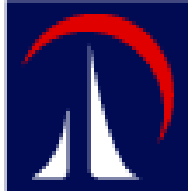


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A Study on the effects of tutoring on SAT scores.

دراسة حول تأثير الدروس الخصوصية على نتائج الإمتحانات التأهيلية
لدخول الجامعات

By

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Dissertation submitted in partial fulfilment of
MEd International Management and Policy

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Abstract

In the last decade, there has been a rapid increase globally in scholastic aptitude test-takers seeking tutoring, under the belief it will improve their SAT scores. This research investigates the effects of tutoring on SAT scores and questions the validity of claims made by an SAT tutor (Tutor A) used by students at an international school (School X) in Sharjah, United Arab Emirates (UAE). The research finds no significant difference in reading, math and essay between a quasi-experimental (Group A) and control groups (Group B), who had and had not received tutoring respectively. There is, however, a significant increase in writing for Group A. Moreover, the research also finds Group A has a lower propensity to engage in student driven preparation, such as downloading SAT practice material from the internet and studying without the aid of a tutor. Due to the stratagem style nature of tutoring provided and according to Messick (1982:23) may have detrimental effects to tertiary education. It is concluded more independent research with a larger sample is required to clarify the effects of tutoring on SAT scores. It also suggests engagement in test preparation of this type is futile as a minimal increase in writing scores does not justify the monetary investment made. Policy in the private sector should be developed to heighten student and parent awareness of the phenomena.

Key words: coaching, College Board, quasi-experimental, SAT, scholastic aptitude test, Shadow education, Sharjah, test preparation, *t*-test, tutoring, UAE, writing.

Arabic abstract

شهدت السنوات العشرة الماضية زيادة مضطردة على مستوى العالم في سعي الطلبة المتقدمين لأداء اختبار السات (اختبار الكفاءة المدرسية Scholastic Aptitude Test SAT) للاستعانة بالدروس الخصوصية، اعتقاداً منهم بأن ذلك سيساعدهم على تحقيق معدلات أعلى في الاختبار.

ويستقصى هذا البحث تأثير الدروس الخصوصية على المعدلات المحققة في اختبار السات، ويبحث في صدقية ما ذهب إليه أحد معلمي السات (المدرس أيه)، والذي قام بتدريس مجموعة من الطلبة من أحد المدارس الدولية في مدينة الشارقة بدولة الإمارات العربية المتحدة، (المدرسة أكس).

وقد خلص البحث إلى عدم وجود اختلافات جوهرية بين نتائج جزئي الرياضيات والكتابة في اختبار السات، التي حققتها مجموعة شبه تجريبية (المجموعة أيه) والتي لم تحصل عناصرها على دروس خصوصية، وتلك التي حققتها مجموعات موجهة (المجموعة بي) والتي حصلت عناصرها على هذه الدروس. إلا أنه تم رصد ارتفاع ملحوظ في نتائج اختبار الكتابة لدى المجموعة أيه.

وبالإضافة إلى ذلك رصد البحث، انخفاضاً في توجه عناصر المجموعة أيه نحو الانخراط في الأنشطة الذاتية المتعلقة بالإعداد لأداء الاختبار، ومنها على سبيل المثال تنزيل المواد التدريبية المتعلقة بالاختبار من مواقع الإنترنت، والاستذكار بدون مساعدة من المدرس الخصوصي.

ونظراً لطبيعة الدروس الخصوصية التي تعتمد بشكل أساسي على تعويد الطالب على حيل بعينها لمساعدته في تحقيق أعلى معدل ممكن في الاختبار، ووفقاً ميسيك (1982:23) فإن الدروس الخصوصية يمكن أن يكون لها تأثير كبير على مرحلة التعليم ما بعد الثانوي.

ويخلص البحث إلى وجود حاجة لإجراء المزيد من الأبحاث المستقلة على عينات أكبر لتوضيح تأثير الدروس الخصوصية على نتائج اختبارات السات.

كما يشير البحث أيضاً إلى التأثير الضئيل للدروس الخصوصية، والذي يظهر في الارتفاع الطفيف في المعدلات التي تم تحقيقها في الجزء الخاص بالكتابة في اختبار السات، والتي لا تبرر الإنفاق المادي على هذه الممارسة. الأمر الذي يستوجب تطوير سياسات في القطاع الخاص للارتقاء بمستوى الوعي لدى كل من أولياء الأمور والطلبة بشأن هذه الظاهرة.

كلمات رئيسية: التدريب، كوليدج بورد، شبه تجريبية، اختبار السات، اختبار الكفاءة المدرسية، الشارقة، الاستعداد للاختبار، اختبار سي، الإمارات العربية المتحدة، الكتابة.

Dedication

This research is dedicated to my parents and sister, who have always been unwavering advocates for the progression of my learning. It is also dedicated to my grandfather, James Tucker, who I wish deeply could have been with me to celebrate the completion of this research, as an inspirational educator, he has motivated me to want to achieve success in the field of education. It is also dedicated to Ahmed Al Rahl and Patrick Dundon who have encouraged and motivated me over the last three years, 'shake n bake' – 'you have to shake it before you bake it'! Finally, I would like to thank Noura Jane, as without her help and love I would not have made it this far. She is easily the most tolerant woman I know, an ideal virtue to build a life together.

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The effects of tutoring on SAT scores.

Chapter one: Introduction

1.1 Overview

The purpose of this chapter is to highlight the issue of tutoring for SAT's and also to bring into scope the issue of tutoring in School X.

I began to realise School X's students, a prominent school located in Sharjah, United Arab Emirates, were leaving school during the day to attend tutored sessions specifically for American based, College Board designed and Exam Testing Service distributed (ETS) Scholastic Aptitude Test (SAT) preparation. This was even happening while class time was designated to teaching SAT preparation (Appendix I & II). It was intriguing as to why students were opting to pay twice for the same exam preparation. One could assume that the pervading belief amongst students seeking test preparation outside of formalised education must be their perception of its possible covert and overt benefits. As stated in personal correspondence, from a grade 12 student:

'I believe the reason we all hired him is because we couldn't study. Not CAN'T but just wouldn't... We'd always put it off till the last second and end up not studying for it. Like with all the school work going on, every break we'd get obviously we wouldn't spend studying SAT.'

(R. Hoodeh, 2012, pers. Comm., 14 January)

'The classes we have are the most effective 'study' we get, but also the homework he assigns us should be done so we could keep up with the tight schedule he offers'.

(R. Hoodeh, 2012, pers. Comm., 15 January)

As purposed by Global Industry Analysis, Inc (2011) in reference to incapacity within the public sector, another contributing factor to the growth of private tutoring may be 'the inability of the standard education system to address the unique needs of each student,' (Private Tutoring – Global Strategic Business Report, Global Industry Analysis, Inc, 2011).

In the United Arab Emirates (UAE) the test preparation market is a rapidly emerging phenomena and has the potential to mimic Asian, European and N. American equivalents which estimate gross market worth in 2009 to be \$4billion (Briggs, 2009:23). This relatively covert market, in the UAE, does not appear as an area of consideration in reports for the KHDA (Statistics for Private Schools in Dubai, 2010/2011, Private School Inspections, Key Findings, 2010-2011), ADEC (Education Statistics First: 2010 Statistical Factbook, Emirate of Abu Dhabi, Primary & Secondary Education, 2010) or the Sharjah Ministry of Education (Statistical Data 2009-2010), and yet the Government is aware that this activity is happening and has taken measures to ban it (Ahmed, 2010) .

Many students of School X are focused on matriculating through an American focused education (Sabis, 2011) and the benefits are obvious due to the higher status of Americanised scholastic methodologies and the failure of local brands (*'America and the Arab world, Education, still in demand, Arabs don't like American policy but do like its education'*, 2002). For example, Pisa (2009) overall ranking of Reading, maths and science position the UAE 42nd and the United States (US) 17th out of 65 assessed countries. Also, as written in an economist report (2002) 'knowledge of English means the power to get a better job, or perhaps emigrate'. This desire of Arabs to partake in Americanised education is further iterated by Robison (2005) when he comments on the rapid growth of the American University of Sharjah (AUS), which opened in 1997 with 287 students on roll and swiftly swelled to 4,000 by 2005. Engaging in this route, however,

ultimately means UAE schooled students are subject to the same standardised tests, in this case the scholastic aptitude test (SAT), as their American rivals, and thus obliged to attain equivalent standards.

In recent years in the US, and to a lesser degree in the UAE, a multitude of private test preparation services have emerged to satiate the hordes of students attempting to take advantage of a well established and respected education in the US or similar accredited institution such as AUS, The American University of Beirut (AUB) or the zenith of tertiary education directly in the States, such as the Massachusetts Institute of Technology (MIT), Harvard, Princeton, Yale or the like of similar esteem. Places are few and competition high, with many parents in the UAE investing heavily in their child's education spending anything from 'Dhs100 to Dhs1, 000 per hour', (Ahmed, 2010). They are unable to assist their children personally to the skill level necessary to achieve the scores required (Al Sumaiti, 2012, p.5) and as stated by Jan Truszczyński (cited in 'Europeans spend billions on "shadow education"', 2011) 'Private tutoring is much less about pupils who are in real need of help that they cannot find at school and much more about maintaining the competitive advantages'. Thus due to the coalescence of these factors, the naturally rapid evolution of a test preparation market has occurred, such as with Kaplan and Princeton Review just to name but two of prominence in a hail storm of expanding companies eager to supply demand via a quartet of avenues: preparation texts, private individuals, institutions and internet preparation services.

In Sharjah, the ascension of Tutor A, who has sagaciously monopolised this niche market, is claiming students who have a base score of 1500/2400 can expect to pump their grade up by 300 to 400 points over a thirty hour period (H. Khan, 2011) This verbose claim, which goes even beyond Princeton Review's recently retracted advertisement of an increase of 255 points (Jaschik, 2010), is one of the foci of this research.

As will be demonstrated in later chapters, qualitative questionnaires demonstrate students are adamant that only by engaging in test

preparation with a tutor or other test preparation methods can they achieve their aspiration and unlock a prodigious future. Their entire education boils down to a single method of testing, the SAT.

This exam, designed in 1901 and recently remodelled in 2005, with the addition of a controversial essay, has become the benchmark or a student's ability to pass through the eye of a needle into a tertiary American style education program, and for students attending School X and their expectant parents, is their passport to a wealthy future, but are they being sold an empty pot of gold at the end of the rainbow by tutors offering fantastical gains?

1.2 Statement of the problem

There are two schools of thought regarding the advantages and disadvantages of preparatory tutoring for SAT's. The Princeton Review, Kaplan, Tutor A and other test preparation providers argue preparatory tutoring does have a significant positive effect on test scores. The College Board and Exam Testing Service (ETS) support a juxtaposed view that tutoring offers minimal gains which do not justify time and capital invested. There is little dispute on tutoring having an effect. While some research has shown a negative effect of tutoring on SAT scores (Dear, 1958, Laschewer, 1885, Whitla, 1988, Zuman, 1988, cited in Briggs, 2009), most research has yielded an increase resulting from preparatory methods (Briggs, 2009). Briggs (2009) tabulated 31 studies (Appendix III) and found a verbal range of -2 to 121 and a maths range of -5 to 63. This raises the question of the validity of the positive effects of coaching SAT scores. Also is there a correlation between coaching and SAT score? This is the main research question and a majority of the following literature review will focus directly on the effects of tutoring on SAT scores. Thirdly the research will investigate the issue of efficacy; if tutors are boosting students test scores through preparatory programs, is there a detrimental effect on the student; by gaining a higher score do they lose in other

areas, such as efficacy. Fourthly, are the students aware of this loss with any level of concern? Finally, if the claims made by Tutor A and other preparation organisations are valid, what are the repercussions for the ability of the SAT to measure our graduates' aptitude to engage in tertiary education?

1.3 Background of the research

History of the SAT

According to Smith et al (2010), in 1904 Alfred Binet and Theodore Simon developed an intelligence test to ascertain the mental age of students as a tool to determine the necessity of remedial instruction. In 1908 this test reappeared in the US as a test to measure retardation. With the onslaught of World War I the Binet-Simon style test was rapidly adapted to become the Army Alpha and Army Beta tests. The concept of the test was to identify possible recruits to become officers and those able for specialised training. The result was Army Alpha which tested knowledge of American culture and the English language and Army Beta, a pictorial test given to illiterate, often minority recruits. As described by Hanford (1991) each university, at this time, had its own admissions test and students attempting to enter a variety of different institution had to sit for the same number or entrance exams. The standardisation of this process into a format that all US universities could access happened in two evolutions. Firstly, through the development of a common subject-matter test administered through University of Columbia. This test was essay based and its popularity led to its second evolution by Carl C. Brigham on Princeton's behalf that used the fundamental ideas of the Army Alpha and developed an early ancestor of the multiple choice SAT, which we see today, first administered in June, 1926. The early SAT, however, was focused purely on aptitude based on 315 questions over a 90 minute period.

Smith et al (2010) adds that in 1947 the ETS was formed, with its president, Henry Chauncery, and chairman, John Conant, who both believed intelligence is fixed and heritable. Others, such as Stanley Kaplan, opposed this view and in 1938 the phenomena of coaching was born, initially from Kaplan's parents' basement, which by 1946 had become SAT specific and led to the College Board's attempt in 1959 to mar the assertion that coaching could have an effect on scores. French & Dear (1959, cited in Smith et al, 2010:5) research suggested that 'an eager College Board candidate should not spend money on special coaching for the SAT'. A later Federal Trade Commission (FTC) report in 1971 concluded that instruction in test taking skills may improve SAT scores and reduce test taking anxiety (FTC, 1981, cited in Smith et al, 2010:5). The suggestion that the SAT may be economically biased and that coaching may improve scores was a taboo subject for the College Board until 1981 when they made a small concession 'that some students may benefit from different types of preparation in different environments.', (FTC, 1981, cited in Smith et al, 2010:6), but went on to state that these gains would only be 'as high as 25-30 points' (FTC, 1981, cited in Smith et al, 2010:6).

In 2005 after heavy criticism from Richard C. Atkinson, president of the University of California, that the SAT was too quantitative, a 25 minute essay was added, plus multiple choice questions to test grammatical logic, and this is the test we see today.

As previously stated, any advantageous opportunity to improve the possibility of acceptance into a US university is grasped by students of School X and as stated by Smith et al (2010:13) 'Coaching companies such as Kaplan continue to reap the benefits of a community that is thwarted with the supposed requirement of coaching in order to have success on standardized testing.' This psyche, it would appear, is evident in the School X's cohort which will be discussed in further depth in later chapters.

1.4 Research questions

In order of importance:

- 1) Is there a significant difference in mean between controlled and quasi-experimental groups in SAT sections (reading, math, writing and essay)?
- 2) Are claims made by Tutor A and other such preparation agencies such as Kaplan and Princeton Review substantiated by this research?
- 3) What is the perception of tutored students towards the effects of being tutored?

1.5 The significance of the research

The UAE has developed dramatically since its independence from the British in 1971. This has led to the formalisation and monitoring of educational institutions by various bodies such as ADEC, the KHDA and the MoE, not to mention a number of independent accreditation organisations in the private sector. In the race to achieve high standards and compete with developed nations, in this case America, a 'Shadow Education System' (Bray, 2010:4) has rapidly emerged to cater for the equivalent of an academic gold rush. Understanding the nature and significance of the relatively emerging market of tutoring is important in terms of school policy. School policy makers' perception of student acquisition of knowledge is critical in a myriad of school functions from professional development to subject allocation. At present there is a lack of comprehension among School X's administrators regarding the effect private tutoring has on undermining School X's education system and when students are choosing to learn. There is a dearth of appropriate formalised education being provided to the standards required to meet market demand, parents and students are attempting to diminish the risk

of failure in securing, what they consider beneficial preparatory support. In School X students who have engaged in exam preparation are paying a total amount between 4,500aed to 6,000aed for private tutoring (see appendix V), a majority with Tutor A (see appendix V). The key significance of the research is to ascertain the validity of this private tutoring and to also understand any perceived beneficial or detrimental effect on the efficacy of those being tutored.

1.6 The organisation of the research

The research is organised to consider variables focused on the effects of tutoring on SAT scores. To aid in the understanding of this investigation, attention will be given to the development of private education globally in the forms of private tutoring and shadow education. It is also ordered to investigate previous literature on the SAT and relevant tutoring and preparation for SAT's both in the US and other countries. Furthermore, the investigation gives attention to the assertions made by test preparation organisations, such as Kaplan, and private individuals with special focus on opinions gathered from communication with Tutor A. The research also analyses data from three sources: SAT analysis reports, questionnaire 1 and questionnaire 2 to establish any possible links between private tutoring and improved SAT scores. Finally, conclusions are drawn and recommendations made regarding the efficacy of private tutoring and the efficacy of students who partake in preparatory courses. It is not the remit of this research to investigate the attitudes or beliefs of School X's teachers, administrators or parents, nor is it the remit of this research to theorise regarding School X's pedagogy, ethos and institutional practices.

Chapter two: Literature Review

2.1 Concepts of tutoring

The concept of 'shadow education' (Bray, 2009), comes in many different forms and is referred to by many different names such as 'coaching' (Briggs, 2009:11; Messick, 1982:3; Powers, 2012:8), and tutoring (Aurini & Davies, 2004:422; Dang, 2008:5).

Aurini & Davies (2004:422) define tutoring as 'a form of supplementary education that does not compete directly with public schools...giving students extra assistance that is difficult to obtain in regular schools'. Dang (2008:5) adds to this, defining tutoring as 'fee-based...supplementary instruction'.

Briggs (2009:11) defines coaching as 'preparation...no longer structured by the student but by an official instructor...who places an emphasis on the teaching of specific test-taking strategies'. Briggs (2009:11) also defines this as having three levels:

- 1) Classroom-based courses offered by Kaplan and The Princeton Review,
- 2) Online coaching (with or without a 'virtual' tutor),
- 3) Private one-on-one or small group tutoring in-person.

Group A of this research would most closely assimilate to point three as 18 of the 19 participants attended sessions in a small group (see appendix XVI). Powers and Rock (1998:5) add to the definition of coaching as 'any and all activities conducted in special preparation programs offered to

students outside their schools.’ Powers (2012:8) defines coaching as ‘short-term efforts aimed at teaching test-taking strategies or “tricks” to enable test takers to “beat the test;” that is, to take advantage of flaws in the test or in the testing system....’ This idea closely mirrors that of Briggs (2009). Messick (1982:3) strongly agrees with this definition of coaching as ‘short-term cramming and simple practice on sample items’. Messick (1982:3) continues by pointing out coaching cannot be amalgamated as a ‘conglomerate’, due to the varieties of this practice. It is, therefore, important to discover the nuances of any such practice investigated. The above definitions, with the exception of Brigg’s (2009) first and second levels of coaching, most accurately define the type of tutoring Group A engaged in. Also for the purpose of this research no attempt has been made to differentiate between the term tutoring and coaching, which, as can be seen from the above definitions, are only semantically distinguished. Finally, the reference to the SAT and SAT I are one and the same test at different points in its development and, thus, both terms are used interchangeably.

2.2 Position taken by the College Board

Powers and Rock (1998:17) state two key findings:

- 1) ‘Coaching companies’ current estimates of the effects of coaching for the SAT I are much too high’
- 2) ‘The revised SAT is no more coachable than its predecessor.’

In correspondence with a representative for the College Board on the effects of tutoring on SAT scores the following statements were made:

‘...the College Board does not endorse the use of expensive test-prep courses and emphasizes that the best way to get ready for the SAT is to do well in school, take challenging

courses, study hard, and read as much as possible. There are no tricks or shortcuts to preparing for the SAT... independent studies show that short term test preparation only increases scores by about the same amount as taking the test a second time.'

(K. Levin, 2012, pers. Comm., 27 April)

The assumption of Levin is that doing well in school is a choice and that students possess the motivation to tackle the SAT alone or as positioned by Chadwick (2012, per, Comm...15 January) students 'have the potential for developing the skills of thinking but...lack consistent internal motivation to use those skills.

As apparent from the stern reluctance of the College Board to recognise any benefit of tutoring in SAT preparation, it would suggest the fallibility of the SAT as a method of fair testing is simply not going to be a point of discussion by the College Board. Part of the reason for this is iterated by Zuman (1988:3) on the dangers of a coachable test being a 'misleading and inappropriate indicator of potential college performance'. Messick (1982:3) takes this a step further by insinuating if the SAT or other aptitude tests prove to be coachable, then they are 'not valid measures of aptitude' and may (Messick, 1982:16) 'jeopardize its predictive validity'. If ultimately proven to be true, it could potentially lead to the dethroning of the SAT as the defining measure of college readiness. Since much of the research on the effects coaching on the SAT has been conducted by the College Board, ETS, or their affiliates, it would appear they are eager to quell any attempts of insurrection to conceptualise the validity of the test. They did, however, make a small concession in 1981 admitting 'special preparation could produce score increases as high as 25-30 points' (Smith et al, 2010:6). With a review of the test made in 1994 and a new format of the SAT being administered since 2005, the College Board (2010, cited in Smith et al, 2010:7) have reviewed the gains made from coaching effects to be '10-25 total points'. In the meantime, no further acknowledgment has been made. Powers & Rock (1998:17) also conclude the reality of being

coaching leads to 'far fewer large gains by coached students than has been suggested in the advertisements of coaching schools'.

2.3 Position taken by test preparation providers

According to Powers and Rock (1998:5) the Princeton Review guaranteed a 100 point increase and Kaplan claimed a 28% of its students improve by at least 170 points upon retesting. Zuman (1988:3) and Briggs (2001:2) cite an increase of 100 points has also been claimed by some commercial test preparation centres. In addition, Briggs (2001:2) notes some private tutors allege an increase of 200 points.

Jaschik (2010) states 'critics have said that they believe test-prep companies' initial tests yield low results, encouraging people to sign up for courses and to credit the companies for large gains later'. Jaschik (2010) continues that the Princeton Review recently retracted claims that a 'score improvement of 255 points' could be achieved on their Ultimate Classroom course. They have now opted for a criticism quieting numberless and vague guarantee of satisfaction (<http://www.princetonreview.com/>). Kaplan have followed suit with a similar guarantee (<http://www.kaplan.com>). However, the cost of tutoring, such as Kaplan's \$4,699 course (Smith et al, 2010:2), would still suggest a significant increase in SAT scores could be expected. The Federal Trade Commission (FTC, 1979, cited in Powers 1982:21) summarise the 'effects of commercial coaching were related to the particular coaching school attended'.

2.4 Previous test preparation research

Briggs (2009:28) tabulates 31 studies from 1953 to 2009 (see appendix III) in which 12 studies found verbal scores to be significant and 16 studies found math scores to be significant. An issue arises when a comparison

with post 1994 revised SAT is attempted in verbal and math to reading, math, writing and essay.

Although according to Zuman (1988:3) 'no clear consensus has yet emerged' to resolve hypotheses surrounding the effects of tutoring on SAT scores, it can be seen in literature presented in this chapter the issue of tutoring having an effect on test scores are apparent. The focus has now shifted towards the degree of that effect and its nature; nevertheless, if the variables acting on the effects of tutoring on SAT scores were a simple case of delineation the phenomena of the effects of tutoring on SAT scores would, at this stage, be a mute point. Unfortunately, those outside of the field of research tend not to deem relevant other variables beyond the gains claimed by various parties. It is, therefore, valid to highlight some of the issue which should be taken into account when considering the effects of tutoring on SAT scores.

Briggs (2009:1) on behalf of The National Association for College Admissions Counselling (NACAC) states 'test preparation efforts yield a positive but small effect on standardised test scores' with average gains being in the region of '30 points'. Briggs (2009:17) also states that a 'standard error of measurement on any section of the SAT tends to be about 30 points'. Briggs (2009:2) infers college admissions officers should be trained not to draw a difference between applicants who have a small difference between scores, as this may be due to access to coaching or measurement error. The effects of coaching, in many cases, would be nullified if this advice were to be globally heeded. Zuman (1988:3) deduces increases in SAT scores in some studies may be due, in part, to 'self-selection...differential motivation...,higher school grades, higher family income and a higher percentage of private school students' appearing in coached than uncoached groups.

Briggs (2009:11) further highlights efforts made by the students to study alone using test preparation material, such as textbooks or College Board test preparation material, as 'student-driven'. The table below show the

free and fee paying material available to students preparing to take the SAT.

The advertisement is titled "SAT Practice" and features a "Register" button in the top right corner. Below the title, it asks "Free and affordable - how would you like to practice?" and lists the next tests as "5/3, 6/2". The main content is divided into two sections: "Free Practice" and "Affordable Practice".

Free Practice			Affordable Practice	
FREE	FREE	FREE	\$31.99	\$69.95
June 6	Sample Practice Questions	Free Practice Test	The Official SAT Study Guide with DVD™	The Official SAT Online Course™
Question of the Day Get The Official SAT Question of the Day™ e-mailed daily. Try it out!	Got skills? Test them with practice questions in math, reading, writing and SAT Subject Tests™.	The only place to take a full-length official SAT from the test-maker – and get your scores right away. Get started now	Get 11 official tests and exclusive practice tools from the test maker. More See inside!	Sign up, and you get 10 online tests, 18 interactive lessons and personalized essay scoring. More Take a tour!

Figure 1 shows free and purchasable SAT practice material. Source: <http://sat.collegeboard.org/practice;jsessionid=lgWyPR0DhQ699XxsSG1vTPtz1lhY85Jz1yL4GJcK12XrLmhdyrJ1!357502938!1639353538>

There is currently a dearth of research on the effects of student-driven learning on SAT scores, which raises some questions of student efficacy in tutored groups.

Further to this idea Briggs (2009:21) implies tutoring may have a negative effect on students as it takes away time which may have been 'spent doing other sorts of activities that might either improve students' chances of college admission or better prepare them for the challenges that await once they matriculate'. Powers & Rock (1998:7) highlight an interesting phenomena that 'coached and uncoached students differed systematically with respect to a variety of characteristics that are related to SAT I scores. These systematic differences are themselves of interest because they

illuminate the bases on which students decide to enrol in coaching courses.’ This infers there is more to the effects of tutoring on participants and their SAT scores than the raw score or mean averages of a control group versus a quasi-experimental group. It would suggest Powers & Rock are advocating some form of qualitative research focused on participant characteristics.

Briggs (2001:4) expects a combined SAT score increase of 60 points can be added ‘just by waiting a year and taking the test again’. Messick (1982:15) limits this idea with the concept of diminished returns, suggesting that an initial improvement will taper over an extended duration.

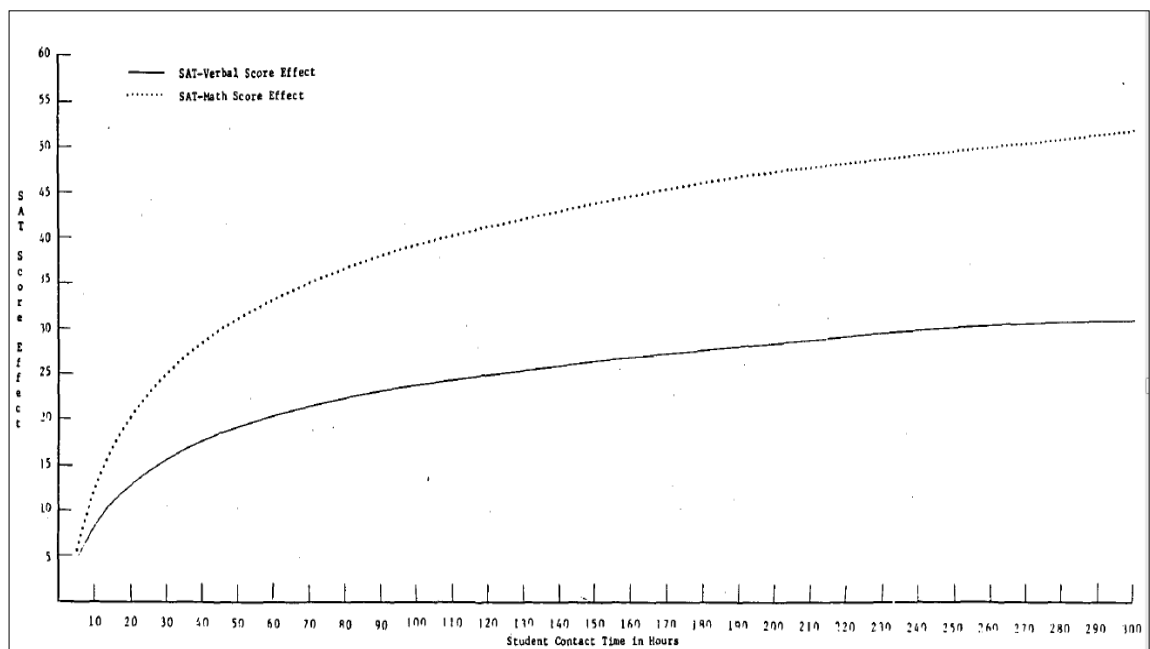


Figure 2 shows effects of contact time on SAT scores. Source: Messick (1982:15) Issues of effectiveness and equity in the coaching controversy: Implications for educational and testing practice.

Roberts & Oppenheim (1966:11) contend gains in SAT scores of tutored groups may be linked to the amount of time students spent preparing. In their study they tutored mainly African-American boys for 7.5 hours and found, using a *t*-test, an insignificant gain of 14 in verbal and 8 in math. Roberts & Oppenheim (1966:11) conclude there may be a relationship between time and increase in scores; stating this could be achieved with ‘a more prolonged and extensive interaction’. Slack & Porter (1980:164)

concur with this theory by stating ‘the more time students devote to training, the higher their scores will be’.

2.5 Quantitative results of previous research

Powers and Rock (1998) measured a coached group of 427 participants and an uncoached group of 2733 participants in verbal and math who all took the SAT during 1995. They compared pre and post test using previous SAT scores and SAT I scores. The table below highlights their mean findings.

Mean Pre-SAT I, Post-SAT I, and Gain Scores for All Coached and Uncoached Examinees			
<i>Group</i>	<i>Test</i>		<i>Gain</i>
	<i>Pre</i>	<i>Post</i>	
<i>Verbal</i>			
Coached (<i>n</i> = 427)	500 (92)	529 (97)	29 (59)
Uncoached (<i>n</i> = 2733)	506 (101)	527 (101)	21 (52)
<i>Math</i>			
Coached (<i>n</i> = 427)	521 (100)	561 (100)	40 (58)
Uncoached (<i>n</i> = 2733)	505 (101)	527 (101)	22 (50)
<i>Note: Standard deviations are in parentheses.</i>			

Figure 3 shows the mean pre and post gain scores for all Powers and Rock coached and uncoached examinees in verbal and math. Source Powers & Rock (1998:11) Effects of Coaching on SAT I: Reasoning Scores.

A mean gain of 29 in verbal and 40 in math was made by the coached group and a mean gain of 21 in verbal and 22 in math was made by the uncoached group; a difference between groups of 8 in verbal and 18 in math. Since there were fundamental changes made to the SAT in 1994 regarding time, construction of math questions, elimination of antonym and

a reduction in analogy questions (Powers & Rock 1998:5), the validity of using the pre 1994 SAT as a starting point is questionable. Powers & Rock (1998:13) investigated participant test preparation characteristics and found 62% of coached and 28% of uncoached groups had obtained other test prep books and 52% of the coached group saw achieving good SAT scores as 'extremely important' compared to 40% of the uncoached group. Powers & Rock (1998:15) conclude coaching has an effect of 6-8 points in verbal and 13-18 points in math, which they 'regarded as small'. Powers (1982:10) previously noted participants attending review or coaching sessions outside school only increased by 2.52 in verbal and -2.75 in math. Compared to an increase of 7.04 by participants who studies English vocabulary independently and an increase of 9.78 in math for participants who answered SAT questions independently, it would appear attending coaching sessions is detrimental to possible increases which could be more effectively gained by using other methods preparation.

Zuman (1988) studied the effectiveness of commercial preparation class using two groups: 55 regular students and 33 low-income minority students, based in New York. He split each group into a control and quasi-experimental group. Zuman (1988:14) using a regression analysis found no increase in verbal and a significant increase of a '57 point effect in math'. The table below shows the mean score for all sets of participants. This gain is contentious due to the small sample size. Zuman (1988:14) concluded 'an intensive, well-planned course focused precisely on SAT-type questions can have a significant effect on increasing students SAT scores'. Moreover, Zuman (1988:18) concluded coaching increased SAT scores, but 'did not affect the quality of their school work', portending gains are isolated to the preparatory material.

Briggs (2001) studied the effects of coaching on 379 participants who responded to the National Education Longitudinal Survey 1988 (NELS:88) and found a significant 15 point increase in math and a 6 point increase in verbal. Briggs (2001:9) concluded the effects of commercial test preparation companies and private tutoring 'is nowhere near the levels

previously suggested' and advises that 'students and parents should be careful before investing in test preparation'.

Finally, Smith et al (2010:12) states 'it is difficult to capture the effectiveness [of coaching] in one or even multiple studies'. Smith et al (2010:13) concludes 'research seems to suggest that little improvement is achieved through coaching'.

2.6 Student and parents perception of test preparation methods

As stated by Briggs (2009:11) participation in test preparation is based on the presumption that 'engaging in such activities will have a positive effect on students' subsequent test performance' and 'the widespread perception remains that students participating in commercial test preparation will improve their test scores dramatically rather than marginally'(Briggs, 2001:2). Part of the prevalence of tutoring, as stated by Powers (2012:9), may be due to a 'concern with ensuring that [test takers] are well prepared to take any tests that have high-stakes consequences'. Messick (1982:16) hypothesises coaching may 'enhance test-taking sophistication' or 'reduce [associated] anxiety'.

Below, Hammond (1980, cited in Messick 1982:23) demonstrates three possible outcomes of coaching on student's acceptance to university. It suggests the type of coaching student engage in could have a significant impact in terms of their acceptance and success or failure in tertiary education. While type A exhibited test-taking sophistication or reduced test anxiety, type B, who benefited the most and demonstrated genuine improvements in comprehension and reasoning abilities, would be admitted and also succeed in their studies. For type B the effects of coaching are most advantageous. While type C, who engaged in test-taking stratagems and answer selection tricks, it predicts, would be admitted but later fail in higher academia.

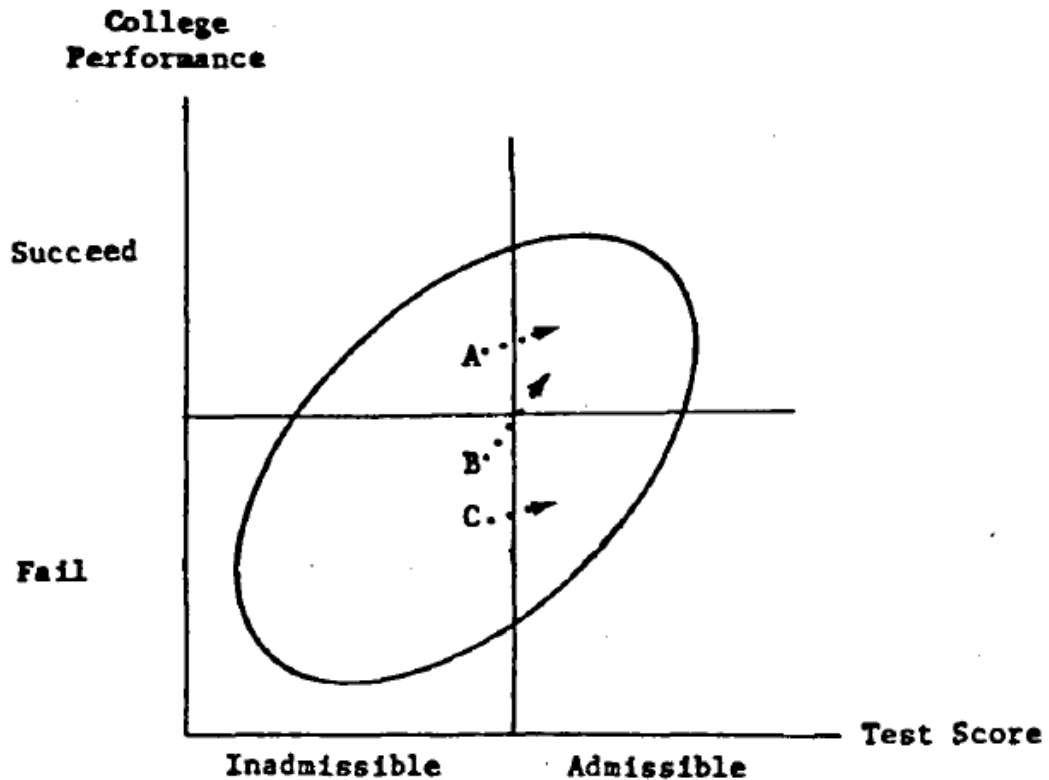


Figure 4 shows coaching effects on college performance and admissions. Source: Messick (1982:23) Issues of effectiveness and equity in the coaching controversy: Implications for educational and testing practice.

Briggs (2009:11) questions the effects of tutoring by posing the question of ‘whether such an increase can be validly attributed to the coaching that preceded it. He continues by purposing a testable methodology of direct group comparison between a control and quasi-experimental group. This idea will be carried forward into this research. Ishii (2010:16) partly concurs with Briggs (2009) recognising the difficulty in understanding ‘efficacy difference due to applicant characteristics from those due to treatment characteristics’.

The College Board has clearly positioned the SAT as the benchmark for college readiness and test preparation companies, for example Kaplan ‘reporting net revenues of \$2.64 billion...in 2009’ (Ishii, 2010:2); it is clear there is no parley to be had and no quarter will be given between the College Board and shadow education providers. The next chapter, methodology, describes and explains the type of research conducted,

demographic of School X, sample selection and ethical considerations pertaining to the research.

Chapter three: Methodology

3.1 Overview

The purpose of this chapter is to show the logical progression of decisions made and course of the research conducted in order to collect both quantitative and qualitative data. It essentially includes a chronology of research gathered, a breakdown of the logic behind each question in quantitative and qualitative questionnaires. It also includes a description of procedure and a breakdown of questions asked during an interview with Tutor A. It also elucidates the decision to use a parametric independent *t*-test to analyse data comparing controlled and quasi-experimental groups. The methodology of this research employs a mixed-method research approach as stated by Firestone (1987:16) that 'qualitative and quantitative methods to address the same issue' can be employed. The purpose of data collection is to enable concrete data analysis of the research questions posed.

3.2 Remit of research

The purpose of the research is to focus on the use of tutors and other SAT preparation methods, such as those provided by the College Board, Kaplan, Princeton Review etc, during SAT preparation. As stated previously, all of the participants who were tutored during their SAT preparation attended School X and all participants who were tutored, except one, were done so by Tutor A during the academic year 2010/11. The remit of this research is, therefore, to focus on this tutoring and preparation phenomena with tutored and untutored homogeneous cohorts consisting of nineteen students per tutored and untutored group with the

tutored group being set as a control group and the untutored group being set as a quasi-experimental group, in total thirty-eight participants.

It is not the remit of this research to advocate or oppose the use of tutoring in assessment preparation, nor is it the remit of this research to purpose the functionality of tutoring. It is the remit of this research, however, to differentiate its effectiveness in influencing the increase in SAT scores.

3.3 Sample

School X

At the beginning of the 2010 academic school year, School X; a large international K-13 school had over 4,000 students on roll. A majority of students are multilingual Arab and Sub-continental co-eds from middle and upper class backgrounds. The school population functions as a pyramid with 2,000 students in grades K-2 and 90 students in grade 12. The current reason for student attrition or school demographic is not the remit of this research.

English, mathematics and physics, for science students, is obligatory from grade 10 onward, however students may choose to engage in specialised advanced courses from grade 11-13 under the stipulation that they have met prerequisite conditions. These courses prepare students for UK advanced subsidiary, advanced level and US advanced placement tests at the end of grade 12 and 13. The English course also runs parallel to advanced courses depending on students' preferred route, preparing students for SAT and TOEFT assessments during grade 11 and SAT assessments during grade 12 (see appendix I & II). The students and teachers use the same textbooks throughout the school and the method of instruction is the same at all levels. The 'points system' is mandatory and encourages teachers to lead student through the textbooks in a logical and linear fashion. Textbooks are often used as the sole impetus of the curriculum. Classroom discussions are secondary to rote learning; note-

taking and independent reading is pushed aside in favour of set answers and directed memorisation facilitated by a web-based support system.

Participation in the school's students led organisation is optional, as is participation in extracurricular activities. Once students are in grade 11 and 12 their academic timetable can be dense allowing little time for other activities. Liberal Arts are nonexistent after grade 10, since a majority of student's time is spent in class, on exams, or preparing for either.

Students Sample

Polit and Beck (2006, cited in Coughlan, M., Cronin, P., Ryan, F. 2007:662) advocate 'at least fifty percent of the sample to participate if a response bias is to be avoided.' This was not possible, as the total cohort for the graduating class of 2011 was only 90 students and of those 90 only 19 sought tutored SAT preparation or other SAT preparation methods. If a larger number of students had prepared for the SAT with a tutor the quasi-experimental group would have been larger with the control group being of reciprocal size to maintain homogeneity and also to abide by the assumptions of a *t*-test.

A total of 38 students voluntarily participated in the research, set into two equal homogeneous groups. Group A, a quasi-experimental group, had engaged in formalised SAT preparation. This was either through a preparatory course offered by such agencies as the British Council or similar agencies or through preparatory material provided by a Kaplan style mock exam based revision text. The rest received tutoring from Tutor A, the style of which will be described later in this section. Group B, a control group, engaged in non-formal tutoring, such as help from an older sibling, parent or relative, or self-studied independently of external assistance.

Both groups were selected from School X only and all participants were in their senior year of academic study. Group A was selected on the basis that they had been tutored or engaged in formal preparation in preparation for an SAT and was willing to participate in the research. Once Group A

had been identified, Group B was selected individually based on their participation in the SAT, their willingness to participate in the research and their school end of term one academic average. Each student from Group A was matched with, in as many variables as possible, as their homogeneous counterpart. For example:

11A	12	SA	M	17` 6	12/10/19 93	Lebanon	Christian	A	83
11B	12	SA	M	17` 11	21/05/19 93	Lebanon	Christian	A	83

Figure 5 shows homogeneity of participants of Group A and B.

Student 11A is part of Group A and students 11B is part of Group B. Both students are in grade 12, scientific section, male, seventeen years of age, Lebanese national, Christian, speaks Arabic as a first language and has an end of term one average of 83/100. As can be seen later in the results chapter and appendix IX, not all counterparts are as homogeneous as the above example. Priority of selection was given to the students whose end of term one average matched a tutored student's average. This homogeneity of school average was important to give a base line for each student. If all students had different end of term averages there would be no fair data to draw a valid comparison to show any significant difference between Group A and B. One of the main purposes of the research was to ascertain the extent, if any, tutoring improves SAT scores, thus being able to compose two equally averaged groups was critical to the possibility of the data having any significance. This would also allow for clarity of analysis later. Group A's end of term 1 total average for the 19 participants totalled 1535 giving a mean of 80.7, while Group B' end of term 1 total average for all 19 participants totalled 1544 giving a mean of 81.2 a difference of 0.5. As will be shown later in the results chapter, this 0.5 difference between the two groups was not significant. Obviously these students do not live in a vacuum and other factors such as parent's occupation, sources of SAT study material, hours of preparation, and perception of exam importance play an important part in the outcome; all

of which were asked in questionnaire one and two. Due to the fragility of data collection in School X questions which may offend participants such as their parents' income, a question which the SAT questionnaire asks, was not asked. More research into these delicate questions may become the remit of later research.

3.4 Type of research

The research, due to the sample size, mainly focuses on data collection and an interview with a prominent tutor indicated as School X students' choice of preparation method in the qualitative questionnaire. A mixed methods approach was favoured for a plethora of reasons relying on four means. First, an SAT result analysis which is published to each student, via an internet based account (see appendix VII), after their SAT results has been assessed. This consists of a ten page report breaking down each of the four sections (reading, math, writing and essay) of the test into type and provides a raw score. Second, was a quantitative questionnaire (see appendix V) consisting of twenty-seven questions which will be further explained in the below quantitative section. Third, was a qualitative questionnaire (see appendix VI) given only to Group A, which asked six open ended questions specific to formal test preparation. These will be described in the qualitative section also below. Finally, an interview (see appendix VIII) with the prominent tutor favoured by students from School X as their provider of formal test preparation; Tutor A. It was important to glean numeric data in the form of the SAT analysis and quantitative questionnaire in order to allow productive data collection of the *facts*.

This research agrees with Taylor and Bogdan, (1984, cited in Firestone, 1987:16) that 'quantitative research is based on a positivist philosophy which assumes that there are social *facts* with an objective reality apart from the beliefs of individuals. Qualitative research is rooted in the phenomenological paradigm which holds that reality is socially constructed through or collective *definitions of situation*.'

It was felt by the researcher that it was also valuable to investigate the issue of tutoring qualitatively. This view concurs with Guba & Lincoln (1994:106) that qualitative data 'can provide rich insight into human behaviour'.

3.5 Quantitative research

The quantitative portion of the research consisted of two elements; SAT students analysis (appendix VII) and questionnaire one (appendix V). The SAT students' analysis was used to collate students total reading, math, writing and essay scores. These results were then tabulated in excel (see appendix X).

According to Briggs (2009:28) other SAT coaching studies chose to use Regression (McClain 1995; Smyth 1990; Schroeder 1992), ANOVA (Kaplan 2005; Smyth 1989), MANOVA (Evans & Pike 1972; Lashewer 1985) or an F-test (Holmes & Keffer, 1995). The researcher concurs with (Frankel 1960; Johnson 1984; Roberts & Oppenheim 1966) and decided to use a *t*-test due to the nature of a *t*-test which (N., Kemp, R., Snelgar, R. (2009:128) '...compares the performance of the participants in Group A with the performance of the participants in Group B.' Further reasons for this choice agree with Gerwien (2008) and with key assumptions stipulated by Brace, N., Kemp, R., Snelgar, R. (2009:127) that to enable a *t*-test to be effective the following criteria must be met:

- 1) They are measured at interval or ration level
- 2) Meet the assumption of homogeneity of variance
- 3) Are drawn from a population that has a normal distribution

In order to meet these assumptions the highest sub score was selected for each participant. For example:

No.	Group	Gender	SAT Scores			
			Reading	Math	Writing	Essay
16	A	Male	430	580	420	8
			440	530	430	6

Figure 6 shows multiple scores for participant 16 Group A in reading, math, writing and essay with the highest score of 440 in reading, 580 in math, 430 in writing and 8 in essay being selected.

This data then became:

No.	Group	Gender	SAT Scores			
			Reading	Math	Writing	Essay
16	A	Male	440	580	430	8

Figure 7 shows single scores for participant 16 Group A in reading, math, writing and essay.

Because all students from Group A took the SAT while being tutored, the influence of preparatory tutoring would be seen on any result. Also students have the option of sending their highest score to perspective colleges and thus, would automatically select their own highest scores. Also the percentages participants achieved on each SAT sub section, such as reading, was not the remit of this research; therefore, these too were omitted. This meant SAT score data used for the *t*-test stood as follows:

No.	Group	Gender	SAT Scores			
			Reading	Math	Writing	Essay
1	A	Male	570	670	590	10
2	A	Female	650	690	610	8
3	A	Male	520	680	690	11
4	A	Female	510	550	450	6
5	A	Male	550	620	590	8
6	A	Male	480	740	670	9
7	A	Female	480	600	580	8
8	A	Male	480	680	490	8
9	A	Female	650	680	800	10
10	A	Male	480	770	620	8
11	A	Male	510	690	570	9
12	A	Male	470	700	560	7
13	A	Female	470	550	540	9
14	A	Female	470	680	560	8
15	A	Male	510	700	530	8
16	A	Male	440	580	430	8
17	A	Male	490	550	620	8
18	A	Male	580	700	540	8
19	A	Male	550	700	650	
1	B	Male	490	710	490	
2	B	Female	520	440	540	10
3	B	Female	410	480	400	8
4	B	Male	510	610	480	8
5	B	Male	590	590	570	7
6	B	Male	570	710	540	7
7	B	Female	530	670	530	8
8	B	Female	480	650	440	8
9	B	Female	440	500	380	6
10	B	Male	360	570	310	4
11	B	Female	520	660	550	8
12	B	Female	510	700	560	8
13	B	Male	570	730	640	8
14	B	Male	510	560	560	8
15	B	Male	370	530	450	7
16	B	Male	460	580	420	5
17	B	Male	410	670	420	7
18	B	Female	450	670	510	6
19	B	Female	550	670	650	10

Figure 8 shows single scores for participants of Group A and B in reading, math, writing and essay.

The second part of the quantitative data collection involved questionnaire one (see appendix V) which investigated the students background, specifics of tutoring and other contributing methods of preparation they may have engaged in. It also investigated their perception on the outcome of being tutored and their expectations for the future. The logic behind these questions is explained below in the questionnaire analysis section. The type of questions used on questionnaire one was adapted from Bell, J. (2005:137) and was:

- Open questions requiring a short response. For example question 26 only required students to write three universities they applied to.
- Question 13 was an open question and asked participants why they felt they needed a tutor to prepare for SAT and required a long written response.
- Likert scale was used to gauge participants' attitudes towards the importance of SAT in applying to university and the ability of the participant's subject teacher in preparing them for the SAT.
- Question 4 required participants to categorise the number of hours they used a tutor to prepare for SAT in increments of 5 hours.
- Quantity questions were asked to instead of category questions for questions 5, 6, 9 and 17 because any number was a possibility and, therefore, required a specific answer from participants.
- Yes/No questions were used to ascertain simple alternatives. For example the first part of question 3 asks 'Did you use a tutor to prepare for SAT?' The answer could only be 'yes' or 'no'.
- One ranked question was use to establish the first three universities participants had applied to. As many students often have a safety, a university they could easily be accepted to, it was important to rank their choices.

The table below highlights the question or questions the above question type pertains to.

Q1	Q4	Q7	Q10	Q13	Q16	Q19	Q22	Q25
Open - short	Category, closed	Open-short	Open - short	Open-long	Yes/No, Closed	Likert scale	Yes/No, closed. Second part of Q22 Open-short	Yes/No, closed
Q2	Q5	Q8	Q11	Q14	Q17	Q20	Q23	Q26
Open - short	Quantity, closed	Open-short	Open - short	Open-short	Quantity, open-short	Yes/No, closed	Yes/No, closed	Ranked, open-short
Q3	Q6	Q9	Q12	Q15	Q18	Q21	Q24	Q27
Yes/No, Closed	Quantity, open-short	Option, closed. Second part of Q9 Quantity, open-short	Yes/No, closed. Second part of Q12 Open-short	Yes/No, closed	Yes/No, closed. Second part of Q18 Open-short	Open-short	Likert scale	Open-short. Participants also given the option 'Not sure yet'

Figure 9 shows questionnaire one question numbers and type of question investigated.

As stated by Firestone (1987:19) a 'quantitative study assesses the magnitude of relationships more precisely.' This was an important issue to consider while developing questionnaire one. If there was, for example, no

significant difference in mean between controlled and uncontrolled groups in reading, math, writing and essay, by covering a wide range of questions orientated towards the participants background, the SAT, the phenomena of tutoring and future university aspirations would aid in finding any possible relationship present. The use of a *t*-test would or would not show significance, but would not illuminate its cause. To further explore this topic a second questionnaire was designed to ask the quasi-experimental group, Group A, five open question which are explained in the next section.

Questionnaire one was divided into four main areas of investigation: 1) the students background (Background), 2) the SAT (SAT), 3) being tutored to prepare for the SAT (Tutoring) and university aspirations (University). The table below shows the category each question relates to.

Background	SAT	Tutoring	University
Q1-Q2	Q15-Q16	Q3-Q14	Q26-Q27
	Q19-Q24	Q17-Q18	
		Q25	

Figure 10 shows category of question asked in questionnaire 1.

More than half of the questions asked are focused on the phenomena of tutoring, as this is the main focus of the research. The results of this questionnaire will be presented and analysed in the following results and discussion chapters.

Question 15 asked participants if they downloaded SAT study material to help prepare for SAT. Since this data was testing dichotomous variables a nonparametric test was used. Greene (2006:216) test flowchart advocates the use of a Chi-square test. Brace, N., Kemp, R., Snelgar, R. (2009:184) suggest the use of Pearson's chi-test, as this is most commonly used.

3.6 Qualitative research

Guba & Lincoln (1994:105) states that there has been a 'patent overemphasis on quantitative methods' and Sechrest (1992, cited in Guba & Lincoln, 1994:106) purposes there is a 'widespread conviction that only quantitative data are ultimately valid, or of high quality'. This may be true in demonstrating a significant outcome, but will not explain why that outcome occurs or, in this case, give depth of the psychological logic students follow in deciding to engage in tutoring. The dynamics of this conundrum will also be further discussed later.

Five questions were asked in the second questionnaire. These questions were the following:

1. Circle the month or months you received a tutor.

January February March April May June July
August September October November December

2. Which SAT exam was this tutoring focused towards?
3. What do you feel were the advantages of using a tutor? Please answer as fully as possible.
4. What do you feel are the disadvantages of using a tutor? Please answer as fully as possible.

The last question was quantitative and asked if students believed using a tutor made a difference to the outcome of their SAT result. Participants were only required to circle 'yes' or 'no' and then explain why if the answer was 'yes'.

These questions were posed to investigate participants' perception of the advantages and disadvantages of preparatory tutoring. Their answers were recorded verbatim (see appendix VI & XII) and common trends will be presented in the results section.

3.7 Chronology of research

The research was collected in five stages. Initially permission to use the schools records of students' SAT scores was requested through an official letter from BUID (see appendix XIII). This request was obvious because all students upon registering for an SAT exam have the option of their official SAT transcript being sent to their school and the universities of their choice. A majority of students opt to do so, as it gives them the ability to send an official transcript, stamped by the school, to any other university of their choice at a later date.

Only partial support of data collection was granted to use the schools data system only for student internal information: name, age end of term average etc, and then permission was only given verbally, possibly though a trepidation of repercussions resulting from the findings. Furthermore, the nature of School X is highly insular with an apprehension towards any questioning of the effectiveness of the school system. The lack of support may also stem from a desire to ignore the popularity of SAT tutoring despite School X designating a significant amount of the English curricula in both grade 11 and 12 to SAT preparation (see appendix I & II). This position is understandable, as it would be the same as eating at a restaurant and then having to stop for a snack before one got home and then asking the restaurant to explain the dearth of nutrition in their menu.

An excel sheet was developed using a pre-existing school data collation program, which enabled a large number of variables to be compared. Simultaneously, the researcher assessed which students had taken the

SAT during their final year of high school and had also used a tutor. This was done verbally and via the distribution of questionnaire one. Once this was ascertained, the 19 students of Group A were formed. The next step was to match all members of Group A with a counterpart. This second group was Group B. Then a statistical SAT report from all participants from both groups was gathered. This process took two months with data being handed to the researcher by the student directly and also being downloaded then printed from the College Board results webpage, which all students have access to once they have registered and paid for an SAT testing date. Once a student handed in or enabled the printing of their SAT report, the first quantitative questionnaire was handed out individually.

This was done by the researcher in a quiet office and all students were given the option to withdraw from the research at any time and all were told the research was part of an MEd dissertation investigating the effects of tutoring on SAT scores. The following statement was typed at the top of both quantitative and qualitative questionnaires:

As part of a MEd dissertation, data is being collected researching the Scholastic Aptitude Test (SAT) and variables acting upon it. The following questions are focused on aspects of that research. Please read the questions carefully and give the most appropriate answer. Thank you in advance for your time and cooperation.

The researcher was present during the answering of questions in case a participant required clarification. Once all the quantitative questionnaires had been collected, it was realised that deeper aspects of the tutoring phenomena were left unanswered such as the advantage or disadvantage of engaging in tutoring or if the participant believed tutoring made a difference to their SAT score. Thus the second qualitative questionnaire was designed and administered to Group A only. This second administering of this questionnaire was done using the same procedure as the first and took a month to obtain all the data. The 100% return of questionnaire one is highly unusual until one contemplates Bell's (2005:148) assertion that 'there are distinct advantages in being able to

give questionnaires to respondents personally'. Two participants did not return questionnaire two despite multiple requests for completion. Plus, the researcher has known and dealt with this cohort for half a decade, the researcher's office was directly adjacent to their classrooms and the researcher held an administrative position within School X. Also many participants sent their SAT analysis and questionnaires via email for convenience towards the end of the academic year. Participants may have felt coerced to take part in the research and the possibility of this will be analysed in the discussion section later. In conjunction with questionnaire two an interview with Tutor A was organised through students from grade 11 being tutored by Tutor A. Securing this interview took three months, due to the popularity of the tutor and possibly his hesitation to come out of the shadows and publicly discuss his tutoring ethos, methodologies and his perception of those he tutors.

Finally arranged for 24th November 2011, the researcher met with Tutor A in a mall in Sharjah. Through negotiations via text message it was originally agreed that the interview would be recorded, however, upon arrival Tutor A made it clear that he did not wish the interview to be recorded and stated he would answer all questions posed to him by email at a later date. The researcher had printed the interview questions and proceeded to take notes in pencil, which Tutor A did not object too (see appendix VIII). The email was never sent by Tutor A, despite repeated emails sent to remind him (see appendix XIV).

3.8 Ethical considerations

Ethical approval was obtained from the Chair of the school of Education Ethics Committee on 5th May 2011 on behalf of BUID (The British University in Dubai), confirming that the project fits within the University's Code of Conduct for Research. To achieve this a number of consideration had to be met. These agree with Beauchamp and Childress (2001, cited in

Coughlan, Cronin, Ryan, 2007:658) who also set out four fundamental moral principals 'autonomy', 'non-maleficence', 'beneficence' and 'justice'. These four concepts, although diluted throughout the BUID ethics form, are present and form the focus of the research ethics methodology.

Autonomy was mostly maintained, as it was clearly stated, verbally, to all persons that they had the right to withdraw from the research at any time without fear of reprisals. Due to the long relationship between all parties concerned, an atmosphere of reciprocal trust had already been created in which persons involved in the research understood their participation and relevant data would be protected from a third party.

Non-maleficence was taken into account and catered for by coding the names of all parties to Group A and B, Tutor A and School X. Since the research does not deal with personal issues of a sensitive nature, such as health issues, this was not of great concern.

Beneficence represented a dilemma in this research as not all parties may wish that their participation in SAT preparation or their SAT analysis report be disclosed. It was of small concern to the researcher, as due to the administrative position held at the time of research, contact with said parties' academic and personal information was common. Also it was made explicitly clear to all parties that participation was optional. Furthermore, harm, as defined by the BUID ethics form, was minimised due to the fact that the SAT analysis report was provided to all participants and often, as a matter of course, sent to School X, and therefore, access to this data by a party other than the test taker was not an abnormal procedure. Finally, many of the questions asked in questionnaire one and two were not of an offensive nature and participants understood they had the option of omitting answers they did not wish to disclose.

Justice was maintained as access to the research is open to all participants including Tutor A. With the exception of questionnaire two and the interview with Tutor A, all participants engaged in the same process described earlier. No burden was placed on one individual to a greater extent than another and it was felt by the researcher that the methods

used to obtain data caused minimal disruption to participants. Even though Tutor A did not give permission for the interview to be recorded, he did give permission for notes to be taken and was made aware of the purpose of the research.

All other ethical guidelines were adhered to in line with BUID's ethical policy (appendix XV).

Chapter four: Results

4.1 Overview

This chapter will analyse the quantitative data of Group A and B using a *t*-test, Chi-squared test, and by the use descriptive data. It will also highlight trends found in the qualitative data and views held by Tutor A.

4.2 Groups

Coughlan, Cronin, Ryan. (2007:662) stat 'Statistical significance helps the researcher to rule out the important threat to validity and that is that the result could be due to chance rather than to real differences in the population', which this research agrees with, hence the first part of the results will present *t*-test analysis.

Group	Frequency	Percent
A	19	50.0
Valid B	19	50.0
Total	38	100.0

Figure 11 shows group, frequency and percent of Group A and Group B participants.

There is no frequency difference between Group A and Group B. Both groups represent 50% of the valid sample totalling 38 participants.

Gender	Frequency	Percent
Female	15	39.5
Valid Male	23	60.5
Total	38	100.0

Figure 12 shows gender, frequency and percent of male and female participants.

There is a frequency difference of 8 between males and females with males contributing 21% more to the research frequency. Group A consists of 13 males and 6 females and Group B consists of 10 males and 9 females (see Figure 8). The two graphs below shows the composition of Group A and Group B for male and female participants. They reveal there is a larger number of male participants in Group A than B by 3 and there are fewer females in Group A than B by 3.

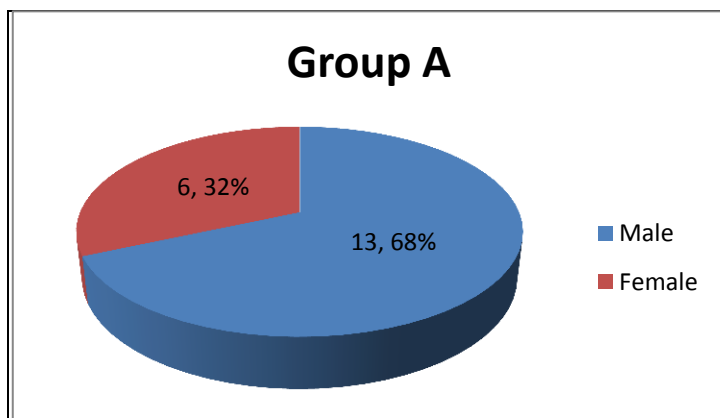


Figure 13 shows number and percentage of males and females in Group A.

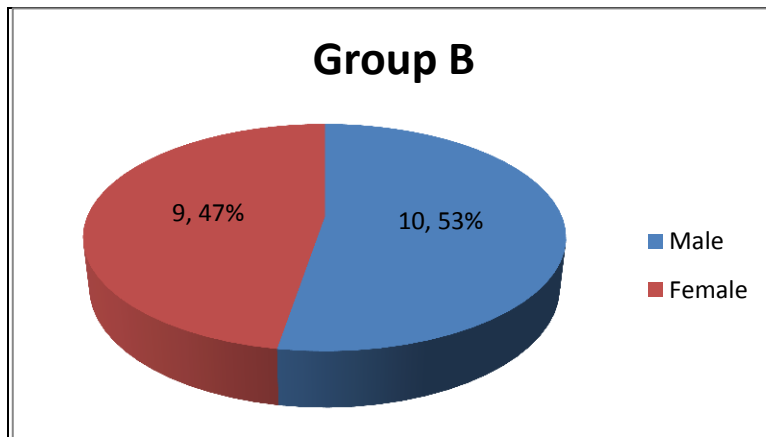


Figure 14 shows number and percentage of males and females in Group B.

4.3 Independent Samples *t*-test

Descriptive data

	Group	N	Mean	Std. Deviation
Reading	A	19	518.95	59.245
	B	19	486.84	66.671
Math	A	19	659.47	65.105
	B	19	615.79	85.004
Writing	A	19	581.58	86.105
	B	19	496.84	88.384
Essay	A	18	6.94	2.817
	B	18	6.39	2.279

Figure 15 shows the number, mean and standard deviation of reading, math, writing and essay for Group A and B.

Reading: There exists a difference in mean between Group A in writing test (mean=518.95, SD=59.245, $n=19$) as compared to Group B (mean=486, SD=66.671, $n=19$). The independent samples *t*-test reveals that there exists no statistical significant difference in mean between groups A and B ($t=1.569$, $df=36$, $p=0.125$, 2-tailed).

Math: There exists a difference in mean between Group A in writing test (mean=659.47, SD=65.105, $n=19$) as compared to Group B (mean=615.79, SD=85.004, $n=19$). The independent samples t -test reveals that there exists no statistical significant difference in mean between groups A and B ($t=1.778$, $df=36$, $p=0.084$, 2-tailed).

Writing: According to figure 15 there exists a difference in mean between Group A in reading test (mean=581.58, SD=86.105, $n=19$) as compared to Group B (mean=496.84, SD=88.384, $n=19$). Table 4, the independent samples t -test, reveals that there exists statistical significant difference in mean between groups A and B ($t=2.993$, $df=36$, $p=0.005$, 2-tailed).

Essay: There exists a difference in mean between Group A in writing test (mean=518.95, SD=59.245, $n=19$) as compared to Group B (mean=486, SD=66.671, $n=19$). The independent samples t -test reveals that there exists no statistical significant difference in mean between groups A and B ($t=0.650$, $df=34$, $p=0.520$, 2-tailed).

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Reading	Equal variances assumed	.481	.492	1.569	36	.125	32.105	20.462	-9.393	73.604
	Equal variances not assumed			1.569	35.509	.126	32.105	20.462	-9.413	73.624
Math	Equal variances assumed	2.143	.152	1.778	36	.084	43.684	24.564	-6.134	93.502
	Equal variances not assumed			1.778	33.711	.084	43.684	24.564	-6.251	93.620
Writing	Equal variances assumed	.220	.642	2.993	36	.005	84.737	28.308	27.325	142.149
	Equal variances not assumed			2.993	35.975	.005	84.737	28.308	27.324	142.150
Essay	Equal variances assumed	.484	.491	.650	34	.520	.556	.854	-1.180	2.291
	Equal variances not assumed			.650	32.576	.520	.556	.854	-1.183	2.294

Figure 16 shows Levene's test for equality of variances and *t*-test for equality of means in reading, math, writing and essay.

Reading: The difference between the mean of Group A and Group B is (Mean difference 32.105, 95% Confidence Interval of the Difference: lower -9.393, upper 73.604). As stated previously the independent sample *t*-test reveals no significant difference in reading between Group A and Group B. ($p=0.125$, 2-tailed).

Math: The difference between the mean of Group A and Group B is (Mean difference 43.684, 95% Confidence Interval of the Difference: lower -6.134, upper 93.502). As stated previously the independent sample *t*-test reveals no significant difference in math between Group A and Group B. ($p=0.84$, 2-tailed).

Writing: The difference between the mean of Group A and Group B is (Mean difference 84.737, 95% Confidence Interval of the Difference: lower 27.325, upper 142.149). As stated previously the independent sample *t*-test reveals a significant difference in writing between Group A and Group B. ($p=0.005$, 2-tailed).

Essay: The difference between the mean of Group A and Group B is (Mean difference 0.556, 95% Confidence Interval of the Difference: lower -1.180, upper 2.291). As stated previously the independent sample *t*-test reveals no significant difference in essay between Group A and Group B. ($p=0.520$, 2-tailed).

Report

Group	Gender		Reading	Math	Writing	Essay
A	Female	N	6	6	6	6
		Mean	538.33	625.00	583.33	6.67
		Std. Deviation	87.731	66.558	118.096	2.944
	Male	N	13	13	13	12
		Mean	510.00	675.38	580.77	7.08
		Std. Deviation	42.230	60.362	72.854	2.875
	Total	N	19	19	19	18
		Mean	518.95	659.47	581.58	6.94
		Std. Deviation	59.245	65.105	86.105	2.817
B	Female	N	9	9	9	9
		Mean	490.00	604.44	506.67	6.00
		Std. Deviation	47.434	100.388	85.732	2.958
	Male	N	10	10	10	9
		Mean	484.00	626.00	488.00	6.78
		Std. Deviation	82.892	72.449	94.375	1.394
	Total	N	19	19	19	18
		Mean	486.84	615.79	496.84	6.39
		Std. Deviation	66.671	85.004	88.384	2.279
Total	Female	N	15	15	15	15
		Mean	509.33	612.67	537.33	6.27
		Std. Deviation	68.083	86.311	103.404	2.865
	Male	N	23	23	23	21
		Mean	498.70	653.91	540.43	6.95
		Std. Deviation	62.907	69.002	93.540	2.312
	Total	N	38	38	38	36
		Mean	502.89	637.63	539.21	6.67
		Std. Deviation	64.301	77.892	96.181	2.541

Figure 17 shows Group, gender, mean, standard deviation and number of participants in reading, math, writing and essay for Group A and Group B.

It shows there is a difference in Group A between males and females in the mean of reading, math, writing and essay and that females in Group A achieved a higher mean than males in reading (mean=538.33, SD=87.731, $n=6$) and writing (mean=583.33, SD=118.096, $n=6$). Males in Group A achieved a higher mean in math (mean=675.38, SD=60.362, $n=13$) and essay (mean=7.08, SD=2.875, $n=12$) than females.

In Group B there appears to be a difference in the mean of reading, math, writing and essay between males and females. Females achieved a higher mean in reading (mean=490.00, SD=47.434, $n=9$) and writing (mean=506.67, SD=85.732, $n=10$). Males achieved a higher mean in math (mean=626.00, SD=72.449, $n=10$) and essay (mean=6.78, SD=1.394, $n=9$).

There is also a difference between males and females in Group A and males and females in Group B in reading, math, writing and essay. As can be seen in figure 17 males and females in Group A achieved a higher mean in all four subjects than females and males in Group B in all four subjects.

According to figure 19 there exists a difference in mean between Group A end of term 1 average (mean=80.79, SD=5.401, $n=19$) compared to Group B (mean=81.26, SD=5.616, $n=19$). Table 7, independent samples t -test reveals there exists no statistical significant difference in mean between Group A and B end of term 1 average and that there is equality of variance ($t=-0.265$, $df=36$, $p=0.793$, 2-tailed).

Independent Samples t-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.012	.915	-.265	36	.793	-.474	1.788	-4.099	3.152
End of term 1 average Equal variances not assumed			-.265	35.946	.793	-.474	1.788	-4.099	3.152

Figure 18 shows Levene's Test for equality of variances and *t*-test of equality of means for end of term 1 average.

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
End of term 1 average	A	19	80.79	5.401	1.239
	B	19	81.26	5.616	1.288

Figure 19 shows end of term 1 average, number of participants, mean, standard deviation and standard error mean for Group A and B.

4.4 Group A quantitative questionnaire results

The total number of participants for Group A was 19, 17 who chose to use Tutor A as their means of SAT preparation 44.7% of the total number of participants (see appendix XVI). To question 3 participant A4 responded 'Yes' to using a tutor, but did not state which tutor she used to assist her in SAT preparation, nor did she answer questions 4 to 12. Participant A8 responded he had used a tutor from the Princeton Review (see appendix XVII). As can be seen below, 41.2% of Group A engaged in tutoring for between 31 to 35 hours.

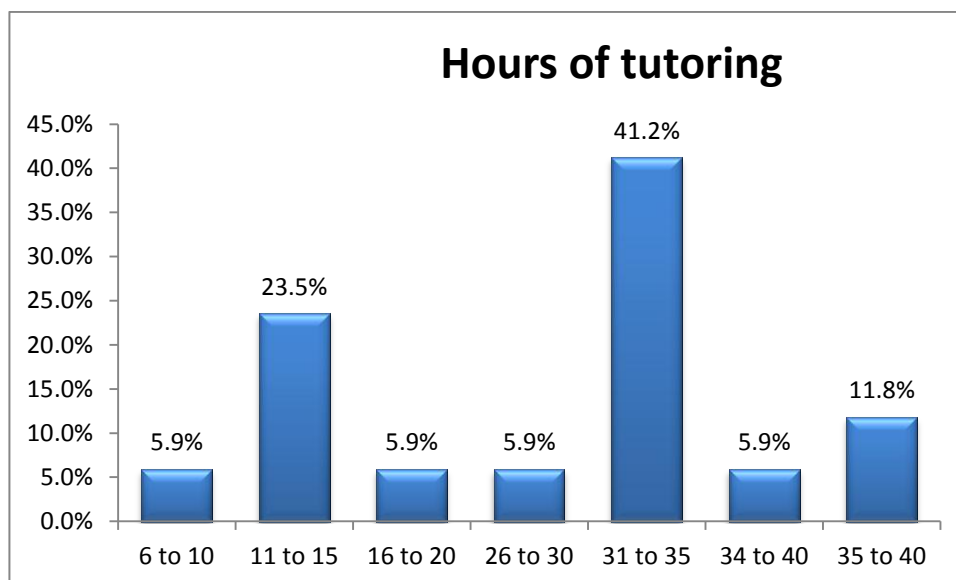


Figure 20 shows percentage of Group A engaged in hours of tutoring.

The graph demonstrates 77.7% of Group A were tutored 3 times per week and 22.2% were tutored twice per week a mean of 2.7 sessions per week. Group A were tutored for a mean time 4.38 hours per week at a mean cost of 5,061aed paid for by one or both of their parents (two participants did not respond to this question (see appendix XVIII). None of the participants were tutored alone; all Group A participants were tutored in a group. It is not clear from the data which participants were in which group. It is clear, however, that Group A was not one group because when asked how many

participants were in their group the mean response was 6.06. The exact group dynamics may be the focus of further research.

Fifteen (83.3%) of the participants from Group A responded that the tutoring took place at a friend's house. Two (11.1%) of the participants stated the tutoring took place at their own home (see appendix XVI). It cannot be concluded that these are the two participants who allowed tutoring to take place in their homes for the rest of the participants of Group A in this research. All Group A participants responded they heard about tutoring through a friend. When asked who organised the this tutoring 66.6% responded that it had been organised by Tutor A, 26.6% that it had been organised by the group and participant 8A responded that it had been organised by the Princeton review. Four participants recorded no response.

When asked if tutoring helped prepare for the SAT 94.4% of the participants in Group A responded 'Yes'. Only participant 8A responded 'No'. It is notable that participant 8A attended Princeton Review twice a week for 4 hours for a total of 11 to 15 hours. He paid 5,600aed, the second highest cost of all Group A participants, and was tutored in a group of 6 in the Princeton Review's office.

4.5 Group A and Group B quantitative questionnaire results

To allow for statistical analysis to take place data had to be categorised into groups. For example a lower case letter was changed to a capital letter or visa verse. Also responses were changed if the wording of the response was different from other participants' responses but the meaning was the same. For example, when asked 'how did you hear about tutoring?' 11A responded 'friends', 12A responded 'through a friend, 13A responded 'a friend told me'. The syntax of each response differs, but the meaning does not and, therefore, these responses were edited as 'friend'.

For a full unedited set of Group A and Group B responses see XVIII and for a full list of edited responses see appendix XVII. Statistical data presented in this research was generated using an edited set of participants' responses.

Opposed to the previous section which only dealt with data pertaining to questions aimed at tutored participants (questionnaire 1 questions 3-14), this section deals with questions 15-27 which apply to both groups of participants.

The data reveals 100% of the participants in Group A and Group B had access to the College Board website at home. As highlighted in the literature review, having access to this site allows participants to access a whole range of features. Interestingly, only 2 participants from Group A chose to download SAT study material compared to Group B where 8 chose to download SAT study material.

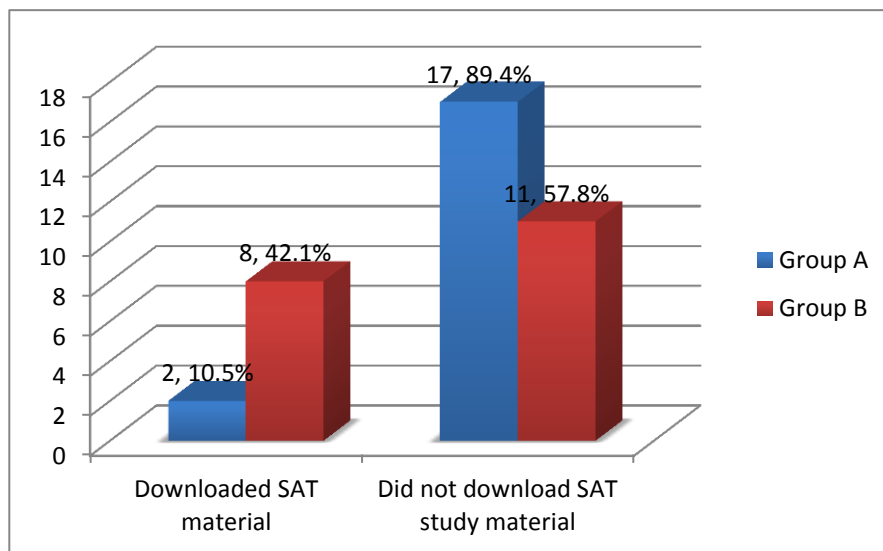


Figure 21 shows percentage of participants in Group A and Group B who did and did not download SAT study material.

The 2 participants from Group A who chose to download SAT study material were A4 who scored 510 in reading, 550 in math, 450 in writing and 6 in essay and 12A who scored 470 in reading, 700 in math, 560 in writing and 7 in essay. When these scores are compared with the mean for Group A in reading 518.95, math 659.47, writing 581.58 and essay

6.94, it illustrates participant A4 achieved a lower score in all four subjects than the mean of Group A. Participant 12A scored higher in math and essay and lower in reading and writing than the mean scores of Group A. this participant is male and the trends he demonstrates in math and essay concur with the trend exhibited by males in Group A (see table 5).

Group A revised for a mean of 2.21 hours without a tutor, while in Group B the responses varied widely ranging from 0 hours to 70 hours over a 2 month period, with a mean of 4.85 hours without a tutor (see appendix XVIII).

	16. Did you download Sat study material		Total
	No	yes	
Group A	17	2	19
Group B	11	8	19
Total	28	10	38

Figure 22 shows number of participants in Group A and Group B who downloaded SAT study material.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.886 ^a	1	.027
Continuity Correction ^b	3.393	1	.065
Likelihood Ratio	5.151	1	.023
Fisher's Exact Test			
N of Valid Cases	38		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.00.

b. Computed only for a 2x2 table

Figure 23 shows value, degrees of freedom and significance between Group A and B.

There exists a difference between students in Group A and Group B who downloaded and did not download SAT study material. This difference is significant $\chi^2 (1, N=38) = 4.886, p=.027$.

Only two participants from Group B sought assistance from family members (see appendix XVIII). None of the participants from Group A sought assistance from family members. Group A felt the SAT was important with a mean of 7.68, Group B felt the SAT was less important with a mean of 7.

There was a difference between Group A and Group B regarding their feeling that using a tutor undermines their subject teacher at school. 3 participants from each group did not respond and participant 8B stated she had never had a tutor.

	25. do you feel using a tutor underminse your subject teacher at school?				Total
		never had a tutor	no	Yes	
Group A	3	0	9	7	19
Group B	3	1	7	8	19
Total	6	1	16	15	38

Figure 24 shows dichotomous variables of Group A and Group B response to question 25.

This exists no significant difference between participants in Group A and Group B in their feeling that using a tutor undermines their subject teacher, $\chi^2(3, N=38) = 1.317, p = .725$.

4.6 Group A and B questionnaire 1: qualitative results

Data from questions 13, 14 and 22 were analysed thematically to highlight trends in the response of participants. No significant conclusion can be drawn from this data. It does, however, shed some light on the perceptions of participants. Reasons why qualitative data was gathered will be expanded upon in the discussion chapter.

When asked in question 13 why participants of Group A felt they needed a tutor the below responses were recorded and thematically analysed (see appendix XIX). Participant A4 and A7 did not respond.

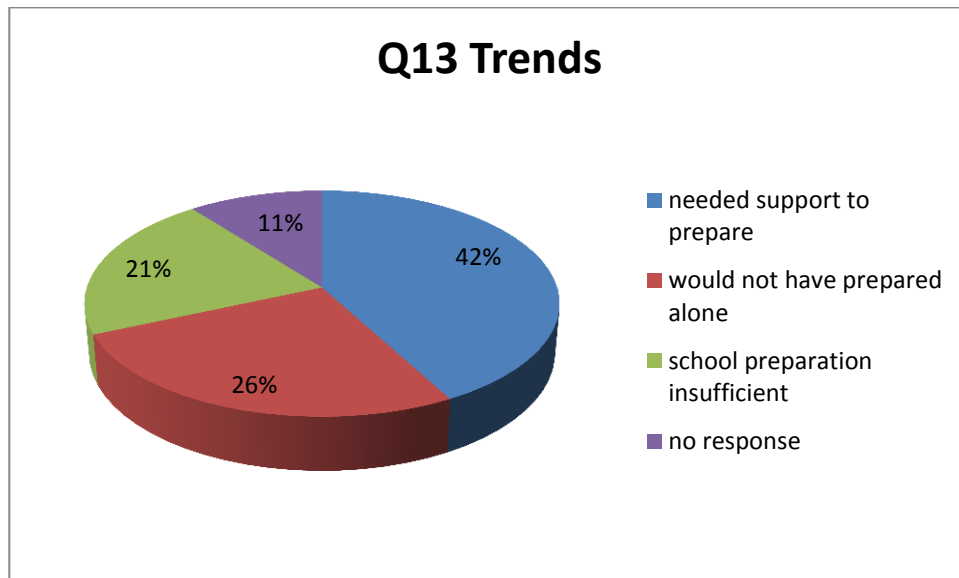


Figure 25 shows percentage trends in Group A towards the need for a tutor to prepare for SAT.

As can be seen in the above graph 42% of Group A felt they needed support to prepare for SAT, 26% felt they would not have prepared alone and 21% felt the amount of SAT preparation provided by School X was insufficient. Only 11% did not respond to the question. As with question 13, question 14 was thematically analysed (see appendix XX) and presented below graphically in which Group B, when asked why they did not use a tutor, 58% of Group B responded they did not need support to prepare, 16% felt School X's SAT preparation was sufficient, 16% indicated they did not have time to use a tutor. It was found 10% of Group B felt the SAT was not important, however, when asked directly in question 19 (see appendix XVIII) how important B3, for example, felt the SAT was in applying to university, she responded on a likert scale of 1 to 10, with 10 being the highest, an 8. This would infer she felt the SAT was important. Participant B3 scored 390 in reading, 480 in math, 400 in writing and 8 in the essay with is below the mean for Group B in all subjects except essay (see table 3).

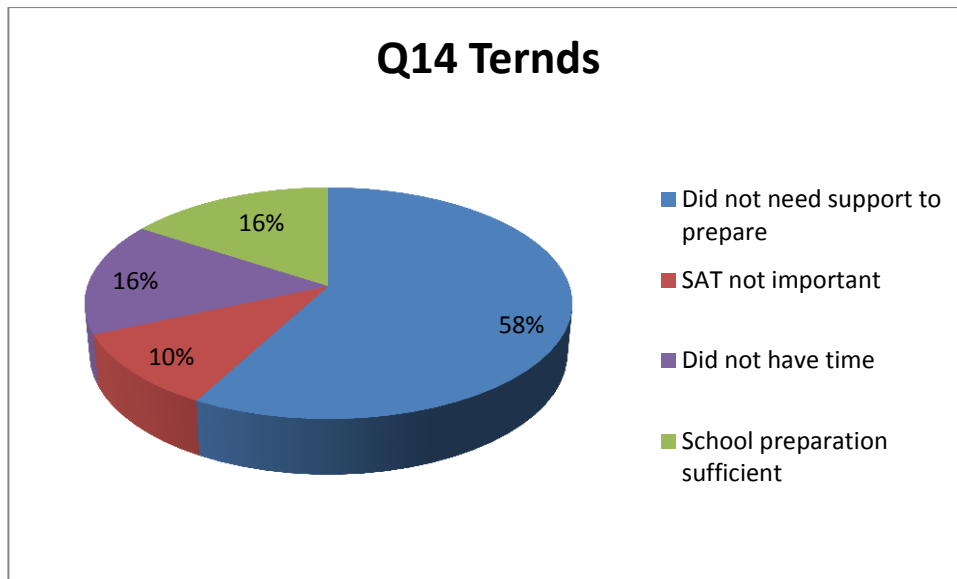


Figure 26 shows percentage trends in Group B towards not using a tutor to prepare for SAT.

Question 22 was posed to both Group A and Group B, asking participants if they were surprised with their SAT score. From Group A and Group B responses, which were thematically analysed (see appendix XXI), the below graphs reveal a difference between the groups. The pie chart above highlights 47% of Group A and 58% of Group B were not surprised by their SAT result. While 21% of Group A expected to achieve a higher SAT result, 16% of Group A and 5% of Group B inferred their SAT result was expected or higher than expected. Finally, 5% of Group A and 37% of Group B attributed being surprised by their score to a lack of preparation and 11% of Group A suggested they were surprised by the difficulty of the particular SAT exam they attended.

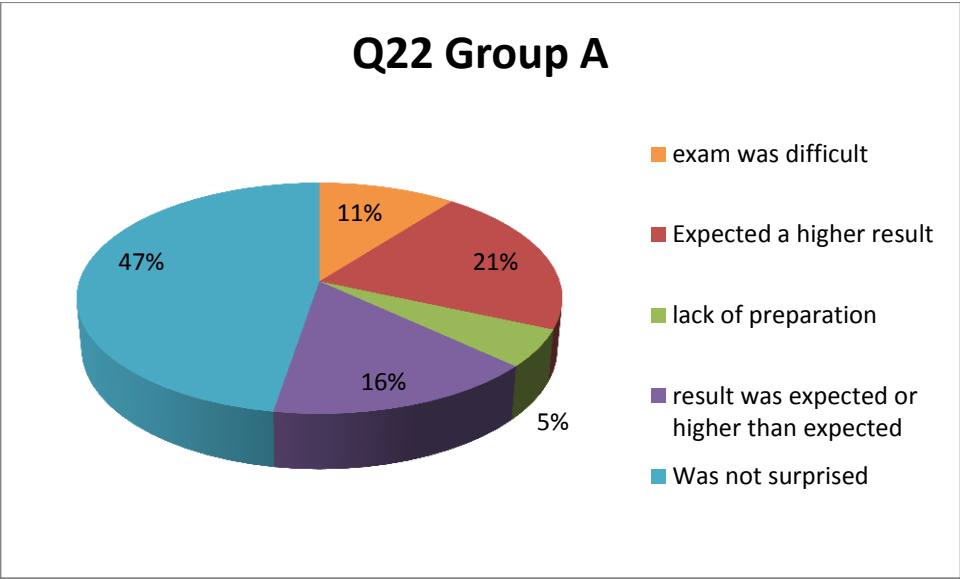


Figure 27 shows Group A responses to question 22.

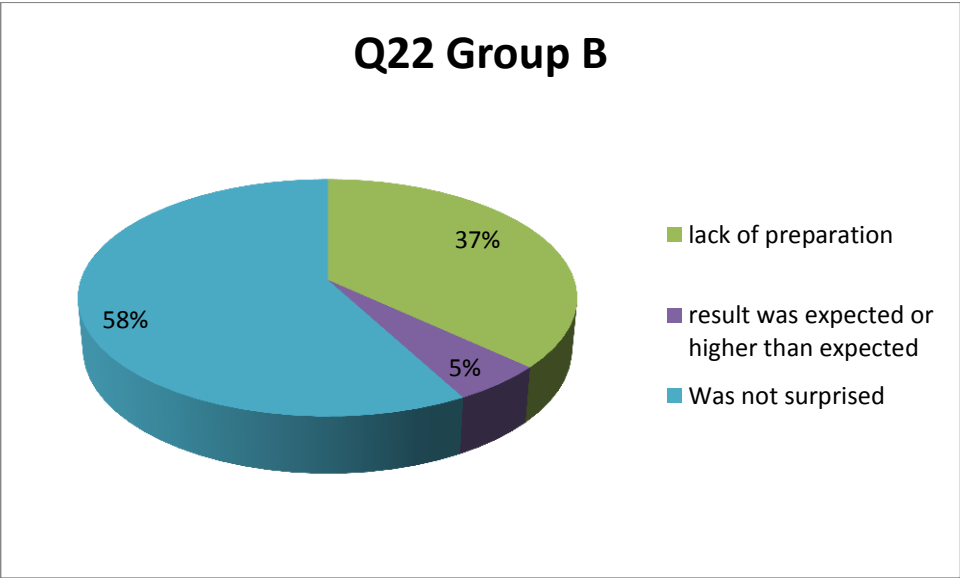


Figure 28 shows Group B responses to question 22.

4.7 Group A questionnaire 2: qualitative results

Group A also completed a second questionnaire (see appendix VI) which focused on three specific tutoring questions: the advantages and disadvantages of using a tutor and the difference using a tutor made to

the outcome of their SAT score. A2 and A17 did not respond to questionnaire 2.

Participants highlighted the advantages of Tutor A was that helped them to be:

- organised
- develop study skills

The graph below illustrates the number of students in Group A who expressed one or both of the trends thematically analysed (see appendix XXII).

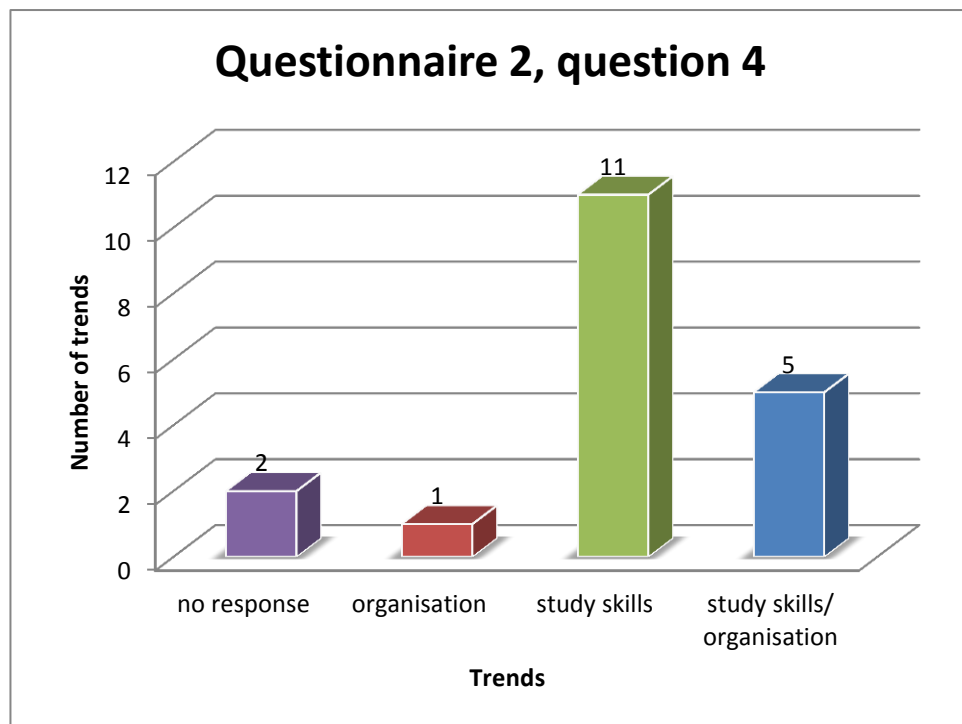


Figure 29 shows trends in Group A responses to questionnaire 2, question 4.

The graph reveals 10.5% of Group A did not respond to this question, 5.2% felt organisation was the advantageous element provided by using a tutor to prepare for SAT, 26.3% felt it was a mixture of study skills and organisation, 57.8% felt the advantageous element provided by using a tutor to prepare for the SAT was study skills. It clearly identifies study skills as the dominant trend for participants in Group A.

Question 5 asked the reverse question of the disadvantages of using a tutor to prepare for the SAT. Based on thematic analysis (see appendix XXIII) the below graph was developed. It shows Group A felt the key disadvantages to using a tutor to prepare for the SAT was their dependency on the tutor 21.0%, the expense of the course 10.5%, expense and time consumed on the course 10.5%, logistical issue in attending the course 15.7% and time consumed on the course 5.2%. 10.5% of Group A did not respond to question 5, 10.5% felt a tutor did not help and 15.7% felt there were no disadvantages to using a tutor. The highest recorded trend was dependency on the tutor. This trend will be discussed in the next chapter.

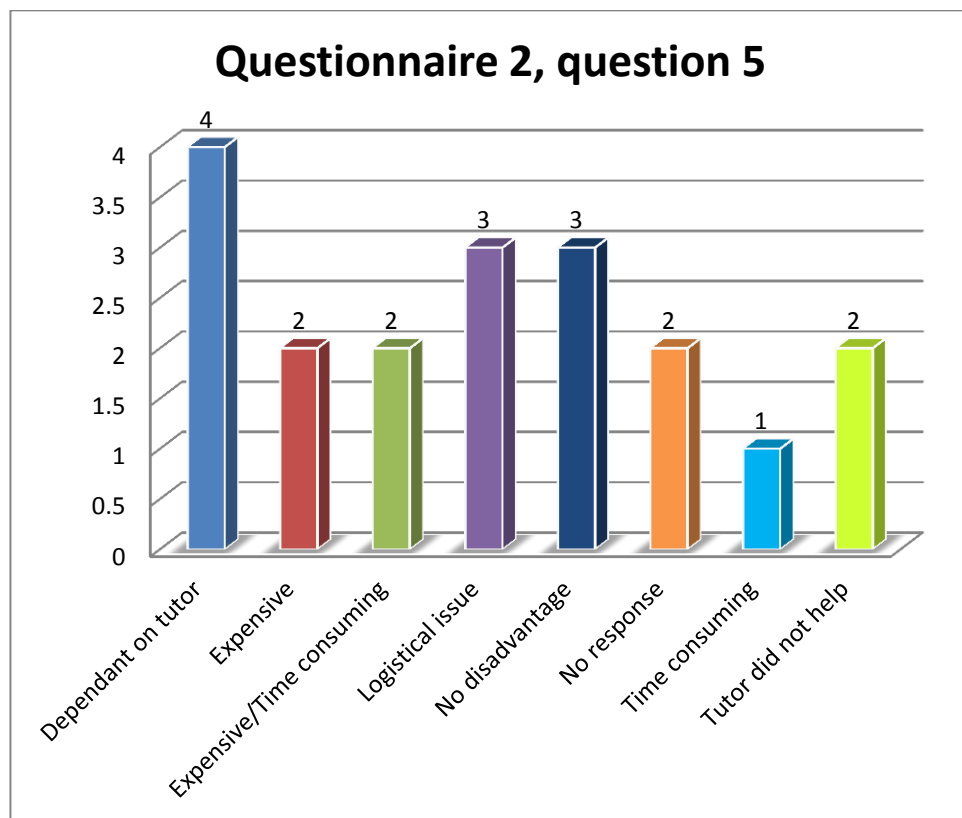


Figure 30 shows Group A trends to the disadvantages of using a tutor to prepare for the SAT.

Question 6 asked if Group A believed using a tutor made a difference to the outcome of their SAT result. Participant A16 responded 'No', however, when asked in question 5 if he felt there were any disadvantages to using a tutor he responded there were no disadvantages. If A16 believed using a tutor did not make a difference to his SAT score, then surly, this would be considered a disadvantage.

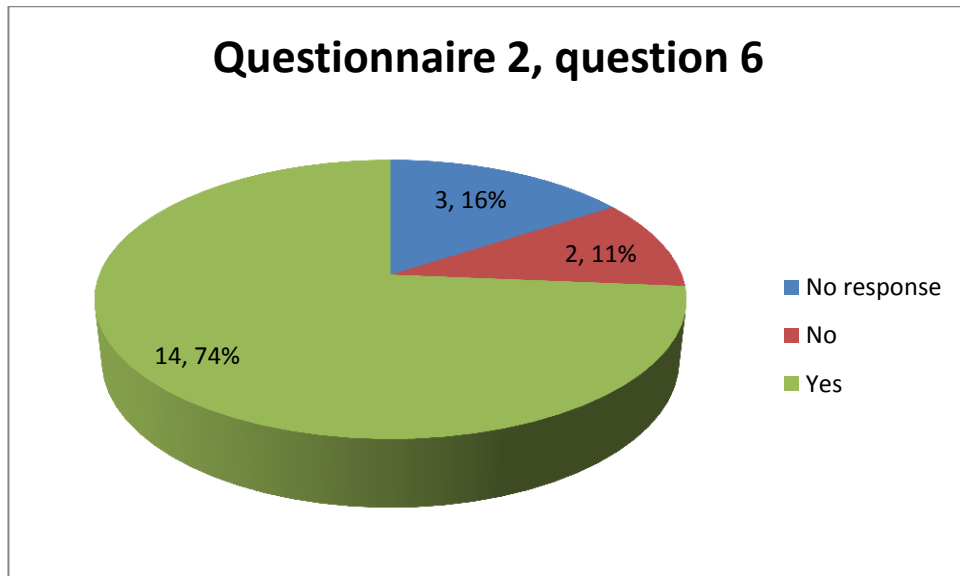


Figure 31 shows response of Group A to questionnaire 2, question 6.

The graph above reveals 74% of the participants in Group A believe using a tutor made a difference to the outcome of their SAT result. It also shows 11% believed it did not. As stated in table 3 there exists no statistical difference in reading, math and essay between Group A and Group B. There is a significant statistical difference in writing between Group A and Group B.

4.8 Tutor A interview responses

For a full list of the interview questions posed to Tutor A and his responses see appendix VIII. The most relevant recorded responses are tubulised below.

Original question number asked to Tutor A	Recorded response of Tutor A
Q7 What do you expect students to gain on their SAT score by attending your sessions?	On a score of 1500 a 300 to 400 gain was expected
Q8 How do you think your tutoring differs from a school setting?	Lower ratio Interactive Maximum 8 in a group Groups are ability banded
Q9 Do you think the SAT is a valid reflection of students' ability?	No - not IQ or knowledge – tests basics. Tutor A pushes study skills
Q11 Who do you think wants the tutoring sessions, students or parents? Why?	Students pushed by parents
Q12 How do you think students perceive tutoring sessions? As a strength or a weakness?	Strength
Q13 What do you feel are the advantages of tutoring?	Higher score
Q14 What do you feel are the disadvantages of tutoring?	No disadvantages
Q18 What do your tutoring sessions focus on?	Focus on all sections of the test

Figure 32 shows questions asked to Tutor A and noted responses by the researcher.

The table reveals Tutor A expects his students to gain 300/400 on a score of 1500. As stated in a press release the College Board (2011) means for 2011 was 497 in reading, 514 in math and 489 in writing. Group A achieved a mean of 518.95 in reading, 659.47 in math and 581.58 in

writing which are above the mean of the College Board means, but not an increase of 300/400. This miscalculation on the part of Tutor A will be discussed in the next chapter. Tutor A stated he felt his tutoring differed from a school setting in ratio of tutor to student, interaction and grouping students by ability. He also thought the SAT was not a valid reflection of a student's ability and, thus, his focus was skills based across all sections of the test. Tutor A thought his students perceived being tutored as a strength, adding high scores as the key advantages and thought there are no disadvantages to being tutored.

The next chapter, discussion, will discuss the results analysed in this chapter and link them to the literature, and methodological choices made by others in the field, to further elaborate and draw together the perception and reality of the research questions posed.

Chapter five: Discussion

In this chapter the key findings will be discussed to ascertain the extent previous research and claims made by Tutor A agree with the results of this research.

5.1 Points gain compared to other research

This research agrees with Powers & Rock (1998:15) and Smith et al (2010) who assert the effects of tutoring are small. As stated by Zuman (1988:14) gains in SAT scores depend on preparation focus which Messick (1982) advises should focus on comprehension and reasoning abilities not test-taking stratagems and answer selection tricks. Previous studies have found minimal gains which could also be gained either by taking the test again or by waiting a year. It may very well be the case that tutors are responding to market forces and providing short-term cramming directly prior to test dates. Zuman (1988) found coaching did not affect the quality of school work which may also be an indicator of the ephemeral benefits of tutoring.

An insignificant gain in reading, math and essay was found in this research. It did, however, find a significant gain of 84.737 in writing. When compared with previous research this gain in writing is larger than has been found in other research. Briggs (2001) calculated a math gain of 15 and a verbal gain of 6 and in later research Briggs (2009) found a greater total gain of 30 points; Powers & Rock (1998) revealed a verbal gain of 8 and a math gain of 18; while Zuman (1988) ascertained a verbal gain of 0 and a math gain of 57. As Briggs (2009) highlights these gains are even smaller once a standard error of 30 points is applied which would eliminate all gains found by the above researchers, except Zuman (1988).

Gains made during tutoring are further convoluted when variables such as: self-selection, differential motivation, high school grades, higher family income and attendance of a private school and tutor focus are taken into account. Moreover when effects such as diminished returns (Messick, 1982) are factored into the calculation, it is no surprise gains are minimal.

Messick (1982) purposes tutoring would continue to have a positive effect on SAT scores, but with a diminished return. Messick (1982) determines 30 hours of tutoring would result in a 25 point gain. He further calculates to achieve an increase of 35 points 60 hours of tutoring would be required. To would appear Tutor A's allocation of 31-35 hours is a sagacious allotment of time to capitalise on the time versus gain ratio designed by Messick (1982). As stated by Briggs (2001) a 60 point increase can be expected annually. If this theory is true then a 60 point combined increase on SAT scores divided through the year would lead to an increase of 30 points within a six month period, and a 15 point gain within a three month period. One could propose the theory that increases in SAT scores as a result of tutoring are only a consequence of chronology. The extent of this effect is not discussed by Briggs (2001), but would explain the College Board's stance on gains from tutoring being between 10-25 points. This theory does have some major issues, as one would expect to see a parallel effect in a control group. The gains revealed in this research contradict the College Board's low estimation, but are less verbose than those advertised by test preparation companies, which draws greater attention to the methods used by all parties concerned. It is an obvious assumption that the College Board and test preparation companies will manipulate statistical data to reflect their own theories, more so for the latter, and, therefore, it is critical that more independent research is conducted to truly ascertain the effects of the tutoring phenomena. Powers & Rock (1998) agree that gains are fewer than the 100-200 point increase reported by coaching companies and this theory could be expanded to apply to Tutor A's claim of a 300/400 score increase. In recent years, both Kaplan and the Princeton Review have retracted their claims, instead

opting for a satisfaction guarantee. At this time Tutor A had not followed suit.

There is nothing explicitly stated in previous research to suggest parents and students are aware of the causes of increases on SAT scores or any detrimental effects incurred from engaging in test preparation practices. Briggs (2009) acknowledges this concern by indicating tutoring may have negative effects on students because it takes time away from preparing for college and other achievements. Briggs (2009) also indicated students would benefit from student-driven preparation. Powers (1982) adds other methods of test preparation may be more effective than tutoring. A majority of research conducted to date has a tendency to focus on the dynamics of coached versus uncoached groups, rather than differentiating between effective types of preparation methods. Comments made by Hoodeh (2012) and Tutor A (2011) contradict each other. In personal correspondence Hoodeh states 'We learn all the tricks of the SAT off by heart' (R. Hoodeh, 2012, pers. Comm., 15 January), whereas Tutor A states he focuses on the development of skills. The latter comment is carried forward by 57.8% of Group A who cited study skill as an advantage of being tutored. More research into the nature of the tutoring being provided by Tutor A is required to clarify whose position is most correct. Messick (1982) concludes students who engage in test-taking stratagems and answer selection tricks risk the possibility of failing in tertiary education. If Hoodeh is proven correct this style of tutoring may have serious repercussions for students of School X who attend test preparation session with Tutor A.

5.2 Effects of being tutored by Tutor A

Group A consisted of 68% males more than double the 32% of females in the group. The higher proportion of males to females may be due to self-selection or a lack of student-driven preparation. A third questionnaire focused on parental perceptions may have shed some light on where the

motivation to engage in tutoring stems from. An explanation for a higher proportion of males than females in Group A is corroborated in a number of ways. Powers & Rock (1998) found coached participants are more likely to obtain other test preparation material and see the SAT as being extremely important. Although Group A did perceive the SAT to be important, they independently studied a mean of 2.21 hours compared to Group B who independently studies for a mean of 4.85 hours, over twice as long as Group A. Furthermore participants of Group A downloaded significantly less SAT study material than Group B. In fact 42.1% of the participants of Group B downloaded SAT study material compared to 10.5% of the participant of Group A. An interesting effect when all participants of both Group A and B responded that they have access to the College Board website. Furthermore more participants in Group B sought assistance from family members than participants in Group A. These trends would indicate an overall shift away from independent and family orientated assistance to greater dependency on a tutor. Four participants of Group A responded that dependency on a tutor was a disadvantage of being tutored. This could occur for a plethora of reasons and further research would be required to delve into the functionality of these trends.

More participants of Group A than Group B felt the SAT was important. Again this may be an effect of self-selection, although it would appear a number of participants from Group A did not complete the 31-35 hours course and 23.5% ceased being tutored 11-15 hours into the course. Almost all of Group A 94.4% felt tutoring helped to prepare them for the SAT. Part of this response being positive may be, as concluded by Messick (1982), due to the reduction of anxiety and an increase in test familiarity.

Participant 8A was the only participant who attended tutoring session with the Princeton Review; thus, no significant conclusion can be drawn as to the effectiveness of tutoring at the Princeton Review based on one participant because the sample size is far too small to produce any significance. While this participant's responses are intriguing, further

research is required with a much larger sample size. This was not possible at School X with the sample available during the period the research was conducted. Participant 8A did reveal a number of detail regarding being tutored by a tutor at the Princeton Review. The sessions were twice a week and were attended for a total of 11-15 hours. Participant 8A paid a total of Dhs5,600 and did not feel the tutoring was beneficial. It is clear from the research discussed that it would be difficult to see a significant SAT increase from only 11-15 hours of study and this would also infer 8A had unrealistic expectations of the short-term effects of being tutored.

Even though Group A scores increased to a greater extent than Group B scores with a mean increase in reading of 32.105, math of 43.684, writing of 84.737 and essay 0.556, all results were insignificant except writing. As previously discussed this is an increase which requires more research using student's SAT analysis report and by further analysing the exact methods used by Tutor A.

The writing section and essay were originally added to provide more balance for female test takers (Smith et al, 2010:7) and this effect can be seen in both Group A and Group B whose writing scores are higher than their male counterparts. It is interesting that in Group A and Group B males scored higher in the essay section. Further research would be required to ascertain the exact cause of this effect. Less surprising is the result that males in both groups scored higher than females in math and conversely females in both groups scored higher in reading than males. This would suggest Tutor A is not changing the manner in which his students are learning because both groups exhibit parallel trends; rather he is enhancing certain aspects of their learning. In this research that enhancement is most prevalent in writing which may be a result of the tutor's focus. This would also present an explanation for trends in other studies, a logical assumption, depending on the subject the tutor decides to concentrate on would lead to an expectation to see a reciprocal increase in the relevant SAT subject.

According to Mattern, Camara and Kobrin (2007:1) the writing section of the SAT consists of a 25-minute essay, and a 25-minute and 10-minute multiple-choice section consisting 45 questions. Participants of Group A are paying a mean of 506.71aed which means each participant of Group A is paying Dhs103.27 per writing question because this is the only section which shows a significant increase as a result of tutoring; a point students and parents should be aware of before investing in expensive test preparation sessions. Furthermore a significant increase in one section of the SAT is asinine, due to the holistic view universities take of SAT scores. For participants of Group A to benefit from being tutored by Tutor A they would have to see a significant increase in reading, math and the essay section too.

Participants engage in tutoring under the assumption that it will aid their entrance into a better university will be sold short. As can be seen in the table below, the mean SAT scores for Group A (reading: 518.95, math: 659.47, writing: 581.58) still do not allow them to gain access to the top echelon of American tertiary education.

SAT Scores						
	Reading		Math		Writing	
	25%	75%	25%	75%	25%	75%
Brown	650	760	670	770	670	770
Columbia	680	770	680	780	690	770
Cornell	630	730	660	770	-	-
Dartmouth	660	770	670	780	670	770
Harvard	690	780	690	790	690	780
Princeton	690	790	700	790	700	780
U Penn	660	750	690	780	670	760
Yale	700	800	700	780	700	790

Figure 33 shows SAT scores in reading, math and writing for eight Ivy League universities in America. Source: http://collegeapps.about.com/od/sat/a/sat_side_x_side.htm

Group A mean SAT scores were higher than the mean scores of all students who took the SAT in 2011 as published by the College Board. Interestingly math and writing score were higher for both Group A and Group B than the College Board means. This would suggest students in

School X would achieve higher means score in math and writing than College Board mean scores.

Group A and Group B trends towards the need for a tutor demonstrated interesting differences between the groups. While 42% of Group A felt they needed support to prepare for the SAT, 58% of Group B felt they did not need support to prepare. This would suggest Group A is less autonomous than Group B. This theory is further supported, as 26% of Group A felt they would not have prepared alone. The comparison between the groups also reveal a difference in perception of the sufficiency of learning at School X. Group A responded 21% felt school preparation for the SAT was insufficient as compared to 16% of Group B who felt preparation provided by the school was sufficient. More research into this response is needed as it could be proposed Group A seek tutoring due to a deficiency in their learning. Since 57.8% of Group A stated study skills as being an advantage of tutoring it could be deduced students would benefit from an element of study skills development in School X. It would appear Group A are slightly aware of the lack of significant increase in their SAT preparation, as 21% revealed they expected to achieve a higher result. To run an effective business one would hope more than 79% of customers are satisfied with the product being supplied.

5.3 Issues with methodology

A pilot study was not conducted before the main body of the data was collected and, therefore, was not able to capitalise on the advantages set out by (Coughlan, M., Cronin, P., Ryan, F. (2007:662) who state 'following the pilot study the researcher may adjust definitions, alter the research question, address changes to the measuring instrument or even alter the sampling strategy'. There were a number of mistakes in questionnaire one which would have been eliminated had a pilot been carried out. Also questionnaire one contained a number of questions which later became irrelevant as the focus of the research narrowed. If these questions had

been removed, it may have been the case that participants would have considered their responses with more depth.

Reliability and validity of instrument were not established. It was felt due to the development of the student analysis report by the College Board it could be used as a valid and reliable source of SAT data. A similar statement cannot be made regarding questionnaire one and two. Questionnaire two creates a further issue, as it was only asked to Group A. It would have been advantageous to ask Group B to respond to these questions. Since there are a number of other researchers who have conducted studies in the field of SAT tutoring, it would have been easier to adapt their questionnaires than develop one from scratch. This would have also facilitated a direct comparison of results, something which, due to a lack of parallelism, made standardising previous research difficult.

Powers and Rock (1998:6) state 'anecdotal accounts are, at best, insufficient and, most likely, very misleading estimates of the impact of coaching.' Thus the opinions gained from a single student via personal communication, such as that gained from R. Hoodeh, cannot be taken as a general opinion held by other students who may engage in tutoring to prepare for the SAT. If all participants were asked to describe the modus operandi of being tutored by Tutor A, this would produce a much more valid response than those of a single participant.

Some participants may have felt coerced to take part in the research, due to the position held by the researcher at School X at the time of data collection.

The coding of qualitative responses presented an issue as nuances of meaning may have been lost in categorisation. Responses to qualitative questions tended to be brief only expressing one or two aspects of participants thinking. It would have been advantageous to interview participants of the research to fully ascertain their views on the phenomena of tutoring as a means of test preparation.

Chapter six: Conclusions and Recommendations

6.1 Conclusions

- 1) Gains made by Group A do not negate the validity of the SAT as a means to gauge levels of college readiness.
- 2) Engaging in expensive test preparation session with Tutor A will not see an investment return. A significant increase would need to be seen in all sections of the SAT for Tutor A to be able to claim his test preparation session have an effect on university admissions.
- 3) This research has found the claim made by Tutor A that a student with an average of 1500 could gain 300/400 points on their SAT scores is spurious. Reading, math and essay have no significant gain and a significant gain of 84.737 in writing is far less than claimed by Tutor A.
- 4) This research concludes engaging in test preparation with Tutor A has a detrimental effect on student efficacy, such as student driven activities, for instance: independent study, seeking assistance from family members, and accessing SAT material from the College Board website. As a result this test preparation takes away from time students could spend preparing for tertiary education or other more purposeful activities.

6.2 Limitations

The research had a number of limitations placed upon it, the most significant being the lack of cooperation from Tutor A. Not only did he stall meeting for an interview; he also refused to allow the interview to be recorded and then ceased all communication with the researcher. This inhibited any further investigation into the nature of his tutoring.

The design of questionnaire one and two limited the depth of information gleaned from participants' responses. An open interview or more

sophisticated data gathering methods may have shed more light on the effects of tutoring on SAT scores.

Since only 19 participants of School X were being tutored, this limited the validity and significance of the research. It is difficult to expand theories developed as a result of this research to a wider context. The research could be expanded to incorporate more participants and investigate more test preparation providers.

The focusing on one tutor meant that any data gathered could only be applied to that tutor and it could well be the case that another tutor in the same location would achieve a significantly different set of results.

6.3 Recommendations

- More independent research should be conducted to ascertain the effects of tutoring on SAT scores. This research should be of a longitudinal nature to see how tutoring affects tertiary success.
- Larger sample size is required to clarify consistency of increases to SAT scores.
- Student analysis report (appendix VII) should be used to further analyse the effects of tutoring on writing.
- Policy should be developed to incorporate an element of study skill into SAT preparation in School X.
- Policy should also be written to make parents and students aware of the effects of tutoring on SAT scores.
- The UAE Government should write policy to introduce transparency and accountability to shadow education and oblige tutors to meet the same standards which are maintained in other educational institutions.

Appendices

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