



## Student Learning in Physical Education: A Teacher's Perspective

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**Abstract:** Students and teachers have a range of perceptions of Physical Education and how it affects students and their learning. Past research has indicated that Physical Education can influence students' academic results as well as their physical development. This study identified and investigated the perceptions of students and teachers towards Physical Education and its effect on the students and their learning. The social aspect of Physical Education is perceived to be either positive or negative for students depending on how the teacher manages the class. Many students and teachers perceived Physical Education to be enjoyable for students and beneficial to their development. Physical Education has the potential to impact students on a spiritual level although the degree to which this occurs is difficult to determine. This article also showed that the way Physical Education is timetabled and taught can have an impact on the way students and teachers perceive this curriculum area.

**Key words:** Attitudes and Perceptions, Substitution Model, Traditional Sport, spiritual development, Obesity Problems.

### Introduction

Educators are continually looking for ways to improve the way students learn. One area that has been studied in an attempt to find out more about how students learn is that of Physical Education. Many aspects of Physical Education have been examined with each offering various positive and negative results that provide information to help educators best understand their students. However, the amount of Physical Education being taught is dwindling in many schools as extra time is afforded to other academic subjects.

It is important to not only consider what is being taught in Physical Education in schools, but also the perceptions students have towards this subject. The reason it is so crucial to consider the attitudes and perceptions students have towards Physical Education is that the "students" attitudes to PE may influence their participation in PE at school as well as organized sports outside school". The perceptions a person has on a topic can influence what they do. Groves and Welsh (2010) say that traditionally the opinions students have about learning have been overlooked. However, this has recently been changing and more research has been

completed that examines students' views or attitudes. This research examined the perceptions of students and teachers about how Physical Education is both taught and received.

Many Physical Education programs include a high number of competitive games and activities. These competitive situations that students are placed in can be of benefit to some students and yet detrimental to others. Physical Education programs should be designed in a way that is less formal and not competitively orientated to ensure equity is shown to all students. Physical Education and sport are sometimes used as synonyms in the educational environment; this is known as The Substitution Model.

Students that participate in performance and competition focused Physical Education classes are more likely to be subject to negative Physical Education experiences. This is especially likely to happen to students who are less physically inclined. The Versus Model states that although Physical Education and sport are related, they cannot be substituted because Physical Education provides less-capable students with the opportunity to participate without the competitive component that

sport provides. The Reinforcement Model and The Sequence Model are similar in that they both link Physical Education and sport together; but they are different in the way they emphasize sport or Physical Education. The former states that games and sport are a significant part of Physical Education when taught in an inclusive manner by the teacher; the latter states that Physical Education should provide the building blocks so that students can grow physically to succeed in sport. These models that have been mentioned demonstrate the variety of ways in which people view Physical Education.

A study that examined the perceptions young women have towards Physical Education showed that young women are more likely to be involved in physical activity than traditional sport. This shows that to maintain the interest of females in Physical Education, a focus on sport should not dominate Physical Education. However, the link between Physical Education and competitive sport is unavoidable. The teacher must listen to their students to determine their different aspirations and motivation levels. To ensure that all students are given the opportunity to exercise and gain the benefits of Physical Education, regardless of their athletic ability, Physical Education should be taught in a way that focuses on learning movement skills and promoting fitness. By teaching Physical Education in this manner a less competitive environment will be created where every student feels comfortable learning and exercising.

### Review of Literature

There are two main study methods that have been used to examine the effect Physical Education has on academic performance. Shephard (1997) lists these as cross-sectional studies and longitudinal studies. One cross-sectional study undertaken from 2004 to 2005 showed that students who passed more fitness tests during Physical Education also outperformed their classmates in Mathematics and English tests. Trudeau and Shephard (2008) state that in the findings of most cross-sectional studies, a positive relationship between physical activity and academic achievement is identified. However, these studies are unable to prove whether or not the high achievement level during Physical Education is a reason why the students also achieve well in other subjects. The only detail proven by these studies is that students who have high Physical

Education achievement also perform highly in other intellectual subjects. Longitudinal studies are able to portray a clearer picture of the effects Physical Education has on academic achievement.

There are three quantitative longitudinal studies that are noted as being at the forefront of Physical Education research in regards to how a change in Physical Education program affects student academic achievement. These studies took place in France, Australia and Canada and all have varying results. Each study was undertaken in a different manner using a range of variables to measure the effects of each Physical Education program.

The first relevant study into the effects of Physical Education was undertaken in Vanves, France, in 1950. This study was completed in only one school, using two groups of students (Shephard, 1997). Shephard (1997) goes on to list the particulars of the study. There was one control group and one experimental group. The experimental group participated in a modified program that consisted of extra school hours, two siestas, limiting academic tuition to mornings, taking regular vitamin supplements and spending afternoons participating in a wide range of physical activities (Shephard, 1997).

The second study was completed in Trois-Rivières in Canada between 1970 and 1977 and involved 546 primary school students. Students in the experimental program participated in five hours of Physical Education per week as opposed to the control students who only participated in the regular forty minutes per week. The extra time created for Physical Education was taken away from other academic subjects.

The Australian study was conducted in seven different schools in Adelaide and consisted of over 500 ten year-old students. This program contained two experimental groups plus one control group. Both experimental groups spent 75 minutes per day participating in Physical Education however each group had differing focuses. One group played games that were designed to raise the heart-rate of the participants while the other group emphasized learning new skills.

Each study presented various findings related to Physical Education. The results from the French study showed that the students participating in the

experimental program academically outperformed the students from the control group. However, no further details were given as to how the results were collected. Although this study was pioneering in this field and adds weight to the argument that Physical Education may enhance academic learning, it was unable to show which exact aspect of the alternative Physical Education program was really affecting students' learning. The study did however provide a platform on which other research has been developed.

The Canadian research showed that students receiving extra Physical Education academically outperformed those in the control group. Trudeau and Shephard (2008) add that the students in the experimental group had higher mathematics scores during provincial exams however their English (their second language) scores were lower than that of the control groups. The Australian study indicated that each group – the two experimental groups plus the control group – displayed differing results in the variety of curricular areas. Both the Canadian and Australian studies suggest that Physical Education may affect students' abilities in various subject areas differently. While unable to provide clear answers about the effect of Physical Education, these studies have led the way in the research into Physical Education. All of these studies were able to show that physical activity can be helpful in improving student academic performance.

Other researchers have also determined that there are certain cognitive advantages associated with physical activity. Jensen (2008, p. 38) says that "aerobic exercise improves thinking and learning because of its ability to trigger a fast response, which is critical to facing and coping with challenges." Shephard (1997) suggests that replacing 45 minutes of class work a day with physical activity can increase scores on mathematics tests.

Research was conducted in the 1990s that examined the effects Physical Education has on students. In the study completed by Sallis et al. (1999), a health related Physical Education program was examined using three groups. The students involved in the study were aged between five and eleven. One group was taught by specialist teachers, another by their usual classroom teacher

who had been trained to teach the new curriculum and the final group was a control group. This study showed that there were some greater academic improvements in the two groups that completed extra Physical Education than the control group.

Other studies suggest that having a break between classes can have a positive effect on students' academic performance or attention span (Sallis, et al., 1999). Sallis, et al. (1999) reflect on the work of Shephard (1997) by saying that physical activity could positively influence students' attention span in the classroom. Shephard (1997, p. 119) explains that this may occur due to "an increase of cerebral blood flow, an alteration of arousal and associated neuro hormonal balance, an enhanced nutritional status, or a stimulation of growth in the inter-neuronal connections." This suggests that, from a biological viewpoint, Physical Education may have a positive influence on students' attention span in the classroom. These considerations contribute to the basis for this study.

Shephard (1997) suggests that there is the possibility that teacher bias has affected results of the completed studies. In the Canadian study, teachers were responsible for awarding student grades. Eighty percent of the teachers involved in the study were in favour of the experimental program (Shephard, 1997). This creates the possibility that teachers subconsciously gave students involved in the experimental Physical Education program higher grades as they believed it was benefitting the students. It is therefore important to determine the effect teachers believe Physical Education has on students, which will be considered in the current research study.

### **Holistic Learning in Physical Education**

Physical Education is a broad topic that contains many diverse components. Research has been undertaken in many sub-categories of Physical Education. These include Physical Education in relation to cognitive development, the health benefits of physical activity, the effects of competitive sport, how Physical Education affects children's self esteem, how students behaviour is linked to their academic performance in the classroom due to Physical Education and Physical Education Curriculum developments. However, minimal research has been undertaken regarding

how Physical Education may affect the attention span and behaviour of students.

There has also been research that examines students' attitudes towards Physical Education however this has largely been completed with college and secondary school students while very little research has been conducted with middle [intermediate] school students. There is currently a gap in researching techniques whereby very few studies consider *both* teachers' and students' voices. This underlines the importance of conducting a study that investigates both the students' and teachers' perceptions of Physical Education.

The primary goal of schools is to positively influence their students' mental, social, and physical development. Some schools also aim to enhance their students' spiritual development. Students generally develop socially by being in a caring school community and spending time interacting with fellow students as well as their teachers. These relationships can be developed in addition to the specified learning topics and can be integrated into whole school learning. The New Zealand Curriculum specifies eight learning areas: English, The Arts, Health and Physical Education, Learning Languages, Mathematics and Statistics, Science, Social Sciences, and Technology. The majority of these subjects guide teachers to focus their teaching time on trying to develop students cognitively. This traditional view of education is expanded upon by Sather:

The main focus during the school day is the development of the mind through traditional subjects like mathematics, English and science. Under this persisting model, children sit passively at their desks attempting to develop their minds and reasoning capacity while ignoring the needs of their bodies.

Therefore, the psychomotor or physical component of children's learning often tends to be overlooked. Traditionally cognitive learning has been prioritized above that of psychomotor learning. The idea of ignoring physical activity in education does not comply with the holistic wellness view of education where people should be developing socially, physically, spiritually, environmentally, intellectually, emotionally, and occupationally (Sather, 2011). Some students and parents have the

perception that replacing cognitive learning with physical learning can have a detrimental effect on a child's cognitive development. Research has been conducted that explores the effects of Physical Education on student learning. Some of these studies also provide brief insights into how Physical Education may affect student behaviour. Because Physical Education can affect student behaviour, this may mean that it can also have an influence on the way students learn or their tendency to remain focused during classroom lessons.

### **Health Benefits and Physical Considerations**

Physical activity and exercise are known to aid overall health in both children and adults. Physical Education is a method used for improving fitness which can help counter current trends towards obesity and inactive behaviours in children. "Obesity is just one of many health issues that a comprehensive HPE [Health and Physical Education] curriculum will engage with from an educational perspective". Although the research by Emmel and Penney (2010) was completed in an Australian context, it is also applicable to the New Zealand system. The health benefits associated with Physical Education are a major reason why teachers believe this subject is taught in schools.

### *Obesity Problems*

Issues with children who are overweight and obese are major concerns within society. The percentage of children who are deemed overweight has increased recently. Ogden et al. (2002) explain that a lack of both physical exercise and a healthy diet are contributing to this increase. Therefore, it would be fair to reason that an increase in child physical activity could lead to a decrease in child obesity. Teachers play an important role in helping students be healthy by providing them with opportunities to be physically active by participating in Physical Education sessions. What students currently think about Physical Education must be considered to determine how this subject is influencing child obesity levels. "Based on national concerns over obesity and activity levels, student perceptions of their physical education experience should be of concern as well".

### *Repercussions for Adults*

Physical activity and exercise habits developed during childhood have a strong influence on the activity levels we have as adults. There is also the likelihood that a high level of physical activity as a child could lead to positive health results as an adult. These benefits include “reduced risks of obesity, cardiovascular disease, diabetes and osteoporosis”. With these positive outcomes in mind, it is paramount that children engage in sufficient physical activity to ensure they remain healthy not only as children, but also to provide a platform for remaining healthy as adults. One of the easiest ways to make sure that every child at least has the chance to exercise regularly is for schools to provide a range of opportunities for their students to exercise and therefore stay healthy. Schools therefore have an important role to play in helping students develop healthy fitness habits. Although there are significant health benefits connected with the teaching of Physical Education, there are also other aspects to consider including student behavioural changes. Some of these behavioural changes are now explored.

### **Concentration Problems due to Technology**

Developing strategies to ensure students remain focused during learning sessions is becoming increasingly important for educators. Research has been conducted that shows that various interactions with technology are negatively affecting students’ concentration levels in the classroom. The watching of television by children can be linked with an increase in attention problems. This may be because “in contrast to the pace with which real life unfolds and is experienced by young children, television can portray rapidly changing images, scenery, and events”. To add to this, there is the concept that “excessively bright, fast-moving, and flickering visual displays can have inhibitory and suppressive effects”.

The watching of television during adolescence can be linked to consequences that include attention difficulties, failure to complete homework tasks, frequent boredom at school, failure to complete high-school, low grades and negative attitudes toward school. The content of the television program may also have differing effects on the level of potential attention problems. There is the possibility that “educational television may differ

from non-educational television in terms of pacing or violent content or other features”.

Video gaming and computer use can also negatively affect students’ levels of attention. The age at which people watch television or play the video games does not have any relation to the amount their attention may be affected. An alternative explanation as to why children are affected so heavily by technology is that the time spent using technology is removed from other more beneficial activities such as reading that is thought to stimulate creativity. The fact that the attention span of children is decreasing due to over-stimulation by technological devices such as television, video games and computers could lead to teachers finding it increasingly difficult to keep students focused in the classroom.

### **Curriculum and Teaching Pedagogy**

Curriculum documents are used as a vehicle for governments and policy makers to influence the way education is administered in a school environment. These curriculum documents provide guidelines for teachers to assist in the preparation of classroom programs. Certain subjects must be taught in all schools. Physical Education is just one of these subjects and school administrators and teachers often struggle to suitably incorporate it into a classroom timetable. There are growing pressures on teachers and schools to ensure students reach specified standards in academic areas which can often lead to Physical Education being overlooked and replaced with extra academic teaching time.

There is flexibility within the New Zealand school system to allow the staff in individual schools to decide upon the amount of time that is spent teaching each subject. This means that there is an inclination for school administrators or teachers to include more academic teaching time to raise the academic profile of the school. This has created a gap between Physical Education and other seemingly more important subjects. Many primary school teachers believe that the curriculum is overcrowded which makes it difficult to teach all the required subjects effectively. What is required to be taught in schools is constantly in the spotlight. Many groups with an interest in education – such as various government departments and educational authorities –each have their own agenda with

regards to many areas ranging from expanded curricula activities to more streamlined learning programs.

Curriculum and syllabus documents are designed to show teachers and schools how each subject should be taught. Despite this, one study has shown that some primary teachers do not actively use the New Zealand Health and Physical Education Curriculum. The positive outcomes that are achieved as a result of Physical Education must be clearly documented and made available to policy makers to ensure this subject remains a critical part of every child's education.

### **The Effect of Exercise on the Brain**

Another suggestion has been made as to why physical activity may affect academic performance, this time on a biological level. Research has been completed in this area that indicates that blood flow to the brain increases during a spell of physical activity. More recent neuro imaging technology has shown that exercise can lead to an alteration in brain structure and function that can be beneficial to student learning. Jensen (2008) agrees that Physical activity can increase the blood flow to the brain as by causing an increase in blood circulation within the body. This could lead to an increase in thinking ability which could benefit the performance of students in the classroom. This area of research is very current and it is beginning to become clear that physical activity is strongly linked to changes in the human brain.

### **Development of Further Research**

The research that has already been completed partially determines the effects Physical Education and activity have on students' academic performance levels. More research into how Physical Education impacts students and their learning needs to be completed however to further determine the effect Physical Education is having. Hillman et al. (2008, p. 58) encapsulate this effectively in the following

Even though there is only a small amount of research connecting Physical Education to cognitive performance, there is even less research that examines the effect Physical Education has on student behaviour. More research is needed that analyses the effect Physical Education has on the

way that students learn. Further research will also provide more precise reasons as to *why* Physical Education is able to successfully contribute to student learning. Most of the previously completed research appears to be quantitative. Completing a qualitative study will provide a greater understanding of the reasons why students learn differently after participating in Physical Education. Greater exploration of how of Physical Education affects student behaviour in the classroom could provide the link between physical activity and academic success.

There is the need for research that examines students' perceptions towards Physical Education. Krouscas (1999) states that very little research has been conducted with middle school [intermediate] students that examines the attitudes or perceptions of students towards Physical Education. Very few research studies consider both teachers' and students' voices, which gives this research study a unique quality. The research examined throughout this literature review indicates it is important to conduct a study that investigates both the students' and teachers' perceptions of Physical Education.

### **Conclusion**

Having considered the research that has been undertaken in this area, it has become clear that in the majority of cases, the inclusion of Physical Education in the school program, does not negatively affect academic achievement. Many cases have shown that Physical Education has had a positive impact on students and has helped them to achieve highly in other academic areas. Suggestions have been made as to why this occurs including biological reasoning and increases in self-esteem. Physical Education can also enhance student attention span and concentration levels in the classroom. Research has been able to show that Physical Education still has an important part to play in education and may even improve students' learning potential.

This research study will analyze the perceptions students and teachers have towards Physical Education and how they believe that this subject is affecting students and their learning. The findings of this research will indicate whether the perceived influence of Physical Education on students is comparable to the findings of past research studies.

The methods that were used to gain an understanding of students' and teachers' perceptions in this research study are explained.

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