

# Study on the Effects of Sports on Education Intentions of Grade Eleven Students in Government Schools: With reference to Gampaha District

Sri Lanka Journal of Social Sciences and Humanities  
Volume 2 Issue 1, February 2022: 127-137  
ISSN: 2773 692X (Online), 2773 6911 (Print)  
Copyright: © 2021 The Author(s)  
Published by Faculty of Social Sciences and Languages, Sabaragamuwa University of Sri Lanka  
Website: <https://www.sab.ac.lk/sljssh>  
DOI: <http://doi.org/10.4038/sljssh.v2i1.63>



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**Received:** 27 July, 2021, **Revised:** 06 October, 2021, **Accepted:** 19 December, 2021.

**How to Cite this Article:** Pramudini, K. & Manel, D. P. K. (2022). Study on the effects of sports on education intentions of grade eleven students in government schools: With reference to Gampaha District. *Sri Lanka Journal of Social Sciences and Humanities*, 2(1), 127-137.

## Abstract

Competitiveness in the field of education in a competitive lifestyle has created a knowledge-based education. Various factors influence the achievements of these educational intentions and this study probed the impact of sports on the education intentions of grade eleven students in government schools. The objectives of this study were to measure the level of students' educational intentions, to identify the difference in the educational intentions of students who engage in sports and those who do not, and to identify the relationship between sports participation and educational satisfaction. The study captured all grade eleven students in four government mixed schools selected from four selected divisions in the Gampaha District by using the multi-stage cluster sampling method. The Questionnaire method was used to collect data and 182 students responded. Univariate analysis, two sample t-test, and chi-square test were used to derive the inferences. The findings of the study revealed that students' overall education intentions were at a moderate level, and the levels of attitudes and skills of students were higher than the knowledge of the students. Furthermore, the findings showed that students who participated in sports had developed more knowledge, attitudes, and skills than students who did not participate in sports. Moreover, the study found that the students who engaged in sports obtained higher marks than the other students in the subjects of Science, Mathematics, English and History. When considering sports participation and satisfaction of education, the students who participated in sports were more satisfied with the existing education system, while students who did not participate in sports were less satisfied. The overall conclusion was that sports enabled students to achieve better knowledge, attitudes, and skills that are the intentions of the education. It can be suggested that it is essential to decide to further develop the existing school sports in Sri Lanka.

**Keywords:** Sports participation, Knowledge, Attitudes, Skills, Grade eleven students

## INTRODUCTION

Education is the key to progress in every society. A society without education cannot move forward. That is why education has become an essential part of every country from an early age. Sri Lanka has made great strides in the field of education. In this regard, we can proudly say that our country is one of the most literate countries in the world, with 92.60 percent literacy level (Central Bank of Sri Lanka, 2019). It is the passion and commitment of the education administrators, parents, teachers as well as students that have been able to bring our country to such a high level. But unfortunately for the nation, today, our society as well as our parents only want the academic outcomes of the students. That is why the students have to work hard for it. Today, our parents send their children to private tutors from pre-school age or even earlier and bring the teachers to their homes to educate the child to pass the scholarship examination at the highest level and obtain 9 As in the Ordinary Level examination. Hence, it is a common question whether the child who chases such a competitive speed and gets 9 As is a fully-fledged child with the knowledge, skills, and attitudes that

educators expect. In this competitive learning pattern, various policy changes take place in the field of education and each of these policies helps to achieve the knowledge, attitudes, and skills that are the intentions of education. Various factors influence educational intentions in the field of education and among them, the researcher intended to look at how students' sports activities affect their educational intentions.

When considering the past history of sports, people used to engage in various leisure activities as a means of relaxation after completing their daily activities and they had a lot of fun with it. Because of this, those activities became an integral part of their lives. Therefore, due to the involvement of sports in human life, people in those days lived a longer, enjoying good health as well as physical and mental balance. That good health was as essential to the past as it is for the present. Therefore, the educators of our country were committed to make our students physically and mentally healthy, active, and creative citizens with a balanced personality. About two decades ago, they allocated five periods per

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week of the school schedule for sports. Because of the increased emphasis on sports in those days, the child was active and was able to achieve a higher level of education intention. Even after going home, they often played with their siblings. Because of this, they developed all the qualities of endurance, solidarity, unity, activism, leadership, obedience, and respect. Hence, good citizens were constantly being created and they achieved educational intentions. But today, there are only two periods for sports in the schools' timetables. During both periods, children are encouraged to study in the classroom instead of going to the playground because of the 9 As concept. As a result, students are less likely to be seen today playing and practicing in the evenings.

Surprisingly, the teachers did not object to the children being so tired. But that should come as no surprise. This is because according to the existing education system, the teacher's ability is measured only by the results obtained by the students. The teacher are also answerable if the students' results are low. Due to this situation, the teacher is constantly striving to produce a student who gets 9 As. But the physical and mental health of the student is essential if we are to achieve the desired level of achievement. It is clear from a circular that Sri Lanka's Ministry of Education has decided that sports are essential. It included that the school education process needs to be prepared to provide the necessary background to endow our country with a healthy and creative citizen with good physical and mental qualities. Sports has a special place in fulfilling this function. Accordingly, the Ministry of Education has decided to provide every student with the opportunity to engage in a sport, just as education is provided to every student. According to the Cabinet-approved School Sports Development Programme, sports have been made compulsory for all school children, except students with disabilities. Accordingly, the principals of each school should be informed to consider sports as a compulsory subject for the examinations to be held at the end of each school term and to take necessary steps to award marks in each student's progress record book.

But no matter how much action has been taken by the government, as mentioned above, children have been not directed towards sports. This this because parents think that sports are a hindrance to their children's education? If not, has the level of education of children who engage on sports dropped or are children who do not engage in sports capable of getting 9 As? If so, are their personality traits at a good level? These were problems that had to be faced. Accordingly, it was questionable how sports can affect the education intentions of students.

### **The Research Problem**

Education aims to achieve the goals of education by developing the intention of knowledge, attitudes, and skills. Accordingly, was it possible for the present student to achieve the educational intention of knowledge by continuing to receive classroom education? Or was experience gained outside the classroom also necessary for the development of knowledge?

And was classroom education sufficient to develop other intentions such as attitudes and skills? If not, did the knowledge and experience gained through external activities affect it? These were issues. In addition to classroom education, the Ministry of Education has also issued circulars to direct students to sports. The ultimate goal of every decision taken by the Ministry of Education on behalf of the stu-

dents was to achieve the intention of education. Accordingly, a circular issued by the Ministry of Education stated that every student should engage in at least one sport. If so, it should be able to achieve the intention of education. Accordingly, as it was time to explore the impact of sports on the achievement of a child's educational intention, it examined how sports can affect the educational intention of Grade eleven students in government schools in the Gampaha District.

### **Objectives of the Study**

The main objective of the study is identifying the impact of sports on the education intention of grade eleven students in government schools in the Gampaha District. There are a few specific objectives of the study, which are as follows:

- to measure the level of education intentions among grade eleven students.
- to identify the difference in education intentions among students who participate in sports and those who do not.
- to examine the relationship between satisfaction of education and sports participation.

### **LITERATURE REVIEW**

The impact of sports on the educational intentions of school children has been explored in researches and the literature has been studied under main sections. These two sections are divided into Positive effects of sports on education intention, and Negative effects of sports on education intentions.

#### **Positive effects of sports on education intentions**

Different parties have expressed different views on the relationship between sports and educational intentions. The majority support a positive link between sports participation and educational achievement, while some researchers have shown that participation in sports can have a negative impact on education performance. Gorton (2010), Gritit (2014), and White (2005) said that there is a positive link between sports and academic achievements. Here, many researchers have focused on students' Grade Point Average (GPA) to calculate their academic achievements, and attempts have been made to study the relationship between sports and academic achievement by estimating the difference between students who engage in sports and those who do not. Accordingly, The Grade Point Average obtained by the students in each subject can be used as the best method to measure the knowledge of the students through their school education. This is evidenced by Stegall's (2012) research. The researcher made this conclusion based on information received from students, teachers, and parents at a high school in the Middle East. It is reported that the Grade Point Average of students who engage in sports was 3.25 and the Grade Point Average of students who did not engage in sports was 3.01. This confirms that although the score of students who engage in sports is higher than the score of students who do not, there is no huge variation. A study by Khan et al (2012) which involved 60 teachers and 200 students, found that there was a link between sports and education performance. The GPA of participants was 3.093 and the GPA of non-participants was 2.444, which showed a positive effect on sports participation. Also, participation in sports has a positive effect on students' memory. It is clear that the students who engage in sports have reached higher percentage of scores by absorbing more knowledge through more memory. Evariste & Andala (2020) also supported the

positive relationship between sports and education. They added that students who play sports are interested in completing their homework effectively. Some research papers offer different interpretations of the subjects of students involved in sports. Giles (2012) found that 75 percent of students who engage in sports have a correlation between English and mathematics. Also, Gómez-Fernández & Albert (2020) showed that there is a positive link between physical activity and the educational performance in science, math, and reading. However, the data shows that students who practice more than one day a week have lower scores in science and reading. Some researchers have used teachers, school administrators, and parents as samples, instead of obtaining data from students about their sports and education. Öcal (2006) conducted a research based on information from school administrations, where the researcher uncovered a lot of information about sports participation and educational achievements. Especially, the research also revealed that the Grade Point Average of students participating in sports was higher than the Grade Point Average of students who do not.

Students should be able to achieve the educational intentions of knowledge while pursuing their learning according to the school curriculum and similarly their attitudes should also be developed, since a student who acquires only knowledge is merely a machine. Although there are no complete research reports on how students develop positive attitudes through sports, some research studies have documented students' feelings. Some studies have shown that students who engage in sports develop better attitudes than the other students. Gorton (2010) said, information obtained using the school information system did not contain any negative information about the behavior of the students who engaged in sports. In Turkey, a rating scale for behavior was calculated to obtain information about student behavior, and a higher behavioral rate of students who engaged in sports was found than that of those who do not. It is also shown that higher scores of the responsibility aspect have been gained by the students who participate in sports than students who do not. Thus, there is a significant difference in the overall behavioral development score according to sports participation (Öcal, 2006). Research has shown that participation in sports helps to develop leadership, character, discipline, responsibility and respect (Cotto, 2016). The study, which looked at the social life and identity of athletic students, found that there was an increase in social interaction for all who participated in sports. It was also confirmed that the participants in this study had developed a positive image of student-athletes (Chen et al., 2010). Thus, research shows that attitudes, which are an educational intention, are more developed in students who engage in sports than in other students.

Knowledge, attitudes as well as skills are essential factors for students to achieve their educational objectives. Whether sports produce talented students is a separate issue to be considered. But some researchers have carried out a minor study on the skills of school athletes and they have suggested that sports can improve students' skills. The research based on information from school teachers concluded that students who engage sports show many skills in the classroom, such as organization, responsibility, and goal setting (White, 2005). Craft (2012) confirmed that there is a greater tendency of students who engaged in sports to participate in outdoor activities such as music programmes as well as social associations. What is special is that there are no large differences in the marks of the students who participate in

such outdoor activities. Accordingly, it is proved that sports have been able to develop the skills of the students.

Researchers from different countries have conducted various studies on the impact of sports on educational intentions such as knowledge, skills, and attitudes. But many investigators were particularly keen to study the positive impact of sports while based solely on students' marks or Grade Point Averages. In some studies, conclusions were drawn based on their skills in schools, in addition to the academic achievements of the students. What is special is that the three variables of knowledge, skills, and attitudes which are the objectives of the study, have not been examined simultaneously by an elaborate study. Although studies have been conducted based on school children as well as university students in different countries, no study has been found on the impact of sports on student education intention in Sri Lanka. Therefore, the findings of this study are very important and can add new knowledge to the already existing knowledge.

#### **Negative effects of sports on education intentions**

There have been various researches to monitor the relationship between school sports and educational achievements and they have uncovered both positive and negative effects of sports and education. There are several researchers which see a positive aspect, especially between sports and education, while some have shown a negative attitude.

A study conducted using grade nine and grade eleven students at a small mid-western Cristian school, found that students who do not participate in sports have been able to obtain A passes (Klein, 2011). For grade 11 students, the rate of change in the Grade Point Average is not as large as in Grade 9, but there is a difference. The Grade Point Average of participants in sports was 0.13 less than that of non-participants. However, it has been found that the number of sports in which students participate in has had a negative impact on their education. Considering the marks of students who engage in sports before school starts so as not to interfere with the school's academic work, it was confirmed that there is a negative relationship with the marks of students who do not engage in sports (Gómez-Fernández & Albert, 2020).

Researchers have focused on the changes in students' knowledge as a result of sports, as well as any changes in their attitudes and skills. The study, which looked at the relationship between students' athletic participation and academic achievements using teachers' information, found that students felt that the weakest impact of athletic participation was on drug and alcohol abuse. Teachers stated that as the social interaction of the athletes increased compared to other students, they were found to be addicted to alcohol and drugs (White, 2005, 2010). Accordingly, it can be confirmed that there are some negative aspects of the attitudes of the students who engage in sports, but it is noteworthy that no negative conclusions have been found regarding the skills of the athletes. Thus, some researchers have confirmed various negative influences on students' educational intentions in interpreting students' education through sports. As these conclusions vary according to education in different countries and the sports available, it is essential to look at what kind of impact sports in Sri Lanka cause on education.

In particular, some studies have been conducted in other countries on this issue, but no research papers have been published on the relationship between sports and education intentions in Sri Lanka. Also, in other countries, the three

factors of students' knowledge, attitudes, and skills that differ from sports have been discussed separately, but all three factors have not been tested simultaneously. Hence, the solution is to incorporate all three factors of students' knowledge, attitude, and skills into one study. The conclusions drawn will be able to explore what kind of impact sports actually have on achieving educational intention. Also, the conclusions will add new knowledge to the existing knowledge base.

## METHODOLOGY OF THE STUDY

### *Research Design*

The research design segment describes the purpose of the study, type of investigation, the extent of researcher inference, unit of analysis and the timeline of the study (Gay & Airasian, 2000) and also depends on the nature of the study. The purpose of this study was to examine the effect of sports on the education intentions of grade eleven students in government schools in Sri Lanka. Students attend school mainly to obtain the subject knowledge to succeed in their education performances. However, this study intended to identify the importance of the impacts of sports on the educational intention of grade eleven students in government schools. The quantitative approach was used for this study to identify the different levels of education intentions among the students who participated in sports and those who do not. Quantitative analytical methods were employed for the analysis of measurable data collected through the questionnaire survey and other secondary sources. Simple statistical methods such as univariate and bivariate analyses were used for the analysis of data relating to demographic characteristics, social and economic factors and sports related factors. In addition, the advanced statistical methods such as two-sample T test to identify whether the difference in education intentions among students who participate in sports and those who do not and Chi-Square test were conducted to measure students' satisfaction with education, in studying the relationship between students' education intentions and sports. The unit of analysis were students in selected schools. In this study, data related to the factors on whether they participate in sports and their education intentions could be collected from grade eleven students in the sample areas. Data was collected from selected government schools two months after the results of the Ordinary Level examination were released.

### *Survey Questionnaire*

The questionnaire method was used to collect the quantitative primary data from the study sample. Malhotra (2006) describes the importance of the questionnaires as a tool of quantitative data collection. The questionnaire was a combination of both open-ended and close-ended questions as recommended by Manel, D.P.K.; Sureeporn, P. & Perera, S. (2017), De Vaus (2001) and Jayatissa (1996), for better survey design. The questionnaire was designed to facilitate personal interviews to provide information on demographic characteristics of students, educational and sports information, with all the necessary questions to respond to the stated research objectives.

According to the objective of this study, the questionnaire consisted of four sections. The first section consisted of information about the respondent. The second section was allocated for information about sports participation. The third section consisted of the academic achievements of the respondents and the fourth section was allocated to measure the attitudes of the respondents. Finally, the fifth section

measured the skills of the respondents. The fourth and fifth sections were presented in the Likert scales. These statements were categorized in one to seven categories as strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree, and strongly agree. Also,, the fifth section included extracurricular activities the respondents participated in and their satisfaction with the existing education system. The students' ideas about participation in sports during schooling and suggestions that need to be implemented in education and sports were allocated as the last questions in the questionnaire.

### *Sources of Data*

Success of a research study is determined by its sources of data and method of data collection (Bazely, 2004). As noted by Uyangoda (2010), "researchers can make a choice among many types of data such as primary, secondary, qualitative and quantitative data" (Uyangoda, 2010 pp.8). This study was mainly based on primary data collected from selected students in the Gampaha district. In addition, secondary data was also used.

### *Sampling Procedure and Sample Size*

In studying the impact of sports on grade eleven students' education intentions, all students who were studying in grade eleven in the Western Province were included in the population. The grade eleven students who were studying in government schools in the Gampaha district were expected to be used as the target population. The reason for using the Gampaha district for this study is because this district had recorded the second-highest number of candidates for the G.C.E. (O/L.) examination for the last six years (Department of Examinations Sri Lanka, 2019) and also since the Gampaha district includes all types of schools compared to the Colombo district.

All government schools in the four selected divisions were considered as the sample population. It was decided to use the multi-stage cluster sampling method to select the sample. A first stage sample of four divisions was selected randomly from a total of 13 divisions in the Gampaha district. Each of the selected divisions consists of three types of schools called a mix, girls' and boys' schools, and as a secondary stage, a mixed school cluster was selected. Each of the selected clusters was divided into categories of schools called 1AB, 1C, 2, and 3. Categories of schools 1AB, 1C and 2 were selected randomly as the third stage. Finally, one school from each of the four selected divisions, namely Divulapitiya, Attanagalla, Mirigama, and Minuwangoda was selected again using the SRS procedure. The sample of this study was all grade eleven students aged about 16 years in four government mixed schools selected from four selected divisions in the Gampaha district. The relevant sample of 385 can be obtained by substituting the Cochran formula. But due to the COVID-19 epidemic in Sri Lanka, 384 samples could not be completed and the data had to be limited to 182. Hundred and four female students and seventy-eight male students assisted in responding to the questionnaires.

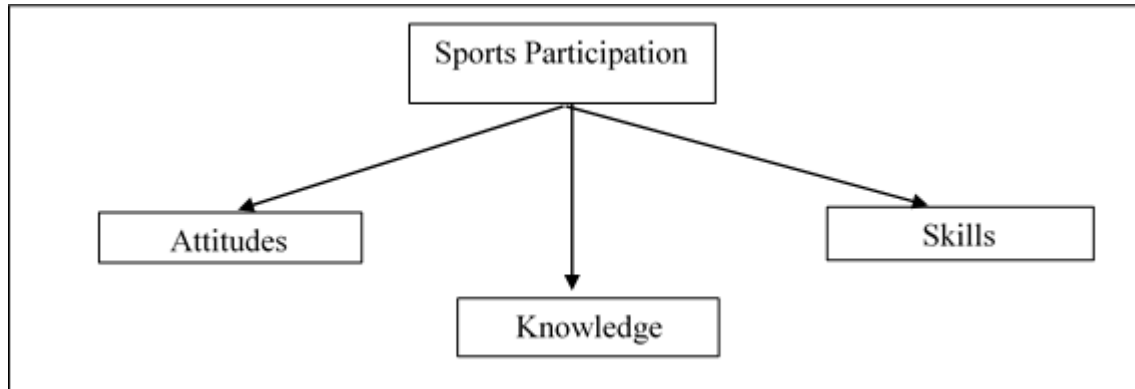
## DATA ANALYSIS AND PRESENTATION

Various methods of analysis were used to achieve the main purpose of the study and to draw conclusions. The SPSS and Eviews software were used to analyze the collected data. The main purpose of the univariate analysis is to describe and find data. Some methods by which we can describe unit data patterns include looking at the mean, mode, median, range, variance, maximum, minimum, quartiles, and standard deviation. In addition, there were several ways to display

unequal data, such as frequency distribution tables and histograms. The two-sample T test was used to study whether the difference in education intentions among students who participate in sports and those who do not and draw the

conclusions. In studying the relationship between students' education intentions and sports, the Chi-Square test was conducted to measure students' satisfaction with education.

**Figure 01: Analytical framework**



Source: Compiled by the researcher, 2020

According to the analytical framework, it was important to identify independent and dependent variables in research. The independent variable is sports participation and dependent variables are knowledge, attitudes and skills of the students.

**RESULTS AND DISCUSSION**

**Descriptive Analysis**

The study is based on grade eleven students in government schools in the Gampaha district of Sri Lanka and is based on data from 182 students. The majority of the respondents to the study were girls, and they made up 104 of the total respondents. This response is 57 percent of the total responses. The number of male respondents was low, with 78 respondents. The response rate of male respondents was 43 percentage on a percent basis. In this study based on students' sports participation, can be divided into two sections depending on whether the students participated in sports or not. Accordingly, the majority of students participate in sports when considering sports participation which is a main factor in the study. It takes up 55 percent of the sample and

quantitatively 100 students can be identified in the sample. Students who do not participate in sports represent 45 percent of the total sample and that percentage is represented by 82 students, while 73 students declared that they joined sports due to their own strong desires. A small number of students are involved in sports in order to become professionals in the future and become strong economically. The peculiarity here is that the majority of students not participating in sports cite sports as a barrier to education.

**Validation of the measurements model**

Table 01 indicates that all observed Cronbach's Alpha values are greater than 0.7. Therefore, it can be concluded that the data are reliable for the analysis. The KMO and Bartlett's Test is performed to check the validity of the data. It tests whether the observed correlation matrix of the indicator variables differ significantly from zero. All KMO values are greater than 0.6. Furthermore, the Bartlett's Test is significant. It means the observed correlation matrix is not an identical matrix. Therefore, it can be concluded with 95% confidence that the data satisfied the validity requirement and that these items can be used to construct an index.

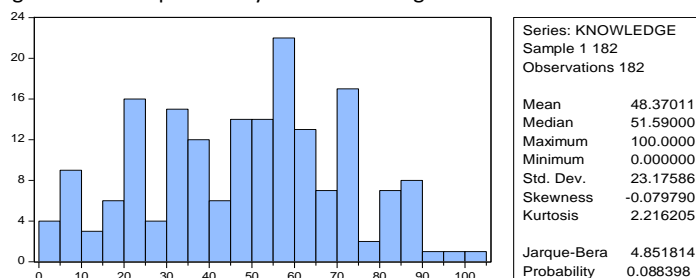
**Table 01: Validation of the measurements model**

Variables	Cronbach's Alpha	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity (Sig.)
Knowledge	0.912	0.916	0.000
Attitudes	0.898	0.912	0.000
Skills	0.925	0.939	0.000

Source: Field Survey, 2020

**Measuring the level education intentions among grade eleven students.**

**Figure 02: Descriptive analysis for Knowledge**

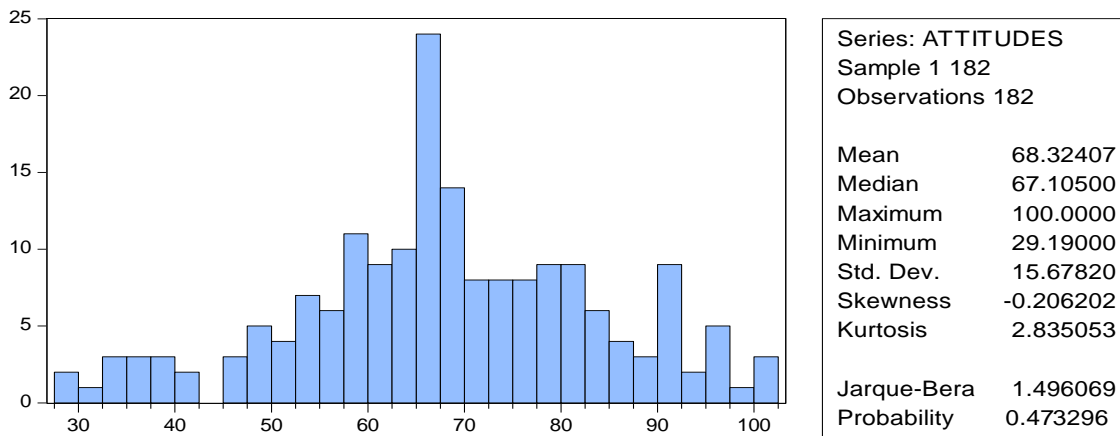


Source: Field Survey, 2020

The overall knowledge of the students is captured by the third term marks of all the main subjects such as Mathematics, Science, English, Sinhala, History, Religion, and the three basket subjects. The Principal Component Analysis (PCA) based on the covariance matrix was carried out to measure the overall knowledge of school students, where 182 students were observed as the sample. The students' knowledge is ranged between 0.0000 (minimum) and 100.0000 (maximum). The average (mean) knowledge of the student is 48.37 and is close to 50. The median distribution is divided so that half of all values are above 51.59 and the other half below. Accordingly, the level of knowledge of 50

percent of students in the population is 52 percent. On average it has deviated about 23.18 (Standard deviation). The skewness coefficient states as -0.0798 and it indicates negative skewness because the mean is less than the median of this data. Kurtosis is 2.2162 and the tail of the distribution is thick and heavy. But looking at Figure 02, it appears that the data are normally distributed. The Jarque-Bera test can further explain this. According to the Jarque-Bera test, it is hypothesized that the variable considered follows a normal distribution and p-value below significance level, and thus indicated the rejection of the hypothesis mentioned. For this data, the significance value is 0.05. Therefore, the variable of knowledge (JB = 4.85, p = 0.088) is normally distributed.

Figure 03: Descriptive analysis for Attitudes

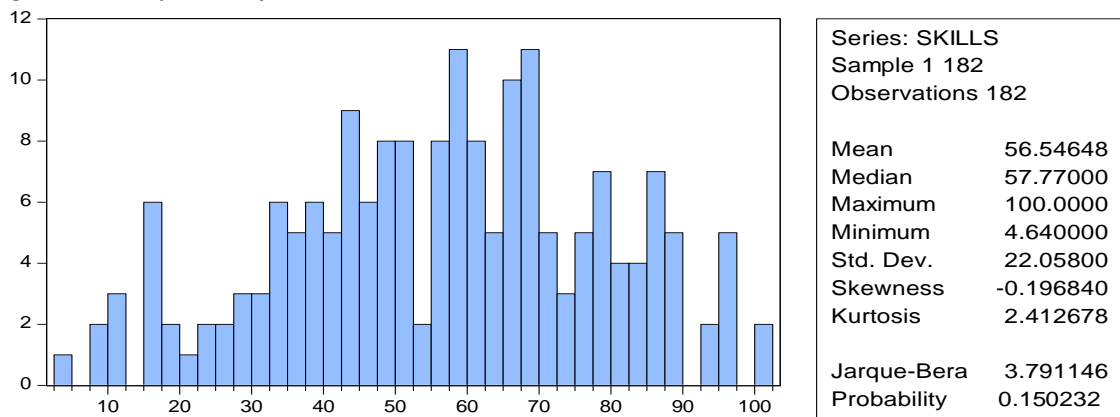


Source: Field Survey, 2020

The attitudes of the students are captured by the Likert scale statements in the questionnaire. The Multiple Correspondent Analysis (MCA) based on a correlation matrix was carried out to measure the overall attitudes of school students, where 182 students were observed as the sample. The average attitude of the student is 68.3241 and on average it has a dispersion of 15.68 (Standard deviation). The students' attitude is ranged between 29.19 (minimum) and 100.00 (maximum), with 67.11 as the median value of students' attitudes. Accordingly, the level of attitudes of 50 percent of

the students in the population is 67 percent. The skewness coefficient states as -0.2062 and it indicates negative skewness. Kurtosis is 2.8351 and the tail of the distribution is thick and heavy. But looking at Figure 03, it appears that the data are normally distributed. The Jarque-Bera test can further explain this. According to the Jarque-Bera test, it is hypothesized that the variable considered follows a normal distribution and p-value below significance level, and this indicated the rejection of the hypothesis mentioned. For this data, the significance value is 0.05. Therefore, the variable of Attitudes (JB = 1.496, p = 0.473) is normally distributed.

Figure 04: Descriptive analysis for Skills



Source: Field Survey, 2020

Students' skills are captured by the Likert scale statements in the questionnaire. Multiple Correspondent Analysis (MCA) based on the correlation model was conducted to measure the overall skills of school students, where 182 students were observed as a sample. The average (mean) skill

of a student is 56.5465, which is close to 60. Students' skills range from 4.64 (minimum) to 100.000 (maximum). The middle distribution is split so that half of all values are above 57.77 and half below. Accordingly, the level of skills of 50

percent of students in the population is 58 percent. On average it is a deviation of 22.06 (standard deviation). The skewness coefficient is expressed as -0.1968, which indicates the negative curve. This is because the mean of this data is less than the median. Kurtosis is 2.4127 and the distribution tail is thick and heavy. But looking at Figure 04 it appears that the data are normally distributed. This can be further explained by the Jarque-Bera test. According to the

Jarque-Bera experiment, the considered variable follows a normal distribution and the p-value is assumed to be significantly higher. For this data, the significance value is 0.05. Therefore, the skill variable ( $JB = 3.79, p = 0.15$ ) is normally distributed.

**Identifying the difference in education intentions among students who participate in sports and those who do not.**

**Table 02: Results for sport participation and education intentions**

		Levene's Test for Equality of Variances									
		t-test for Equality of Means									
		F	Sig.	t	df	Sig. (2-tailed)	(2-Mean Difference)	Std. Error	95% Confidence Interval of the Difference		
										Lower	Upper
Knowledge	Equal variances assumed	3.313	0.070	2.617	180.00	0.01	8.892	3.398	2.186	15.598	
	Equal variances not assumed	1.357	0.246	3.808	180.00	0.00	8.580	2.253	4.134	13.026	
Attitudes	Equal variances assumed	37.195	0.000	3.578	180.00	0.00	11.392	3.184	5.109	17.674	
	Equal variances not assumed			3.798	151.41	0.00	11.392	2.999	5.465	17.318	

Source: Field Survey, 2020

In studying the impact of sports on the education intentions of grade eleven students, three main factors of education intentions namely, knowledge, attitudes, and skills were measured through the construction of indicators. Thereby, a two sample T test was conducted to test whether students' participation in sports affects education intentions. The results are shown in Table 02.

**Identifying whether sports participation affect the knowledge of students.**

In the two-sample T-test, the first Levene's test is used to determine whether there is a difference in variance between the students engaging in sports and those who do not. If the null hypothesis is accepted, then the variance of the two groups is the same. Accordingly, the results of Table 02 show that the value of p ( $F=3.313/p=0.070$ ) is greater than 0.05. Therefore, it can be concluded that the variance between the two groups of participating and non-participating students is the same. Accordingly, the two hypotheses of the two sample T-test are as follows:

H<sub>0</sub>: Knowledge of athletes and non-athletes are the same.

H<sub>1</sub>: Knowledge of athletes and non-athletes are not the same.

Since the p-value of the t-test (0.010) is less than alpha value (0.05) at 5 percent, the null hypothesis (H<sub>0</sub>) is rejected. Since the confidence interval is between 2.19 and 15.6, the zero does not exist, so it can be further confirmed that H<sub>0</sub> can be rejected. It is declared that the result is statistically significant. Therefore, it can be concluded with 95 percent confidence that participation in sports determines the knowledge of a student at 5 percent significant level. It means that the knowledge of students who participate in sports and students who do not participate in sports are different. Then, it is needed to consider what kind of impact this causes. When considering the sign of the mean difference value, it implies

that the knowledge of the students who engage in sports in the first group is significantly higher than the knowledge of the students who do not engage in sports in the second group. Therefore, it is confirmed that sports participation affects the knowledge of the students.

It was concluded that an increase in the knowledge of the students who engage in sports can be seen when considering the knowledge of the students. The index of the knowledge was constructed based on the marks obtained in nine subjects by the students. Therefore, it is necessary to find out in which subjects the athletic students have shown more performance compared to the non-athletic students. Two sample T test can also be used for this.

The students' marks in the nine subjects range from 0-100, which fluctuates under different variations between students who engage in sports and those who do not. According to Table 03, there is no difference of variance between students who engage in sports in subjects other than Mathematics and students who do not. Levene's value for Science, English, Sinhala, History, Religion, first basket subject, second basket subject and third basket subject is 0.193, 0.064, 0.337, 0.200, 0.677, 0.766, 0.807, and 0.158 respectively. The Levene's test is only significant for Mathematics as 0.001. Accordingly, based on the results of the two sample T test, some subjects show a difference in mean and some do not. Since the p-value of the t-test is greater than the alpha value (0.05) in Sinhala, religion, basket subject 1, 2, and 3 for these subjects, the students' sport participation did not affect them. It means that these five marks of the students who participate in sports and students who do not participate in sports are not different.

Since the p-value of Mathematics, Science, English, and History are less than the alpha value (0.05) at 5 percent, the null hypothesis (H<sub>0</sub>) can be rejected. It is declared that the result

is statistically significant. Therefore, it can be concluded with 95 percent confidence that participation in sports determines the marks of Mathematics, Science, English and History of a student at 5 percent significant level. It means that

the marks of the students on these three subjects of students who participate in sports and students who do not participate in sports are different. Therefore, it is confirmed that sports participation affects the knowledge of the students.

**Table 03: Results for subjects and sports participation**

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean	Std. Error	95% Confidence Interval of the Difference		
									Lower	Upper	
Math	Equal variances assumed	11.442	0.001	3.470	180.00	0.001	9.860	2.841	4.253	15.466	
	Equal variances not assumed			3.374	146.98	0.001	9.860	2.922	4.084	15.635	
Science	Equal variances assumed	1.704	0.193	2.474	180.00	0.014	6.600	2.667	1.337	11.862	
English	Equal variances assumed	3.469	0.064	2.250	180.00	0.026	5.780	2.569	0.712	10.849	
Sinhala	Equal variances assumed	0.926	0.337	0.237	180.00	0.813	0.453	1.908	3.313	4.218	
History	Equal variances assumed	1.657	0.200	3.615	180.00	0.000	9.224	2.551	4.190	14.259	
Religion	Equal variances assumed	0.174	0.677	1.203	180.00	0.230	2.728	2.267	-1.745	7.201	
Cat_1	Equal variances assumed	0.088	0.766	0.858	180.00	0.392	1.968	2.292	-2.556	6.492	
Cat_2	Equal variances assumed	0.060	0.807	-0.084	180.00	0.933	-0.189	2.239	-4.608	4.230	
Cat_3	Equal variances assumed	2.005	0.158	1.212	180.00	0.227	2.742	2.263	-1.724	7.208	

Source: Field Survey, 2020

According to Table 02, the Levene's test was performed to test whether attitudes changed among students who engage in sports and students who do not, and the results confirmed that the p-value ( $F=1.357/p=0.246$ ) was not significant. Thus, it can be concluded with 95% confidence that the variance between the two groups is the same. Accordingly, based on the results of the two-sample T test,  $H_0$  can be rejected and the p-value (0.000) is significant. Since the confidence interval is between 4.134 and 13.026, the zero does not exist, so it can be further confirmed that  $H_0$  can be rejected. It is declared that the result is statistically significant. Therefore, it can be concluded with 95% confidence that engaging in sports and not engaging in sports have a significant impact on students' attitudes. Also, it means that attitudes of athletes and non-athletes are not the same. Accordingly, when looking at the sign of the mean difference, it is clear that there is a development in the attitudes of the students who engage in sports compared to the students who do not. Therefore, it is confirmed that sports participation affects the attitudes of the students.

#### Identifying whether sport participation affect the skills of students.

For the Levene's test, grade eleven students were used to determine if there is a difference in variance between participating and non-participating students. If zero, then the assumption is accepted, the variance between the two

groups is the same. Thus, the results of Table 02 show that the value of

$P (F = 37.195 / p = 0.000)$  is less than 0.05.

Therefore, it can be concluded that the variance between the two groups of participating and non-participating students is different. Accordingly, the researcher used the t-test with assumption of equal variances not assumed. The sample T test is as follows:

$H_0$ : Skills of athletes and non-athletes are the same.

$H_1$ : Skills of athletes and non-athletes are not the same.

Since the p-value of the t-test (0.000) is less than the alpha value (0.05) at 5 percent, the null hypothesis ( $H_0$ ) is rejected. Since the confidence interval is between 5.465 and 17.318, the zero does not exist, it can be further confirmed that  $H_0$  can be rejected. It is declared that the result is statistically significant. Therefore, it can be concluded with 95 percent confidence that participation in sports determines the skills of a student at 5 percent significant level. It means that the skills of students who participate in sports and students who do not participate in sports are different. Then, it is needed to consider what kind of impact that has. When considering the sign of the mean difference value, it implies that the skills of the students who engage in sports in the first group are significantly higher than the skills of the students who do



not engage in sport in the second group. Therefore, it is confirmed that sports participation affects the skills of the students.

**Identifying the relationship between satisfaction of education and sport participation.**

The results indicate that of the 182 participants, the majority (29.1 percent) is at the level of one. The lowest percentage (5.5 percent) are in the level of five and level of seven. Of the participants, 54.9 percent are participating in sports

while 45.1 percent represent those who do not. The satisfaction with the education of students who participate in sports takes a positive turn. Students participating in sports are more satisfied with their education than those students who do not, with 33 in the first satisfaction level. Only four of them are not satisfied with their education. Satisfaction with the education of non-sporting students takes a negative image. It is confirmed by the fact that 47 out of all students who do not engage in sports have a low level of satisfaction.

**Table 04: Summary Statistics**

		Participate in sports		Total	
		Yes	No		
Level of satisfaction	1	N	33.0	20.0	53
		% Within satisfaction level	62.3	37.7	10
	2	N	40.0	7.0	47
		% Within satisfaction level	85.1	14.9	100
	3	N	6.0	6.0	12
		% Within satisfaction level	50.0	50.0	100
	4	N	17.0	2.0	19
		% Within satisfaction level	89.5	10.5	100
	5	N	0.0	10.0	10
		% Within satisfaction level	0.0	100.0	100
	6	N	1.0	30.0	31
		% Within satisfaction level	3.2	96.8	100
	7	N	3.0	7.0	10
		% Within satisfaction level	30.0	70.0	100
Total	N	100.0	82.0	182	
	% Within satisfaction level	54.9	45.1	100	

Source: Field Survey, 2020

Chi-square tests can be performed to further statistically study whether there is a significant difference between the

satisfaction level and the participation in sports or not. It is as follows:

**Table 05: Summary Statistics of Chi-Square Test**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	75.892	6.000	0.000

Source: Field Survey, 2020

Hypothesis:

H<sub>0</sub>: There is no association between satisfaction with education and sports participation

H<sub>1</sub>: There is an association between satisfaction with education and sports participation

The test was performed at a significant level of 0.05, and if the p value is less than 0.05, the H<sub>0</sub> is rejected.

Since the p-value (0.000) is less than the alpha value (0.05) H<sub>0</sub> can be rejected. Therefore, it can be concluded with 95

percent confidence that there is an association between satisfaction with education and sports participation. Furthermore, it can be concluded that there is a significant difference between the students' satisfaction with education and sports participation. Thus, since there is a difference between these two variables, the contingency coefficient is presented in Table 06 to find out the strength of the two variables.

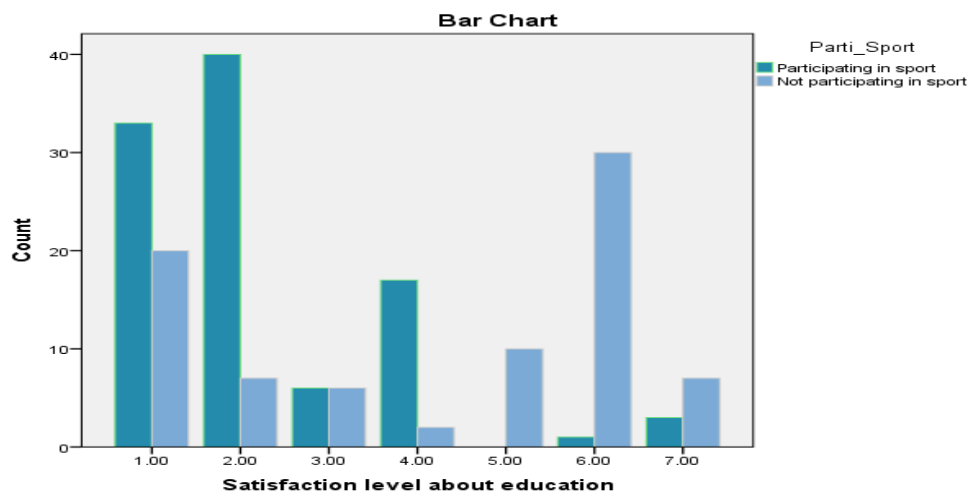
**Table 06: Strength of the variables**

	Value	Approx. Sig.
Nominal by Nominal Contingency Coefficient	0.542	0.000
N of Valid Cases	182	

Source: Field Survey, 2020

According to Table 06, the p-value (0.00) is less than the alpha value (0.05), and it can be concluded that the strength of association between the satisfaction level of education

and participation in sports is very strong. It is easier to visualize data than to read tables. The Cluster bar chart option allows readers to generate a corresponding chart that highlights the categories and frequency of these groups.

**Figure 05: Cluster Chart of Participating and Not participating in Sports**

Source: Field Survey, 2020

Overall, both athletes and non-athletes experience a trend with each satisfaction level. Sports participation rate is in satisfaction level 2, being the highest number of students included. The lowest level of the sports participation is satisfaction level 6. The highest non-sports participation is indicated in satisfaction level 6. Also, it decreases in level 4. The level of 1-4 satisfaction illustrates the high sports participation rate than the non-sports participation rate. Satisfaction level 5-7 indicates the students who do not participate in sports. Accordingly, it can be ensured that students who play sports have more satisfaction with education.

## CONCLUSION

Different results were obtained based on the sample obtained in this study on the impact of sports on the education intentions of grade eleven students, and they can be further explained by the following conclusions:

Knowledge, attitudes, and skills were the three main factors used to achieve the three specific objectives of the study, where indexes were used to measure the education intention of knowledge, attitudes and skills. According to the first specific objective, the summary measurements concluded that the overall behaviour of students' knowledge, attitudes, and skills were at a moderate level. Also, the knowledge of 50 percent of students in the population was 52 percent and the level of attitudes of 50 percent of students in the population was 67 percent. The level of skills of 50 percent of students in the population was 58 percent. Therefore, it can be concluded that the overall level of attitudes of the students is higher than the knowledge, and that the skills of the students are higher than their knowledge.

According to the second specific objective, it was concluded that knowledge differs significantly between students who

engage in sports and students who do not. It was also found that the knowledge of the students who engage in sports is higher than the knowledge of the students who do not. Since knowledge was based on nine major subjects, it was concluded that the knowledge of the students who engage in sports and those who did not changed on the basis of only the marks in Science, Mathematics, English and History. Therefore, it can be concluded that students who engage in sports obtain high marks in intellectual subjects such as Mathematics and Science and therefore, sports developed brain function, inquisitiveness and reasoning ability. It can also be concluded that language skills and memory power are developed through sports by obtaining higher marks in English and History subjects. Attitudes as well as skills which are the other two main factors, concluded that students who engage in sports have positive attitudes and skills compared to those who do not. Accordingly, it can be concluded that the attitudes of the students who engage in sports are at a good level compared to other students and it has been confirmed that the athletes have shown remarkable skills in other outdoor activities in the school as well.

According to the third objective, this study was able to draw a unique conclusion of the existing satisfaction of students with education. That is, students who engage in sports are satisfied with their education whereas students who do not engage in sports have a lower level of satisfaction with their education. The results suggest that the existing education for students not engaging in sports has become boring as it is limited to educational activities within the uniform education system.

Finally, when asked about the impact of sports on education intention during school education, many students answered that it is easier to pursue their education intention by focusing on sports. They also said that sports are a time-honoured

need for schoolchildren to develop mental strength, relieve stress, develop resilience, develop personality, manage time, be active and become good citizens. According to this study, sports are a must for every school student and will enable them to achieve better knowledge, attitudes, and skills that are the intentions of education.

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