worked with and, if they themselves did not fit the criteria, then they were able to refer me onward to someone who may be a better candidate. This created a “snowballing” effect, and as a result my pool of participants kept on growing and growing. Snowball sampling is also effective as it often uncovers “hidden populations”, or groups that might not be easily accessible to the researcher on their own (Mack et al, 2005).

**3.3.3 Participant biographies.**

The three participants chosen for this study all taught in public school boards within Ontario, at the high school and elementary level. For the purpose of keeping their identities anonymous, they will be referred to as John, Lauren, and Bill.

*John*

John is a Full-Day Kindergarten (FDK) teacher. He is in his ninth year of teaching, all at the same school. During this time, he spent four years as a Special Education Resource Teacher
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(S.E.R.T) doing resource work with students from kindergarten to grade eight, three years working in a multiple exceptionality classroom, and two years teaching kindergarten.

Lauren

Lauren is a grade six teacher who has been teaching for nineteen years. She has experience working with a wide range of students, from grades three to six. Lauren was a principal designate at her school and also a POR (Position of Responsibility) for two years. Lauren is also qualified to teach French and has been doing so for the past couple of years. Outside of school, Lauren is an exercise enthusiast who enjoys going for runs in her spare time.

Bill

Bill has been teaching for seventeen years. During that time, he has worked with just about every grade. He recently completed his fourth year teaching at his current school, where he works with students from grade nine through twelve. Bill is the athletic director at the school and also runs the athletic council. Outside of school, Bill is involved with organized sport by coaching and mentoring players.

3.4 Data Analysis

All data collected was transcribed and organized into categories, and then into larger, over-arching themes. The themes were then coded and synthesized in regards to subject matter, or common ideas. The process of coding, or categorizing, involves gathering the data into small groups of information, seeking evidence for the code from different databases being used in a study, and finally assigning a label to the code (Creswell, 2013). The coding process made the data much easier to analyze.

Once the themes were clearly articulated, I began the meaning-making process whereby I spoke to what matters about the themes given the existing research present in the literature.
review. The themes were then compared and contrasted to the research findings already present in order to see if the research reflects the real life experiences of the participants in this study. All in all, the data analysis process used in this study followed these procedures as outlined by Creswell (2013): organizing the data; reading and memoing; describing, classifying, and interpreting data into codes and themes; interpreting the data; and representing and visualizing the data. This allows the researcher to take on a custom-built, revised, and “choreographed” approach to analyzing data that evolves to allow for flexibility, and to suit the nature of the study and the researcher themselves (Huberman & Miles, 1994).

Null data also plays an important role in the data analysis portion of a study. Null data refers to information that the research participants did not speak to in the interviews. Such data can be important in the research study because it can identify certain gaps pertaining to the impact of PA on students with LDs which are not being addressed, in this case. This data may also pave the way for new themes, and raise questions that can be recommended for future research.

3.5 Ethical Review Procedures

There are no known risks to participation in this study. Participants were re-assured that they have the right to refuse to answer any question(s) that they do not feel comfortable with. In addition, they also had the option to withdraw from participation at any stage of the research study. All participants involved in this study were asked to sign a consent letter, found in Appendix A, giving their consent to be interviewed as well as audio-recorded. This letter provides an overview of the study, addresses ethical implications, and specifies the expectations of participation. All data collected is in the form of notes taken by the researcher, and audio recordings. These recordings are stored on a password protected cell-phone and computer owned
by the researcher, and will be destroyed after five years. In addition, participants had the opportunity to review any transcripts beforehand and to clarify, or take back, any statements they may have made before the data analysis was conducted. It is also important to note that participants’ real names are not used in this study. Rather, an alias was assigned and thus their identities remain confidential. This includes any identifying markers related to their schools or their students.

Whenever research is being conducted on people, their well-being must be of top priority. With that in mind, these standards help ensure that the needs and concerns of the participants are being considered, that appropriate care for the conduct of research takes place, and that a foundation of trust is established between the researcher and the participants (Mack et al, 2005).

3.6 Methodological Limitations and Strengths

This section aims to highlight the strengths and some of the limitations of the study. Looking at the limitations, it is important to note that, given the ethical parameters set in place by OISE’s Master of Teaching Program, this research paper only involves interviews with teachers. Students, parents, and the conducting of any sort of classroom based surveys or observations were not included, potentially leaving out valuable information that can aid in better understanding the topic being investigated. For instance, parents see their children in a different light at home, and it would be interesting to explore whether the LDs present at school are also evident at home. In addition to this, the role PA plays in supporting students after school could also be investigated further. Children can be quite responsive and passionate on matters of interest to them (Partington, 2001). Thus, talking, and gathering data from students with LDs could greatly improve the quality of the findings for the simple reason that a first-hand account of the effects of PA could be obtained from subjects who are the main focus of the research
study. Another limitation of this study is that only three participants were involved. Although the data gathered from these participants is of great value and relevance, it cannot generalize the experiences of all teachers, in broad terms. Certain schools may have more support systems in place for students with LDs, or may have more funding available for their PA programs. Thus, additional participants would add a wider knowledge base, with varying experiences and opportunities, and therefore a larger data pool would be available for coding.

In terms of the strengths of this study, it is worth emphasizing the significance of interviewing teachers. By conducting semi-structured interviews with teachers that were currently practicing in Ontario, relevant, up to date data was collected, and these individuals were given the opportunity to make meaning from their lived experiences. Also, interviews create the space for teachers to speak on what matters most to them, and their position is made more explicit (Flick, 2009) when it comes to PA and students with LDs, in addition to providing much more in-depth data than a simple survey would allow. The qualitative nature of this study is also considered to be a strength because it enabled the researcher to consider experiences from the informants’ perspective and provided the opportunity to delve deeper into how people, such as teachers, think regarding the topic at hand (Bogdan & Biklen, 2007).

3.7 Chapter Conclusion

In this chapter, the research approach and procedures have been presented, as well as the criteria required for participants to take place in the study. Sampling procedures, and brief biographies of each of the participants were also included, in order to familiarize the reader with the participants involved. The data analysis portion of the study was then explained and the ethical review procedures were laid out in order to make sure that the well-being of participants
is of top priority. A brief overview of the strengths and limitations of the study was discussed at the end of the chapter.

In the next chapter, the research findings from the data collection are reported in the form of themes. Given what the existing research has learned to date, the significance of these findings is discussed with regards to the topic of PA and supporting students with LDs.
Chapter Four: Research Findings

4.0 Chapter Introduction

This study aims to explore the impact of physical activity (PA) on students with learning disabilities (LDs) in the general education classroom. The previous three chapters have introduced the study, examined existing literature on the topic, and described the research methodology employed while also looking at the instruments of data collection. The research presented is based on three interviews with teachers practicing in both the York Region and Toronto District School Boards. The participants include Lauren, who is a grade 6 teacher; Bill, who teaches health and physical education at the high school level; and John, who is a full-day kindergarten teacher.

The following chapter will present the research findings, in the form of themes, with the goal of identifying and describing them in a clear and concise manner as well as discussing the significance of what was found, and comparing these to the pertinent academic literature. These findings address the research question of “what are teachers’ perceptions regarding the impact of PA on students with LDs?”

During the data analysis portion of this study, which involved transcribing and coding interviews, the following three themes were uncovered:

1. Working with students with LDs
2. Factors limiting the use of PA within the classroom
3. Strategies to support students with LDs

Among these themes, certain sub-themes emerged as well. Theme one is broken down into challenges of working with students with LDs, and benefits of working with students with LDs. Theme two consists of factors limiting the use of PA in the classroom for all students, and
factors limiting the use of PA in the classroom for students with LDs. Theme three goes on to further explore strategies that have proven ineffective, and effective strategies to support students with LDs. Together, these themes and sub-themes will assist in presenting the findings by discussing the significance, given what existing research has communicated to date. Finally, a discussion centered on recommendations for next steps will conclude the chapter.

4.1 Working with Students with LDs

Throughout the interview process, it was evident that participants’ experiences working with students with LDs varied. Both challenging and rewarding situations were discussed, with valuable lessons stemming from each circumstance. These findings echo research done by Grosshans and Kiger (2004), who state that students with LDs are typically capable of performing at their specific grade level and may even out-perform their non-learning disabled (NLD) peers. Sharma’s (2004) research looks at the other end of the spectrum, where students dealing with LDs have been shown to have low frustration tolerance, be highly emotional, and unable to handle stress well. Through the interviews, it became evident that the type of attitude and mindset educators bring into the classroom with them is what matters most when working with students with LDs. The participants discussed their experiences with students in both cases, and their responses are analyzed below.

4.1.1 Challenges of working with students with LDs.

One of the biggest challenges that participants mentioned when it comes to working with students with LDs is the lack of support these students receive in school. When asked what she would like to change about her school in terms of supporting students with LDs, Lauren responded by saying, “To have enough special needs assistants.” She went on to add that “it is difficult when you feel obligated to teach the kids that you have, plus integrate kids and have
A lot of people would disagree with what I am about to say, but I would put those students [with LDs] in smaller class sizes and I would put more supports in place for those students so that they are able to, first of all, get the attention that they need... and the focus: making the classes more student focused.

This raises the question of why teachers feel they are not receiving sufficient support from the school when it comes to working with students with LDs. Before embarking on this research study, I was under the impression that schools in Ontario were fairly supportive of students with special needs and exceptionalities. Thus, I found it surprising to hear “support” mentioned so often as one of the challenges participants faced when working with students with LDs. Peterson’s (2011) research highlights the importance of providing deliberate support to students with LDs, in a consistent and timely manner. Their work states that teachers have experienced breakthroughs with students with LDs when they maintain a high degree of engagement with them, provide tasks that ensure an increased rate of success, check for understanding, and deliver immediate feedback which is specific.

Another challenge that was brought up was centered on uncovering specific students’ LDs, and then figuring out how to best cater to their needs. John clarified this by saying, I think that the thing with LDs is that those profiles... you know, you tend to have average intelligence, and then you have one area that has a massive deficiency compared to the rest. So, sometimes it is really hard to spot it, and not blame it on “that kid doesn’t listen to me, what is wrong with that kid”... when it might be about auditory processing, for example.
John’s statement, along with the other two participants,’ proves to be pertinent in answering one of the sub-questions of this research study, which is centered on identifying some of the challenges and benefits that teachers face as a result of students’ LDs. In addition, by providing authentic examples, the participants’ responses help demystify and bring context to the difficulties teachers face when attempting to identify students’ LDs.

4.1.2 Benefits of working with students with LDs.

Although it can be argued that the challenges observed by teachers who work with students with LDs may be vast and at times overwhelming, there are also numerous benefits of engaging with these students. The participants all agreed that the main benefit of working with students with LDs is the rewarding experiences that come out of it. Lauren reflected on an experience she had working with a student with severe autism during her sixth year of teaching: “I was nervous about having another adult in the room with me [the educational assistant]. However, it ended up being a very positive experience for myself as a teacher, and as a teacher with a kid that has a severe LD.” Bill echoed this same notion when he shared an event that he experienced while working with a grade nine student with ADHD who demonstrated the ability to self-regulate by taking a walk around the school and then returning to class when he felt he was ready to participate again: “As a grade nine student to be very conscientious of that, and to do it in such a way that was not disruptive, really left an impact on me.”

It is evident that students with LDs require a significant amount of support and attention from their teacher. Despite the urge to take a break from the instruction, teachers must aim to press on and remain consistent when dealing with these students (Drecktrah & Chiang, 1997). As the anecdotes of Lauren and Bill demonstrate, the efforts put forth by teachers can pay dividends.
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throughout the child’s academic journey. Educators will realize the lasting impact of their
endeavours as they watch students grow and succeed.

4.2 Factors Limiting the Use of PA within the Classroom

It was clearly evident, and reassuring, that all participants involved in this study were
willing to implement PA within their own classrooms without experiencing any unwanted
outcomes, even though some research suggests adverse effects of such an approach (Bailey &
Diperna, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Kall, Malmgren et al., 2015;
Sibley & Etnier, 2003). Nonetheless, there were some limiting factors for all three participants
that impacted their ability to effectively incorporate PA with their students. These factors differ
when it comes to incorporating PA with all students and when working specifically with students
with LDs.

4.2.1 Factors limiting the use of PA in the classroom for all students.

When it comes to incorporating PA with all students, Lauren faults the lack of space and
class size as factors that hold her back. Having a class of thirty growing grade six students can
definitely prove to be challenging. She admitted that “it is very difficult with a large group of
kids to do something effective [with PA]. It’s easier to take kids out for an early recess or take
them for a walk around the neighbourhood.” In our discussion, John reported large group settings
as a barrier to effectively implementing PA within his classroom. With twenty-six kindergarten
students that have varying needs, interests, and attention spans, John finds it difficult to
effectively tailor PA for the large group. He gave the following example,

I would say the biggest challenge would be to do it [PA] in a full group. Once you
allow kids to have opportunities to get that PA at their level, when they want, it
starts to become a little bit more difficult, in that you have to individualize to what that kid might need.

At the high school level, intrinsic factors stemming from the students themselves seem to act as the barriers that limit the use of PA within the classroom. Bill listed motivation and self-esteem, or lack thereof, as hindering students’ participation in PA, and thus making it hard for teachers to implement such a strategy within the classroom. He noted that “when students haven’t had success in the past [with PA], I think it affects their self-esteem.” He went on to further explain that the lack of self-esteem “affects their behaviour, their attendance, and their motivation to want to hand stuff in.” This snowballing effect, originating from students’ lack of self-esteem, highlights the importance of creating a classroom community where students are not fearful of judgement from their peers, and can feel safe when trying new things.

4.2.2 Factors limiting the use of PA in the classroom for students with LDs.

One of the biggest factors that participants mentioned that limited their use of PA with students with LDs is accommodating the varying needs of such students. As stated in Chapter Two, there are a wide range of LDs that manifest themselves in different ways, all requiring unique sets of interventions in order to be managed correctly (Cornett, 2006; Grosshans & Kiger, 2004; Menear & Neumeier, 2015; Mulrine, Prater, & Jenkins, 2008; IDAO, 2016). Lauren gave an account of her experiences by stating that “a lot of kids with LDs need frequent breaks. Finding out what each kid needs to do, and what works for them in order to self-regulate and be able to maintain focus, [is a limiting factor].” Bill suggested that discovering how severe the specific disability is and then figuring out how to accommodate the varying needs and abilities of students, limits his use of PA. He expounded this further by saying,
There are certain kids that just physically can’t do certain things, or they can’t do it at the same level of the class. So, the challenge is how you get that student to get engaged in physical education when they are moving at a much, much, slower pace than everyone else.

These findings confirmed some of the suspicions that I had surrounding difficulties that may arise when attempting to implement PA with students with LDs. In order to understand the specific needs of students dealing with LDs, and then be able to effectively support them, teachers must spend time and resources to educate and inform themselves about best practice. With the already demanding task of delivering curriculum content to the whole class, some teachers may be turned away from learning how to effectively implement something like PA with students with LDs. This was not the case for Lauren, Bill, and John, however, who despite the factors mentioned above continue to see the value in utilizing PA with students with LDs and are constantly searching for ways to successfully put it into practice. Some of the strategies they have used are mentioned in the ensuing theme.

4.3 Strategies to Support Students with LDs

Teachers typically see themselves as a primary resource when it comes to addressing and accommodating the needs of students with LDs (Johnson & Pugacch, 1990). The findings gathered throughout the interview process demonstrate that the participants involved have used a wide variety of strategies, either PA-based or otherwise, when working with students with LDs. However, not all of the strategies mentioned were effective. As a result, I was able to learn and inquire about these strategies for use in my own imminent practice. In each scenario, the strategies were employed with the goal of supporting students and providing them with the best possible educational experience.
4.3.1 Strategies that have proven ineffective.

Some of the strategies perceived as ineffective included forcing students to participate in certain activities, especially those involving PA. Students with LDs often describe learning as something that is being imposed upon them and, as a result, are more likely to have homework problems than their classmates (Bryan, Burstein, & Bryan, 2001). Therefore, it was not surprising to learn that such a strategy is not recommended. Employing quick-fix solutions that are not developmentally appropriate for all students, as well as assuming the abilities of certain students versus getting to know them better and building relationships, were two additional strategies that participants recommended avoiding.

When this topic of conversation came up during the interview, John gave the example of using a SMART Board with four and five-year-old kindergarten students, noting that it “is not developmentally appropriate for everybody, and it might not cater to their interests. Demanding that they all do it [PA] standing in a small little space where they can’t see… It ends up being really hard to manage.” When speaking on the idea of forcing students to do an activity, Bill explained:

So, in one respect, if you don’t ever try to get them [students] to try things that they are not good at, they never improve in it. The other thing is, if they know that it will be a constant “forcing” to do things they are uncomfortable with, then they just don’t come.

Bill’s struggles reflect research done by Camahalan and Ipock (2015) who state that if students are not explicitly required to be physically active, many of them will not make the choice to be active on their own. Getting students to participate, especially in PA, can often prove to be a balancing act of sorts.
This study has discovered that if there is a lack of intrinsic motivation on the part of the students, then the desired effects of the PA intervention will be rendered useless. To add on to this concept, Bill reflected on his own practice: “If there is an area where I could improve, it is getting to know my students better so that I could understand how to get them to do the various activities that we need them to do.” A relationship based on trust and mutual understanding must be developed between students and teachers in order to foster a safe and inclusive environment where, as mentioned earlier, individuals are inclined to participate and try new things.

**4.3.2 Effective strategies to support students with LDs.**

Participants in this study mentioned that, to effectively support students with LDs in the classroom, educators must avoid judgement, get to know the students and their individual needs, and adopt a student-centered approach within the classroom. John explained his rationale on why such an approach is important by saying, “If [PA is] going to happen in an authentic way, it should be something that puts a smile on kids’ faces; it should be joy.” John also mentions the term “student choice” when speaking on the value of building relationships with students: “Part of that relationship is developed by giving the student ownership over their learning, giving them choice in their learning.” If students have more choice in their learning, then they are more likely to provide meaningful, high-quality work. Research has shown choice making to increase student performance, task engagement, and task completion, all while decreasing problem behaviour (Dunlap et al., 1994; Mithaug & Mar, 1980; Parsons, Reid, Reynolds, & Bumgarner, 1990).

As a high school physical education teacher, Bill reflected on some of the strategies he used when working with students with LDs. For him, getting students to take ownership of their learning activities proved to be very effective as well: “What we found is if you can get them doing and leading the warm-up activities, it gives them a reason to be there.” He went on to add
that “the other thing is getting students to teach me, and the class, about skills we don’t already have, is very empowering.”

Lauren shared a technique that she used with a child with severe autism: “He would go and help the kindergarten classes with gym class because he needed the movement. He was very gifted in basketball. Also, this promoted social interaction for him, because he did not know how to interact with kids.” The importance of providing opportunities for students with LDs to develop socially cannot be stressed enough. Kavale and Forness (1996) suggest that seven out of ten students with LDs rate themselves as possessing social skill deficits that distinguished them from their NLD peers. These deficits can be found in the areas of social problem solving, self-concept, and self-esteem, which can transfer over to academics as well. Research in this area demonstrates that many students with LDs do not think very highly of their own academic abilities when compared to their non-learning disabled peers (Chapman, 1988; Kavale & Forness, 1996; Prout, Marcal & Marcal, 1992; Serafica & Harway, 1979).

These findings bring into question the value of positive PA experiences in increasing the self-esteem of students with LDs, and in turn, the effect that has on their confidence when faced with academic endeavours. Based on participants’ narratives and their experiences in the field, PA definitely seems like a good place to start. “It changed the dynamic of our classroom completely. Attendance improved, participation improved, it was very, very effective,” exclaimed Bill when discussing the impact effective PA instruction has in his class.

4.4 Chapter Conclusion

Three main themes developed from the data analysis process. First off, in terms of teachers’ experiences working with students with LDs, both challenging and rewarding circumstances were discussed. One of the most prevalent challenges participants mentioned was
the lack of support these students received in school. Yet, research highlights the importance of
providing deliberate support to students with LDs (Peterson, 2011). The rewarding experiences
mentioned served as eye-opening for teachers because they completely changed their perception
of what students with LDs were capable of. Additionally, these experiences proved that if time,
effort, and care is put forth, much is possible. The anecdotes that were shared reiterate the fact
that patience and consistency are key when working with students with LDs (Drecktrah &
Chiang, 1997).

The second theme that emerged focused on factors that limit the use of PA within the
classroom. These factors differ when talking about students with LDs versus their NLD peers.
For NLD students, lack of space, large group settings, and lack of self-esteem were among some
of the most limiting factors participants reported. When looking at students with LDs, in addition
to the factors mentioned previously, uncovering students’ LDs and then figuring out ways in
which to meet their various needs while delivering PA instruction proved to be restrictive for
those involved in the research study.

Finally, the last theme explored strategies educators have used to help support students
with LDs. Ineffective and effective strategies were discussed, some of which were specifically
centered on PA. Strategies that participants found ineffective included forcing students to
participate in activities, trying to employ quick fix solutions that are not developmentally
appropriate, and assuming the abilities of students without first getting to know them. Some of
the strategies that participants found effective, and recommend for teachers to employ with
students with LDs included avoiding judgement, getting to know students’ individual needs,
adopting a student-centered approach to teaching, and giving students the opportunity to take
ownership over their learning.
It was evident throughout the data collection and analysis process that PA can have a positive impact on students with LDs. According to Fedewa & Ahn (2011), children who are cognitively impaired or classified as physically disabled benefit even more than typically developing children from PA interventions. However, it became clear that PA alone may not always prove to be effective. The most important conclusion that came out of the dialogue with participants was that, in order for PA to have a positive impact on students with LDs, a relationship between the student and teacher must be fostered first. This relationship provides the student with a sense of trust and peace of mind, knowing that the teacher has their best interest at heart and is delivering instruction that is tailored for individual student success. If teachers do not know their students and take the time to cultivate meaningful alliances with them, no strategy or intervention will be substantial enough.

In Chapter Five, the implications of the findings discussed above will be looked at from a broad perspective – that of the educational community, and a narrow perspective – that of the teacher. Recommendations, areas for further research, along with some concluding comments will round off the chapter and the paper as a whole.
Chapter Five: Implications

5.0 Chapter Introduction

The present study was designed to learn more about the impact of physical activity (PA) on students with learning disabilities (LDs). The findings serve to support the extant literature pertaining to PA and to specifically tell us more about the impact it has on students with LDs. This chapter summarizes the research findings, highlights the present study’s implications for various stakeholders, provides several recommendations, and suggests directions for future research.

5.1 Key Findings and their Significance

Following interviews with three educators, a rigorous analysis revealed three important themes: working with students with LDs, factors limiting the use of PA within the classroom, and strategies to support students with LDs.

The first theme looks at teachers’ experiences working with students with LDs and highlights both challenging and rewarding situations that will arise. One of the biggest challenges that participants mentioned is the lack of support that students with LDs receive in school. In contrast, the participants all agreed that the main benefit of working with students with LDs is the rewarding experiences that come out of it. With that in mind, the findings indicate that the type of attitude and mindset educators bring into the classroom is what matters most, regardless of the circumstances they may face.

The second theme explored the effects of class size and classroom space on teachers’ willingness to incorporate PA with students with LDs and their non-learning disabled (NLD) peers. This theme also looked at intrinsic factors, such as student motivation and self-esteem, and the role they play in PA participation. The findings indicate the importance of creating a
classroom environment where students are not fearful of judgement from their peers, in which they can feel safe and supported when engaging in novel, innovative PA activities. More importantly, these findings raise questions surrounding the rationale behind the decision making that results in classrooms becoming overcrowded and teachers feeling overwhelmed.

The last theme assists in making educators aware of strategies that have proven ineffective when working with students with LDs. This theme also highlights strategies that have been successful and are highly recommended for implementation with such students. The findings from this theme reveal that when students are forced to participate in certain activities, especially those involving PA, their desire is quickly diminished and thus the intended outcomes are almost never achieved. The idea of student choice comes up numerous times throughout this theme as well and serves to remind us of the importance of giving students ownership over their learning – the importance of providing them with choice. Research has shown choice-making to be effective in increasing student performance all while decreasing problem behaviour, and should be considered as a viable practice for all educators (Dunlap et al., 1994; Mithaug & Mar, 1980; Parsons, Reid, Reynolds, & Bumgarner, 1990). The implications of these findings will be discussed and analyzed in the following section.

5.2 Implications

The present study has important implications for educational reform. On a broad scale, this study should serve as a reminder to policymakers and curriculum planners that the benefits associated with PA and the impact it can have on students are vast and well documented (Bailey & Diperna, 2015; Brusseau & Hannon, 2015; Camahalan & Ipock, 2015; Fedewa & Ahn, 2011; Haapala, 2012; Kall, Malmgren, Olsson, Linden, & Nilsson, 2015; Sibley & Etnier, 2003; Strong et al., 2005). Consistent with the conclusions of Fedewa and Ahn (2011), the present study also
reiterates the value and importance of incorporating PA with students with LDs. Additionally, the study provides novel insight into the issues surrounding curriculum implementation with students, especially when it comes to PA, and the importance of offering choice. Policymakers should be mindful of the detrimental effects of imposing learning upon students, particularly those dealing with LDs.

The present study has four main implications. First, on a broad level – taking into account the educational community as a whole – this study maintains that teachers do not feel students with LDs receive sufficient support in schools. This manifests as not having enough special needs assistants and the lack of classroom space available for interventions such as PA. This is consistent with research done by Peterson (2011), who highlights the importance of providing deliberate support to students with LDs by maintaining a high degree of engagement with them, providing tasks that ensure an increased rate of success, checking for understanding, and delivering immediate and specific feedback. When teachers are required to teach the students already in their class, while also working to integrate and support students with LDs, they may feel overwhelmed without the proper supports in place.

Secondly, on a much narrower scale, teachers’ lack of action when it comes to addressing intrinsic factors such as student self-esteem and motivation impacts their ability to successfully implement PA with their students. Research conducted by Kavale and Forness (1996) found that students with LDs consider themselves to possess social skill deficits that distinguish them from their NLD peers. These deficits can be found in the areas of social problem solving, self-concept, and self-esteem. PA, on the other hand, has been shown to have tremendous benefits for students with LDs in all areas (Everhart et al., 2012; Fedewa & Ahn, 2011; Haapala, 2012; Schunk & Shuell, 1986, Sibley & Etnier, 2003). By ignoring or failing to take into account students’
sensitivities, educators are limiting the potential reach PA could have on their academic and social development.

With that in mind, it is also important for educators to be aware of the overly competitive nature of some PA activities. Such activities may exacerbate the concerns surrounding lack of confidence and self-esteem for some students. PA activities should be designed to both encourage engagement and promote inclusion and cooperation. The Teaching Games for Understanding (TGfU) model is a great tool for educators to use when designing PA programs. The objective of the model is to offer all students, regardless of ability or skill level, the opportunity to actively experience, enjoy, and understand games (Butler & McCahan, 2005). This is done by placing “the learner” at the centre, and utilizing student needs, motivation, abilities, and development level as fundamental guidelines to all programming decisions made by the educator (Robinson & Randall, 2014). Through models like TGfU, the hope is that PA activities can be designed to both encourage engagement and appeal to all students, regardless of physical or mental ability.

Finally, with a focus on individual teachers and my own professional identity and practice, this study indicates that teachers must adopt a student-centered approach to teaching that is built on strong relationships and promotes student choice when implementing strategies such as PA. It can be argued that students with LDs often describe learning as something that is being imposed upon them (Bryan, Burstein, & Bryan, 2001). Thus, as educators, it is our duty to guide students through engaging, thought provoking activities and lessons that are relevant and applicable to their daily lives. Failure to do so will result in the continued disengagement and lack of interest on the part of students that is being observed so often in schools. This notion is synonymous with research that has shown choice-making to increase student performance, task
engagement, and task completion, all while decreasing problem behaviour (Dunlap et al., 1994; Mithaug & Mar, 1980; Parsons, Reid, Reynolds, & Bumgarner, 1990).

5.3 Recommendations

The implications of the present study point specifically to several recommendations for teachers, school administrators, Ministries of Education, and government officials. These recommendations are outlined below:

1) Taking into account the emphasis that participants of this research study have placed on getting to know students and developing authentic relationships with them, it is recommended that all teachers spend at least the first two weeks of the school year working to foster professional relationships with their learners. These relationships, based on trust, mutual respect, and understanding, will pay dividends in terms of increasing student participation in class, and making it easier to implement things like PA. These crucial first weeks will set the stage for the rest of the year and can be introduced across the province as “Welcome Weeks,” for example. Additionally, “Welcome Weeks” will help combat the lack of self-esteem and motivation that educators and researchers have reported with students – especially those with LDs. Looking into professional development courses such as “Tribes Learning Communities” is suggested, as it provides teaching staff with strategies to help students feel included, appreciated, and respected for their different abilities, cultures, gender, interests and dreams (Tribes, 2017).

2) To address the lack of support students with LDs receive in schools, it is recommended that the provincial government provide increased funding to school boards so that administrators are able to hire more educational assistants and assign them to classrooms where they are needed. This will aid in decreasing the student-to-teacher ratio and thus
help alleviate some of the pressure teachers experience by having another adult present in the room. Additionally, it would also be ideal to reduce the number of students in classrooms so that teachers are able to reach out and provide personalized attention to more students.

3) Although the government’s initiative around Daily Physical Activity (DPA) is well intended in its effort to engage students in twenty minutes of physical activity each day, it can be argued that teachers do not always implement this program for various reasons. As a result, it is recommended that the province undertake a study in this area, in order to redesign or replace the current DPA program in schools by making it more fun, practical, and inclusive. Additionally, resource development and training for teachers is warranted when it comes to leading fun, participatory, inclusive, and engaging PA activities.

4) Copious amounts of research and participant testimonies serve to highlight the positive impact PA can have on all students (Camahalan & Ipock, 2015; Colcombe et al., 2004; Haapala, 2012; Hillman, Kramer, Belopolsky & Smith, 2004). As a result, it is highly recommended that health and physical education be a daily requirement in schools across the province, just like math and science. If schools required health and physical education to be a part of the daily schedule, teachers will feel less pressure to have to find additional time to implement DPA, and students will be able to reap the benefits of receiving quality PA instruction on a consistent basis.

5.4 Areas for Further Research

In as much as the present study has served to expand upon the extant literature, it has also highlighted the need for further study. In future research endeavours, it is recommended that a greater emphasis be placed upon observable differences – behaviour related or otherwise – in
students with LDs following PA. This could be achieved through teacher reports; however, one could argue that in order to obtain real, authentic data, the students themselves must be interviewed. Given the ethical parameters set in place by OISE’s Master of Teaching Program, interviews with students, parents, and the conducting of any sort of classroom based surveys or observations were not permitted in this research study. In the future, research focused on students’ first-hand experience is warranted, especially since children can be quite responsive and passionate on matters of interest to them (Partington, 2001).

Furthermore, the intersectionality of race and socioeconomic status should be studied in order to explore the role those factors may play in incorporating PA with students with LDs. If they prove to be significant factors, strategies focused on how to provide students with accommodations are needed so that these individuals can continue to reap the benefits of PA. These strategies need to be tested and documented so that teachers across the province can have access to them. If PA can help the social and academic well-being of students with LDs, there should be no reason why educators cannot make this service available to all learners.

5.5 Concluding Comments

The present study is significant because it not only reinforces the importance of incorporating PA in schools, but also speaks to the impact it can have on the social, emotional, and academic development of students with LDs. These students face many challenges in today’s classrooms and these may become even more pronounced with age if left untreated (Sharma, 2004). The research presented throughout this paper, along with the data gathered from participants, all indicate that PA is a crucial component of a well-rounded pedagogical approach. With that in mind, more work is yet to be done when it comes to uncovering specific PA
practices that can be implemented with students with LDs, and how these practices can be adapted for all students, regardless of circumstances.

To summarize, the implications of this study point towards the benefits associated with PA and the impact it can have on students, as well as the value and importance of incorporating PA with students with LDs. The study also indicates the importance of offering student choice when it comes to PA, in order to avoid the detrimental effects that can manifest as a result of imposing learning upon students. Additionally, this study offers four recommendations aimed at teachers, school administrators, Ministries of Education, and government officials. These recommendations are intended to address the lack of support students with LDs receive in schools, raise awareness surrounding the impact PA can have on students, and develop PA programs that are inclusive, engaging, and practical for both students and educators. Some areas for further research highlighted by this study include, placing a greater emphasis on observable differences in students with LDs following PA, as well as focusing on students’ first-hand experiences with PA programs. The intersectionality of race and socioeconomic status should also be explored in relation to PA and students with LDs.

The findings within this study are beneficial to teachers and administrators, as well as to the educational community as a whole. Humans are meant to move, and our health depends on movement. If all those involved in shaping the educational landscape begin to share a unified vision when it comes to PA, we will start to see a drastic, but positive shift in the area of special education and LDs. To conclude, the goal of this study was to initiate conversation, and get individuals thinking about the correlation between PA and LDs. Although the study is successful in achieving this goal, it also serves as a general reminder that relationships, genuine interaction,
and compassion are the three pillars upon which the teaching profession is built on. Once these three things are in place, there is nothing teachers and students cannot accomplish together.
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PHYSICAL ACTIVITY AND LEARNING DISABILITIES


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Appendix A: Consent Letter

Dear __________________________,

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 the impact of physical activity on students with learning disabilities. I am interested in interviewing teachers who have been teaching for at least five years, and who have some background knowledge or experience working with students with learning disabilities. In addition, the participants involved must have some knowledge of, and prior experience with PA either in the classroom, during structured physical education time, or in their personal lives. I think 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. I may also present my research findings via conference presentations and/or through 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. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected cellphone and computer, and the only person who will have access to the research data will be my research coordinator, Ken McNeilly. 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 during the interview. 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 to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy.

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,

Vlad Velici

Research Coordinator’s Name: Ken McNeilly
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 Vlad Velici and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: _____________________________

Name: (printed) _____________________________

Date: _____________________________________
Appendix B: Interview Protocol

Thank you for agreeing to participate in this research study, and for making time to be interviewed today. This research study aims to explore the impact of physical activity on students with learning disabilities. This interview will last approximately 45-60 minutes, and will be composed of approximately 20 questions. These questions will be focused on some background information about yourself; with regards to professional experience and your perspectives and beliefs about the topic under study. Questions regarding your current teaching practices, supports and challenges, and finally some next steps in terms of your professional goals in this area will also be addressed, before ending off with any advice you may have for beginning teachers who are committed to the topic at hand. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I have explained in the consent letter, this interview will be audio-recorded. Do you have any questions before we begin?

To begin, can you state your name for the recording please.

Background Information

1. How many years have you been teaching in general, and what grades have you worked with?
2. How many years have you been teaching at this school in particular?
3. In addition to your teaching role at the school, are there any other roles you play? (e.g. coach)
4. Do you have any specific qualifications/training in the area of special education?
5. Describe one experience you have had working with a student that has an LD, and what kind of impact that experience left on you.

Teacher Practices

6. What are some of the most common challenges you have faced when dealing with students with LDs? Why do you think this is the case?
7. In your experience as a teacher, what are some challenges you have faced when trying to incorporate PA with your students?
   a. What about with students that have LDs?
8. How much time during the school day would you say that you spend with your students engaged in some sort of PA?
9. In your experience working with students with LDs, what are some effective strategies that you have used?
10. If PA is not mentioned, ask: “I’ve noticed that you have not mentioned PA as one of the strategies you have used. If at all possible, would you please elaborate on why you have not used PA as a strategy?”
11. What are some examples of effective PA practices that you have adopted in the past, or are currently adopting today with your students? What are some examples of ineffective practices, and why do you think those did not work?
12. In what ways have you seen these practices impact students with LDs in the classroom?

Teacher Perspectives/Beliefs

13. What are your beliefs when it comes to incorporating PA in the classroom?
14. Do you believe that PA can have a positive or negative impact on students in the classroom? Why or why not?
15. In your opinion, do students at your school spend sufficient time engaged in some form of PA each day? If no, why do you think this is the case? If yes, what are some examples?
16. How comfortable do you feel with your ability to lead students (using the space inside the classroom) through some sort of PA during the school day? Why?
17. If not comfortable, what would make you feel better/more comfortable?

Next Steps

18. If you could change one or two things about your school in terms of supporting students with LDs, what would they be and why?
19. What advice would you give to a beginning teacher who is assigned to a classroom with a student (or more) that has LDs, and is unsure of what to expect and how to support that student?
20. How would you recommend that they go about incorporating PA with these students?
21. Is there anything else you would like to add in terms of the role PA has on students with learning disabilities?

Thank you for your participation in this research study.