The impact of student attendance on student achievement in PSAT: An Analysis of Grade 9, 10, and 11 students in an International School in Dubai

اثر الحضور على التحصيل العلمي للطلاب في تقديم امتحاناتPSAT

تحليل لطلاب في مدرسة دولية في دبي لمراحل الصف التاسع و العاشر و الحادي عشر

by

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Abstract

This explanatory study is aimed at exploring the impact of attendance on PSAT achievement. The existing literature suggests that high level of attendance is correlated with high academic performance (Moonie *et al*., 2008; Wigley 2009; Oghuvbu, 2010) and there is no gender difference in school attainments (Lindberg *et al*., 2010). However, these studies were conducted predominantly in western societies such as the USA and the UK. While there are some research findings linking attendance to academic achievements, they have not established this link in relation to PSAT; hence, there is a limited research, if any, that has contributed to attendance-achievement debate from the UAE. Therefore, the current study has employed an archival research design and collected attendance and PSAT data from an international high school situated in Dubai. The school has 80% attendance policy; hence, attendance performance above 80% is considered 'high' attendance, while attendance lower than 79.99% is grouped under 'low' attendance. Based on the literature review, eight hypotheses were developed and tested using statistical analysis. Interestingly, contradictory to the predominant research findings on this topic, this study has found that there was no statistically significant impact of attendance on academic achievement. The implications of this finding for practitioners have been considered and recommendations have been provided.

Abstract in Arabic

هذه الدراسه التوضيحيه تهدف الى استكشاف اثر الحضور على الاداء الاكاديمي وعلى اختبار القدرات الدراسيه الاوليه المعروف ب(PSAT)، وتقترح هذه الماده الادبيه البحثيه ان الالتزام بالحضور بنسب عاليه مرتبط بالاداء الدراسي والاكاديمي العالي (Moonie et al., 2008; Wigley 2009; Oghuvbu, 2010) ولايوجد هناك فرق في النوع بين دكر او انثى في التحصيل الاكاديمي (lindberg, 2010).

ومع ذلك فإن هذه النوعيه من الدراسات تجري في الغالب بصفه دوريه في المجتمعات الغربيه مثل الولايات المتحده الامريكيه والمملكه المتحده؛ وهناك بعض نتائج البحوث التي تربط بين نسب الحضور والاداء الاكاديمي، ولكنها لم تكن قد انشأت هذا النوع من الارتباط فيما يتعلق بال (PSAT) ومن ثم فالابحاث المتاحه محدوده ، وان وجدت فقد تسهم في تحقيق مناقشة عن الانجاز في نسب الحضور في دولة الامارات العربية المتحدة.

ولهذا فإن هذه الدراسه وظفت تصميم للبحوث الارشيفيه، وجمعت بيانات الحضور وا (PSAT) من احدى المدارس الثانوية الدولية التي تقع في مدينة دبي.

وتتبع هذه المدرسة سياسة حضور ال٨٠٪ ، ومن ثم فإن نسبة الحضور التي تتعدى ال ٨٠٪، تعد نسبة حضور عالية، في حين ان نسبة الحضور الاقل من ٧٩،٩٩٪ تندرج تحت نسبة الحضور المنخفض. واستناداً الى استعراض هذه الدراسة، فهناك ٨ فرضيات جرى اختبارها باستخدام التحليل الاحصائي.

ومن المثير للاهتمام ان تضارب نتائج البحوث السائده بشأن هذا الموضوع، فإن هذه الدراسه اثبتت انه لم يكن هناك اي اثر هام ومباشر احصائياً للحضور على الانجاز الاكاديمي او التحصيل الدراسي، وتم اثبات الاثار المترتبه على الممارسين لهذه الدراسة بالإضافه الى توفير التوصيات اللازمة

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Chapter 1: Introduction

1.1. Background and Rationale

Many researchers (for example, Wheat, 1998; Applegate, 2003; Atkinson, 2005; Cassell, 2007) have explored the attendance-achievement link because attendance is an important factor for good academic performance. High level of attendance is often encouraged by government education-related authorities, school administrators and parents while schools take actions to discourage absenteeism, claiming that improved attendance can enhance positive academic outcomes. As secondary students prepare for their higher education at colleges, universities and other higher education institutions, performance of standardised examinations such as Scholastic Aptitude Test (SAT) becomes a vital concern for academics, teachers, parents and other stakeholders (Chen and Lin, 2010). University places are often awarded to those students who achieve higher scores in standardised tests than those who obtained low grades. Under such higher education systems, if students got lower scores in mathematics, English reading and writing skills, then they would unlikely be able to secure a place in universities. For this reason, it is one of the primary objectives of parents to send their children to 'good' secondary schools where they would learn necessary skills to do well in standardised examinations. Many affluent parents want to their children to study in good schools and hence they choose to educate them in fee-paying schools, both private and international schools, assuming that these private schools are better at preparing their children for university placement examinations.

Even if the key stakeholders have concerns about students' poor academic performance, some students fail to attend school as required by school attendance policy due to host of different reasons, including parental factors, truancy, usage of alcohol, illicit drugs and cigarettes, and family structure (Miller and Plant, 1999: Teasley, 2004). One significant factor contributing to poor school attendance is truancy (Henry, 2007), the action of skipping school without any

valid reason. Peer pressure plays a significant role in playing truant, although there are many other reasons for students skipping school (Gullatt and Lemoine, 1997; Gottfried, 2010). Ill health is also another factor that can increase the number of days students being absent from their school sessions. Although there are many factors that influence students being absent to school at secondary age, this research does not focus on identifying the reasons for students' absenteeism, but rather it is concerned about exploring the relationship between attendance and academic achievements in Preliminary SAT or PSAT in grades 9, 10 and 11. Hence, it aimed at exploring the impact of attendance on PSAT achievement. While SAT is a highly recognised standardised exam that is used for college entrance purposes (ADS, 2017b), the PSAT examinations are offered to students in the high school in Dubai as a tool for preparing students for the SAT examination. Although it is the case, the results of the PSAT are considered important when selecting students for the National Merit Scholarship in Dubai (ADS, 2017b). To achieve satisfactory results in either PSAT or SAT, it is necessary to remove factors that lead to skipping school by students and encouraging to achieve a high level of school attendance for the purpose of attaining higher academic performance.

From an academic perspective, researchers have shown a significant interest in studying whether increased attendance to school and classes has any bearing on their exam results and academic achievement. According to Chen and Lin (2010), the attendance-achievement relationship has received a noticeable attention recently because of its link to securing placements in good higher education institutions and achieving a successful academic career. However, further empirical research is needed in different context as the majority of the existing research comes from USA and other western societies (Chen and Lin, 2010). In the current study, an attempt was made to identify the academic works that have been done on the topic in hand using various sources, including search engines (Google scholars), textbooks and

peer-reviewed journal articles (both print and electronic). The outcome of this effort leads to the conclusion that while there are some research findings linking attendance to academic achievements, they have not established this link in relation to PSAT. Most importantly, there is very limited research, if any, on finding out the relationship between attendance and PSAT. Furthermore, the researcher could not find any credible academic work on the attendance-PSAT link in the context of Dubai in either public or school schools. Therefore, there is a need to carry out further academic work on establishing the link between student attendance and PSAT results in the context of schools in the UAE. For this reason, the present research aimed at investigating the attendance-academic performance link in private schools in Dubai collecting and analysing PSAT results against students' attendance records.

1.2. Research Context

There were many options of standardized tests that were available to use in the current study such as MAPS, PSAT, ACT and SAT in order to determine the relationship between student attendance and student academic attainment. However, PSAT has been chosen because the largest number of students took PSAT in the International school in Dubai. The PSAT examinations are important for students and their parents because the outcomes of these tests can answer the question whether or not a student will be able to enrol in higher education programmes offered by well-known universities at home and abroad. While Grade 9 students usually take MAPS, Grade 12 take SAT for grade transitional purposes. However, PSAT is one common examination to all students in the grades 9, 10 and 11. Although this is the case in the school in question, PSAT examinations for grade 9 are different to that of the PSAT examinations given to the grade 10 and 11.

1.3. Aim and the Purpose of the Research

The aim of this research is to investigate the impact of student attendance on their achievement in Preliminary Scholastic Aptitude Test (PSAT) in grades 9, 10, and 11 as determined by PSAT English (reading and writing) and mathematics examination scores. As explained in the introduction, other researchers have investigated the link between student attendance and PSAT results, the primary reason to carry out this research is to test this assumption in a different context to see whether the same or different results could be established. The purpose of the study is to explain the relationship between attendance and PSAT examination results. The following research questions have been addressed, while the hypotheses have been tested in order to determine the effects of student attendance on PSAT achievement.

1.4. Research Questions and Hypotheses

The present research is interested in finding answers for the following questions. “Does increased attendance result in higher performance in PSAT in grades 9, 10, and 11?” “Does lower level of attendance result in poor academic attainment in PSAT in grades 9, 10 and 11?” Is it only school attendance that accounts for low/high student achievements? What other factors can influence student low/high achievements? Informed by these questions, the following hypotheses have been worked out in this research.

a) There is a strong positive correlation between student attendance and their PSAT achievement,
b) Low student attendance negatively affects their reading scores,
c) There is a strong positive correlation between student attendance and PSAT Math scores.
d) Low student attendance negatively affects their writing scores.
e) Male students get absent to school more frequently than female students

f) More male students have performed better in PSAT examinations than female students
g) Grade 11 students' academic performance is better than grade 10 students.
h) Grade 11 students' academic performance in overall English is better than grade 10 students.
i) Grade 11 students have achieved higher average scores in Maths than 10th graders.

A sample of high school students' attendance records and their PSAT results in English, mathematics, reading and writing have been analysed to test the above hypotheses.

1.5. Significance of the Study

The present study investigated the relationship between student attendance to school session and their academic performance in PSAT English and maths examinations results. This investigation is limited to one school's attendance records and PSAT result; hence, only focusing on finding the link between attendance and PSAT performance, not discussing other factors such as parental involvement or student motivation. Previous researchers have studied this link taking other contexts such as different standardised tests, grades and cultures. These researchers have also examined the effect of increased absenteeism on student academic performance. They also have examined the link between student attitudes towards learning and their academic outcome. However, these researchers have not explored the relationship between PSAT results and student attendance performance in the context of UAE, Dubai. Therefore, the present study can contribute to the existing attendance-achievement literature in three different ways. Firstly, the findings of the current study will contribute the wider body of literature pertaining to the relationship between higher attendance and greater academic performance. Secondly, the current study will provide insights into understanding the

attendance-achievement link in the Dubai context. Thirdly, this research has contributed to the researcher's professional development as it enabled them to learn new skills.

1.6. Conceptual Framework

The conceptual framework can help readers to understand the key concepts used in this study. Figure 1 shows these concepts.

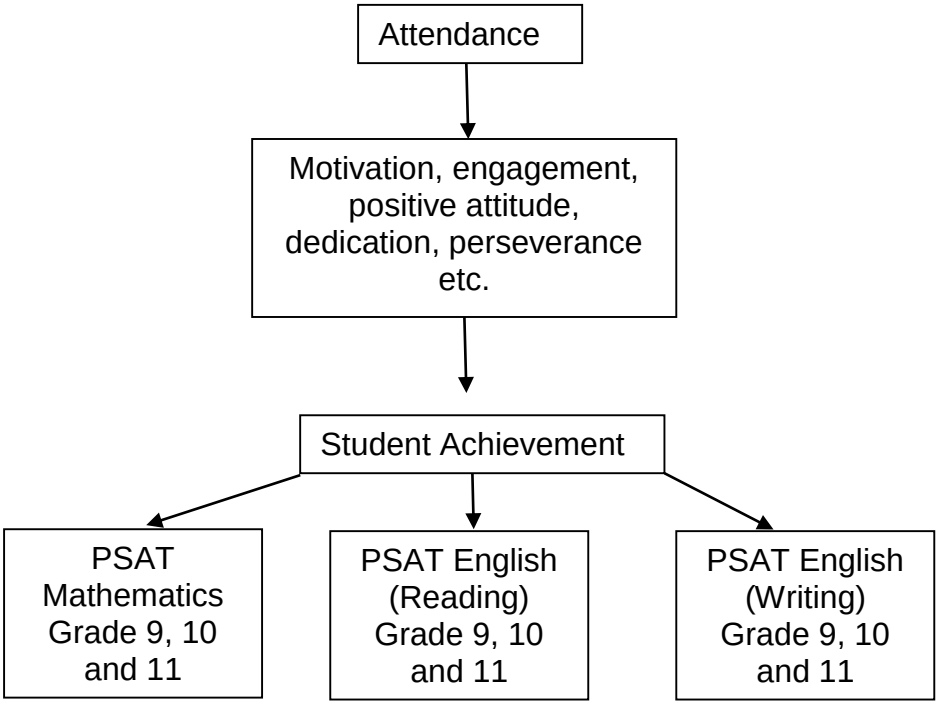


Figure 1.1: Conceptual Framework

As shown in Figure 1, the two most significant variables that are tested in the current study are attendance and student achievement in terms of students' performance in PSAT examinations in mathematics and English language in grades 9, 10 and 11.

1.7. Definitions of key terms

The definitions are important to help readers to understand the key terms used in this research. For this reason, the following terms are used as follows:

1. Academic Achievement - the extent to which a student has achieved sufficient PSAT scores enabling him/her to secure a place in higher education institutions. The achievement is measured using benchmarks; eg. Examination and test results (Dubai Schools Inspection Bureau, 2012).
2. Attendance - this is being present in school lessons as required by attendance policy of a school.
3. Non-attendance - this is the act of skipping school sessions or not being able to present for school lessons.
4. Truancy - this is about not attending school without any valid reason.
5. PSAT - this term refers to Preliminary Scholastic Aptitude Test for grades 9, 10 and 11.

1.8. Research Assumptions

There are two assumptions under which the current study has been carried out.

1. It is assumed that all grade 9, 10 and 11 students in the international school in Dubai with higher level of attendance records will achieve higher scores on the PSAT examinations in English and Mathematics than those students with a lower levels of school attendance.
2. Another assumption made in this research is that male students with higher attendance records in grades 9, 10 and 11 will score higher in PSAT mathematics and English examinations than those female students with higher attendance records.

1.9. Report Organisation

The dissertation is structured in the following order with six chapters. The first one is the introduction, where the research background and rationale has been provided. In addition, this chapter has laid out the research aim and purpose with the research questions and hypotheses.

The next chapter is the literature review, where the works of previous researchers have been critically reviewed. This chapter also has identified some research gaps. The third chapter is the methodology chapter where the research design has been justified with the research method and data analysis. The fourth chapter, then goes on reporting the data analysis and the results of the data analysis. The fifth chapter is the discussion of the dissertation where the existing literature is compared with the findings of the current study. Lastly, the sixth chapter is the concluding chapter where the conclusions will be provided. This chapter also offers some recommendations and directions for future research.

1.10. Summary

This chapter has introduced the research with the background of the research. It has also developed a rationale for undertaking the current research. In addition, the research context has been explained with an overview of the standardised tests conducted in Dubai. Apart from these, this chapter has defined the research aim, purpose and questions. Linking the research questions, some hypotheses have also been developed followed by an explanation of the significance of the research. What is more, a conceptual framework has been provided and the definitions of key terms are given. Lastly, some research assumptions have been considered.

1.11. Conclusion

Introduction is an important chapter because it is the groundwork for the study. As stated above, it gives the background and rationale of the research in addition to the research aim and questions.

Chapter 2: Review of Literature

2.0. Introduction

This chapter reviews the existing literature on student attendance and its impact on student academic performance, in particular achievement in reading, writing and maths. Ziegler (1972) and Applegate (2003) are among the researchers who have emphasized the importance of student attendance to their academic attainment. Student attendance is calculated as percentage (% = 100 x Actual days in attendance/Possible school days). The difference between the possible school days and actual days in attendance is absence days.

Previous research has shown that excessive absenteeism is detrimental to students' academic achievements (Moonie, Sterling, Figgs and Castro, 2008). Wheat (1998) argues that a 25 per cent reduction in excessive absenteeism would result in 22,000 more students to achieve higher national average scores on standardised tests in the United States. In his study, Wheat (1998) states that the relationship between student achievement and attendance is "grounded in common sense" (p. 2). It may be true in the US, but there is no clear empirical evidence whether this is the case in Dubai, giving a good reason for further exploration of the attendance-achievement relationship. Rothman (2001) goes further in explaining that students would find difficulty to understand what is taught in school, if they do not attend learning. Therefore, Rothman (2001) takes the view that improving student attendance will enhance student academic achievement. The attendance-achievement relationship has attracted many researchers and studied in different context. However, most of the research comes from America and other Western countries, with little, if any, input from Arab countries. This relationship has also been studied using various factors; however, many researchers (for example, Wheat, 1998; Oghuvbu, 2010) have found that irrespective of economic, cultural and

social factors, schools with a higher proportion of student attendance achieve better test scores than the schools with lower attendance.

Student attendance literature mainly focuses on the impact of non-attendance to school, irregular attendance and playing truant on student academic performance. This chapter covers the importance of student attendance, the relationship between excessive absenteeism and student achievement and the link between attendance and student success.

2.1. The Importance of Student Attendance

It is a common view held by many researchers and practitioners that regular school attendance has a positive impact on school success (Ziegler, 1972; Applegate, 2003; Moonie et al.,2008: Gottfried, 2015). Cassell (2007) argued that student attendance was regarded as an important component providing students with positive school experience for almost all students. In his Doctoral thesis, Applegate (2003) concluded that regular school attendance was directly related to improved academic achievement. Other benefits have also been established in the existing literature, including social benefits (opening up communications channels between students and teachers), developing friendships that sometimes last for lifetime and developing independence which may be important to students for their future (Ary, Jacobs, Razavieh and Sorensen, 2010).

For these and other reasons, both public and private schools in the UAE encourage students to achieve 100 per cent school attendance. For example, in its attendance policy, Dubai British School states that the school actively encourages 100 per cent attendance for all students because the school, not only believes that good attendance contributes to students' personal development, but the school also agrees that attendance is fundamental for achieving

exceptional academic performance. The UAE law does not allow a student being absent from school for more than 21 days in an academic year and these days must be authorised or excused absences. Al-Suwaidi (1997, p. 123) states that "a federal law was passed" in July 1972, "making school attendance obligatory for all children over six years of age, and free for all citizens". In accordance with this law, some private schools in the UAE have attendance policies that suggest permanent exclusion from school if a student failed to attend school for 20 days consecutively. Furthermore, the UAE law requires school administrators to deal with chronic illnesses, long-term ill health or family emergencies on a case-by-case basis (Al-Suwaidi,1997).

The importance of attendance has also been highlighted by scholars. Some earlier researchers (for example, Easton and Engelhard, 1982) have compared academic results between students with regular attendance and irregular attendance. These studies have found that those students who attended school regularly performed significantly better than those who did not (Easton and Englehard, 1982). Similarly, Lan and Lanthier (2003) found that poor attendance was a significant factor that affected student alienation and the lack of engagement in learning, leading to student finishing their academic career. Moore's 2005) study also discovered that high rates of attendance were strongly correlated with high level of academic performance. Conversely, low rates of attendance were strongly correlated with poor performance. More recent studies have also suggested that increased absenteeism is damaging for students' academic performance. In his research, Gottfried (2010) revealed that a higher percentage of absence put the students at great risk, in particular mathematical success. Chronic absenteeism (10% or more school absence) affects not only the absentee but also has a significant impact on their classmates' academic performance (Gottfried, 2015). Lower school attendance is also linked to the likelihood of future unemployment and dependency on welfare system. Therefore,

regular school attendance is very important for students to achieve success in their academic work.

2.2. Absenteeism and Student Achievement

Many researchers are hesitant to provide a definition of student success because there is a lack of agreement as to what constitutes academic achievement; however, student achievement is sometimes defined as the extent to which a school or a student is able to achieve their short and long-term academic objectives (York, Gibson and Rankin, 2015). Student academic achievements is linked to many factors, including parental involvement (Jeynes, 2007), teacher effectiveness (Rivkin, Hanushek and Kain, 2005), student attitudes towards learning (Gullatt and Lemoine, 1997) and student own efforts (Carbonaro, 2005). By contrast, a high level of absenteeism is associated with poor academic success, as found by many researchers. Absenteeism is often regarded as non-attendance to school and lessons. Kearney (2016) defines school absenteeism as follows:

> *...a child's absence from school, which can come in many forms. A child may be completely absent from school for a short or a long period of time. Or, a child could miss part of a school day in the form of tardiness, a skipped or otherwise missed class, or premature departure from a school campus. (p. 2)*

Research has found that a high level of absenteeism is detrimental to educational achievements. Moonie *et al*., (2008) conducted a study that has examined how excessive absenteeism and student grades are related. The study was focused on African American children with asthmatic illness, who regularly absent school. The researchers used a sample of 3812 students whose ages were between 8 and 17, who took the Missouri Assessment Program (MAP), a standardised test, in 2003. Having analysed the results using statistical models, the researchers

concluded that there was a significant inverse relationship between student performance on the MAP and absenteeism, after adjustment for covariates. This means the higher the absenteeism, the lower the MAP score and conversely, the lower the absenteeism, the higher the MAP score (Moonie *et al*., 2008). While this study has shown the importance of student attendance to improve their academic achievement, it investigated students who had a health issue that prevented them from attending school regularly. The study was also situated in urban American schools; hence, the study context was different from the current study.

Another study that examined the attendance-achievement link is by Gottfried (2009). The researcher introduced two new terms to describe absenteeism: excused and unexcused absence. The study used a quantitative approach and it was a longitudinal study, which began in 1994 and ended in 2000. The data were collected from grade 2, 3 and 4 students who were learning in the Philadelphia School District in the States. This study discovered that the students with excessive unexcused absences were at a significant risk of poor performance in mathematical achievement. However, Malcolm, Wilson, Davidson and Kirk (2003) stated that there was no point in distinguishing between authorised and unauthorised absence because of the policy was put into practice in different ways by different schools. Despite this contradiction, both Malcolm et al. (2003) and Gottfied (2009) agree that a high level of absence to school is positively linked to poor academic performance. Although Gottfried's (2009) study has benefited the current study, it has examined only elementary-grade students, not secondary or higher secondary students. This research also was an American study where the national culture is different from that of Dubai's.

An English study, which took multiple stakeholder perspective explored views from local educational authorities, teachers and parents about the impact of student absence on their

academic attainment, behaviour and safety. This research report was commissioned by the Department for Education and Skills and put together by Malcolm *et al*. (2003). This qualitative study took a sample from seven local educational authorities and the analysis of the collected data revealed the following. The report found that full school attendance was necessary for improving academic attainment and children's safety as well as minimising disruptive behaviour. From the parents' contributions to this report, it showed that they wanted their children not to miss any school days, because they thought that regular school attendance was associated with children's academic performance (Malcolm *et al*., 2003). According to the parents who provided information for this report, the primary cause of school absence was truancy, which happened due to bullying, peer pressure and problems related to teachers. Most worryingly, Malcolm *et al*.'s (2003) found that 16 per cent of secondary students truanted from their schools. Therefore, school attendance is an area of concern to schools and parents because if students skip school, then this would affect their academic performance (Malcolm *et al*., 2003).

In addition to analysing the impact and causes of increased school absence, some scholars have examined the impact of programmes that aimed at improving student school attendance. Educational authorities encourage reducing student failure rate, while schools carry out programmes to decrease student drop-out rate. Epstein and Sheldon (2002) explained the importance of reducing truancy and excessive absenteeism stating that these were also goals set out by many schools and local educational authorities. The attendance-achievement research has looked at not only how attendance-enhancement programmes affected students' performance, but they also investigated the impact of increased student attendance on their academic performance.

Pearson and Banerji (2010) were interested in examining a dropout prevention programme (DPP), which was designed to lower the rate of dropouts from ninth grade. This study was focused on investigating the effects of this programme on students' grade point average in math and reading achievement, dropout rate and school attendance. This study used data from students from six high schools where the dropout prevention programme was put into practice. The results of the study were compared with a sample of students who studied in the year before the DPP was undertaken. The outcomes of this study indicated that there was a significant positive effect of the DPP on student performance, dropout rate and school attendance. Therefore, this study concluded that increasing student attendance would result in better performance in terms of their academic achievements. However, there are many factors associated with skipping schools, including social, economic and family factors (Wilkins, 2008), which have not been studied in detail in Pearson and Banerji's (2010) research.

2.3. The Relationship Between Attendance and Student Achievement

Some researchers have examined the link between school attendance and student academic attainments. One such study is Oghuvbu's (2010) research that has examined the link between attendance and students' academic performance in Nigeria, an African nation. This study took a sample of 2860 students and analysed their performance in terms of academic and attendance performance in percentage scores. The data were obtained from 58 secondary schools in Nigeria in Delta State and the data were analysed using statistical methods such as linear regression models and percentage means. According to the author, the results of this study showed a positive correlation between student academic performance and their attendance percentage. In fact, the study concluded that 22 per cent of academic performance could be explained by student attendance performance. If this is the case, then improving student school attendance is significantly important for achieving higher academic results. Oghuvbu's (2010)

study is valuable to the current study as it examined secondary students' academic performance in relation to their school attendance. However, this study was done in Nigeria, where the school system may be different from that of Dubai's. Therefore, further research is needed taking data from Dubai secondary schools.

Another study that looked at the relationship between attendance and student performance is Wigley's (2009) research whose purpose was to investigate the impact of attendance on students' examination results. This study used a sample of 179 psychology students at A/S level and employed quantitative measures to determine the results of statistical tests conducted by the researcher. Using a Pearson Product Movement Correlation tests, the findings indicated that there was a positive correlation between students' examination performance and their attendance ($r = .221$; $p = 0.01$). Although this study is relevant to the current research, its focus was on students who studied psychology, rather than PSAT. The research also was not conducted in Dubai. Therefore, additional research needs to be carried to establish the impact of poor attendance on academic achievements in the context of Dubai schools.

In the Netherlands, Meulenbroek and van den Bogaard (2013) wanted to know the link between student attainment and their attendance in a standard calculus programme. This study used a logistic regression model, a statistical method to analyse the relationship between two variables. The researchers used this method in order to determine whether the correlation was significant, if there was one. The study concluded that the pass rate of the students who attended organised classes regularly was greater than 75 per cent, which was significantly higher than those students who attended fewer classes (Meulenbroek and van den Bogaard, 2013). Therefore, the authors argue that there was a causal relationship between attendance and academic performance level. This study has contributed to the current research; however, it did not study the impact of attendance on the PSAT results; nor was it conducted in Dubai. Thus,

further research is needed to establish the link between attendance performance and students' PSAT outcomes.

Furthermore, Cassell (2007) investigated the relationship between student attendance and test scores in a standardised test known as Virginia Standards of Learning Test (VSLT). The researcher used test scores of fifth graders who took reading and mathematics tests between 2005 and 2006 to determine the link between the two variables. The data were obtained from the Virginia Department of Education and these data were analysed using statistical methods. Pearson correlation coefficients were generated using the collected data. The author of the research report indicated that there was a significant positive correlation between school attendance of students and students' academic performance on the VSLT. This study also found that higher attendance produced better mathematical results than students' English performance. Therefore, the findings of Cassell's (2007) study have contributed to the current research. However, Cassell's (2007) research was conducted in Virginia on the VSLT, a criterion-referenced test taking samples from only grade five students. Therefore, it has a little relevance to the current study because it is concerned about academic performance of grades 9 – 11 in Dubai on PSAT. Hence, further research is needed to determine the relationship between student attendance and the results of PSAT.

Newman-Ford, Fitzgibbon, Lloyd and Thomas (2008) also were interested in investigating the relationship between student attendance and their college performance because according to these researchers, the previous findings of attendance studies were inconsistent. However, Newman-Ford *et al*. (2008) acknowledged the existence of empirical evidence linking attendance and academic performance, but argued that there were numerous limitations of data collection, including the use of manual data entry and paper-based attendance monitoring systems. In Newman-Ford *et al*. (2008) study, an electronic attendance monitoring system

known as UniNanny® was used because of its ability to provide high-quality attendance data, minimising disadvantages related to the traditional paper-based methods. This particular study evaluated 22 first year modules selected from four undergraduate courses and examined the attendance data obtained from the UniNanny® system. Using Pearson's correlation coefficient, the results of the data analysis indicated a strong correlation between students' academic performance and their attendance to lectures. However, Newman-Ford *et al*. (2008) research examined undergraduate students' academic performance in relation to their attendance, not secondary students' academic attainment on PSAT. This study was also not located in Dubai. Therefore, further research is needed to establish the link between students' attendance and academic outcomes in the context of Dubai secondary schools.

Another recent research by Clark, Gill, Walker and Whittle (2011) attempted to answer the following question: "*Does attending lectures improve student performance?*" (Clark *et al*., 2011, p.199). This study collected both quantitative and qualitative data from first-year and final-year students to determine whether there was a statistically significant link between attendance and academic performance. The overall result of the study indicated that the relationship was moderate, whereas a very high level of attendance was "statistically associated with an improvement in performance over very low attenders of between 5.3 and 12.8 per cent" (Clark *et al*., 2011, p.199). Therefore, the researchers have concluded that the attendance-performance relationship is complex and requires further studies. While this study has contributed to the current study, it did not examine the attendance performance in relation to secondary students' PSAT performance. Therefore, additional research is needed.

Lastly, Chen and Lin (2010) carried out a randomised experiment to find out the effect of average attendance of students who attended lectures on their exam performance. This study took college students' attendance and exam results as data. Using the randomised experiment

method, the researchers have found a significant positive effect of attendance to lectures on students' exam performance. According to Chen and Lin (2010, p. 213), "on average, the effect of attending lectures corresponds to a 9.4 percent to 18.0 percent improvement in exam performance for those who choose to attend classes". It is concluded by the researchers that a high level of class attendance leads to improved exam results for college students. Although this study is valuable to the current research, it does not reflect the context within Dubai colleges, nor has it explored the outcome of the exam results using the PSAT from grades 9 – 11 students. Therefore, doing further research is needed to see if the same results can be deduced from the data obtained from Dubai secondary schools.

2.4. Summary

This chapter has reported a review of the existing literature on the attendance-achievement relationship. It has analysed studies in different contexts, at different age groups and subjects of learning. Some researchers (for example, Cassell, 2007; Moonie *et al*., 2008) have examined the relationship between attendance and academic performance in elementary level students. These studies also come from the States examining the link between state-level examination outcomes and students' attendance. Other researchers (for example, Oghuvbu, 2010; Wigley 2009) were interested in finding out the attendance-achievement relationship using the data from secondary schools. These studies were located in different parts of the world, including Nigeria. There are another group of researchers (for example, Meulenbroek and van den Bogaard, 2013; Newman-Ford *et al*., 2008) who wanted to establish the link between college students' attendance to lectures and their exam performance. While these studies have contributed to the current research, there was limited empirical evidence, if any, coming from empirical research from Arab world, in particular from Dubai researchers.

Previous researchers have also examined the attendance-achievement relationship within different subject areas. Some studies have looked at American standardised tests (for example, Virginia SOL Test), whereas others have investigated language performance within attendance-achievement studies. Other attendance research has also examined correlation between mathematics performances in relation to the level of student attendance. However, there is limited research, if any, that has explored the impact of attendance on PSAT outcomes. The above literature review suggests that while there are some studies that have examined the relationship between attendance and academic achievement, Atkinson (2005) and Epstein and Shelton (2002) have pointed out that there has not been sufficient research conducted on attendance-achievement relationship. Therefore, the current research aimed at filling the existing research gap in the context of Dubai secondary schools, in particular collecting data from grades 9, 10 and 11 on the relationship between their attendance and PSAT performance. The next chapter provides details about the research design adopted in the current study.

2.5. Conclusion

While there is literature that has presented debates about the attendance-achievement link, much of it comes from the Western World, which clearly shows that Dubai-based research on this topic is scarce.

Chapter 3: Methodology

3.0. Introduction

The research question that the present research aimed at answering is this. “Does increased attendance result in higher performance in PSAT in grades 9, 10, and 11”? Following this question, the researcher has developed some hypotheses that are outlined in the introduction chapter. As established in the literature review above, there is some evidence showing that

there is a positive link between attendance and student academic attainment (Rumberger and Larson, 1998). However, research on attendance-achievement link is scarce in the context of Dubai, UAE. This chapter discusses how the research has been conducted to test the hypotheses, with the research design, including research philosophy, approach, strategy and the choice of data collection and analysis. In addition, it will discuss the concept of research validity and reliability before considering ethical issues related to the research process of present study. Lastly, it ends with a summary of the discussions in the chapter.

3.1. Research Design

The research hypotheses have influenced in deciding the most appropriate research design for the present study. This explanatory study aimed at explaining the relationship between the impact of student attendance (independent variable) on PSAT achievement (dependent variable). Johnson and Christensen (2016) state that explanatory research is often aimed at studying a problem to explain the relationship between independent variables and dependent variable. According to Creswell (2014), quantitative researchers are more interested in finding answers for *why* question or in engaging in cause-and-effect thinking rather than analysing views and opinions of research participants.

For this reason, the following hypotheses were tested using the data (PSAT results and students' attendance records) obtained from a Dubai international school.

a) There is a strong positive correlation between student attendance and their PSAT achievement,
b) Low student attendance negatively affects their reading scores,
c) There is a strong positive correlation between student attendance and PSAT Math scores.

d) Low student attendance negatively affects their writing scores.

e) Male students get absent to school more frequently than female students

f) More male students have performed better in PSAT examinations than female students

g) Grade 11 students' academic performance is better than grade 10 students.

The research philosophy and approach to studying the relationship between the variables have played an important role in choosing the explanatory research design.

3.2.1. Theoretical/Conceptual Underpinning and Approach

The hypotheses tested in this research have focused on determining the impact of student attendance (independent variable) on PSAT achievement (dependent variable), a positivist's research philosophy has been chosen for this study. Whilst an interpretive or a mixed-method approach would have offered relevant data for this research, the positivist stance has been adopted because the researcher agrees that authentic knowledge can be created through scientific methods. As argued by Saunders, Lewis and Thornhill (2012), a researcher who seeks for facts about the impact of attendance on students' academic attainment would take a different view from a researcher who wants to know about attitudes and feelings of students or teachers about the impact of attendance on students' academic performance. The researcher also strongly argues that reality should be informed through objective means and independent of social factors and that credible factual data should be obtained from observable phenomena. For this reason, the current research has been conducted using a value-free method in which the researcher was independent of the data. Therefore, influenced by positivism, a deductive approach has been applied in this study to test hypotheses rather than developing a theory using an inductive approach. A deductive approach requires testing hypotheses, explaining causal

relationships between variables, employing a highly structured approach to data collection, and collecting quantitative data (Saunders *et al*., 2012).

Although only attendance is used as independent variable to show its link to students' achievement, it is important to acknowledge here that there are many other factors that can influence academic achievements. These include institutional factors (for example, teaching methods, teachers' attitude towards teaching, school culture, teaching materials etc.), personal factors (for example, motivation, engagement, determination and perseverance etc) and home factors (for example, parental involvement, socioeconomic background etc).

3.2.2. Strategy: Archival Research

This research has obtained recorded students' attendance data and past PSAT examination outcomes for grades 9, 10 and 11. Therefore, the research strategy used in the present study can be described as an archival research, which Saunders *et al*. (2009, p. 587) defined as "research strategy that analyses administrative records and documents as principal source of data because they are products of day-do-day activities". One benefit of choosing this research strategy in the current study was that it enabled the researcher to collect quantitative data, which were needed for testing the hypotheses. The choice of quantitative data as opposed to qualitative ones has been made because some previous studies (for example, Cassell, 2007; Chen and Lin, 2010) have used students' attendance records and past exam performance in their studies in order to determine the relationships between variables. Such data were numerical, not in the form words. While archival research strategy was not limited to just qualitative data, it has offered sufficient quantitative data for the present study. For this reason, the data were collected from the records kept by the international school in Dubai in the form of PSAT results and attendance records.

However, other materials such as teachers' comments and feedback could have been used in this research. Had these materials were used; it would enable the researcher to explain why students perform well or poorly and provide suggestions to improve teaching and learning process. In spite of this possibility, these materials have not been used because of many constraints, including the limited time available for the research and the difficulty of accessing other materials.

3.2. Description of the population

This research was carried out in Dubai, the United Arab Emirates, where a secondary school starts from grade 6 and ends in grade 9 and students spend two more years in high school. Whilst most of the secondary schools are required to give their students standardised tests such as IGCSE, high secondary school students are required to take examinations such as Advanced Placement, PSAT and GCE Advanced Level (Oxford Business Group, 2015). The focus of this study was on one of the international schools in Dubai, offering high secondary education. Unlike the public schools, this particular school can be described as a Pre-K and a college-preparatory school, starting from Grade 9 to Grade 12.

The population of the school, at the time of data collection, was 1,814 and the enrolment was represented by over 50 countries around the world (ASD, 2017). However, the majority of students (61%) was represented by American students, while 23 per cent and 16 per cent represented other countries and Canada respectively. In 2016-2017 academic year, the school offered a number of curriculum subjects including English, Maths, Science, Social Studies and Information Technology. However, this study only examined the performance of students in English, with reading and writing and Maths in relation to their attendance in the PSAT written

in October 2016 by students in grade 9, 10 and 11. Therefore, students' population in the sample include Grade 9 (Class of 2020), Grade 10 (Class of 2019), and Grade 11 (Class of 2018).

3.3. Sampling

The purpose of this research was to explain the relationships between students' attendance and their PSAT performance. For this reason, quantitative data has been collected using a simple random sampling method, taking a subset of the whole school population (Thompson, 2012). The primary belief about selecting a sample was that it would be difficult to obtain data that contained the performance of all the students in the school in question. Instead, a representative sample would ensure the equal chance of each student being selected for the study. This type of sampling technique is referred to as probability sampling (Saunders *et al*., 2012).

Simple random sampling has been chosen for this study primarily because of its relevance to studies that aimed at establishing a link between two variables. This sampling method was relevant to this study because the sampling frame (the records of all students in Grade 9, 10, 11 and 12) was available beforehand. Another advantage of using this sampling method was that it was easy to use (Thompson, 2012) compared to other probability sampling techniques such as stratified random sampling. Moreover, the available dataset was highly appropriate to produce the right data to achieve the research question of this study. In addition, it was regarded as a technique of sampling that could provide an accurate representation of all the students in the school in question. Lastly, some statisticians (for example, Black, 2010; Thompson, 2012) agree that random sampling allows making generalisation about the whole year group in a school on their academic performance. The study used 272 cases of students' performance in PSAT out of 563 (48% of the total dataset) and their attendance as provided by

the school in question. Therefore, a valid representation of students' performance has been guaranteed for this study.

3.4. Instrumentation

The PSAT tests for Grade 9, 10 and 11 included English (reading and writing) and mathematics assessments while students in these grades were required to attend school sessions regularly. In the current study, individual students' test outcomes of English and mathematics were compared statistically against their attendance performance. The English performance has been analysed in terms of student abilities in reading and writing scores. Although reading and writing skills were tested separately for 10^{th} and 11^{th} graders, Grade 9 students do not have separate exams for reading and writing skills. For this reason, a combined score for English has been used to identify the relationship between academic performance and attendance for 9^{th} graders. However, for 10^{th} and 11^{th} graders', reading and writing performance has also been analysed separately in addition to their overall performance in English language. This score has been used to generalize the link between student academic performance and student attendance. The examination body conducted all the examinations on different days according to the guidelines published by the PSAT administrators.

The current study has used two types of variables: dependent variable (DV) and independent variable (IV). The DV used in the present study was student achievement in PSAT in grade 9, 10 and 11 in mathematics, reading and writing. On the other hand, the IV was the student attendance. The researcher compared student achievement scores in these three academic areas against the effect of attendance on student achievement.

3.5. Data Collection Procedure

In this research, the data collection began with the idea of conducting the present research. Soon after the researcher had decided to undertake this project, the school in question was approached to obtain data. The importance of gaining access to data as early as possible is explained by Bryman and Bell (2007). Newby (2014) also argues that educational researchers should be aware of sources of information as they prepare for their empirical studies.

The data for the current study have been accessed from the database of the school in question with the permission from the school authorities. The researcher contacted the school explaining the purpose of the research and how the data should be used in the current study. The researcher gave assurance to school authority that utmost confidentiality of the data would be maintained, and the school and students' names would by anonymised when using the information in the research report.

The school in question held the database using electronic methods. For this reason, the dataset used in this research has been stored electronically in the researcher's personal computer. This computer is secured with username and password, which were not accessible to strangers. In case of data loss because of system breakdown or software problems, the researcher had created a backup system in which the data have been securely stored, until the data were analysed and reported in the actual research report. Following the completion of the report, the dataset was deleted from the computer system.

3.6. Data Analysis

The following procedure was used to analyse the collected quantitative (numerical) data. First, as the dataset was obtained in Microsoft Excel format, the data needed to be fed into the Statistical Package for Social Sciences (SPSS, v.22). Whilst Excel could have been used for

statistical analysis of quantitative data, the SPSS software was used in the current research because of its convenience and its familiarity to the researcher. In fact, McCormick, Salcedo and Peck (2017) point out that SPSS can be used for handling complex and large amount of data. They also argue that its ability to eliminate hours of boring and laborious data management is a significant advantage for a quantitative researcher. For these reasons, the data that were collected from the school consisting of attendance records and students' performance have been analysed using SPSS (v.22).

Using the SPSS software, the data were analysed for descriptive and inferential statistics. Frequency tables have been used to classify student numbers in each of the three grades. Similarly, percentage has been used to provide a general discussion of students' attendance performance. The comparisons of the results of PSAT subjects have been made using 'Comparing Means' between the 'high' and 'low' attendance groups. In addition, Pearson's correlation coefficient statistics have been generated to determine the relationships between the variables tested in the study. For every statistical test, a significant level of .05 or a confidence level at 95 percent has been used in all the inferential tests (Rubin and Babbie, 2011). For easier interpretation of the data, tables and charts have been provided for visualisation of data. Lastly, the hypotheses have been tested using the inferential statistics, including comparing means and the Pearson's correlation coefficient because these hypotheses required an investigation of the relationship between attendance and students' academic performance in terms of test scores in English, mathematics, reading and writing skills.

3.7. Validity/Reliability

The construct of validity is concerned about the integrity of the researcher's conclusions from his/her research (Bryman and Bell, 2007). It is about measurement validity that taken into

consideration in this study. In terms of face validity and content validity, the PSAT can be regarded as acceptable examination as it uses highly standardised test formats. Reliability, on the other hand, refers to "the extent to which data collection technique will yield consistent findings" (Saunders *et al*., 2009, p. 600). It is also about the question whether other scholars can draw similar conclusions if the same methodology was employed.

In this research, the results of PSAT and student attendance records provided by the school in question have been used. The PSAT examinations given to the students were standardised assessments, which were prepared by a credible and reliable examination body. These examinations have been recognised by other schools as valuable examination to assess the quality of students before students enter into university education. The PSAT examinations are consistent with other standardised tests (ASD, 2017a). Similarly, the school maintained the attendance records using software and specialised machinery; hence, these records are considered accurate. However, not all occasions of interactions between teachers and students were recorded as attendance because the school in question conducted extra-unrecorded sessions where students were provided with important academic instructions. Despite this, the data used in the current study can be considered both valid and reliable.

3.8. Ethical Considerations

Educational researchers are required to consider ethical issues during the process of the research, from its inception to publishing the work (Johnson and Christensen, 2008). In the current study, the researcher thought about ethical issues as early as deciding the research topic for the study. How to get access to data ethically was also considered by the researcher well in advance in order to avoid unethical means of obtaining data. As reported by many scholars (for example, Johnson and Christensen, 2008; Saunders *et al*., 2012), an informed consent was

obtained from the school authority where the data were collected. Similarly, the identity of the school was anonymised in case any unintended inconvenience was caused due to the present research. Although the examination results and attendance records of students included the details of individual students, including their names and individual scores for each of the subjects, the researcher had not disclosed such information in the report, because of the intention not to cause discomfort among students. At data analysis stage, the researcher ensured that the information entered into the SPSS was accurate, without any errors. At the same time, when reporting the findings, the researcher was discussed what has been found from the data analysis rather than basing the findings on the researcher's guesses. Therefore, the researcher has considered research ethics in every step of the way to complete the study.

3.9. Summary

This chapter has outlined the research process, with the beliefs and assumptions of carrying out the current research. It has justified that a positivist stance was the most appropriate approach to the current study because it collected quantitative data through archival research. The data used for the current study came from an international school in Dubai, where students of grades 9, 10 and 11 take PSAT examinations as part of their preparation to enter into college or university. Although hundreds of students' study in the school, only a sample of 431 students' results of the examinations has been analysed in the present study. The primary aim of the study was to find out the impact of student attendance on their academic achievement. Therefore, it is an explanatory study rather than exploratory one. Ethical issues have been considered and efforts have been made from the very beginning of the study to avoid harm and discomfort to the research participants. Informed consent has been obtained prior to getting access to the data. The quantitative data gathered have been analysed using the SPSS to generate statistical models. In this context, Pearson's correlation coefficient has been used to

establish the relationships between the variables. The findings of the data analysis will be presented and discussed in the following chapter.

3.10. Conclusion

The quantitative research methodology is more appropriate to this research than a qualitative or a mixed-methods study because the research questions require establishing a link between attendance and students' achievement. Therefore, a quantitative research design has been used and a deductive approach has been adopted to conduct this research.

Chapter 4: Analysis of Data and Results

4.0. Introduction

This chapter presents the data analysis using the SPSS software and the outcomes of this analysis. The aim of the data analysis was to identify the relationships between students' academic performance in terms of maths results, English (overall results), reading and writing and their attendance records. In this study, two types of analysis were performed: descriptive and inferential. The descriptive statistics were used to analyse students' demographic data, which included their gender and grades. On the other hand, the inferential statistics have provided analyses to establish the relationship between students' academic performance and their attendance outcomes and compare the difference of academic achievement between 'high' and 'low' attendance performance. The hypotheses tested have provided evidence to answer the research questions and achieve the aim of this study. The overall finding of the sample used in the current study is that there is no statistically significant evidence suggesting that there is a positive impact of attendance on academic achievement. The analysis begins with explaining how the missing data in the dataset was treated. After the presentations of the results, a summary of findings has been provided at the end of the chapter.

4.1. Dealing with Missing Data

The dataset has some missing values in attendance records, which, according to Ho (2014), is part of quantitative data analysis. To deal with this issue, missing value analysis tool in the SPSS was applied and the expectation maximisation (EM) technique was used in order to give a value to the missing cases, with an assumption that the cases were missing randomly rather in a systematic way. The EM technique forms a missing data correlation assuming the shape of data such as normal distribution for the partially missing data and then basing inferences

about the values that are missing and the likelihood of that data be there under the normal distribution (Ho, 2014).

Ho (2014) argues that if the data missing is non-random, it can cause problems to the findings because any statistical results based on non-random data can increase bias. However, this problem is less concerning if a very few data points are missing (Tabachnick and Fidell, 2001 cited in Ho, 2014). In the current study, it was found that some values in the attendance records were missing. Therefore, this variable has been tested using the EM techniques. Table 1 below show the summary of the EM test.

Table 1: Univariate statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes	
				Count	Percent	Low	High
Attendance	427	127.05	19.163	4	.9	7	0

As shown in Table 1, the missing data was very small; only 4 cases were missing, which is 0.9 percent. According to Tabachnick and Fidell (2001 cited in Ho, 2014), if the missing cases are less than 5 per cent in a random pattern, it may not be a problem when establishing relationship between two variables. Therefore, using the EM technique, some random values have been given to replace the missing values.

4.2. Demographic Information of the Sample

This section presents results for gender representation of the sample and the number of students representing each grade.

Gender

Table 4.2 below summarise student representation by sex. As shown in Table 4.2, 50.1 percent (n = 216) of the sample consists of female students, while 49.9 per cent (n = 215) students were males.

Table 4.2: Gender representation in the sample

Gender	**Frequency**	**Percent**
Female	216	50.1
Male	215	49.9
Total	**431**	**100**

Therefore, the data analysis indicated that one half of the sample was female students and the other was male students and hence, there was an almost equal gender representation in this study.

Grades

Figure 4.1 below illustrate the breakdown of the total students into separate grades. The sample consisted of 136 students from Grade 9 (% = 31.6), 153 students from Grade 10 (% = 35.5), and 142 students from Grade 10 (% = 32.9) (Figure 2).

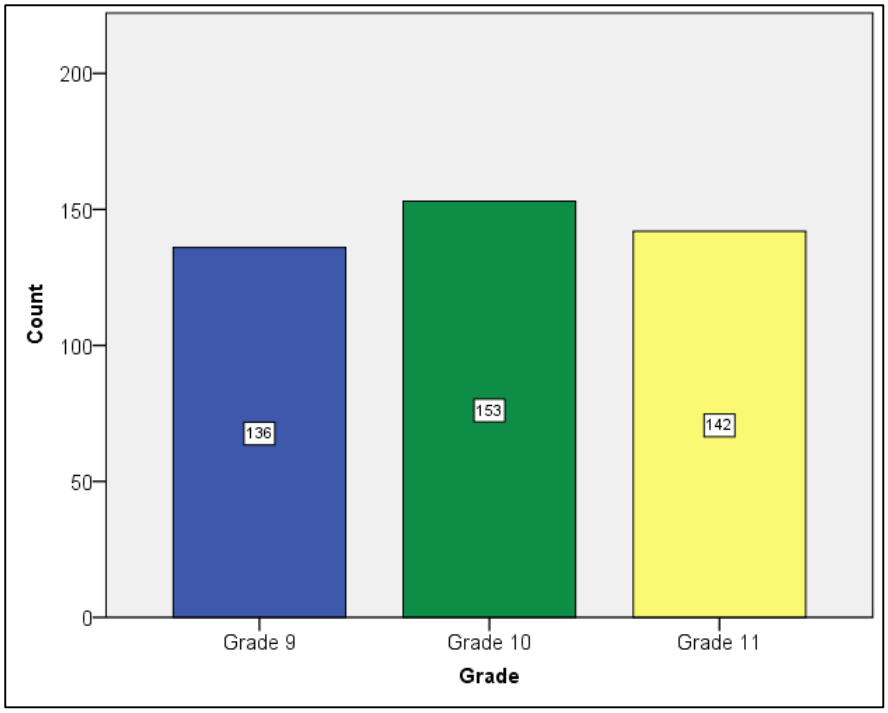


Figure 4.1: Student representation by grades

Therefore, the data analysis indicates that 10th graders represented in the study more than the other two graders.

4.3. Overall Attendance Calculations

In this study, attendance performance has been calculated based on days present out of 159 possible school sessions for the whole academic year. According to Knowledge and Human Development Authority (KHDA, 2017), the total days for the academic year for 2016/2017 were 159 days. The schools started in August and ended in June. Students attended school 5 days a week – Sunday to Thursday from 8.00 am to 3.30 pm. Although English and Mathematics PSAT scores have been considered to determine the academic performance, school attendance was for all subjects. This dataset was used because of the difficulty of obtaining the subject-specific attendance records for the study. Attendance data also included one Advisory class per week (also known as Homeroom class, which was not considered an academic subject) nor would it affect their attainment in PSAT standardized tests.

Additionally, absence data included the time when students were on a school trip, skipped classes (truancy) and an in-home or in-school suspension, generally, missing instructional time in the class. Some of the attendance data might not be 100% reliable because students were counted as absent if they were late for 20 minutes or more to class. For this reason, even if the students were present for part of the lesson, they were considered absent for the whole time. Attendance data also did not include any out-of-school academic support that a student received during the course of the academic year. These included extra time spent with teachers after school or during lunch, at home one-on-one tutoring or peer/group tutoring. Thus, while on record, a student's average attendance may have been regarded as 'Low'; their academic performance may not reflect it because of the catching-up work given to them later.

Based on the above considerations, attendance records have been analysed and Table 3 below provide a summary of the attendance performance in the sample.

Table 4.3: Average attendance performance

	N	Minimum	Maximum	Mean	Std. Deviation
Attendance	431	24	158	127.05	19.074

As shown in Table 4.3, the lowest attendance was 24 school days out of the possible 159 days, whilst the average was 127 (SD = 19). Therefore, the descriptive statistics show that on average, the study sample attended school for 127 days out of 159 possible days.

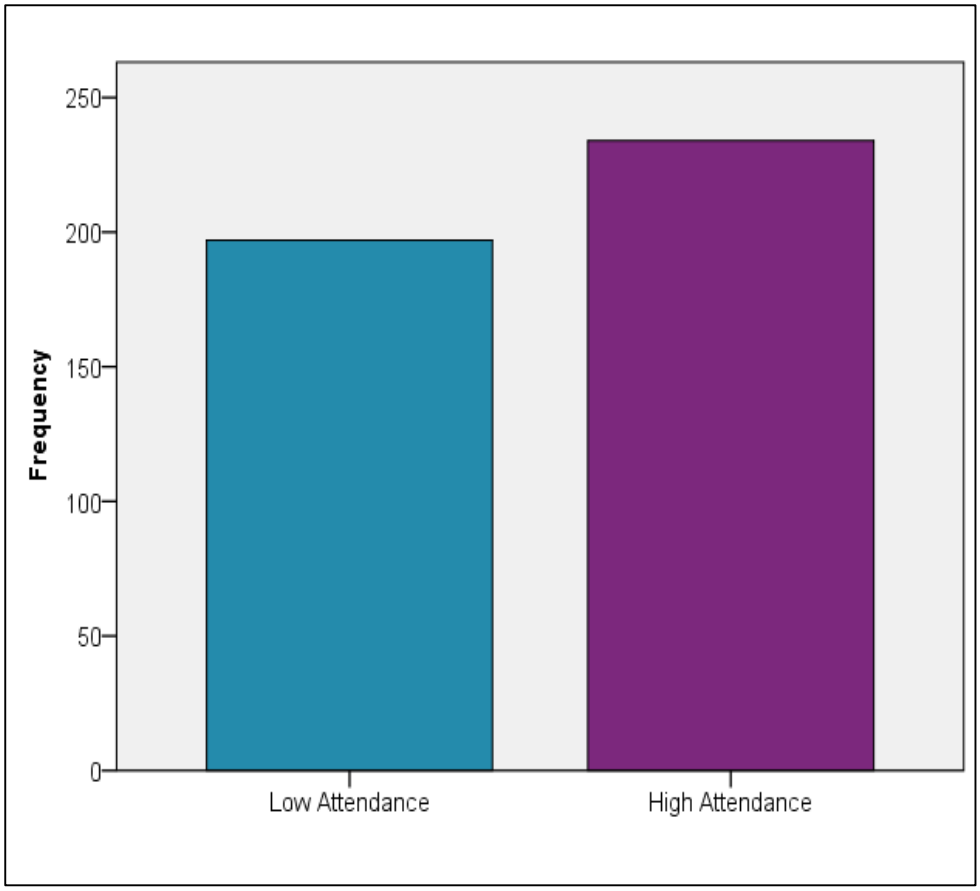
The average attendance of each student was needed to ascertain the percentage of attendance, which has been calculated using the following formula:

$$\text{Average attendance \%} = \frac{\text{Number of days present in school}}{\text{Total possible school days for the academic year}} \times 100$$

Following the calculations of average attendance percentage, the following criteria have been used to decide whether the individual attendance was ‘high’ or ‘low’.

High Attendance = average attendance score between 80 – 100%
Low Attendance = average attendance score below 79.9%

In the ASD High School Attendance Handbook (the school where the dataset was obtained) has an 80% attendance policy (ASD, 2017b). This suggests that the school as linking positively to good academic achievements regards this level of attendance performance. The use of ‘high’ and ‘low’ attendance criteria was important because the hypotheses focused on examining the relationship between high attendance and academic achievements as well as low attendance and academic attainment. The individual attendance percentage (continuous data) were re-coded into the ‘high’ and ‘low’ categories using the SPSS transformation tool. Figure 4.2 provide a summary and illustration of the data analysis showing the categorisation of the sample on the ‘high’ and ‘low’ categories.



Attendance Categories	Frequency	Percent
Low Attendance	197	45.7
High Attendance	234	54.3
Total	**431**	**100.0**

Figure 4.2: High and low categories of attendance

As shown in Figure 4.2 below, below, 45.7% (n = 197) of the total sample was found to have lower attendance, achieving below 80%, whilst the remaining 54.3% (n = 234) was included in the 'high' attendance performance category, with average attendance over 80%.

4.3.1. Individual Graders' Performance in Attendance

Further tests were performed to determine the attendance performance between grades and within the three grades. For this purpose, a cross-tabulation test was conducted using the SPSS and the summary of the data analysis has been presented in Table 4.4. As shown in Table 4.4,

28.7 per cent (n = 39) of 9th Graders were in low attendance group, while 71.3 per cent (n = 97) in the high attendance category. As for grade 10, the low attendance group is more (52.9%; n = 81) than the high attendance group (47.1%, n = 72). Similarly, the students with low attendance were greater (54.2%, n = 77) in Grade 11 than high attendance (45.8%, n = 65) group.

Table 4.4:: Cross-tabulation for individual grades' attendance performance

Attendance Categories	Details	Grade		
		Grade 9	Grade 10	Grade 11
Low attendance	Count	39	81	77
	% within Grade	28.7%	52.9%	54.2%
	% of Total	9.0%	18.8%	17.9%
High attendance	Count	97	72	65
	% within Grade	71.3%	47.1%	45.8%
	% of Total	22.5%	16.7%	15.1%
Total	Count	136	153	142
	% of Total	31.6%	35.5%	32.9%

Additionally, Table 4.4 show that the 10th graders represented the highest in low attendance group (18.8%) followed by 11th graders (17.9%). On the other hand, 9th graders represented the highest in high attendance category with 22.5 per cent followed by the 10th graders with 16.7 per cent. The above analysis, therefore, indicates that 11th graders got absent more frequently than the other two grade students, although the importance of school attendance may be more important for them as they were preparing for their final examinations in grade 12 than the 9th graders.

4.3.2. Male versus Female Attendance

One of the hypotheses of this research stated that male students have higher school attendance than female students. This hypothesis was influenced by Stokes and Walton's (2001) finding that more boys than girls got absent from lessons. Despite this, the difference between boys and girls was not greatly significant (Stokes and Walton, 2001). To test this hypothesis, comparing means test was performed with analysis of variances (ANOVA). Table 5 present the summary of the data analysis with the outcomes. As shown in Table 5, the mean score for girls was 124.84 (n = 216) representing 49.2 per cent of the total sample, whereas the mean score for male students was 129.28 (n = 215) representing 50.8 per cent of the sample. This suggests in a descriptive sense that male students have higher school attendance than female students.

Table 4.5: Outcome of the 'Comparing Means' test and ANOVA

Gender	Mean	N	Std. Deviation	% of Total Sum	Grouped Median
Female	124.84	216	19.276	49.2%	128.38
Male	129.28	215	18.650	50.8%	131.75

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	2121.2	1	2121.198	5.897	.016
	Within Groups	154317.7	429	359.715		
	Total	156438.9	430			

Furthermore, one-way ANOVA test was conducted to find out the difference between male and female students in terms of their attendance performance. As summarised in Table 5, there was a significant difference of attendance performance between the two groups of students at

p <0.05 [F (1, 429) = 5.89, p = .016]. Therefore, there is some evidence to reject the null hypothesis and accept the research hypothesis because p < 0.05 indicates that the result is not occurred by chance alone and because p = .016 means that the finding is statistically significant.

4.4. Academic Achievement

In this study, PSAT examinations performance of grades 9, 10 and 11 has been considered students' academic achievements. Among the three grades, the overall results in Maths and English have been used to ascertain the academic performance of 9th graders, while the test scores in reading and writing have accounted for academic attainments for 10th and 11th graders, in addition to their overall performance in Maths and English. Maths scores range from 200 to 800 (200 being the lowest and 800 being the highest) and similarly, the overall English scores also range from 200 to 800 (200 being the lowest and 800 being the highest). Each individual English test scores (for reading and writing) range from 8 to 38 (8 being the lowest and 38 being the highest). However, according to ADS (2017b), in the actual SAT, the overall scores range from 200 to 800 for the three tests: mathematics, writing and critical reading.

4.4.1. Overall Academic Performance in Each Grade

The overall test performance among the 9th, 10th and 11th graders has been analysed using 'Compare Means' function in the SPSS. Table 6 report the summary of the data analysis.

Table 4.6: Comparative performance in Mathematics, English, Reading and Writing by grades

Grade	Subject	Mean score	Number	Median	SD	Rank
Grade 9	Mathematics	477.65	136	470	66.16	3
	English (overall)	494.63		490	65.64	3
Grade 10	Mathematics	517.71	153	510	65.64	2
	English (overall)	536.99		540	78.26	2
	Reading	27.36		27	4.05	2
	Writing	26.34		26	4.30	2
Grade 11	Mathematics	580.99	142	580	89.36	1

English (overall)	581.20	590	77.88	1
Reading	29.00	29	4.91	1
Writing	28.68	29	4.69	1

According to Table 4.6, 11th graders have performed better in Mathematics (M = 580, SD = 89.36), English (M = 581, SD = 77), Reading (M = 29, SD = 4.9) and Writing (M = 28.68, SD = 4.69) compared to the performance of 10th and 9th Graders. Similarly, 10th graders have outperformed in Mathematics (M = 517, SD = 65.6) and English (M = 536.99) compared to the 9th graders (Table 4.6). Therefore, Grade 11 has been ranked first in Table 6 above. One possible interpretation of this is that students who achieve higher psychosocial maturity may gain better academic performance than those that have lower social, emotional and intellectual maturity. In fact, a study that looked at the relationship between psychosocial maturity and academic performance by Berzonsky and Kuk (2005) has provided evidence that students with higher psychosocial maturity produced better SAT scores than the others. Despite the 11th graders' maturity, taking 800 as the highest possible score, the average score of 580 in mathematics indicates that, on average, 11th graders have achieved 70 per cent overall performance in maths and English.

4.4.2. Comparing 11th Graders and 10th Graders' Performance

It was hypothesised, in this study, that Grade 11 students' academic performance in overall English is better than grade 10 students. To test this hypothesis, an independent sample t-Test was performed to determine whether there was statistical evidence that these two graders' English performance was significantly different. The outcome of the t-Test for equality of means shows that there was a significant difference between English performance of 11th graders (M = 581, SD = 77) and 10th graders (M = 536.99, SD = 78); t (293) = -4.84, p = .001 (see Table 4.6).

Another hypothesis of the current study was that grade 11 students achieved higher average scores in maths than 10th graders. To determine whether it was the case, a second independent sample t-Test was performed. The result of the t-Test for equality of means indicates that there was a significant difference between maths performance of 11th graders (M = 580, SD = 89) and 10th graders (M = 517, SD = 65); t (293) = -6.48, p = .001. However, the variation in maths (SD = 89) in individual scores in 11th graders was greater than the variations in maths (SD = 65) in 10th graders (Table 6). This suggests that some 11th graders have produced very good results while others had lagged behind.

Although the current study has found that the 11th graders' academic performance is better than their one year juniors in terms of English and mathematics results, Table 4 show that the high-attendance percentage of Grade 11 (45.8%) is considerably lower than Grade 10 students (47.1%). The cause of this difference may be due to many different factors including the provision of extra sessions for 11th graders and other academic exposure given to Grade 11 students.

4.4.3. Comparing Boys' and Girls' Academic Performance

For the purpose of comparing the academic performance between girls and boys in terms of their PSAT results in mathematics and English, a 'Compare Means' test was carried out. The outcomes of this test are presented in Table 7 below.

Table 4.7: Comparison of mean scores between male and female students by Mathematics and English result

Gender		Maths	English
Female	Mean	513.61	547.41
	N	216	216
	Std. Deviation	84.539	75.721

	Median	500.00	550.00
Male	Mean	538.28	528.93
	N	215	215
	Std. Deviation	91.546	87.233
	Median	530.00	520.00
Total	Mean	525.92	538.19
	N	431	431

ANOVA table

		df	Mean Square	F	Sig.
Maths	Between Groups	1	65566.404	8.447	.004
	Within Groups	429	7762.346		
English	Between Groups	1	36786.297	5.516	.019
	Within Groups	429	6669.469		

As shown in Table 4.7, on average, male students have done better in maths (M = 538, SD = 91) than female students (M = 513, SD = 84). The analysis of variance shows that there is statistically significant difference between the performance of boys and girls in terms of mathematics results at $p < .05$ [$F(1, 429) = 8.45$, $p = .004$]. However, in a recent meta-analysis study conducted by Lindberg, Hyde, Petersen and Linn (2010) examined 242 peer-reviewed research articles published between 1990 and 2007. This study found that the overall difference between genders was 0.05. For this reason, the authors concluded that there was not significant difference between genders in mathematics performance. Nevertheless, almost all of these studies were conducted in the western world rather than Asia or Middle East where there are marked cultural differences in education systems and way of thinking towards equality. Therefore, the null hypothesis has been rejected and the research hypothesis that more male students have performed better in PSAT mathematics than female students has been accepted.

On the other hand, as shown in Table 4.7, girls have performed better in English (M = 547, SD = 75) than boys (M = 528, SD = 87). The ANOVA in Table 7 indicates that this difference is statistically significant at $p < .05$ [$F(1, 429) = 5.52$, $p = .019$]. A similar finding was revealed in an American study conducted by Center on Education Policy (March 2010). This study

concluded that in reading and language, male students lagged behind girls in in all states in the USA and in some states, the gender gap was found to be greater than 10 percentage points. Thus, the null hypothesis is rejected and the research hypothesis that more boys have performed better in PSAT English examinations than girls has been accepted.

4.4.4. Correlation between Attendance and Reading and Writing

The current study has put forward the hypothesis that there is a statistically significant correlation between student attendance and 10th and 11th graders' reading scores. To validate this hypothesis, a Pearson's r test was performed and the results have been presented in Table 4.8. The sample indicates that there was no statistically significant correlation between attendance and writing scores, r = .013, n = 295, p = .819. Therefore, the research hypothesis has been rejected.

Similarly, the correlation coefficient (Table 4.8) indicates that there is no statistically significant correlation between attendance and reading scores in PSAT, r = -.04, p = .491. Therefore, the research hypothesis has been rejected.

Table 4.2: Relationships between attendance and writing and reading scores

		Writing	**Reading**	**Attendance**
Writing	Pearson Correlation	1	.	
	Sig. (2-tailed)			
	N	295		
Reading	Pearson Correlation	.796**	1	
	Sig. (2-tailed)	.000		
	N	295	295	
Attendance	Pearson Correlation	.013	-.040	1
	Sig. (2-tailed)	.819	.491	
	N	295	295	295

**. Correlation is significant at the 0.01 level (2-tailed).

This finding is contradictory to that of Cassell's (2007) finding because in his study, he found a positive correlation between student attendance and their test scores on the Virginia Standards of Learning Tests. This contradiction may have been observed because Cassell's (2007) study was conducted for 5th graders rather than high school students doing PSAT. Therefore, further research is needed to ascertain this contradiction.

4.4.5. Relationships Between Mathematics and English Achievement and Attendance

The current research conducted statistical tests to find out the relationships between student attendance and PSAT performance in terms of English and Mathematics results. First, an independent sample t-Test was conducted to find out whether there was any difference in English and Mathematics achievements between high attendance and low attendance groups. Table 4.9 give a summary of the t-test results.

Table 4.3: Mean English and Mathematics scores within 'high' and 'low' attendance groups

PSAT subject	Attendance Category	N	Mean	Std. Deviation
English	Low Attendance	234	536.79	82
	High Attendance	197	539.85	81
Maths	Low Attendance	234	528.38	91
	High Attendance	197	522.99	86

t-Test for Equality of Means

	t	**df**	**Sig. (two tailed)**
English	-.384	429	.701
Maths	.626	429	.532

Table 4.9 show that there is a slight mean difference of PSAT English achievement between high attendance (M = 539, SD = 82) and low attendance group (M = 536, SD = 81). Similarly,

there is a slight difference of mean score of mathematics achievement between high attendance (M = 522, SD = 86) and low attendance group (M = 528, SD = 91). An independent t-test for English and Maths scores within the 'high' and 'low' attendance group was also performed to ascertain the significance of the differences between groups. Although there are small differences, this study has found that there was no statistically significant difference between the two groups in English performance, t (429) = -.384, p = .701. Similarly, no statistically significant difference between high and low attendance group was found in Mathematics performance, t (429) = .626, p = .532.

The Pearson correlation test was performed for further analysis to identify the relationship between students' actual attendance and their English and Maths results. Table 4.10 provide a summary of the outcome of this test. As shown in Table 10, the correlation between English achievement in PSAT and students' attendance percentage was weak and negative, with no statistically significant relationship, r = -.062, p = .198. On the other hand, there was a weak positive correlation between attendance percent and Maths PSAT scores, but again the relationship was not statistically significant, r = .011, p = .815.

Table 4.4: Relationship between attendance and English and Mathematics scores

		English	Maths	Attendance
English	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	431		
Maths	Pearson Correlation	.720**	1	
	Sig. (2-tailed)	.000		
	N	431	431	
Attendance	Pearson Correlation	-.062	.011	1
	Sig. (2-tailed)	.198	.815	
	N	431	431	431

**. Correlation is significant at the 0.01 level (2-tailed).

Therefore, the above examinations suggest that there was no statistically significant relationship between student attendance and PSAT English and mathematics results. For this reason, the hypothesis that there was a strong positive correlation between attendance and PSAT English results has been rejected. Similarly, the null hypothesis that there was no strong positive correlation between attendance and PSAT mathematics performance has been accepted.

4.5. Summary of the Findings

The data analysis shows that 50.1 per cent of the dataset was represented by girls' attendance and academic performance and the remaining 49.9 per cent was boys. Hence, gender representation in the study was almost equal. Maths and English scores from grades 9, 10 and 11 were used in the sample. However, exam results for reading and writing excluded grade 9 students. The dataset was grouped into 'high' and 'low' attendance groups (high = >80%; low = <79.99%). It was found that the majority of students (54%) represented 'high' attendance group and the analysis of individual grades performance shows that 11^{th} graders performed better than 10^{th} and 9^{th} graders in all subcategories of academic performance. As for gender difference, boys outperformed girls in mathematics, while girls did better in English examinations than boys. The current study found that attendance and reading achievements has a weak positive correlation, but this relationship was not statistically significant. Similarly, although there was a weak negative correlation between reading performance and attendance, this relationship was not statistically significant.

As far as English achievement is concerned, the current study has found that there was not difference of English results between 'high' and 'low' attendance. Again, there was no statistically significant relationship between attendance and mathematics performance.

Similarly, while there was a slight difference of mathematics achievement between ‘high’ and ‘low’ attendance groups, this difference was not statistically significant. The next chapter will discuss these findings in relation to the existing literature and implications of the findings will also be considered.

4.6. Conclusion

Based on the findings of this study, it can be concluded that boys are better at mathematical knowledge than girls. In contrast, girls are doing better in language than boys. Although statistically significant, there is only a weak positive correlation between attendance and student achievement in the context of Dubai.

Chapter 5: Discussion

5.0. Introduction

As pointed out in the summary of the preceding chapter, the purpose of this chapter is to discuss the findings of the current study in relation to the existing literature. The discussion will be focused on addressing the research questions stated in the Introduction chapter. These research questions are:

1. What impact does attendance performance of high school students have on their PSAT outcomes in English, mathematics, reading and writing?
2. If there is an impact, is it a positive or a negative impact?

A sample of data from an international school in Dubai has been used to analyse quantitatively using the SPSS software to report findings. Both descriptive and inferential statistics (p-value at .05) have been used to conclude findings. In addition to addressing the research questions,

this chapter also will consider the limitations of the current research and it ends with a summary of the key points of the discussion.

5.1. Discussion

The purpose of this study was to establish the relationship between academic achievement in terms of PSAT English, mathematics, reading and writing and student attendance of Grade 9, 10 and 11 in an international school in Dubai. The academic achievement was determined by the PSAT examinations scores based on the 2016-2017 academic year. Therefore, the current research has focused on high school academic achievement on the PSAT tests scores in the areas of mathematics, English, reading and writing. Thus, the study was located in attendance-achievement debate.

5.1.1. Relationship between Attendance and Overall Academic Achievement

Within the attendance-achievement literature, there has been a number of studies (for example, Moonie *et al*., 2008; Wigley 2009; Oghuvbu, 2010) that have contributed to the debate about the relationship between attendance and academic attainment. The importance of high level of attendance has been stressed by researchers (see Applegate, 2003; Moonie et al.,2008: Gottfried, 2015) and practitioners. Apart from academic benefits, high level of school attendance has also been found to have several benefits, including developing friendships (Ary *et al*., 2010) and improved communication between students and teachers (Applegate, 2003). In educational settings, students and parents are given school attendance policy and actions are taken if poor attendance has been observed. The 80% attendance policy practised by ASD is an example of such policies.

Although the researcher did not find any studies that have examined the link between PSAT results and student attendance in the context of Dubai schools, the literature review has reported some studies that showed a positive relationship between student attendance and their academic performance. Lan and Lanthier (2003) have shown the outcomes of poor attendance, while Moore (2005) found strong positive correlation between improved academic achievements and high level of attendance performance. Furthermore, Gottfried (2010) has indicated some negative effects of poor attendance on classmates' attainment. Therefore, past studies have provided some evidence showing that there is positive relationship between high attendance and good academic performance.

As reported in the literature review, most of the cited studies were conducted in different context to PSAT environment in Dubai. For example, Chen and Lin's (2010) finding was based on university students and attendance to lectures. This study concluded that regular attendance had contributed between 9.4 and 18 percent to increase in exam performance. Similarly, Clark *et al*., (2011) observed between 5.3 and 12.8 per cent improvement in academic outcomes when compared high attenders and 'very low' attenders.

On the contrary, the observations made in this study, using the sample of 431 students, did not show statistically significant positive correlation between student attendance and their academic performance on PSAT English and mathematics. There may be several factors that can explain the outcomes of the current study. One possible explanation for this contradictory finding can be linked to the dataset. The current study used attendance records only for one academic year; however, the PSAT result may have been the outcome of an aggregation of a number of years' worth studying and accumulation of knowledge throughout students' academic career. In addition, many students might have extra assistance from private tuition or

their own studies using the available online and published resources. Another reasonable explanation is that students' attendance performance may have been affected by the school attendance policy. For example, according to ASD (2017b), if students reported to school 20 minutes late, although they were present to classes, then their attendance would be marked as an absent day. Even if their attendance records show absence, students might have received instructions that might not affect their PSAT results on English and Mathematics. Apart from this, students are also provided with make-up classes, although these sessions are not accounted for present days.

5.1.2. Attendance Criteria

In the current research, attendance percentage greater than 80% was considered 'high' attendance and attendance performance below 79.99% was included in the 'low attendance' group. This cut-off has been used because the school in question has an 80% attendance policy (ASD, 2017b), assuming that achieving this level of attendance can help students to produce satisfactory level of academic performance on PSAT examinations. However, in primary school, according to Reid (2014), 95% and above should be considered high attendance, while attendance percentage lower than 85% should be regarded as a 'cause for concern' (p. 126). The fact that the school in question used an 80% attendance policy suggests that school attendance in private schools in Dubai is an existing issue.

Using the criteria (>80% = high; <79.99% = low), the current study has found that only 54.3 per cent of students were included in 'high attendance' group. As far as the 11th graders is concerned, only 45 per cent of them represented the 'high attendance' group. This further confirms that many students in high schools get absent. According to the Dubai Schools Inspection Bureau, only 32 per cent of boys complete high school within the timeframe (KHDA

cited in Usman, 2015). Usman (2015) links the high level of student retention in high schools and dropping out school to poor attendance. While there was no satisfactory level of 'high attendance' from the 11th graders, it was this grade that produced better scores in all subgroups on PSAT examinations than the grade 9 and 10. One explanation of this is that students' maturity in terms of psychosocial and intellectual is important for producing good results in standardised tests. Berzonsky and Kuk (2005) have supported this line of argument.

5.1.3. Gender Difference in Attendance and Academic Performance

This study has found that on average boys did better in attendance. At the same time, boys have shown achieving better PSAT mathematics outcomes than girls in the three grades. This finding is consistent with Cassell's (2007) finding. Cassell's (2007) data showed students achievement in mathematics was significantly linked to attendance. However, this finding is contradictory to the findings of Lindberg *et al*. (2010). Having conducted a meta-analysis involving 242 studies, Lindberg *et al*. (2010) concluded that there was no significant difference between boys and girls' achievements in mathematics. While Lindberg *et al*.'s (2010) analysis concentrated on American and other western education systems, there was no consideration of attendance behaviour in the context of Dubai. Perhaps, the cultural differences between west and east may have an impact on school attendance practices. Thus, further research needs to be conducted to confirm or reject the finding of the current study.

Furthermore, the current study has found that girls did better in English in grade 9, 10 and 11. This finding is consistent with some of the western studies such as the Center on Education Policy (March 2010). After analysing 14,000 texts Newman, Groom, Handelman and Pennebaker (2008) have also confirmed that female students produced better results in language production than men. Therefore, while average female attendance has been found, in

this study, to be 0.6 percentage point lower than boys, their PSAT English performance was better than boys.

5.1.4. Attendance and PSAT Reading and Writing Outcomes

Further analysis has been done to determine the relationship between attendance data and PSAT reading and writing results. As reported in the preceding chapter, the current study found that there was weak positive correlation between student attendance and PSAT writing scores. A positive correlation means that when attendance increases, achievements in writing goes up. However, the problem is that this positive relationship is weak and a p-value grader than .05 suggests that there is no significant evidence to conclude that there is a positive correlation between attendance and writing scores. Similarly, there is a negative correlation between reading and attendance, suggesting that when attendance increases, reading scores decreases (Applegate, 2003). Again, there is no sufficient statistical evidence ($p > .49$) to conclude that there is a significant relationship between attendance and PSAT reading outcomes.

Although the current study has failed to establish a clear link between attendance and PSAT reading and writing outcomes, some previous studies (for example, Easton and Engelhard, 1982; Lan and Lanthier 2003; Gottfried, 2015) have found clear relationship between academic achievement in many subjects, including reading and writing and student attendance. The peculiarity of the dataset may explain the surprising findings in the current study. Therefore, further research is needed to determine the relationship between PSAT reading and writing scores and student attendance performance in the context of Dubai high schools.

5.2. Limitations of the Study

The present study has some limitations that will be discussed in this section. Firstly, the findings of the study are limited to the analysis of the sample used, which was drawn from one international high school in Dubai. Secondly, the sample included students from three grades, Grade 9, 10 and 11. This may have affected the significance level of student achievement in relation to their attendance as the average attendance performance of each grade differed from the other. Thirdly, the outcomes of the data analysis cannot be generalised to all the high schools in Dubai because other private and public high schools may be different from the school where the data were collected. Fourthly, the research outcomes are limited because of the use of 2016/2017 attendance records and focusing only on PSAT English, mathematics, reading and writing results. Fifthly, the use of PSAT may present a limitation to the research findings because PSAT is a preliminary examination-preparing students for SAT, whose results are counted for university entry decisions. Therefore, the achievement outcomes in PSAT may differ from the outcomes of another assessment tool such as SAT or CAT. Lastly, the current study is limited due to the fact that the students were provided instruction although they were considered absent for the school session.

5.3. Summary

In this chapter, a discussion of the key findings of the current research has been offered in relation to the existing literature. On the relationship between attendance and overall academic achievement, the existing literature indicates that higher attendance level has positive relationship with higher academic performance. However, the current study did not find sufficient proof to agree with this conclusion. On the contrary, the current study has found that there was no clear impact of attendance on students PSAT results. This may be peculiar to the dataset and sample used for this research. As pointed out earlier, the records of attendance may

not represent the time students spent with their teachers. Despite the disagreement with the wide body of literature on the overall link between attendance and academic achievement, the current study has found, with statistical significance, that female students did well in English than male students, while high school boys fared well in mathematics than girls. Again, there is a body of literature that showed that there is virtually no gender gap in academic achievements in standardised examinations between girls and boys. Lastly, the current study has not found any statistically significant evidence to suggest that there was a positive impact of high school attendance on their PSAT results in reading and writing scores. Again, surprisingly, this conclusion does not agree with the predominant literature on attendance-achievement discussion. The next chapter will provide concluding remarks with research implications for practitioners, recommendations and directions to future researchers.

Chapter 6: Concluding Remarks

This explanatory study has aimed at finding out the impact of student attendance on high school student achievement in PSAT using a sample from an international high school (Grade 9, 10 and 11) in Dubai. Linking the aim of the study, the following research questions were developed and addressed in the current study:

1. What impact does attendance performance of high school students have on their PSAT outcomes in English, mathematics, reading and writing?
2. If there is an impact, is it a positive or a negative impact?

Along with these questions, eight research hypotheses were formulated based on the existing literature on attendance-achievement debate. The existing literature suggests that there is a positive correlation between high level of school attendance and student academic achievements. However, most of these studies were located in the western world and there is scarce research, if any, such studies conducted in the context of Dubai and on PSAT results. The research hypotheses have been tested using a p-value of .05 or at 95% confidence level. The dataset used in the current study came from the international school in question and the missing data have been treated using the EM technique. This section gives concluding remarks with a summary of findings, conclusions, and implications for practice, recommendations and directions for future studies.

6.1. Summary of Key Findings

The following are the key findings of the current study.

1. There was no impact of attendance on student academic achievement on PSAT English [t (429) = -.384, p = .70) and mathematics [t (429) = .626, p = .532) (see Table 9).

However, there was a weak negative correlation between attendance and English results, r = -.062, p = .198 (see Table 10). Again, this relationship was not statistically significant because p-value was more than .05. On mathematics performance, however, there was an extremely weak positive relationship between attendance and maths PSAT scores, r = .011, p = .81 (see Table 10). Thus, this relationship was not statistically significant. Therefore, this study found that there was no impact of attendance on both English and mathematics achievement.

2. For English, the 'high attendance' (>80%) group mean score (M = 539) was greater than the 'low attendance' group mean score (M = 536). As for mathematics, the mean score of the 'low attendance' group (M = 528) was higher than the 'high attendance' mean score (M = 522) (see Table 9). Noticeably, this difference was insignificant.
3. This study has found that among the three grades, 11th graders outperformed the other graders in all the subgroups tested (see Table 6). When compared the academic achievements between 10th and 11th graders, this study found that the 11th graders' PSAT outcomes were better than that of the 10th graders.
4. As far as gender difference is concerned, boys' achievement in mathematics was better (M = 538) than girls (M = 513), F (429) = 8.4, p = .004] (see Table 7). On the other hand, female students have performed better in English (M = 547) than male students (M = 528), F (429) = 5.5, p = .019 (see Table 7).
5. There was no statistically significant correlation between attendance and reading and writing. However, the current study found a positive relationship between attendance and PSAT writing results, r = .013, p = .819 (see Table 8). On the other hand, there was weak negative relationship between attendance and PSAT reading, r = -.04, p = .491 (see Table 8).

6. There was an equal male/female students' representation in the current study (49.9: 50.1) (see Table 2). However, 10th graders' representation was slightly higher than the other two graders (see Figure 2).

6.2. Conclusions

The current study has answered the research questions through statistical analysis using the quantitative data obtained from the international high school in question. In addition to answering the research questions, the focus of the data analysis was to test the hypotheses set out in the outset of this research report. In the data analysis, both descriptive and inferential statistics have been used. Based on the analysis and evidence provided above, it can be concluded that attendance of one year did not have a significant impact on PSAT outcomes as far as this study is concerned. This conclusion is limited to the peculiarity of the dataset and hence found contradictory results to the mainstream research findings. One issue that has been raised earlier was that student attendance records did not reflect their actual school attendance due to the school policy in keeping attendance records. Therefore, the findings of the current study have interesting implications for practitioners and future research.

6.3. Implications

Although this study has found that there was no meaningful impact of attendance on students PSAT results, this is not the position of wider literature on attendance-achievement debate. As several studies have concluded that there is a positive correlation between attendance and academic achievement, it is important to encourage students to be present in school for their lessons. The evidence provided by the KHDA in the UAE indicates that many students are

repeating in their high school. KHDA has also shown that the main reason why students dropped out from high school is their poor attendance. For these reasons, it is important for educational administrators and managers to consider attendance as an important factor that improves academic achievement, although current study did not find a positive impact of attendance on academic performance.

As far as this study is concerned, the findings have indicated that there are many factors that can contribute to academic achievements other than attendance. For example, the extra classes offered to students may contribute greatly to academic progress and improving knowledge and skills, while these additional activities may not be included in the overall attendance records. Educational expeditions offered to students may provide them with the opportunity to apply some knowledge and skills learned during the timetabled sessions. However, these expeditions may not be included the regular school attendance records.

On the other hand, even if students attend all the school days, ineffective teaching and low quality of instruction may result in poor academic outcomes. The fact that the current study showed there was no direct impact on attendance and academic result indicate that there is a need to improve quality of teaching and to provide more effective educational interventions. While a high level of attendance should be encouraged from students, developing teachers with professional development activities and improving resources may be necessary to enhance educational achievements. Although private schools may not face problems of skipping school because of poverty, there may be other reasons why students may not want to attend school. Therefore, high schools should look into factors that have both direct and indirect effects on students learning, including attendance and improve students' academic outcomes in the UAE.

6.4. Recommendations for Practitioners

The predominant view about attendance in relation to academic achievement is to accomplish 'good' level of attendance. However, there are no universally agreed criteria to decide what a 'good' attendance look like. Despite this, many primary schools consider attendance between 95 and 100 as 'good' attendance, while some schools such as ASD have an 80% attendance policy in which students are required attaining this level of school attendance per academic year. Based on the analysis in the current study, the following recommendations have been put forward:

Improve attendance records

One of the reasons why this study failed to establish a significant link between attendance and academic achievement probably was down to the attendance data. Therefore, it is recommended to improve attendance record keeping policy and practice. Although it may be difficult to change the current record keeping systems, it is possible to consider the time students spend in school and academic activities as their attendance. There should be better coordination between the support staff and teachers in order to ensure that students attendance was maintained correctly. Access to electronic attendance systems to teachers and students can help record their presence in the school accurately. However, setting up such a record-keeping system may involve a high level of investment, but schools can evaluate cost and benefits of such a system.

Increase quality of teaching

There was an indication from the data analysis that many of the students in 'low attendance' group scored quite high marks in PSAT English, mathematics, reading and writing. This suggests that although students get absent for school, they acquired the knowledge and skills

they missed from the school. The students may have studied the contents through other means such as private tuition or online. If this was the case, then there might be an issue of teaching standard in high schools. Therefore, it is recommended to improve quality of teaching in grade 9, 10 and 11. One of way of doing this is to recruit well-qualified and experienced teachers with track records of success in student achievement. To get this done in an effective way, schools need to improve their teacher recruiting and hiring strategy. Hiring quality teachers means giving them industry-competitive remuneration packages and developing good teachers in order to retain them for the betterment of students.

Improve student motivation

Lastly, for high level of attendance and academic achievement, it is recommended to increase student motivation. Motivation relates to students' attitudes and direction of their behaviour towards learning and school attendance. One of the ways in which this can be achieved is through delivering interesting lessons, because if students enjoy lessons and school, then they are more likely to be present to school. On the other hand, if students see that they do not learn and going to school is waste of time, then probably they may not attend school, but rather may skip school. The wider body of research on attendance-achievement debate shows that attendance is important for better student attainment. Therefore, working on improving student motivation may increase learning and school attendance.

6.5. Implications for Future studies

It was interesting to find that there was no significant impact of attendance on academic achievement. As this finding is contradictory to the other similar studies, it is necessary for researchers who are interested in identifying the relationship between attendance and academic achievement in the context of high school in the UAE to replicate this study. Future researchers

may aim to answer the same research question with statistical analysis using different set of data, preferably collected from private schools in Dubai. Apart from quantitative design, future researchers can also employ a qualitative study to find out the perceptions of teachers or head teachers on the attendance-achievement debate. Experienced head-teachers and teachers can provide valuable insight into understanding issues related to this debate. Furthermore, the impact of attendance on student learning can be studied by taking students perspective. This can be valuable as this topic is highly relevant to students, who are important stakeholders of the education system. Therefore, collecting qualitative and quantitative data from students can give new meaning to the debate.

6.6. Overall Conclusion

On the whole, the findings of this research are interesting and contradictory to the predominant literature on attendance-achievement discussion. The researcher reported what they have observed from the statistical analysis using the dataset. Despite the contradictory findings, the researcher has acquired several important skills through this project. One such skill is reflecting on past experiences, which is important because reflective on past experience is valuable form of learning. Another skill that has been improved through this work is the analytical skill. Analysing data and interpreting them developed this skill. Lastly, the researcher has learned new skills that helped in their research skills, which are considered very valuable for personal and professional development. Therefore, this project has been highly valuable to the researcher, although the whole experience was daunting and overwhelmingly difficult.

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