

**Academic Difficulties Related to Literacy Experienced by
University Students in Saudi Arabia: Developing a Screening
Questionnaire and Examining Students' Experiences**

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Abstract

The purpose of this study was to develop a questionnaire to identify students who are at risk of developing academic difficulties related to literacy in higher education in Saudi Arabia.

The study adopted a mixed methodological pragmatic approach with two phases. Data for Phase One was obtained from 341 female Saudi students through the Student Academic Difficulties at Risk (SADR) questionnaire, administered at the beginning of the academic year. After six months, three sets of data were gathered: Students' Self-Inventory (SSI) with 188 students, teacher reports on students' academic performance with five teachers reporting on 96 students, and students' academic Grade Point Average (GPA). In Phase Two, based on the findings of the SADR questionnaire, two students were purposively chosen from each of three different groups for case studies.

The findings from Phase One suggested that some of the SADR subscales had high reliability and others showed poor reliability. The results also showed that the SADR questionnaire and GPA correlated and that the regression analysis showed a predictive value for the reading scale. However, case-level analysis showed that the SADR questionnaire could not be reliably used to predict GPA.

Additional analysis showed that SSI had high reliability for all subscales and correlated with the SADR questionnaire as well as with GPA. The reading and writing subscales from the SADR questionnaire can predict continued academic difficulties that are related to reading and writing at university level.

Phase Two involved case study investigations into true positive, false positive, and false negative predictions of the reliable scales in the SADR questionnaire. The findings of Phase Two showed that a variety of influences affected academic attainment, such as motivational, wellbeing-related, and socio-cultural reasons.

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Chapter One

1 Exploring the Gap

1.1 Introduction

The focus of this study is the development of a screening questionnaire to identify students in higher education who experience academic difficulties related to literacy in Saudi Arabia.

However, this was not the original starting point of this study. The current research can be best described as a journey. Along the way, there were a number of turning points where previously held conventions were challenged. In education literature in the Arabic language, students with phonological processing difficulties, and who have a discrepancy between their academic performance and apparent intellectual ability, can be diagnosed as having dyslexia. My interest in this field grew out of my own experiences as a teacher in primary school, dealing mainly with students with specific learning difficulties. It was my belief at that time that students who struggle with reading at the word level are dyslexic; after I moved to teaching at the university level, I realised that the struggles of some students persist and encompass reading in higher education. Therefore, in this study it was initially believed that dyslexia was the only reason for profound literacy difficulties on a phonological level, and that dyslexic students were the only students who needed help and support in higher education, which is what the Arabic literature, such as a study by Elbeheri and Everatt (2011), supports. However, it was necessary for the study to quickly move away from dyslexia in the diagnostic sense, in order to consider academic difficulties related to literacy in a broader, more conceptualised way.

This chapter starts by setting out the rationale for the study. This is followed by an account of the overall aims of the current study and the questions associated with these

aims. Additionally, the research approach adopted will be presented in brief. The significance of the study will also be briefly presented, followed by the context of Saudi Arabian education, including general and special education, with a particular focus on specific learning difficulties (SpLDs). Finally, the chapter will conclude with an overview of the thesis.

1.2 Rationale for the study

In Saudi Arabia, awareness of the importance of equal education opportunities for all students is growing, with a particular focus on early intervention in special education for certain groups of students, such as those who have SpLDs and dyslexia. However, little or no attention has been paid to adult students who may not belong to this group and may not belong to other disability groups in higher education (HE).

Such students seem to be slipping through the cracks in the Saudi HE system (Al-Saud, 2006). In a study conducted by Damietta (2011), the researcher found that female students from the University of Taibah in Saudi Arabia were performing below their ability and had academic problems that contributed to their failure, so as educators we must ask ourselves why this is happening and how we can help. Sadly, assistance is only provided for students who have a specific problem (Alquraini, 2011), the number of which are very limited within the Arab world to start with (Elbeheri and Everatt, 2011). As a result, many students with academic difficulties that are not directly caused by an apparent disability are not recognised, even when they reach university level. This creates a real problem as adult students undeniably have more burdens and demands placed on them in their domestic and financial lives than younger students, meaning that effectively dealing with their academic difficulties is even harder.

The current research sheds light on adult students who have academic difficulties related to literacy in HE by developing a screening questionnaire that is intended to

identify difficulties at the beginning of the academic year and exploring the personal and academic aspects of their lives. The purpose of this is to establish a resource and information centre to increase awareness and offer help and support for future generations of students with any kind of academic difficulties or challenges. Ultimately, the goal is to achieve a university environment that is supportive of academic difficulties.

This research seeks to address this important educational issue which, to the researcher's knowledge, has not been previously discussed in Arabic studies. This is the identification of students with academic difficulties related to literacy at university level, not just dyslexia; although dyslexic students might be included. The findings of the study will hopefully convince administrators and policymakers in the country of the importance of having a resource and information centre that deals with students' educational difficulties and their emotional state and wellbeing.

1.3 Study aims and questions

This research was carried out in two phases, with each phase having specific aims and questions.

Phase One aims:

1. To design a screening questionnaire to identify students in higher education who experience academic difficulties related to literacy.
2. To evaluate the screening questionnaire in terms of its reliability and predictive predictability.

Phase One research question:

How can we identify students in higher education in Saudi Arabia who have academic difficulties relating to literacy?

Sub-questions:

1. How reliable is the Student Academic Difficulties at Risk (SADR) questionnaire?
2. To what extent can the SADR questionnaire be used at the start of the year to predict end of year academic GPAs?
3. How stable are students' literacy and study skills over a six-month period?
4. To what extent do an end of year Student Self-Inventory (SSI) and teachers' reports on student's academic performance correlate with end of year academic GPAs?

Phase Two aim:

The aim of this phase of the project is again twofold, as follows:

1. To explore, in detail, the reasons for the Phase One outcomes for specific types of students.
2. To understand how the screening questionnaire does or does not predict students' academic performance.

Phase Two research question:

To what extent do the academic and non-academic experiences of selected case studies help in understanding how the questionnaire can predict students' academic performance?

1.4 Research approach

In the current study, a mixed methodological approach was adopted, consisting of two research phases, to answer two types of research question. This study adopted a mixed methodological approach because the need was not just to gather two different sets of data, but the lens that looked at the results and the interpretation was different in each phase. The justification for using a mixed methodological approach will be explained in detail in the methodology chapter.

Phase One, quantitative data gathering, included constructing and applying a screening questionnaire, the first of which is called the Student Academic Difficulties at Risk (SADR) questionnaire for first-year undergraduate students in a university in Saudi Arabia. This mainly concerned the academic experience of the student and was aimed at identifying students who experience academic difficulties related to literacy. The second questionnaire, called the Student Self-Inventory (SSI) questionnaire, was constructed based on the corresponding scales from the SADR questionnaire, and it was concerned with the academic experience at university with the aim of testing the continuity of academic difficulties. It was conducted six months after the SADR questionnaire. At the same time, teachers' reports on students' academic performance were studied in order to gather information from the teachers' perspectives on the students who completed both the SADR and SSI questionnaires. The students' academic Grade Point Average (GPA) was also collected.

Phase Two was qualitative data gathering. The data was gathered through semi-structured interviews with six students from three different groups. The students were chosen purposively from three different groups, based on the SADR findings: true positive, false positive, and false negative groups.

1.5 Significance of the study

This study was designed to be original in terms of the study methodology, the conceptual view of academic difficulties related to literacy, and the age group being studied, since academic difficulties related to literacy have not been researched from the current angle. The research carried out in the field of literacy difficulties has mostly been conducted with children; there are significantly fewer studies about reading difficulties in adults than in children (Gwernan-Jones and Burden, 2010). It can be said that the research is original; although in the Western literature review there have been previous studies about academic difficulties related to literacy in higher education, they are only from dyslexic students' points of view (Gilroy and Miles, 1996; Hunter-Carsch and Herrington, 2001; McLoughlin et al., 1994; Richardson et al., 2003; Mortimore and Crozier, 2006). From the Arabic literature perspective, there is even more originality because the subject of literacy difficulties is under-researched in general, and at university level in particular, and what is available is also usually about dyslexia in children. Therefore, this study will be the beginning of much-needed research into adult students with academic difficulties related to literacy in Saudi Arabia and the Arab world.

In practice, this study gives a voice to students from three different groups in terms of difficulties related to literacy and academic attainment, as projected by their GPA, which establishes the grounds for understanding the experiences and obstacles that students with academic difficulties related to literacy face. It provides a better understanding of these students for teachers at university, which will hopefully help with the provision of effective teaching. The current study also provides a reliable questionnaire that can, to some extent, identify students with academic difficulties related to literacy in higher education in Saudi Arabia.

The researcher hopes that the results will help policymakers in Saudi Arabia realise the importance of identifying students with academic difficulties in higher education and provide the resources required to meet their needs. The findings support the need for an appropriate identification method and the need for a resource and information centre in universities.

An information and resource centre in universities is essential for any student with any kind of difficulty; it is important to ensure that students can access appropriate information and resources at all times. It is the overall aim of this research to help policymakers understand the importance of including these centres in universities. These centres might implement a much-needed accommodation. “In general ‘accommodation’ refers to a strategy that changes the academic environment and, therefore, enables students to demonstrate what they know. An accommodation usually does not alter the information or amount of information that the student must learn” (Wadlington et al., 1996: 2).

1.6 Saudi Arabia: An overview

An understanding of the socio-political environment of Saudi Arabia is essential in order to fully appreciate the topic of this study. Many factors, including historical, geographical (international, national and local) and social issues should be taken into consideration when studying the socio-political environment and educational context of a country (Cohen et al., 2000). Saudi Arabia is located in south-west Asia, and is the second-largest Arabic state by land (see Appendix I), occupying 2,150,000 square kilometres (four-fifths of the Arabian Peninsula). According to the 2014 Census conducted by the Central Department of Statistics and Information, the total population of Saudi Arabia is over 31 million. The history of the education system in Saudi Arabia will be described briefly in this chapter in two sections, general and special education, with particular reference to

the Ministry of Education's roles in the overall development of the education system (Wilson & Graham, 1994).

1.7 Education system: Saudi Arabia

1.7.1 General education

The earliest form of education system in Saudi Arabia began with the teaching of the Qur'an and Hadith. These were taught along with reading and writing in Arabic in schools called kuttab. These schools were open to all who wanted to attain Islamic knowledge. According to the Saudi Arabia Culture Mission, it was only in 1925 that a formal education system was established, with the advent of the Directorate of Education, followed a year later by the appointment of the first basic instructors, a move that heralded the start of a centralised national system of education (Wilson & Graham, 1994).

A new epoch in the development of a modern education system was marked by the establishment of the Ministry of Education in December 1953. A 6+3+3 education system was established: 6 years in elementary school, 3 years in intermediate school and another 3 years in high school. There was a separate, tailored curriculum for each of these three stages (Turay and Morawski, 2010.).

1.7.2 Special education

The first special school in Saudi Arabia was created for visually impaired children in 1960 and was called Al-Noor Institute. This was a major step towards the provision of special education. Over the five decades since the creation of Al-Noor, a range of resources have been developed to meet the requirements of students with disabilities and/or special needs (Al-Wabli, 1996). Students with mild to moderate disabilities attend primary school from the age of six until thirteen; after this, they attend secondary school

until eighteen. Following this, opportunities for such students to pursue further education are limited to vocational training centres (Al-Ajmi, 2006).

According to the Ministry of Education (2008), between 2007 and 2008, 96% of students in Saudi Arabia with multiple and/or severe disabilities received their education in separate institutions. These institutions provide residence, food, financial aid and assistance to students. Students only return home at weekends. Segregating students in this way had its reasons: according to Al-Faiz (2006), students with disabilities in Arabic countries still receive their education in segregated settings because of the social stigma associated with disabilities, and a general lack of awareness and training among schoolteachers at government-funded schools about disability and special needs.

Students with SpLDs were the last group in special education to be provided with services by the Ministry of Education, which did not happen until 1971, also in the form of a day school (Aldabas, 2015). However, more emphasis was still paid to students with observable disabilities. In this process, students with SpLDs often go unseen. Therefore, educators fail to identify SpLD and dyslexic students because of the absence of a physical and/or observable disability. There has thus been a failure to design appropriate education for students with dyslexia, and this has been largely responsible for the slow progress of such students (Smythe et al., 2004).

1.7.3 Rules and legislation for special education

Saudi Arabia aspires to stay up to date with the development of education systems and regulations across the globe, in order to meet the Kingdom's education demands with optimal resources and staff. The Regulation of Special Education Programmes and Institutes (RSEPI) were formulated by the Ministry of Education in 2001. RSEPI was the first regulatory body in Saudi Arabia for students with SpLDs, and it was created to outline the rules and regulations governing students who require special education. It was

also tasked with the implementation of new legislation, and with working towards continued improvement. The main categories of disabilities classified by RSEPI are visual impairment, hearing impairment, SpLDs, and multiple disorders. The regulations describe the procedures for determining whether a student is eligible for special education, and how he or she needs to be assessed and evaluated. RSEPI designed a special individual education programme (IEP), listing the basics of the programme and describing the type of student who can participate in or qualify for an IEP (Turay and Morawski, 2010).

There are some other pieces of legislation, such as the Legislation of Disability passed in 1987, the first piece of legislation in Saudi Arabia ensuring equal rights for people with special needs; this legislation contains sub-articles that define disabilities and describe programmes for prevention, intervention, and assessment to determine eligibility for special education services. There is also the Disability Code, passed by the Saudi government in 2000 to ensure that people with disabilities have access to free and appropriate services, including medical, social, and educational services, through public agencies. Despite these developments, however, there is no legislation in Saudi Arabia prohibiting discrimination against children with disabilities and guaranteeing their right to access facilities (Alquraini, 2013).

1.7.4 Higher education in Saudi Arabia

In a globalised world, government investment in higher education is often a result of its role in ensuring that the labour market remains economically competitive, through a continuous supply of workers who are highly skilled and educated (Wilkins and Burke 2013). With this in mind, the Saudi Ministry of Higher Education was established as a separate department responsible for implementing reforms at all levels of the education system. In addition, it is responsible for the provision of support for students with specific

learning difficulties and physical disabilities. As mentioned before with the Ministry of Education, the Ministry of Higher Education does provide support for students with physical disabilities, but this has been at the expense of students with non-physical disabilities, such as academic difficulties and SpLDs, for whom levels of support are far lower. According to Smythe, Everatt, and Salter (2004), centralising control of the education system in this way may create a problem and might be one of the reasons why the needs of students with academic difficulties have been overlooked at a structural level.

Following the World Education Forum's adoption of the Dakar Framework for Action, Education for All: Meeting our Collective Commitments (2000), and in order to implement its recommendations, the Saudi Ministry of Education inaugurated the National Forum on Education for All in 2004. It then published its ten-year action plan (2004-2014) to provide basic education to all citizens (as cited in Turay and Morawski, 2010). Despite the Ministry's stated goal of providing education for all, however, meeting the needs of children with 'invisible' disabilities (such as dyslexia or academic difficulties related to literacy) has remained peripheral to its endeavours. Unfortunately, educational provision for children with SpLDs remains markedly absent from the policy agenda.

The education system in Saudi Arabia is aware of global developments and changing demands in the global education scene. Education policies go through continuous transformations to meet changing requirements so as to make the education system and its students competitive in the global system. The educational framework is built around social and religious parameters, and guidelines are influenced by international standards and agreements.

1.8 Overview of the study chapters

The thesis is arranged in five chapters:

Chapter One has provided a rationale for the study, and reported the research aims and questions in two phases. It then undertook a brief introduction to the research approach, followed by a look at the educational system in Saudi Arabia, both in terms of general and special education, with a particular look at SpLDs. After this, the rules and regulations in Saudi Arabia, and the status of students with SpLDs at university level, were mentioned.

In Chapter Two, a background to achievement in higher education and issues surrounding HE is provided, followed by an overview of study skills, academic difficulties related to literacy and other difficulties that might affect achievement in HE. Then, the chapter takes a more detailed look at SpLDs, and dyslexia as one type of academic difficulty related to literacy, which is extensively covered by literature.

Chapter Three details the study's approach; the methodological concerns that inform the research framework of the current study, the study's aim and research questions, and the research design are presented and discussed. Then, the philosophical assumptions for each phase are presented, in order to answer the research questions for each part of the study and ultimately fulfil the aim of the study as a whole. Therefore, the paradigm, ontology, epistemology, data collection and analysis are detailed for each phase, ethical considerations are dealt with and the methodological limitations are also discussed.

Chapter Four provides analysis of the results of the two phases of the study. First, the results of the research questionnaires from Phase One are analysed, with particular attention directed towards SADR's ability to predict GPA and its ability to predict the continuation of academic difficulties. After this, a summary of Phase One's results is

presented. Following this, the results from the case study are analysed and presented, providing a portrayal of students' perceptions of their academic experiences. Each case study is presented, then a summary is provided for each case; the chapter finishes with a summary of the results of Phase Two.

Chapter Five incorporates all of the research findings into a logical discussion, directly connecting the results to the review of the available literature. Each of the research questions is discussed, and then answered based on the results presented in Chapter Four. This is followed by a presentation of the study's main findings, the limitations of the study and suggestions for future research.

Chapter Two

2 Literature Review

2.1 Introduction

This chapter reviews the literature related to the current study. The chapter begins by examining the existing literature that highlights important issues affecting attainment in higher education. Secondly, it examines study skills and academic difficulties that clarify additional issues with regards to attainment in higher education. An investigation into other possible conditions or reasons for low attainment sheds further light on the issues.

The purpose of this chapter is to show that literacy difficulties is a subject that has not received much attention, and that researchers are more interested in dyslexia as a form of literacy difficulty than in issues relating to poor reading skills or students with study skills difficulties, especially at the university level, which is what drives this research. Therefore, although the interest here is not dyslexia, due to this lack of research, SpLDs and dyslexia will both be referred to in this chapter.

The research and studies discussed in this chapter are from countries such as the United States and the United Kingdom because, unfortunately, there is a dearth of studies on SpLDs and dyslexia conducted in Saudi Arabia. There is also a tendency in Western literature to discuss dyslexia as the only type of academic difficulty related to literacy that requires intervention. Not only does this tendency overlook other academic difficulties, such as poor reading skills, but it also focuses on children and young people, whilst ignoring adults in higher education.

2.2 Attainment in higher education

The term ‘higher education’ (HE) describes post-18, college- or university-level education, especially that which involves formal learning and research leading to the

awarding of a degree rather than training in practical, technical or vocational skills (Galiher, 2006). The proliferation of HE institutions is an important measure of a country's economic development (OECD, 2013).

The underlying goal of university education is to gain knowledge and professional qualifications that set one on a career path of one's choice (Robertson, 2010; Peretomode and Ugbomeh, 2013). However, university education is very challenging for many students, particularly because it requires pertinent foundational skills or higher-order information processing skills that aid understanding, such as reading, research, and critical thinking (Pirttimaa et al., 2015). Without these crucial skills, university students are not able to participate effectively in their own learning, and therefore fail to accomplish both their professional and academic goals (Pineteh, 2014). Often, academic attainment is calculated using a student's grade point average (GPA) with scores ranging from 0 to 4 (Galiher, 2006). Any difficulties in achieving high, or even average, scores can make students susceptible to failure, resulting in them potentially dropping out of college or university.

2.2.1 Issues surrounding academic attainment

Several educational factors determining attainment have been addressed in the literature. In this section, I will discuss the following factors determining educational attainment: access, students' socio-economic backgrounds, social attitudes towards education and gender.

In Saudi Arabia, there are a number of complicated issues concerning non-citizens and dual citizens with regard to HE, and access is one of them. Some of these students find it difficult to secure places at Saudi universities, for example, if they are born to a Saudi mother and a foreign father. Although the law is generally on their side, there have

been some cases that have reached court, in which these students met with unfair treatment that affected their access to higher education (Sabri, 2015).

Another determinant of educational attainment according to a studies done outside Saudi Arabia is the socio-economic background of students themselves. Studies have shown that socio-economic factors have a direct influence on academic achievement (Ferguson et al., 2007). Young people from more deprived socio-economic backgrounds are less likely to attend HE establishments. If they do, they are more likely than their more privileged peers to take up part-time employment during their time at college (Van Dyke et al., 2005). Such financial constraints may result in fewer study hours and lower grades (Burke, 2012).

A third factor affecting educational attainment is social attitudes towards education. For example, parents' lack of engagement with, and experience of, education can affect their children's attainment in HE. Parents who have a lower level of education may find it difficult to provide their children with financial, motivational, and emotional support, as well as the necessary guidance in order to make well-reasoned choices about their courses of study (Ball et al., 2000; Reay et al., 2005). On the other hand, children of parents who are highly educated are often capable of making nuanced choices about their studies. In addition, they tend to receive greater support and encouragement to continue into higher education (Kintrea et al., 2010).

In addition to the above factors, gender-based discrimination also negatively impacts girls' and women's attainment in higher education (UNESCO, 2004). Contrasting levels of investment in boys' and girls' education has meant that gender discrimination operates at the structural level in Saudi Arabia. On a social level, girls are often expected to remain at home after marriage, as mothers and housewives. Furthermore, female students are still prohibited from entering higher education (and, indeed, the workplace) without the consent of their (male) guardians. Transport, and

travel in general, are also restricted for women who are expected to travel only with their guardians (Sandekian et al., 2015). Not only are female students socially discouraged from participating in HE, they must also choose between a limited range of poorly resourced colleges and universities. A further issue regarding gender in HE is that female students in Saudi Arabia are limited by religious authorities as to what professions they can enter. This, therefore, also constrains women's access to education (Cordesman, 2003).

A study by Szilagyi (2015) into Saudi female students undertaking online studies found that the main reasons they do so are due to existing limitations on travelling to university campuses and the gender-segregated education enforced in Saudi Arabia. For such women, online education offers the opportunity to gain research-based knowledge in their preferred professions, without restrictions and limitations. Table 2-1 shows the numbers of female and male students in each discipline. It suggests that the number of female students decreases in professions not supported by religious leaders, such as business and engineering.

Discipline	Total female students	Total male students
Secondary stage/equivalent specialisations	936,813	1,134,068
Teacher training and educational science	302,677	268,062
Humanities	194,946	96,296
Social and behavioural sciences	49,736	40,084
Health	21,988	49,645
Business and administration	19,335	113,758
Computing and information technology	12,345	38,143
Engineering and engineering related occupations	1,998	92,559
Other professions	111,486	150,639
Total	1,651,324	1,983,254

Table 2-1: Number of females and males with at least a secondary or equivalent certificate, by discipline. Data source: Central Department of Statistics and Information, detailed results of 1425 AH (2004) population and housing census

2.2.2 Study skills

Academic life involves the use of study skills to succeed. According to the website of the University of Sheffield’s Department of Student Skills and Development Centre, students should be proficient in everyday skills such as time management, organisational skills, working with numbers and computers, critical thinking, and creativity. Furthermore, the Centre advises that students have learning skills such as (proficient) reading, listening, note taking, and self-assessment. Other study skills listed on the University’s website include writing skills (generic, academic, and professional); communication skills (visual, formal, and dialogue communication); and research skills relating to design, methodology, and working with data.

Underscoring this list of study skills, Hoover and Patton (1995) report that “study skills include the competencies associated with acquiring, recording, organizing, synthesizing, remembering, and using information”, and that “these competencies contribute to success in both non-academic (e.g. employment) and academic settings” (quoted in Gettinger and Seibert, 2002: 350). In addition, they argue that good study skills

reduce the risk of failure and enable students to become effective learners. As such, they suggest that not only must students try to develop a wide range of study strategies, but they must also develop the skill of knowing when and how to apply them. Since students with low academic attainment tend to opt out of classroom activities and assume a passive role in learning, often relying on others, they may adopt unproductive approaches to the development of study skills. Therefore, Hoover and Patton argue, they must learn to maintain focus, devise stricter self-management strategies, and dedicate more time and effort to studying and the retention of information in order to succeed. Failure to engage in effective study behaviour may be due to insufficient motivation, low engagement, or lack of home support. Gettinger and Seibert (2002) also argue that, for study skills to be effective in promoting academic competence, students must be willing and motivated.

Yip's (2009) study in Hong Kong with 100 distance learning students argues that improving study strategies at university level can improve students' academic performance. His study found that academic performance and study strategies were significantly related, with study strategies being good determinants of academic success. The results of this study demonstrate that academic high-achievers scored significantly higher than low-achievers in all subscales of tests that asked students about strategies used in their academic work.

Similar studies have found strong correlations between academic attainment and specific kinds of study skills. For example, a study conducted by Gajria and Salvia (1992) examined the effectiveness of a summarisation strategy on increasing comprehension in students with SpLDs in the United States. Thirty students who were identified as students with SpLDs were chosen from grades six to nine, and were split into experimental and control groups. Students from the experimental group were taught five rules for summarisation. The researchers found that a direct summarisation strategy significantly increased students' reading comprehension, and also that the strategy was maintained and

applied to other aspects of their work. Similarly, Baumann and Bergeron (1993) looked at cognitive organisation as a study skill believed to increase reader comprehension in young students. Using this strategy, the reader engages prior knowledge and combines it with organisation, prediction, and creating maps of images. The study found that instruction in story mapping is an effective instructional strategy for promoting students' abilities to identify central narrative elements in literature.

Zimmerman (1998) has also investigated self-regulatory processes related to effective studying. In this study, carried out in the United States, students reported the use of specific strategies during their studies, such as the self-regulated process of the imaginary, which refers to creating or recalling vivid mental images to assist learning. Another self-regulated system is the process of self-instructing, by which students verbalise the words while studying, incorporating the use of pitch and tone (for example, alternating between talking softly and loudly). Self-regulation also includes time management (knowing how long it should take to complete a piece of homework or an assignment, and developing the necessary time management technique to achieve this) and self-monitoring (systematically checking oneself and earning or withholding rewards, according to the work done). Further self-regulation methods mentioned in Zimmerman's study include structuring a self-regulated environment and seeking help by choosing specific models, teachers, or books to assist with problem solving. Another self-regulation study conducted by Zimmerman and Martinez-Pons (1986) found that high achievers reported using study strategies twice as often as low achievers.

A study conducted by Hassanbeigi et al. (2011) at a Middle Eastern university investigated 179 male and female medical students to uncover the relationship between various study skills and academic performance. The study found that the use of study skills at university level can play an important role in improving students' academic performance. The findings of the study also suggested that students who adopt more

learning strategies (such as time management, concentration, memory, study aids, note taking, test strategies, managing test anxiety, organisation, processing information, motivation, attitude, and reading and selecting the main idea) achieved higher GPAs than those who adopted fewer strategies.

As noted in the studies conducted by Zimmerman (1998) and Zimmerman and Martinez-Pons (1986), regulatory strategies—also referred to as metacognitive regulation (Maclellan and Soden 2006)—are the means by which students manage their different learning activities. The system adopted depends on the type of learning difficulty that a student exhibits. Therefore, students with SpLDs develop their own strategies, as Heward (2009) states; students with SpLDs and dyslexia actively seek different methods of coping at university.

In self-regulated approaches, a student is responsible for executing most regulatory actions themselves. A self-regulatory approach therefore includes the student checking whether their study practices are in line with their academic goals. If not, there are alternative strategies that can be used to assess why a student is not accomplishing his or her learning objectives. Since it encourages a deeply-embedded approach to study, teachers encourage students with dyslexia to take up a self-regulated approach, until it becomes a habit. The main reason for this is that this self-regulated approach evolves into a high-quality, meaningful, and independent learning method, which eventually leads to a more profound level of comprehension. Dyslexic students are able to be in control of their approaches to learning through ensuring that they take individual responsibility for development and learning (Steenkeen, 2000). Heward (2009) suggests that dyslexic students need more self-regulating strategies at university level than non-dyslexic students, including revising their notes regularly, checking they have understood everything, and ensuring they have all the necessary information in their notebooks and reference books.

However, Vermunt and Verloop (2000) believe that such regulatory practices are significantly affected by a student's individual learning and reasoning capacity, in respect of his or her personal motivation. Indeed, the different cognitions that students display with regards to the process of learning will help to influence the strategy they choose as the most suitable aid to comprehension in their studies. These cognitions include their attitude towards learning, and self-efficacy, which comprises the student's individual capabilities and judgements to carry out whatever is needed to achieve designated levels of educational performance (Vermunt and Verloop, 2000). Dynamic self-efficacy convictions influence learning in many ways. A sense of dynamic self-efficacy induces students with dyslexia to assume more challenging responsibilities. A student's personal understanding of regulatory strategies, on the other hand, is significant when it comes to selecting the most suitable learning strategy. According to Vermunt and Verloop (2000), in cases where students have a constructive learning conception, they usually have an inner drive to learn and seek comprehension of their study material.

Of course, learning strategies can be hugely individual. What works for one student with dyslexia may not work with another, as no two dyslexic students are the same. Many students with dyslexia find it helpful to use colour to differentiate between or highlight sources, they may prefer visual representations, so use elements such as bullet points and physical space, for example, by placing papers in different locations in a room, in accordance with the type of information represented (Kember et al., 2004).

Another study skill is the use of graphic organisers; Lerner (2000) endorses the use of graphic organisers, integrating both pictures and text, as important illustrative representations of information, knowledge, or concepts. Graphic organisers may consist of Venn diagrams, semantic maps, flow diagrams, tree diagrams, and matrices (Reynolds and Fletcher-Janzen, 2007). Often, these representations make it simpler for a student with dyslexia to comprehend information by enabling them to absorb multifaceted

relationships. Graphic organisers are therefore considered extremely useful in supporting dyslexic students' reading and learning in different academic areas (Brunswick, 2012). For example, the use of graphic organisers might enhance the retention of information presented in lectures and seminars.

It is noteworthy that technology is growing in use among students as a study skill; however, for students with dyslexia existing technology is largely restricted to support for writing, arithmetic, reading, and memory (Zdzienski, 1998). Organisational support systems seem to be few and far between. Much existing contemporary software relates to issues associated with human-computer interaction. These issues include making layout, colour, and content available to dyslexic and non-dyslexic users. There is also visual aid software, such as the magnifying tool ScreenRuler, while additional tools include SpeakOUT, BrowseAloud, and text-to-speech. Study skills software includes mind mapping and Nessy BrainBooster. Other software that can also be used by dyslexic students includes MindGenius and Mindful (Beacham et al., 2003).

2.2.3 Low attainment and academic difficulties

As stated previously, attainment in HE in Saudi Arabia is affected by a number of determining issues. This study is focused on academic difficulties that relate to literacy, but it is worth explaining that there are broader reasons that can affect attainment. The website of the Center for Academic Success at the University of Alabama lists some of the causes of low attainment, which are:

- *Not fully comprehending the amount of work required:* According to the study, some students failed to realise that there is a difference between the workloads of secondary school and higher education.
- *Other activities of interest:* Students with low GPAs may have other interests that take priority over their studies.

- *Vagueness about long-term goals*: Students do not have a sense of working towards a personal goal.
- *Inappropriate choice of major subject*: The study found that, in order to achieve their best, students must be aware of their personal strengths, limitations, and abilities.
- *Poor language skills*: Students at university level must have already mastered the use of language. They must be able to read, write, speak, and listen effectively. A lack of any of these skills might cause profound difficulties later.
- *Lack of personal standards or quality*: Many students are unable to judge the quality of their work.
- *Interference from psychological problems*.
- *Failure to assume responsibility*.
- *Lack of ability and/or poor high school preparation*.

In a study on low attainment amongst medical students in Saudi Arabia, Ali et al. (2009) demonstrated that four factors are crucial in student success rates. Firstly, they argue that a significant correlation exists between parents' educational levels, household income, and children's educational attainment. Secondly, their study found that students retained more information when they were taught as active learners—that is, when their teachers expected them to apply the knowledge they had gained through problem solving activities, answering questions, group discussions, brainstorming, debating and formulating questions of their own. Thirdly, the study found that attendance has a small but statistically significant effect on student performance. In other words, students who missed class on any given date were more likely to respond incorrectly to questions relating to material discussed on the day they were absent. Finally, the study found that students who participated in school-based extracurricular activities had higher grades than those who did not.

A similar study, conducted more recently by Salem et al. (2013) at a Saudi medical school, found that academic performance was significantly affected by the student's study skills and personal motivation. According to Salem et al., not only did students with high GPAs display higher levels of motivation and more developed study skills, they were able to relate their knowledge to past experiences and apply it in their daily lives. Furthermore, these students also engaged in more problem-based discussions, which enabled them to better assimilate new information into their existing knowledge base. According to Shathele and Oommen (2015), in Saudi Arabia family support is the most important factor that influences high attainment in higher education. According to their study, support from family and partners is imperative for achieving a high GPA. Shathele and Oommen also established that other factors affecting attainment include good health, sufficient time for self-study, adequate language proficiency, enough time for sleep, management of anxiety and stress, and understanding the teaching methodology.

Based on these studies, the causes of low attainment in higher education can be grouped into three categories, as follows:

1. *Students' personal qualities.* The student should have sufficient personal motivation to complete the course of study; adequate language proficiency; the aspiration to succeed; and higher study skills, such as time management.
2. *Socio-economic factors.* Students are more likely to have greater success when they are encouraged and supported by their parents. This is especially true of students whose parents have experience of the education system and are also high earners.
3. *Teaching methods.* Students' experiences of different types of teaching and learning at the primary and secondary levels affect how they study and learn at university.

Despite the usefulness of these studies, a discussion of academic difficulties related to literacy in relation to low attainment is noticeably absent. One reason for this may be that general literacy difficulties are not seen as reasons for low attainment. However, this absence also highlights a disparity in the support offered by university disability centres to students who are struggling with their learning. For example, this support is mainly directed at students with dyslexia and neglects students with the problems outlined above. It seems that the assumption made by disability centres is that a student experiencing academic difficulties must be dyslexic—despite the fact that research shows there are many other contributing factors.

2.3 Academic difficulties related to literacy

Literacy is essential for effective participation in modern life. People who struggle with reading and writing face difficulties in their daily lives, which may affect their performance both in higher education and in the workplace. In 1997, the Organisation for Economic Cooperation and Development (OECD) report, *Literacy Skills for the Knowledge Society*, defined literacy as “a particular skill, namely the ability to understand and employ printed information in daily activities at home, at work and in the community, to achieve one’s goals, and to develop one’s knowledge and potential” (OECD, 1997: 10). UNESCO (2003) defines literacy as the “ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts” (ibid.: 13), and that “Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society” (ibid.: 10).

In 2006, UNESCO further clarified this definition, stating that:

“[The] most common understanding of literacy is that it is a set of tangible skills—particularly the cognitive skills of reading and writing—that are

independent of the context in which they are acquired and the background of the person who acquires them” (UNESCO, 2006: 149).

UNICEF refers to “functional literacy” as “the ability to use reading, writing and numeracy skills for effective functioning and development of the individual and the community” (quoted in UNESCO, 2006: 158).

However, UNESCO (2013) estimated that 774 million adults worldwide—two-thirds of them women—lack basic literacy skills. Although the highest illiteracy rates are to be found in the developing world, adult literacy remains a concern in developed countries. For example, forty-three percent of American adults lack the necessary literacy skills to enable them to comprehend anything more than basic prose and text documents (Kutner et al., 2007). A high number of people experience reading and writing difficulties, despite having educational opportunities; difficulties in this specific area include SpLDs and dyslexia, which are discussed in the next section.

The literature unfortunately does not discuss academic difficulties related to literacy at the university level. These tend to be discussed only in the context of dyslexia. Although students who have academic difficulties related to literacy are sometimes referred to as poor readers, they are mostly overlooked, especially when it comes to services. Usually, a student must be labelled dyslexic in order to be eligible for university support.

2.3.1 Other difficulties

University students all over the world experience many difficulties in the course of their education and training in institutions of higher learning (Malek, 2014). These difficulties include physical, emotional, and even psychological issues. While many of these problems may seem insurmountable at first, they are actually stepping stones to scholarly excellence, and overcoming them is vital to the process of preparing students to cope with

the demands of life and the labour market (Wangeri et al., 2012). Thus, this section briefly explores some of the difficulties faced by many university students and how they affect both their personal and academic lives in general.

The ever-increasing cost of higher education is a significant concern for students (Ebersole, 2014), as some students experience financial difficulties over the course of their studies. Without sufficient funds to meet the high cost of living and tuition fees, among the other expenses involved in HE, many university students are forced to take up part-time employment. This may result in reduced time for studying and negatively affect their grades.

Stress, especially as a result of the high demands of university education, is also a major difficulty that nearly every university student has to deal with (Bocar, 2013). Students are likely to feel stressed in response to both academic-related and personal triggers, such as low test results or relationship problems. Moreover, the heavy workload of university students in the form of large research and reading assignments is in itself a significant cause of stress, besides often being a difficulty in its own right as well (Pettigrew, 2014). For most degree and diploma programmes, university students are expected to read and research widely and to produce a colossal quantity of written material in the form of term papers for their end of semester evaluation, besides revising thoroughly for examinations (O'Connor and Moodie, 2007). This entire workload is more likely to trigger stress, especially bearing in mind that university students must accomplish all these tasks successfully, while adhering to strict deadlines.

Given that university education entails huge workloads in a limited time, lack of effective time management is also a common difficulty experienced by nearly all university students (Bocar, 2013). While effective time management can be learnt, it is a skill that takes a lot of time and practice to master and perfect; therefore, most university students struggle with time management issues throughout their university life (Pettigrew,

2014), especially because university students are required to complete assignments and projects within stipulated timeframes or face punitive penalties for lateness (Bocar, 2013).

The preceding discussion highlighted some of the critical difficulties faced by university students; generally, university students face difficulties such as study problems, financial hardships, stress, heavy workloads, and time management issues. However, these difficulties are not entirely negative, especially bearing in mind that surmounting them prepares university students for dealing with life's challenges, and to be successful in their forthcoming professions.

2.4 SpLDs and dyslexia

According to Deponio and Macintyre (2003), SpLDs is an umbrella term that points to students displaying significant discrepancies across the learning spectrum. Such students, they argue, demonstrate areas of high competence alongside major difficulties. There are many types of difficulty, many of which tend to overlap, making it hard to establish clear-cut differences. Nonetheless, the Learning Difficulties Association of America (2005) lists a number of disorders that fall under the term SpLD, which include dyslexia (language and reading difficulty), dyscalculia (problems with arithmetic and mathematical concepts), dysgraphia (illegibility caused by a writing disorder), dyspraxia (problems with motor coordination), central auditory processing disorder (difficulty processing and remembering language-related tasks), visual perceptual/visual motor deficit (the inability to copy accurately, the tendency to lose one's place when reading, difficulty cutting things or holding a pen, and poor hand-eye coordination), non-verbal learning disorders (trouble with non-verbal cues such as body language), and aphasia/dysphasia language disorders (difficulty in understanding spoken language and poor reading comprehension) (Emmons and Anderson, 2005).

2.4.1 Terminology used to describe SpLDs in the USA and UK

In this research, the term ‘specific learning difficulty’ (SpLD) is used, or the group is referred to as ‘SpLDs and dyslexia’. Although studies from different countries are reviewed, these terms will be unified, referring to the focus of this study as SpLD. This is the term used in the UK. However, it is important to clarify that the terminology is different from one country to another.

Pumfrey and Reason (1991) indicate that the term ‘learning disability’ (LD) is used in the USA to refer to problems similar to those described in the UK as SpLD. They also suggest that several definitions of SpLD, LD, and dyslexia are drawn upon in the UK, the USA, and other countries.

The term ‘learning disability’ in the UK is constantly used in different contexts within the health and social care fields. Such definitions as mild, severe, and moderate are used to show the extent to which a child is affected by their learning disability (Further Education Funding Council, 1999). In the USA, on the other hand, the term ‘learning disability’ has a different meaning to that used in the UK. In the USA, the term is used to cover a number of specific learning disorders that are related to reading, writing, and mathematics, such as dyslexia (Beecham et al., 2002; Schmidt et al., 2014). In the United States, the term ‘intellectual disabilities’ is used in the same context as that used in the UK for ‘learning disabilities’. This difference in definition is understandable, because the term is used in diverse contexts. The diverse contexts within which the understanding of the term ‘learning disability’ was developed can be considered one of the reasons for the differences in its definition in these two countries. Therefore, the differences in the understanding of learning disabilities in these two countries can be attributed to the differences in the scholarship that has been conducted in both the United States and the UK.

2.4.2 Prevalence of SpLDs and dyslexia

Kleinert (2012) put the prevalence rate of SpLDs at sixteen to twenty percent of the university population in the United States, with those with specific SpLDs at three to five percent. The prevalence of students with SpLDs differs from university to university, with certain universities registering over thirty percent of their student population with learning problems. In the UK, it is estimated that five to ten percent of the population as a whole has some form of dyslexia (NHS Choices, nd).

The exact prevalence ranges for SpLDs are almost impossible to determine since, globally, no consistency has been established in defining the term ‘specific learning difficulty’ (Dodge and Kendall, 2004). For example, in the prevalence rates presented above, the terms ‘general SpLD’ and ‘specific SpLD’ have been used in the United States and ‘dyslexia’ has been used in the UK. The diversity of definitions observed here, and how they are applied to students who are considered to have literacy difficulties, makes arriving at accurate numbers extremely problematic, especially when translating definitions from different languages. Furthermore, it is difficult to identify which students are being referred to whenever practices and policies for students with SpLDs are being discussed or described.

According to statistics provided by the Saudi Ministry of Education in 2010, the number of students in Saudi schools exceeds five million. Building on UK studies that estimated the incidence of SpLDs in any society as one in ten (BDA, nd), it can be inferred that the number of Saudi students in school with SpLDs is between a quarter and half a million. However, available statistics show that very few of these students have actually been identified and provided with programmes and services by their schools, and unfortunately there are no statistics available about the prevalence of dyslexia among students in HE in Saudi Arabia. Furthermore, despite there being over 28,000 schools in

Saudi Arabia, less than five percent offer programmes and services for students with SpLDs (Ministry of Education of Saudi Arabia, 2012).

2.4.3 Models explaining SpLDs

2.4.3.1 Medical model versus social model

The ‘medical model’ denotes the assumption that disability located within the individual, and as such should be remedied (Rothman, 2010). Conversely, the ‘social model’ refers to the assumption that disability is a result of a social construction, and not an individual’s impairment or difference. As such, the social model plays a role in finding ways to eliminate barriers considered to limit life choices, particularly for persons with disabilities. In essence, when such barriers are removed, persons with disabilities are better placed to have a sense of autonomy and be treated as equals in the social realm (Thomas, 2004).

In relating the medical model to specific learning difficulties, the focus is often on an individual’s pathology and impairment. As such, individuals presenting with academic difficulties. As stated before, among the common difficulties related to literacy in school settings is dyslexia. Subsequently, from a medical model perspective, the focus involves the use of with the use of an intervention that can lessen the impact of the disability. Applying the medical model in school settings, students presenting with academic difficulties related to literacy, such as dyslexia, may be separated from other non-dyslexic students to ensure they access specialised learning (Rothman, 2010). Furthermore, in order to help students with dyslexia adapt to the existing education system, specialised institutions can be created to cater for their special needs.

However, viewing academic difficulties from the perspective of a medical model is likely to lead to a cycle of dependency and exclusion. When medical models dominate, the focus on providing for students with special educational needs is often informed by

viewing the individual with academic difficulties as being different, thus requiring assessment and the provision of remedies. The drawback of a focus on using a medical model to address SpLDs in school settings is that it is likely to lead to stereotyping notions that can impact negatively on the esteem of students with special academic needs, particularly in a school setting (Johnston, 1996).

Alternatively, a focus on using the social model to understand specific learning difficulties provides an alternative solution to the limitations associated with the medical model. In essence, the social model recognises that some students in a school setting are likely to present with physical or psychological differences that can have an impact on their learning ability. As such, the emphasis in learning settings should be on how to provide support networks for students with academic difficulties, as a way to not only improve their learning experience, but also to promote an education system that is inclusive. This model also notes that the oppression experienced by persons with any kind of disability is socially constructed. Consequently, it is the responsibility of society to shift their perceptions of persons with disabilities. In this sense, society needs to regard persons, regardless of their disabilities, as being able to make their own choices regarding their needs, in order to do away with stereotypical notions associated with disabled people (Shakespeare & Watson, 1997).

In school settings, rather than creating specialised institutions to cater for students' needs, the education system should develop policy and practice that ensures their needs are addressed in a school setting where they can interact with other students. In essence, the application of the social model is vital in enabling diversity in school settings. Within both society and school settings, students presenting with academic difficulties are exposed to the same economic, cultural and environmental challenges experienced by their peers. As such, instead of viewing students with academic difficulties as being different, which may lead to interventions that segregate, the focus

among educators should be on how to incorporate teaching styles that resonate with the needs of students with SpLDs (Riddick, 2001).

On another note, most learning environments tend to overlook the needs of students with academic difficulties. For instance, classrooms may lack assistive technology that suits the needs of students presenting with academic difficulties. In this sense, rather than a focus on learning styles that only suit one group of students, the social model perspective ensures that schools appropriately address the learning needs of all students, including those with difficulties. Furthermore, in addressing the needs of students with SpLDs, the social model plays a role in the implementation of education systems that embrace diversity. Such a focus promotes that all students, whatever their abilities, excel in their learning endeavours. The social model as used in education circles plays a role in ensuring that the focus on students with academic difficulties is not on the specific student, but on the learning environment (Riddick, 2001).

2.4.3.2 Affirmative model and SpLD

The ‘affirmative model’ denotes a positive way of looking at SpLDs presented by students in a school setting. The social model of disability influences this model and provides the framework necessary to understand persons with disabilities, not only in a school setting, but also in their social spheres (Swain & French, 2000). Furthermore, affirmative models create the assertion that difficulty does not equate to inability, and as such, motivates persons with difficulties to exploit their potential in different settings. The affirmative model plays an important role in encouraging diverse students to develop positive attitudes regarding their disabilities, as a way to improve their learning experiences particularly in an inclusive learning environment (Swain & French, 2000).

2.4.4 SpLDs and dyslexia: Saudi Arabia and other Middle Eastern countries

Awareness of dyslexia began to emerge in Gulf countries in 1992 when a three-day workshop was conducted by the Department of Psychology at Bahrain University in Manama. The workshop, entitled Assessment and Teaching of Dyslexia Children, had been organised to promote an understanding of the issue of dyslexia in children and was headed up by the Institute for Dyslexic Students in England. At that time, there were no schools in Saudi Arabia dedicated to children with SpLDs, and the Saudi Ministry of Education participated in the workshop to understand the educational situation. Shortly after this, the Special Education Department at King Saud University in Riyadh designed and offered a degree course in SpLDs, which included training in the teaching of SpLD strategies and techniques, to meet the needs of various schools in the country (Al-Hano, 2006). King Faisal University in the Eastern Province of Al-Hasa also set up a department to meet the growing demand for specially trained teachers of students with SpLDs.

In Saudi Arabia, the Ministry of Education's Regulation of Special Education Programmes and Institutes (2002) introduced a manual explaining disability types and categories, and the procedures to be adopted to determine the eligibility of a student for special education. Referred to as *so'ubat al-taal'um* in Arabic, and 'specific learning difficulties' in English, Saudi Arabia follows US federal law in defining the term SpLD. A "specific learning difficulty" is defined, in part, as "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia" (U.S. Department of Education, nd).

2.5 Dyslexia

As noted earlier, dyslexia is one of a number of specific learning difficulties. Moody (2007) delineates dyslexia as an explicit learning difficulty or disability, the source of which is neurological. It is typified by difficulties in fluent and/or accurate word identification and by the lack of decoding abilities and poor spelling. Moody also considers the root of dyslexia difficulties to be the inadequate provision of classroom instruction, the consequence of which is a reduced reading experience and lower reading comprehension, which in turn can lead to a reduced rate of growth in terms of a student's background knowledge and vocabulary. Dyslexia presents an enduring problem with writing and reading that individuals will struggle with all their lives (Rose, 2006). Dyslexia may also include deficiencies in speech production and phonological awareness, so individuals may need strategies to deal with processing phonological information, involving encoding and retrieving (Wadlington et al., 1996).

Two types of dyslexia have been distinguished in the literature. Developmental dyslexia refers to a condition whereby a person has never been able to read at a 'normal' level. On the other hand, acquired dyslexia refers to a condition in which a person loses the ability to read, having previously shown the ability to do so (Hultquist, 2006). Dyslexia can present itself as mild, moderate, or severe.

In addition, dyslexia involves some complicated issues such as labelling, definition, and identification. There are ongoing debates about dyslexia in relation to the nature and extent of learning difficulties, including its causes, diagnosis, and types of intervention, which are important to address (Elliott and Grigorenko, 2014). For example, the causes of dyslexia and how it is manifested are arguably poorly understood. For years, psychologists, neurologists, and other researchers have tried to find an answer to the question of what dyslexia actually is, but no universally accepted definition has been developed. Although many experts believe that a convincing theory and explanation of

dyslexia is not far away, it remains a condition without a generally agreed-upon definition (Fitzgibbon and O'Connor, 2002).

One issue in the search for an agreed definition and understanding of dyslexia relates to the distinction between 'poor reading' and dyslexia. This has caused substantial debate. For example, Elliott and Grigorenko (2014) consider the latest research in cognitive science, genetics, and neuroscience insufficient to diagnose dyslexia. Instead, by focusing on other students with the same problems as dyslexic students, such as poor readers, but who are not identified as dyslexic, they have tried to develop methods of identification and intervention for all students with reading difficulties. Furthermore, they consider the application of the label of dyslexia to be unscientific, because while one clinician may diagnose and label a student as dyslexic, another clinician may refute that diagnosis and consider the child not to be dyslexic. For example, Clinician 1 may apply the label 'dyslexia' to any student who struggles with learning to read, whereas Clinician 2 may focus on reading difficulties when accompanied by other intellectual characteristics. To complicate matters further, Clinician 3 may diagnose dyslexia as being due to cognitive 'markers' such as phonological or visual defects.

The poor reader may have developed the problem due, for example, to his or her frequent absence from school or lack of motivation and encouragement. However, in the case of the dyslexic student, there is evidence of different clinical, educational, psychological, and/or social factors (all of these, or perhaps a mix of some of them). With dyslexia, there is no diagnostic biomarker and, as different disorders overlap, there is no clear boundary between a dyslexic student and a poor reader. Therefore, the debate goes, the label 'dyslexic' is not necessarily needed clinically, educationally, psychologically, or socially in order to mark dyslexic difficulties.

Elliott and Gibbs (2008) thus argue against the concept of dyslexia or, more specifically, the application of the diagnosis itself. They contest that the label itself

promotes stigma, disenfranchisement, and an unequal use of resources. More importantly, they argue that it deprives poor readers who are not diagnosed as dyslexic of access to the resources that would be provided for dyslexic students. They also argue that the term ‘dyslexia’ permits people who are diagnosed with the condition to receive various kinds of treatment that are denied to the poor reader. Their argument stresses the importance of ensuring that all children receive equal educational opportunities, as they see the concept of dyslexia to be undefined and unverifiable.

This is also supported by the work of Stanovich (1994), who emphasised that the available research embraced unverified assumptions about the meaning of the term ‘dyslexia’, which can be misleading and limiting. He also criticised the notion that educators need a diagnosis of dyslexia, and the current separation of it from other theoretical terms such as reading disabled and poor reader. Stanovich suggested that rather than being fixated on the term ‘dyslexia’, it may well be more productive for the field of education to explore the implications of conceptualising reading, and looking at reading as containing a continuum of developmental language disorders.

That being the case, there may be no point in diagnosing dyslexia. Rather, the resources, time, and money could be invested in support provided for all students with reading problems.

2.5.1 Characteristics of students with dyslexia

Tables 2-2 and 2-3 present a summary of the characteristics displayed by students with dyslexia at different ages. The characteristics of students in preschool and early years, students after spending two years in school, middle school students, and high school students are adapted from Reid (2009); the characteristics of dyslexic students at university level are adapted from the Cambridge University website and from Miller-Shaul (2005).

Level of study of students with dyslexia	Characteristics of students with dyslexia
<i>Students in pre-school and early years</i>	History of dyslexia in the family Difficulty learning nursery rhymes Forgetfulness Speech difficulty Reversal of letters Difficulty remembering letters of the alphabet Difficulty remembering the sequence of letters of the alphabet Coordination difficulties Difficulty with tasks that require fine motor skills, such as tying shoelaces Slow at reacting to some tasks Reluctance to concentrate on a task for a reasonable period of time Confusing words that sound similar Reluctance to go to school Reluctance to read Difficulty learning words and letters Difficulty with phonics (sounds) Poor memory Difficulty forming letters Difficulty copying Difficulty colouring Poor organisation of materials
<i>After approx. 2 years at school</i>	Hesitancy in reading, therefore has poor reading fluency Poor word attack skills – difficulty decoding new words and breaking these words down into syllables Poor knowledge of the sounds of words Difficulty recognising where in words particular sounds come Spelling difficulty Substitution of words when reading, for example ‘bus’ for ‘car’
<i>Middle school</i>	Behavioural difficulties Frustration May show abilities in other areas of the curriculum apart from reading Attention and concentration difficulties

Table 2-2: Part one of the summary of the characteristics of dyslexic students in different age ranges

<p><i>Secondary/high school</i></p>	<p>Takes a long time to finish homework Misreads words Relies on others to give him/her information Poor general knowledge Takes longer than others in written tasks May not write a lot in comparison to his/her knowledge of the subject Difficulty copying from books May spend a great deal of time studying with little obvious benefit May not finish class work or examinations; runs out of time Attention and concentration difficulties</p>
<p><i>University level</i></p>	<p>Students with dyslexia at university level may have one or more of difficulties in: Written composition Speed and legibility of handwriting Planning, organizing, ordering and structuring writing and ideas Retaining and manipulating long lists of orally given instructions Formulating and retaining ideas (both in speech and in writing) Proof reading (ability to recognise own errors) Sentence structure/grammar/punctuation Listening and taking notes simultaneously, and selecting essential information Summarising from source material/paraphrasing Scanning and skimming information rapidly Maintaining focus and focusing accurately on the text for a sustained period Task and time management, such as planning and structuring time</p>
<p><i>Workplace/ postgraduate level</i></p>	<p>Adults with dyslexia can be: Slower and less accurate with vocal reading Using compensating strategies effectively</p>

Table 2-3: Part two of the summary of the characteristics of dyslexic students in different age ranges

It is apparent, therefore, that there is a broad range of difficulties faced by dyslexic students in the study process. For a student with dyslexia, the management of any difficulties may differ greatly from secondary to tertiary education, as the nature of the workload and the methods of study make increasing demands. Grant (2010) states that, even though students with dyslexia may satisfy the requirements needed to gain admission to post-secondary institutions, most of them have additional problems when compared with non-dyslexic students (see Table 2-3). Such additional difficulties for dyslexic students relate to the organisation of academic work, note taking, and the ability to express ideas, particularly in writing (Miller-Shaul, 2005). According to the BDA dyslexic students in HE mostly experience problems with information processing, note taking, essay writing, and organisation. A further issue concerns difficulty in pace and accuracy when reading, which may constrain students in HE from progressing with their education and later in the workplace (Reid and Kirk, 2001).

Studies further show that considerable differences exist between dyslexic students and their non-dyslexic peers when it comes to levels of learning motivation. Types of learning that help dyslexic students to maximise their individual capabilities include informal, lifelong, behavioural, situated, collaborative, and constructivist learning; dyslexic students are able to retain control of the approaches to learning by ensuring that they take individual responsibility for development and learning (Steenkeen, 2000). This mainly entails the use of conceptual and analytical thinking. From a descriptive viewpoint, researchers have attempted to find probable connections between psychopathological, cognitive, and motivational variables, and the educational accomplishments of students with learning difficulties. For example, Sideridis (2003, 2006, 2007) performed a series of research projects that not only added to existing information, but also verified the important links between lack of achievement, not fulfilling academic goals, low self-esteem, depression, and anxiety.

2.5.1.1 Self concept, self-esteem and SpLDs

“Self-concept” denotes being aware of oneself in terms of the image that individuals attach to themselves. There are several factors that are associated with self-concept, and they include, for example, certain personality traits, personal values and one’s role in a given social setting. As posited by social identity theory, self-concept consists of two key parts: personal identity and social identity. An individual’s personal identity encompasses their personal traits and other attributes that make them unique. Conversely, social identity relates to the groups that individual belongs to or associates with, such as a community or religious group (Campbell et al., 2003).

Educators are likely to separate students presenting with academic difficulties from their peers, which can lead to negative self-thoughts that may in turn interfere with positive learning experiences, as a result of being seen to be different from other students. Here, educators can help students with academic difficulties to develop a positive self-concept by treating them in a similar manner to the peers. Such an endeavour may involve, for instance, providing them with supportive structures in an inclusive learning environment (Campbell et al., 2003).

2.5.2 Identification of students with dyslexia

Cory (2011) states that in the United States, dyslexia is presented as a recognisable disability category in both the Individuals with Disabilities Education Act 2004 (IDEA) and the Exceptional Children’s Education Act (ECEA). Recently, a considerable shift has taken place in the United States in the way people think about dyslexia and how to recognise it. As a result of the IDEA, emphasis was placed on efficient core intervention and instruction, leading to improved educational results for all students, including those who are at risk of an SpLD such as dyslexia, as well as those already diagnosed with dyslexia.

The previous ‘test, to eligibility, to intervention’ approach in the United States had frequently led to a ‘wait to fail’ situation because the point had not been reached when intervention through special education was justified, since the assessed discrepancy between achievement and aptitude had not proved to be sufficiently great (Korbel et al., 2011). This method of identifying dyslexia has now been replaced by a problem-solving/response to intervention (RtI) approach, which offers different interventions. They act as components of problem-solving procedures at the first indication of a learning need. Then, if insufficient progress is made, and low achievement is still apparent, the student’s reactions to the administered interventions, in conjunction with pertinent data, are observed. This may yield data that outlines the need for a disability diagnosis or a special education referral.

By the time a dyslexic student enters HE, it is highly probable that he or she has developed what are called ‘accomplished compensatory strategies’, whilst those who ‘fail’ at school may have been unable to devise or master such strategies and are, therefore, more readily identified (Reid and Kirk, 2001). Consequently, this may make the matter of identification very difficult and complex. In the UK, it is not unusual to find students being identified as dyslexic only after leaving school. A survey of more than a hundred UK learning institutions indicated that on average 51 students per institution (a range of 10-225) declared themselves to be dyslexic on their application forms (1.5% of the total student population), yet 43% of the total dyslexic student population were only identified as dyslexic after admission to university. These figures do not include undiagnosed dyslexic young adults, who are likely to account for more than 1% of the school-leaving population (Reid and Kirk 2001).

2.5.3 Strategies employed by students with dyslexia

Students with dyslexia may employ strategies that are different to students without dyslexia. They may also employ strategies that differ from other students who have dyslexia. Additionally, a single dyslexic student may employ many different strategies to cope with reading and writing. A study conducted by Trainin and Swanson (2005) showed that secondary school students who are identified as dyslexic can overcome their difficulties with sufficient support. Furthermore, by refining their time management skills and decision-making methods, they can prepare themselves for the transition from secondary school to university. According to Kirby et al. (2008), dyslexic students are often able to demonstrate better comprehension and reading rates than those who do not have dyslexia, because they are able to employ techniques to help overcome their word-reading difficulties.

In terms of SpLD learning approaches, it has been well documented that students with SpLDs in university utilise a diverse range of study strategies (Lerner, 2000). These strategies are mainly dependent on the perceptions and experience of the students. Students devise different coping mechanisms to ensure a smooth transition to higher education and, eventually, the workplace. Some students develop a deep approach founded on the comprehension of course resources. Examples of a deep approach include actively seeking to understand the subject, interacting vigorously with the content, making use of evidence, enquiring and evaluating, taking a broad view and relating ideas to one another, relating concepts to everyday experience, and reading and studying beyond the course requirements (Lublin, 2006). Other students come up with a surface strategy that involves studying only for assessments. Examples of surface learning include trying to learn in order to repeat what has been learned, memorising information needed for assessments, making use of rote learning, taking a narrow view and concentrating on detail, failing to distinguish principles from examples, and tending to

stick closely to the course requirements. The adoption of different approaches is dependent on what suits the student best, since dyslexia affects people in a variety of ways.

According to Kirby et al. (2008), students who display positive discernment are most likely to choose a strategic or deep approach. Therefore, they do not usually adopt a superficial or surface strategy, since this is attributable to students with negative discernments. Students who possess a deep strategy for learning show greater intrinsic motivation when attempting to learn and understand the deeper meanings of the learning task. The motivation these students possess helps them learn how to perform and complete tasks faster than those with a surface approach.

As students with dyslexia adopt different strategies, they often demonstrate better comprehension and reading rates. This means that dyslexic students invent techniques to overcome their basic word reading problems, which, to some degree, enable them to thrive in HE. Students with SpLDs have often identified other ways of surviving in post-secondary institutions (Kirby et al., 2008). These techniques often consist of study aids and time management strategies. Many support strategies applied by institutions encourage dyslexic students to engage in techniques that enhance their time management capabilities, in order to help them make the transition from university to employment.

2.5.4 Academic and social experiences of students with SpLDs

Although there is a diverse range of SpLDs, making it difficult to generalise concerning them, in general Steenkeen (2000) suggests that students with SPLDs can be expected to gain from comprehensive, longstanding services such as in-class support, tutor support, exam arrangements, and IT support, which would enable them to become more productive, independent, and active.

Attending university or college can present students with SpLDs with a number of challenges, such as lack of support services and facilities, which can seriously limit geographical mobility, independence, and employment prospects after leaving education. To illustrate how difficult such challenges are, research in the US has shown that most university students with SpLDs who withdraw at the end of their first year do not resume their studies (Heward, 2009). It is relevant and important to recognise that such students often drop out because their teachers are unaware of, or simply do not take into account, their problems. A further factor is that institutions do not demonstrate interest in exploring potential ways to solve such problems. Brysbaert (2013), points out that some students with dyslexia and other learning difficulties may have different academic problems and behavioural issues. Certain problems may be apparent in the classroom, while others can be identified when students complete their assessment forms at the end of a semester.

Such indicators, which could potentially be recognised by professors or teachers as signs that a student has social or academic issues, include lateness to class, absenteeism, incomplete assignments and class tasks, sending text messages or calling out during class, low test scores, rudeness towards instructors, and anxiety in exams; these issues in the classroom could lead to students dropping out. As a consequence of frustrating relationships with adult instructors or professors, who may perceive students with SpLDs to be lazy, these students may then develop a distrust of authority figures. In an academic setting, this reduces a student's focus on achieving his or her educational goals, causing many to lag behind (Humphrey and Mullins, 2002).

While students with SpLDs encounter various academic difficulties, they must also contend with the social repercussions of the label itself. These repercussions mostly present as negative responses when interacting with their peer group, taking instructions, or participating with other students in an academic setting. The result is that such students

are perceived as being slow, easily diverted and lacking concentration, absent-minded, and generally as having a behavioural problem (Michail, 2010).

Compounding the perception of SpLDs as a weakness is the reluctance of students to seek help. The fear of stigmatisation is probably the main reason for students being reluctant to seek , In addition, Quinn et al. (2009) point to the limited number of staff able to make the link between students' learning difficulties and their financial problems, isolation, and poor accommodation. Beyond academic support, it is proposed that a university's specialist service should be in a position to help all these students realise their full potential, regardless of their disabilities. With the right support, students can learn different ways of socialising with their peers, as well as being better able to relate to their teachers and lecturers.

Frequently, labelling is depicted as a process of stigmatisation and discrimination. A major reason for students not making their disabilities known to university administrators is to avoid this stigmatisation and labelling (Lisle, 2011). The stigma is evident when students display reluctance to reveal their SpLD or dyslexia. Monk (2004) states that only a small percentage of students are comfortable enough to reveal their problems on campus, and even then are extremely cautious in their choice of authority figures to whom they disclose their condition.

In addition, a number of factors force students with SpLDs to abandon their studies, such as inadequate academic preparation during university admission in terms of writing skills, reading and maths techniques, and training in time management. In most cases, students with SpLDs are faced with unfavourable campus conditions and an ambivalent (sometimes even hostile) classroom climate, which impose severe obstacles to their integration and learning.

2.6 Perceptions of students with SpLDs that influence their academic abilities

According to Choi (2005), the negative or positive experiences of able students are dependent on problem-solving skills, intellectual ability, coping styles, emotional stability, self-esteem, and locus of control. Other determinants include attributional style, personality variability, learning approaches, and a sense of mastery. Similarly, there are distinct determinants specifically for students with SpLDs. These include problem-solving skills, resource use, perceived social support, stressful events, contentment with the university's disability resource centre, and extracurricular involvement. As such, attachment to peers and parents, and the perceived provision of counselling and academic support are also important determinants. Several studies have recognised the general attributes of successful adults and college students with a low-to-medium range of academic difficulties.

According to Quinn et al. (2009), psychosocial adaptation to disability is outlined as the emotional approval of an individual's disability, usually revealed through the realisation of an individual's positive self-value potential, and the ability to overcome different obstacles. Furthermore, individuals become active in their determination to reach their goals. Variables that relate to psychosocial adaptation to disability include self-esteem, self-concept, coping styles and strategies, and emotional responses such as depression, anxiety, and anger. These psychosocial determinants explain the extent to which the positive or negative reactions of students with SpLDs can be observed by other people. There is a strong connection between the extent to which students with SpLDs can adjust to different situations and their ability to adapt to the pressure exerted by instructors or by their peers.

2.6.1 Dyslexic students' perceptions of their academic difficulties in HE

Students demonstrate varying levels of motivation and different approaches to learning, and react in diverse ways to particular instructional practices and classroom environments. The more thoroughly instructors understand these variations, the better the prospect of meeting the learning requirements of all students (Steenkeen, 2000). Although there has been an increase in the number of dyslexic students enrolling in higher education, this group also displays a high attrition rate (Pino and Mortari, 2014). This comes as no surprise because the negative stereotypes associated with the SpLD label means that the university environment alienates such students. Nevertheless, it is hard to evaluate the impact of these difficulties on students without paying attention to social and emotional impacts. The perceptions of students with SpLDs regarding their academic difficulties cannot be solely based on their views, but must also take into account environmental issues.

Some dyslexic students perceive themselves as failures, particularly in an academic setting (Falgout, 2014). These feelings are usually derived from emotional and social interactions with both adults and fellow students. This partially explains the difficulties they have in terms of behaviour and social interactions. They perceive other students as non-dyslexic and therefore able to excel in their studies without any dynamic effort to produce significant competition between these students (Steenkeen, 2000). The frustration of prolonged failure in a variety of curriculum units, leading to a mind-set of insecurity and an absence of confidence, has a considerable influence upon friendship patterns, social status, adjustment, and acceptance in leisure activities. This explains why students with SpLDs may develop antisocial behaviour, since they do not perceive themselves as students without difficulties and therefore believe they are not good enough to interact with others. Insecurity and stress in students with SpLDs may lead, Steenkeen (2000) suggests, to a deterioration of information processing abilities. In some cases, the

students do not deem themselves to be responsible enough to be compared with other students who do not have SpLDs or dyslexia. This applies to both academic and social settings.

In addition to these feelings of inadequacy and the shame of failure, students with SpLDs often perceive themselves as lazy (Pollak, 2002). This is also a view commonly held by the majority of non-SpLD students. As a result, students with SpLDs tend to think that they are not exerting enough effort in order to achieve their academic goals. Such self-perceptions are also reinforced by teachers' impatience. Some teachers who do not comprehend how to deal with students with difficulties find themselves putting much of the blame on the students themselves (Heward, 2009), which only intensifies the students' confusion, frustration, and anxiety, leading to harmful effects on their self-esteem. The various descriptions ascribed to students with SpLDs can have a considerable impact on their perception of their academic difficulties. Sometimes, dyslexic students present themselves as having negative self-perception and low self-esteem (Alexander-Passe, 2010).

Some students with SpLDs develop into passive students, due to the self-perception of learned helplessness (Lapraik, 2012). This perception demonstrates the little conviction some students have as to their individual capabilities. They are inclined to give up immediately if they perceive a specific assigned task to be complex, and because of this helplessness, even in instances where they perform well in tasks or tests, they perceive this success as luck or 'sympathetic teaching'. Indeed, they frequently think that if a person is not bullying them, they are sympathetic towards their form of SpLD and are not displaying honesty when evaluating or judging them. With this form of perception, it is hard for teachers, parents, and counsellors to provide students with sufficient motivation to develop confidence and more positive individual self-perceptions. This is

mainly because their record of failures has created self-doubt and negative feelings regarding their abilities (Steenkeen, 2000).

2.6.2 Dyslexic students' perceptions of their teachers and universities

The environment of a university plays a major role in a dyslexic student's decision to stay in education or drop out. Teachers, too, play a major role in such decision-making (Sung, 2010). Faculty complaints by students with SpLDs are common in cases where their needs are not being satisfied. Students with SpLDs do not exhibit a preference for teachers who show a lack of understanding regarding SpLDs. Clearly, students cannot benefit from instructors who do not understand their condition. Such teachers may treat them like other students, thus teaching through the application of uniform teaching strategies. Because of this, in circumstances where students with SpLDs display a deficiency of information and skills, this fault is attributable to instructors' failure to give these students the consideration they need. Different students' perceptions of their university and its teaching staff show that teachers should make every effort to enhance their teaching quality, which in turn demands an understanding of the learning requirements of today's dyslexic students and knowledge of how to apply the necessary teaching methods.

Since no two students are alike, the methods used by teachers should be adaptable to accommodate the needs of all students (Sung, 2010). Devlin (2002) points out that students feel that the amount of attention they receive in class is determined in part by their abilities and their prior research or homework. Furthermore, she adds that students feel that their backgrounds, interests, sense of responsibility, motivation levels, study strategies, and strengths and weaknesses are not similar, and therefore it is necessary for teaching strategies to be differentiated. Teachers, therefore, play a major role in academic attainment in the identification of the different characteristics of the students and adapting their teaching styles accordingly. For example, Devlin distinguishes between those who

mainly lecture, those who focus on activities or demonstrations, those who pay more attention to the principles of the subjects they are teaching, those who focus more on application, those who place greater emphasis on understanding, and those who set greater focus on memorising (Devlin, 2002).

The concept of improving teaching does not necessarily mean that teachers have to discover the deep-rooted characteristics of each dyslexic student. Rather, it means that different teaching strategies need to be applied. By applying diverse teaching methods, the needs of multiple dyslexic students can be considered and met to ensure that they receive the best education. There should also be monitoring of the university environment to ensure that there are no hindrances to the learning of students with dyslexia. More importantly, dyslexic students feel that universities should put measures in place to ensure that there is close monitoring of their progress (Goode, 2007).

2.6.3 Perceptions related to classroom inclusion

Wigfield and Wagner (2005) have highlighted that the move to emphasise the inclusion of students with SpLDs in class, particularly in general education, has become a growing educational trend. Not only does the inclusion of dyslexic students yield enhanced academic performance, but it also provides opportunities for them to socialise with their peers, most of whom do not identify as disabled. While greater focus is placed on how students with SpLDs relate to their non-dyslexic peers, much less attention is paid to these students' perceptions of teachers and the university learning environment.

Singal (2006) argues that including students with SpLDs in general classrooms augments the responsiveness of each interrelated element of the university as a community. Observable results are affected by the forms of inclusive approaches that are applied by teachers. Generally, students who are involved in support programmes initiated by their teachers have positive perceptions of teachers (Hornstra et al., 2010).

In cases where teachers do not intervene, the final result is students dropping out of university. Unfortunately, some teachers do not engage with students on a level that encourages them to feel confident enough to confide in them regarding their academic and social issues. In cases such as these, students feel disadvantaged mainly because of their difficulties (Ogunleye, 2011). Wigfield and Wagner (2005), for example, suggest that teachers demonstrate more positivity towards students who are physically disabled than students who suffer from academic difficulties. Students with SpLDs agree that in some areas, especially mathematics and spell-checking, they exhibit delayed responsiveness to the teachers. This causes longer lecture times in some cases where teachers have to focus on attending to the learning needs of students with SpLDs.

Different university staff exhibit different attitudes towards students with SpLDs. For some teachers, for example, there is a level at which a particular disability will be deemed acceptable. According to students with SpLDs (Cassady, 2016), the most widespread sentiment they encounter from staff administrators in general is either pity or admiration. Negative social attitudes and pity towards students with SpLDs can be perceived as invisible restrictions to access and learning. Furthermore, the impact of negative social attitudes contributes to preventing students with SpLDs from mainstreaming effortlessly into the university community.

2.6.4 Motivation of undergraduate students with SpLDs

Several distinct factors affect whether students who register at university finally complete their degrees. Hallahan and Kauffman (2000) suggest that adjustment during transition periods is a continuous process and that, for students with SpLDs, the transition from high school to university can be complex. This transition process requires incoming undergraduates to possess high levels of maturity, whilst avoiding the temptations offered by freedom and autonomy. With less instructional time at the university level, learning is student-led, with emphasis placed on independent learning. For students with SpLDs, it

can be difficult to adapt to this environment and manage both short- and long-term objectives. Skills such as self-awareness and self-advocacy are important when students with SpLDs transition to higher education.

2.7 Transition and academic preparedness

Research conducted on student retention points to the academic preparation of students with SpLDs as one of the most important indicators of student motivation and persistence to finish their degree programmes (Steenkeen 2000; Maclellan and Soden, 2006). Students who have a good understanding of their abilities, disabilities, and interests can usually find the most appropriate university for them. Through the identification of these elements, a student can develop the intrinsic motivation necessary to handle any problem that arises. However, there is a need for parents and teachers to become seriously involved in the learning process and decisions made by students, by encouraging them to fully explore their interests and abilities. This can serve as further motivation for such students to complete their degrees. Most students who focus on personal ambitions are more motivated to accomplish their academic goals, and therefore students with SpLDs can graduate just like other students. Simply put, the integration of motivation with personal interests and dynamic positive self-perceptions is an important factor in ensuring that students with SpLDs complete their degrees (Steenkeen, 2000).

On the other hand, students with SpLDs who go through a difficult transition to university may encounter teachers who do not take the time to acquaint themselves with a student's interests or disabilities. Some studies reported that university teachers could be condescending and offensive towards students with dyslexia (Riddell and Weedon, 2006; Hanafin et al., 2007). A number of studies have explored staff attitudes towards students with dyslexia in higher education from the perceptions of students themselves; a key finding was that university teachers sometimes lack an understanding of dyslexia and do not have adequate training in teaching and assessing students with special needs

(Riddell and Weedon, 2006; Hanafin et al., 2007). As previously mentioned, other demotivating factors include labelling and stigmatisation due to academic difficulties. In such situations, a student may end up dropping out during their first year at university, or at some other time. In situations such as this, it is advisable for an institution's management to find the cause. In cases where they are able to rectify situations such as stigmatisation and disregard for a student's abilities and disabilities, the student may find it easier to resume their studies and complete their degree. It should be noted that students who do not receive such support and withdraw from universities often do not choose careers that highlight their strengths (Brigham et al., 2011).

2.8 The Disability Resource Information Centre (DRIC) model

This section will examine the DRIC model, which is the service provided in higher education in the US for students with SpLDs. The reason for including a discussion of this model as an example is because, as stated before, in Saudi Arabia the American definition of an SpLD has been adopted. This model of providing support for students with SpLDs in higher education may therefore be a relevant one to consider applying within the Saudi education system.

Establishing positive relationships with parents, instructors, and counsellors can empower dyslexic students to call upon a diverse range of individuals for help during their time at university. Furthermore, they derive help from counsellors in instances where they are faced with problems after graduation. Counsellors gradually help them to develop confidence in their additional skills and abilities (Hall et al., 2009). This provides a way for students to make correct decisions and support different learning needs. In cases where dyslexic individuals do not feel at ease with the programmes and services provided by organisations and universities, they should have the right to be provided with student services.

2.8.1 Components of a DRIC

It is therefore essential to evaluate how the DRIC model works by examining its components. A conceptual representation of the DRIC model was developed under the American Disability Act 1990, and has been implemented at university. It is therefore a requirement of every institution to build up a local disability resource information centre. This creates a resource through the use of which students with SpLDs can develop different abilities in education, while seeking recourse to support services where appropriate. The model acts as a source of current information for instructors on how to deal with different learning difficulties.

2.8.1.1 Students

Students are one of the most important elements of a DRIC. It is impossible for a centre to function without them, since they are the principal reason for the development of DRICs. The main purpose of a DRIC is to provide students with various support services. These services include tutoring help, a Braille library service, parking locations, and wheelchair accessible facilities, among other services. Student disabilities include visual impairments, hearing disabilities, and mental incapacitations. Students go through an accommodation process in DRICs. By law, it is expected that students can make requests for accommodation individually (Cory, 2011). Hence, they are the instigators of the DRIC accommodation process.

In order to make requests for accommodation, they must demonstrate willingness to disclose their respective disabilities to the DRIC. During this process, an additional party may be present to assist with the documentation of the student's disabilities. The documentation must offer an unambiguous diagnosis and the practical effect of the individual's disability on university-related activities such as class participation, taking examinations with other students, and doing homework. According to Cory (2011), when

students initially reveal their individual disability to the DRIC, they are engaged with by professionals. The discussion focuses on how their disabilities may affect them in the institution's environment. Equally, the conversation also addresses other institutional issues. The meeting will also address the issue of accommodation, if the university provides it. After a discussion with the student, the DRIC and third parties then consider their access to all facilities of the university, both inside and outside the classroom.

2.8.1.2 Faculty and teaching staff

Typically, the faculty and teaching staff in the DRIC help to engage students in detailed conversations. This occurs after the student confirms that they will attend the university (Shaw et al., 2009), and may occur at the beginning of the first semester or when the student decides to reveal their individual disability, which does not have to take place at the beginning of the semester. In the conversation between the staff member and the student, the staff member will build a working relationship with the student, through which they will be able to determine the student's experiences and academic goals. As such, they will also establish the history of the disability and its effects on the student's life. During this discussion, the staff member can take the student's accommodation request. Using the student's report and documentation, the staff member makes accommodation suggestions based on what is typically presented to the university faculty. The presentation is done in the form of a letter regarding accommodation. The student is given letters describing their disabilities and needs, which are conveyed to teaching assistants and instructors personally. In cases where the student would like to instigate conversations regarding individual needs, such letters are used.

2.8.1.3 Perceptions of students toward DRICs

DRICs assist students with disabilities to cope with obstacles that could otherwise reduce their professional, personal, and academic potential. The nature of these obstacles may

be attitudinal, or university-related. DRICs also offer direct coordination and services with other university programs and state agencies to ensure identical access. The purpose of DRICs is to offer students with disabilities equal opportunities to access all university programmes. Students with SpLDs are able to get easier access to support services that help them to achieve their academic goals. DRICs help students to transition through university. As such, it is a significant resource to help them overcome any difficulties experienced during their studies. Some services offered by DRICs include pre-admission inquiries, intake interviews, academic accommodations, consultations, and resources or referrals. Most students with SpLDs may not be fully acquainted with the university system during the admissions process. Students are supposed to submit appropriate documentation about their disabilities to the DRIC offices. Subsequently, they receive individual services from the centre's administration.

Some resources that are specifically handled by DRICs include note-taking services, sign language interpreters, classroom relocations, alternative print formats, disability parking, and assistive listening devices (Eisenstadt and Moss, 2005). These are some basic requirements that ensure that the transition for students with SpLDs in HE is more manageable. Most students feel that the presence of DRICs helps them to have better access to the resources they need for successful study. In addition, students also find it easier to associate with counsellors that base their counselling services in the DRICs. As a result, they become more expressive over the problems they encounter in school. They also become more open to the suggestions and opinions of the counsellors in these services. In cases where students with SpLDs exhibit reluctance to ask for help from their peers, DRICs act as facilitators for seeking help. This is in relation to students' positive and negative perceptions of their disabilities and how they affect their academic achievement (Hartman-Hall and Haaga, 2002).

2.9 The role of academic advice centres in Saudi Arabia

In Saudi Arabia, disability resource centres exist in some universities. However, upon contacting the faculty and staff at female and male universities by telephone and email, they agreed that the services provided are below the expectations of students, and that the services provided by these centres are very limited. It seems that the main role of these centres is to organise entertainment, trips, and academic excursions for certain students with visual and hearing impairment and physical disability. Upon asking the university staff about academic difficulties related to literacy, they said that students who have academic difficulties related to literacy are not included in the operations of these centres. Furthermore, the universities providing these services do not produce any literature outlining their activities and services. Although in some cases there are some services advertised on university websites, there are no confirmed changes in the nature of the services provided, as stated by university staff who were contacted by the researcher.

The lack of student services in Saudi Arabia demonstrates how, by developing stronger strategies for helping students with non-visible difficulties, starting by identifying students with literacy difficulties and acknowledging their difficulties, this research can call the attention of policy makers to the importance of student services. This research supports the need for a wider discussion on achievement. Currently, there is little research being carried out in Saudi Arabia on achievement, dyslexia, and the broad range academic difficulties related to literacy.

2.10 Summary

The literature review covered aspects of achievement in HE, and issues that surround low achievement and academic difficulties, with a specific focus on academic difficulties related to literacy. Unfortunately, very little research on this topic has been conducted at the HE level, and very little has focused on literacy difficulties in general from a

conceptual point view. The available literature largely focuses on children, and on dyslexia as one form of academic difficulty relating to literacy, but overlooks other types of student who also struggle on a phonological level, similar to dyslexics, but are not themselves dyslexic. Discussions concerning students with SpLDs and dyslexia in this chapter are necessary, since the topic under investigation is under-researched and this is the material that is available.

As shown in the literature review, little or no attention is given to students at university level who have academic difficulties related to literacy, but are not labelled dyslexic; there are few studies about university-level students who are struggling academically. In general, what is available is usually about children. This study tries to cover this gap in the literature about these students by investigating academic difficulties related to literacy in a more conceptual way, which is lacking in previous research, and doing so with university students.

Considering what is covered by the literature about disability and resources centres, it is necessary to rethink the provision of support offered by those centres in Saudi Arabia, starting with the groups their services are offered to, and including the process of labelling, which may be counterproductive. There is a need to improve educational achievement for all students, without exception, which is a view shared by many other researchers—that every person should have an equal chance in education (Elliot and Grigorenko, 2014; The Dakar Framework for Action: Education for All, 2000), all students must have the same level of support, and the education system must consider poor readers and dyslexics equally.

Chapter Three

3 Research Design and Methodology

3.1 Introduction

This chapter presents the methodological framework of this research, as well as the aims and research questions, with a discussion of the research design. In addition to describing the uses of different research methodologies, the chapter offers a justification for adopting a mixed methodology. This is followed by a presentation of the ontological, epistemological, and methodological assumptions and justifications of the research approach in each of the two phases of the project. Additionally, a description of the two phases of the study (scientific survey and case studies), data collection methods, sampling, and data analysis methods are presented. The reliability and validity of the first phase and the trustworthiness of the second phase are assessed. Finally, the chapter concludes by considering a number of ethical issues relevant to this project.

In general, a research project should reflect the systematic process implemented to gather, record, and analyse data concerning particular issues, in order to find a reliable solution to a given problem or to contribute to further knowledge in a given field. The research purposes, and the practical procedures needed to accomplish these purposes, will be discussed. Fundamentally, the purpose of the research will be converted into research questions in an attempt to find answers to a given research problem. This necessary process is undertaken in order to accomplish the purpose of the research through the implementation of practical steps, such as data collection, data analysis, and data interpretation (Shaughnessy et al., 2003).

3.2 Research design, research aims and questions

The concept of research design encompasses the procedures undertaken for collecting, analysing, and interpreting data (Creswell and Plano Clark, 2011). Kothari describes the research design as “the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure” (2004: 31). Therefore, the research design follows on from the task of defining the research problem. This vital step implies decisions related to what, where, when, how long, and by what means the study is conducted (Kothari, 2004).

These planning procedures assist in ensuring that the gathered data enables the researcher to address the research problem in an effective manner. Furthermore, a thorough research design provides the researcher with a detailed plan, which contributes to guiding and focusing the research process effectively. For this reason, a two-phase design was adopted in this study, in which Phase One is informed by the scientific paradigm, and Phase Two by the interpretivist research paradigm. By adopting both paradigms, the research can be seen to follow a ‘mixed methodology’ approach, combining both ‘quantitative’ and ‘qualitative’ approaches.

The diagram below demonstrates the steps taken to define the research problem, and the phases of the study with each phase, including the relevant methodology chosen and the data collection methods used.

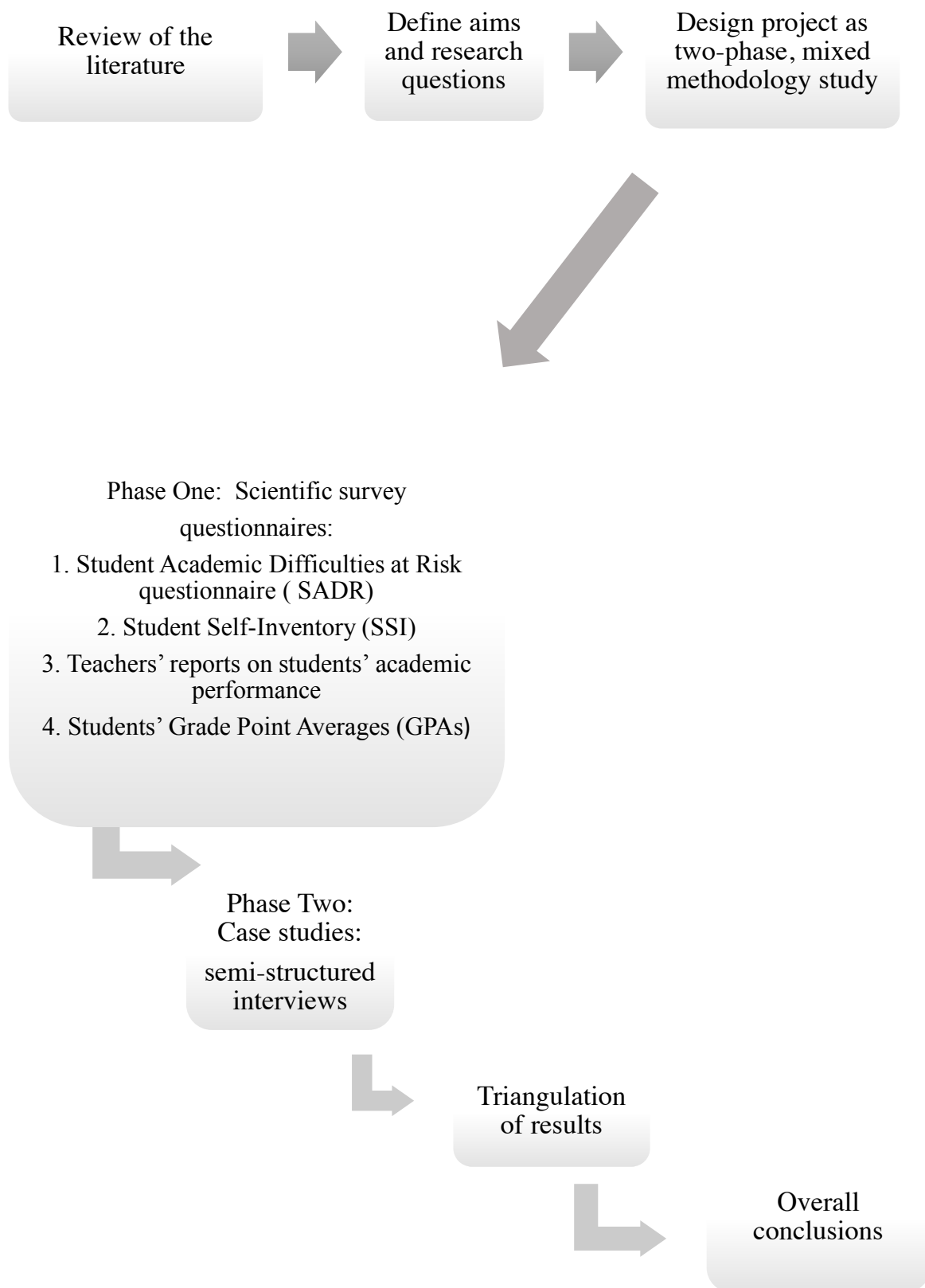


Figure 3-1: The research design

As can be seen from Figure 3.1, the literature review formed the first step in designing the study. The aims and research questions were then formulated using information uncovered during the review process, related to literacy and study skills difficulties among students in higher education. Conducting the review enabled the assembly of a clearer picture about the topic under consideration. The research aims and questions were defined based on this review.

In order to better understand the issue of learning provisions in Saudi higher education, the study consisted of two research phases. During Phase One, the aim was to identify students who have academic difficulties related to literacy, through the development and application of a screening questionnaire. As part of this first phase, the screening questionnaire was used to predict future academic difficulties, alongside analysis of the Student Self-Inventory (SSI), teachers' reports on students' academic performance, and finally the students' grade point averages (GPAs). During Phase Two, the aim was to explore why the screening questionnaire did or did not predict future academic difficulties. This was done by adopting a case study methodology, involving semi-structured interviews, and was based on six case studies of university students chosen on the basis of the screening questionnaire's prediction versus their actual level of achievement.

When designing research, the primary purpose of choosing a research method and style is to decide which methodology would be most appropriate to provide sufficient relevant data about the questions being asked (Goodson and Sikes, 2001). This project was organised in a sequential pattern (Onwuegbuzie and Collins, 2007) in which the first two research aims relate to the first phase of the study, and the third aim relates to the second phase.

Phase One

The aim of this phase of the project was twofold, as follows:

1. To design a screening questionnaire to identify students in higher education who experience academic difficulties related to literacy.”
2. To evaluate the screening questionnaire in terms of its reliability and predictive validity.

The research question guiding this phase

How can we identify students in higher education in Saudi Arabia who have academic difficulties relating to literacy?

Sub-questions

1. How reliable is the Student Academic Difficulties at Risk (SADR) questionnaire?
2. To what extent can the SADR questionnaire be used to predict end of year academic GPAs at the start of the year?
3. How stable are students’ literacy and study skills over the six-month period?
4. To what extent does an end of year Student Self-Inventory (SSI) and teachers’ reports on student’s academic performance correlate with end of year academic GPAs?

Phase Two

The aim of this phase of the project is again twofold, as follows:

- 1.To explore, in detail, the reasons for the Phase One outcomes for specific types of students.
- 2.To understand how the screening questionnaire does or does not predict students’ academic performance.

The research question guiding this phase:

To what extent do the academic and non-academic experiences of selected case studies help in understanding how the questionnaire can predict students' academic performance?

3.3 Research terminology

There are a number of items of terminology and complex philosophical terms that are often discussed and understood by researchers in multiple ways. These different understandings depend on the paradigmatic beliefs adopted by the researchers themselves, and this applies to the term 'mixed methodology'. Whereas many researchers adopt this approach in their research, they refer to it by different terms. For example, early articles have referred to this approach variously as multi-method, integrated, combined, or mixed methodology research (Creswell and Plano Clark, 2007: 6). Adding to this list of terms, Denzin (1978) refers to using both quantitative and qualitative methods as 'methodology triangulation', and Patton (1980) adopts the term 'methodological mixes'. Furthermore, Caracelli and Greene (1993) and Onwuegbuzie and Teddlie (2003) suggest the term 'mixed model' to differentiate research designs integrating qualitative and quantitative data from those that simply employ quantitative or qualitative data. On the other hand, some researchers dispute the term 'mixed methods' to describe research designs that intentionally use both qualitative and quantitative approaches across or within phases of the research study (Johnson and Onwuegbuzie, 2004). Indeed, some dispute the concept itself. Therefore, there has been intense debate with regards to the appropriateness of combining multiple methods that are often based on fundamentally different paradigmatic assumptions (Denzin and Lincoln, 1994; Guba, 1987).

Despite the fact that the terms 'mixed methods' and 'mixed methodology' have sometimes been used interchangeably in the social and behavioural sciences, there are

significant differences between the two in terms of the researcher's worldview. In mixed methods research, a researcher applies two or more research methods, yet may (or may not) be restricted to a solitary worldview (Mingers and Brocklesby, 1997; Teddlie and Tashakkori, 2003, 2009). Therefore, the term 'mixed methods' is used in two different ways: when there is a solitary worldview and both kinds of data are used, and when there are multiple worldviews and both kinds of data are used. The latter might be better called 'mixed methodology' because it is more concerned with utilising tolerance, acceptance, and respect for pluralism to create a deeper understanding of educational phenomena, fully comprehending that every single phenomenon involves layers of particularity and generality, contextual complexity, patterned regularity, internal and external perspectives, the whole and parts, and so forth (Miller and Fredericks, 2006).

It is confusing to talk about mixed methods without referring to the worldview paradigm that informs the use of different kinds of data. For example, Caracelli and Greene talk about mixed methods as "combining the qualitative and quantitative approaches within different phases of the research process" (1993: 195). The problem with this definition is that it does not refer to paradigms or worldviews, and so it does not account for the researcher's beliefs, which underline their research approach. However, some researchers are against this mixed methodological approach, arguing that it is impossible for qualitative and quantitative research to be associated with two distinct paradigms that are incompatible with one another (Bazeley, 2002). Table 3-1 shows the different terminologies used to describe methodology.

	Pure designs: Purely quantitative or purely qualitative designs (may involve the use of several data sources and/or data gathering instruments from the same approach).	Multi-method designs: Designs where both quantitative and qualitative approaches are used, but they remain relatively independent until the interpretation stage.	Mixed designs: Designs where elements of quantitative and qualitative approaches are combined in various ways within different phases of the study.
Tashakkori and Teddlie, 1998	Monomethod studies	Mixed method studies	Mixed model studies Mixed methodology studies
Brewer and Hunter, 1989/1998	Monomethod studies	Multimethod studies	Composite method studies
Cresswell, 1995	Quantitative study Qualitative study	Two-phase design Dominant-less dominant design	Mixed-methodology design
Marks and Shotland, 1987	Quantitative study Qualitative study	Triangulation Bracketing model* Complementary multiplism	
Bryman, 1988	Quantitative study Qualitative study	Ten different methods of integration	Methodological hybrids
Patton, 1980	Quantitative study Qualitative study	Triangulation	Mixed-methodology design
*The triangulation and bracketing model can be used within the purely quantitative or qualitative studies as well.			

Table 3-1 Terminologies used to describe methodology, adopted from Niglas (2004)

3.4 Why a mixed methodology?

Creswell and Plano Clark (2011) argue that combining quantitative and qualitative approaches may result in gaining a deeper understanding of the research problem compared to using a single method. Denscombe (2008) agrees with this assertion, arguing that each single method can provide an alternative tool for collecting data, which would enable the researcher to develop a clearer picture about the information, an accurate measurement of the data, and evidence that supports the topic in question. Whereas these

authors only discuss methods and ways of collecting data, mixed methodology refers to an approach that combines worldviews and paradigms. The term ‘mixed method’ was suggested by Tashakkori and Teddlie (1998) as more applicable to projects in which multiple methods are used at any or all of a number of phases of the research. They make the valid point that mixing often extends beyond just the methods employed in research. Therefore, ‘mixed methodology’ is the term used to describe the methodology adopted in this research, as different worldviews are represented in different phases.

According to Gorard and Taylor (2004), educational research should overcome any rigid methods or identities implied by terms such as *qualitative* and *quantitative*, and that using either or both is a decision that ought to be driven by the research context and questions. Adopting a mixed methodology in this study therefore has the potential to enhance the research conducted, by balancing the strengths and weaknesses of quantitative and qualitative data. The combination of both a scientific survey and a series of case studies can help overcome the limitations of one methodology alone. On the one hand, scientific survey data provides a general understanding of difficulties facing students in higher education with regard to literacy and study skills. For example, a survey such as a questionnaire helps to assess a large number of responses to specific variables. On the other hand, case studies involving semi-structured interviews provide detailed information about students’ experiences and life contexts. In addition, such data can be used to understand why the questionnaire may not predict some of the students’ literacy difficulties.

In terms of the philosophical assumptions underpinning this research, as both scientific and interpretive methodologies were utilised, each phase of the project is situated within its own paradigm, ontology, and epistemology. The ontological assumptions of this study are multifaceted: the project assumes that some students in higher education in Saudi Arabia have literacy difficulties due to diverse reasons, and that

these multiple realities can be understood. So, this study simultaneously makes another assumption: that there are multiple realities constructed by the students' experiences and feelings. As a result, this study explores a multi-layered reality, as explained by Miller and Fredericks (2006), in that the ontological view of mixed methods research has a multi-layered reality and is not restricted by a one-way lens. Consequently, the epistemological stance of this project is both objective and subjective, given its view of the knowledge being sought; hence, understanding will be more effectively achieved because knowledge is gained in more than one way.

The paradigmatic position of this project can thus be viewed as pragmatic, a deconstructive paradigm encouraging the use of mixed methodology in research, which “focuses on ‘what works’ as the truth regarding the research questions under investigation” (Tashakkori and Teddlie, 2003: 713). By adopting a duality of beliefs and worldviews, pragmatism rejects a position between two opposing viewpoints. Pragmatists state that there is a close relationship between the choice of approach and the nature and purpose of study questions (Creswell, 2003). At the core of the debates about scientific versus interpretivist approaches in social research lies a separation between realism and anti-realism. This separation is rejected by pragmatists, who generally take an agnostic view towards ontological issues. For these pragmatists, there is such a thing as reality, but it is ever-changing (Morgan, 2014). This approach fits with the research aims and questions of this project, as they have been conducted in two phases, where each phase has its own worldview. Table 3-2 summarises the philosophical assumptions, methodology, ontology, and epistemology in the two phases of the current study.

Philosophical assumption	Phase 1: Scientific	Phase 2: Interpretive
Methodology	Scientific survey	Case studies
Ontology	Realism position: reality is objective and separated from researcher.	Relativism position: reality is subjective and varies from one individual to another.
Epistemology	Objective: discovering absolute knowledge.	Subjective: the world is linked to our knowledge.

Table 3-2: Summary of the philosophical assumptions of the methodologies

3.5 Philosophical assumptions for phase one: scientific survey

Table 3-3 summaries the philosophical assumptions of Phase One.

Philosophical assumptions for Phase One scientific paradigm	
Paradigm	Scientific paradigm
Ontology	Realist position: reality is independent from any conscious perception
Epistemology	Objective position: Discovering absolute knowledge empirically
Methods	Questionnaires and students' GPAs

Table 3-3: Philosophical assumptions of Phase One

3.5.1 Paradigm

Paradigms have been defined as “world-views that signal distinctive ontological (view of reality), epistemological (view of knowing and relationship between knower and to-be-known), methodological (view of mode of inquiry), and axiological (view of what is valuable) positions” (Dalziel, 2015: 96). Scientific and interpretivist research may be considered as the two main empirical research approaches within the social sciences. Each one of those approaches has its own worldview and set of beliefs about knowledge and truth; these values, beliefs, and assumptions also address ontology and epistemology.

Although they may be hidden within the research, they play an important role in grounding and facilitating the formulation of the methodology and, accordingly, the consequent implementation of the methods (Slife and Williams, 1995).

The first phase of the research was concerned with predictability. As such, I embraced the scientific paradigm because it strives for objectivity, measurability, predictability, controllability, patterning, and the construction of laws and rules of behaviour (Cohen et al., 2000). The scientific paradigm was adopted in the first phase, in order to gather trusted data about students' academic performance through the use of the questionnaire in relation to their GPAs.

3.5.2 Ontology

Every piece of research is bound to include some ontological assumptions. The term 'ontology' has been defined as a field of study "address[ing] the nature of existence" (Crotty, 2003: 10). Guba and Lincoln (1989) state that ontological assumptions are those that respond to the question "what is there that can be known?" or 'what is the nature of reality?' (ibid.: 83). Thus, ontological assumptions are concerned with the nature of reality. In the words of Cohen et al. (2000), they refer to the "very nature of the essence of the social phenomena being investigated" (ibid.: 5). In practical terms, it is important to know the ontology of a research field, simply because individuals' ontological beliefs shape how a researcher thinks about reality; it either exists in thought or in the real world. Ontology involves how a researcher sees and experiences the world, in order to better understand it. Within the social sciences, some argue that reality is out there to be discovered, whereas others believe that it is socially constructed.

The current research adopts a realist ontology in the first phase. Realism is recognised as the ontological assumption providing the overall foundation for the scientific research approach, which suggests a reality that exists independently of

conscious perception. In other words, it insists on an objective metaphysical existence (Ernest, 1994). Therefore, the scientific worldview relies on realism by viewing objects as being independent of the researcher. It is a framework that follows the physical world in which researchers assume the existence of a reality. Here, the researcher assumes that there is a reality in which there exist higher education students who have academic difficulties related to literacy.

3.5.3 Epistemology

Epistemology refers to the theory of knowledge that is concerned with the origins and nature of knowing, as well as the construction of knowledge. Crotty (2003) has argued that epistemology is “a way of understanding and explaining how we know what we know” (ibid.: 3), including the claims and assumptions made about the nature of knowledge. Thus, epistemology fundamentally involves questioning the sources and reality of knowledge, essentially what we know and how we can know it.

During the first phase of this research, objectivism was the epistemological position. According to Crotty (2003), objectivist epistemology holds that meaning and therefore meaningful reality, exists as separate from the operation of any consciousness on the part of the researcher or research participants. The mind of the researcher is regarded as detached from the objects of research. Thus, researchers are simply discovering a meaning that has been waiting to be discovered, and then claim to have found “the way things really are and the way things really work” (Pring, 2004: 40). Consequently, the epistemology of the scientific survey methodology, as adopted in the first phase of the project, seeks to gather the meaning detached from whatever reality exists apart from any consciousness. The scientific survey method provided quantitative data that was then analysed for the purposes of prediction and generalisation.

3.5.4 Methods

According to Crotty (1998), methods refer to the particular techniques and procedures implemented for collecting and analysing data. The data collected may be qualitative or quantitative in nature. Scientific survey research is applied to phenomena that can be quantified (Kothari, 2004), and investigates and evaluates correlations between different variables (Shaughnessy et al., 2000). This first phase of the study consisted of three scientific surveys as methods for collecting data: an initial screening questionnaire for identifying academic difficulties and at-risk students; an academic self-inventory for students; and a teacher's report on students' academic performance, together with the students' GPAs.

The questionnaire attempted to not only establish what academic difficulties university students in Saudi Arabia encounter, but also to determine whether it is possible to predict future academic difficulties using SADR.

3.6 Sample

The university which is the site of this study was chosen according to ease of access for the researcher; because of gender segregation, as previously explained, the university caters for female students.

The method of sampling adopted in this study was purposive sampling, whereby participants are chosen based on a variety of criteria (Oliver, 2013). Participants were female university students in the first year of a university degree at a college of education, and their university teachers. The sample was also based upon participants' willingness to engage in the project and their study schedules.

During the first phase, university teachers of first year students, 12 teachers, were initially asked to invite their students to participate. students and teachers were given an information leaflet describing the nature of the study and how they would be expected to

participate (see Appendix II). Seven teachers agreed and asked for student volunteers in their classes, resulting in 455 students being asked (this would include some students who were in more than one class). A total of 358 female students (78.7%) agreed to take part in the first phase of the research, completing the screening questionnaire, entitled Student Academic Difficulties at Risk (SADR; see Appendix III). Seventeen questionnaires were excluded for reasons such as incomplete responses and participant withdrawal. Ultimately, the sample consisted of 341 female participants, with a return rate of 95.2%.

After completing this first questionnaire, a total of 153 students dropped out of the study and did not wish to participate any further. Most of these students did not offer reasons or explanations. Those who did offer reasons stated that they did not see the purpose of participating in the study or perceive any personal advantage. Others explained that their families simply did not want them to be part of the study. A total of 188 students went on to complete the second questionnaire, the Student Self-Inventory (SSI; see Appendix IV). The second sample of Phase One consisted of those university teachers who taught the participating students. These teachers were selected based on the fact that they had taught the students at the beginning for the academic year, and they also acted as academic advisors to these students. This meant that they met their students on a regular basis. As stated earlier, seven of the possible twelve university teachers agreed to ask their students to complete the first questionnaire; five of these seven agreed to participate themselves and undertook the process of rating reports on the students' academic performance questionnaire (see Appendix V) These five teachers evaluated 110 students. A number of teachers' reports on students' academic performance were excluded for technical reasons such as incomplete responses. Eventually, the data consisted of evaluations of 96 female university students.

3.7 Data collection

As stated earlier, the first phase of the study employed scientific surveys: the Student Academic Difficulties at Risk (SADR) questionnaire, the Student Self-Inventory (SSI) questionnaire, and the teachers' reports on students' academic performance. Student GPA data was also collected. Table 3-4 shows the data collection methods, their aims and what they were measuring.

Questionnaire	Aim	What it is measuring
Student Academic Difficulties at Risk questionnaire (SADR)	To identify students with academic difficulties related to literacy at the beginning of their university experience.	Reading, writing, maths, attention, motivation, self-esteem, compensatory strategies, visual stress, memory.
Student Self-Inventory (SSI)	To measure the ability of the SADR questionnaire to predict continued academic difficulties related to literacy.	Motivation, memory, feelings and attitudes, time management, organisation, attention, reading, writing.
Teachers' reports on students' academic performance	To measure the ability of the SADR questionnaire to predict continued academic difficulties related to literacy	Students' academic levels.
GPA	To measure SADR's prediction ability	Students' average university grades

Table 3-4: Data collection methods, aims, and what is measured for Phase One

The first method of data collection used in this study was the Student Academic Difficulties at Risk questionnaire, which aimed to identify students who might have

characteristics and behaviour commonly associated with academic difficulties at the beginning of students' first year at university. The aim of the second questionnaire, SSI, and the teachers' reports on student's academic performance were to measure the continuation of the academic difficulties measured in the SADR questionnaire, and GPA data was collected to measure the prediction ability of SADR; all three took place six months after collecting the SADR data.

3.7.1 First questionnaire: Student Academic Difficulties at Risk

This questionnaire was developed based on a concept map (see Appendix VI), the development of which will be explained below, and consisted of 145 items. Table 3-5 shows the components of the Student Academic at Risk questionnaire.

	Dimension	Sub-dimension	No. of items
1	Reading comprehension	1.1 Literal comprehension	2
		1.2 Inferential comprehension	3
		1.3 Listening comprehension	2
		1.4 Critical comprehension	2
		1.5 Affective comprehension	3
		1.6 Lexical comprehension	1
2	Oral reading (reading aloud)	2.1 Omission	2
		2.2 Substitution	3
		2.3 Gross mispronunciation	1
		2.4 Hesitation or repletion	2
		2.5 Inversion or transposition	3
		2.6 Insertion	1
3	Reading habits	3.1 Tension movement	2
		3.2 Insecurity	1
		3.3 Loses place	1
		3.4 Holds material close	1
4	Word recognition	4.1 Mispronunciation	2
		4.2 Unknown word	2
		4.4 Fluency	2
5	Written expression	5.1 Composition	2
		5.2 Spelling	1
		5.3. Omission	4
		5.4 Substitution	2
		5.5 Transposition	3
		5.6. Insertion	1
		5.7 Visual discrimination	2
		5.8 Handwriting	4
6	Maths	6.1 Incorrect operation (calculation disorder)	1
		6.2 Incorrect number fact (basic number fact disorder)	1
		6.3 Incorrect algorithm	2
		6.4 Mathematical estimation disorder	1
		6.5 Mathematical language disorder	1
		6.6 Mathematical measurement disorder	1
		6.7 Mathematical navigation disorder	1
		6.8 Mathematical organisation disorder	2
		6.9 Symbolic mathematical operation disorder	1
		6.10 Temporal or monetary math disorder	2
		6.11 Visual spatial math disorder	1
7	Attention and hyperactivity	-	10
8	Motivation	-	6
9	Self-esteem	-	6
10	Compensatory strategies	-	8
11	Social and emotional problems	-	6
12	Problems with pragmatics	-	6
13	Visual problems (stress)	-	5
14	Memory	-	6
15	Family history	16.1 Parents' academic levels	2
		16.2 Family literacy	3
		16.3 Literacy support	8
		16.4. Birth history and general health	7
Total			149

Table 3-5: Components of the Student Academic Difficulties at Risk questionnaire

The questionnaire went through a three-stage development process. Firstly, a review was conducted of the literature relating to literacy and academic difficulties, particularly with regards to the identification of students with academic difficulties in higher education and the support provided for them. A good literature review will aim to “weigh up the contribution that particular ideas, positions or approaches have made to the topic” (Hart, 1998: 9). Hart’s quote stresses the important critical and evaluative function of literature reviews, which were considered in this research. Secondly, a review was conducted of the few instruments available online. Thirdly, questions were formulated based on the concept map presented in the appendix (see Appendix VI), the concept map was constructed based on the literature review. One of the most important factors that was considered during the development of the questionnaire was the adoption of a functional assessment of difficulties approach, identifying academic difficulties in general and addressing student problems in particular. The design was thus based on definitions and assumptions found in educational texts and included in the literature review related to this project.

The questionnaire was designed to screen students through items that specifically addressed academic problems, before presenting more general questions about literacy and numeracy. The construction of each item in the questionnaire (except for the demographic questions) adopted a bipolar scale:

The bipolar scale is a specific style of rating scale characterized by a continuum between two opposite end points. A central property of the bipolar scale is that it measures both the direction (side of the scale) and intensity (distance from the centre) of the respondent’s position on the concept of interest. (Kennedy, 2008.p71).

3.7.1.1 Pilot study

According to Shaughnessy et al. (2000), a pilot study tests the questionnaire prior to conducting the main study. Furthermore, Creswell and Plano Clark (2011) outlined that the purpose of a pilot study is to accomplish the following: to filter the questionnaire to avoid any potential problems arising during the answering of the questions by the respondents, to avoid problems while recording data, and to arrive at a general assessment in terms of the validity and reliability of the study instruments. In order to assure the reliability indicator of this project, a pilot study was conducted with a small-scale sample, which consisted of 73 female Saudi Arabian first year university students from the university under study, who did not take part in the final sample of the study.

This pilot study aimed to improve the question wording, to maximise respondents' comprehension of the questions, to estimate the time needed for the completion of each questionnaire, and to eliminate ambiguity in the questions. A student feedback form (Appendix VII) was provided to respondents in order to obtain a clearer view about the instruments in terms of content and answering time. At the end of the pilot study, valuable feedback was obtained and appropriate modifications were undertaken. The pilot study results indicated that the time needed to complete the questionnaire ranged between thirty and forty minutes. The wording of five questions was changed as a result of student feedback, although the wording of the English version remained unchanged because it was not affected by the Arabic change of words. These changes were verified by the same language experts who tested the English-Arabic translation. Furthermore, an explanation of the formatting was added before administering the questionnaire with the final sample of the study, because fifteen students said they did not understand the bipolar format of the questionnaire; the translation process of this questionnaire and the other two (SSI and the teachers' report on the students' academic performance) is explained in Table 3-7.

3.7.1.2 Administration of SADR

The researcher conducted the questionnaire in person. Consent forms were sent before administering the questionnaire and a second consent form was also included on the cover page. SADR took around thirty-five minutes to complete; it was administered in one of the university auditoriums, which holds up to seventy students per lecture. The time allocated for completion was agreed earlier with the teachers, in order to avoid disturbing lecture times. Additionally, a verbal explanation was provided of the research and its overall aim, and students were asked to fill out the questionnaire honestly, as there were no right or wrong answers. My name, contact number, and email address were written on the board, even though these details had already been given to the students on their consent forms.

3.7.2 Second Questionnaire: Student Self-Inventory (SSI)

This questionnaire included thirty-two items divided equally into eight dimensions, corresponding to those in SADR: motivation, memory, feelings and attitudes, time management, organisational skills, attention, reading, and writing. The scales in SSI were chosen based on the reliability measures for the corresponding scales in SADR.

The items in SSI were constructed with only university level students in mind; students were asked to answer for the experience since they started university and not the time before that. A Likert-type rating scale was adopted; the Likert scale used in this study consisted of five points according to the following ratings: does not apply, never, rarely, sometimes, and always.

The dimensions and items are listed below.

Motivation

- I am very enthusiastic about finishing university and getting my degree.

- I have a set of goals that I want to achieve after I graduate from university.
- I have felt discouraged about my academic work since September.
- I have found it difficult to complete a task that I have started.

Memory

- I have the ability to remember things that have been discussed in class.
- I can remember what is said in class regarding my university assignment.
- I have difficulty recalling dates or days with regard to deadlines and meeting times.
- I don't have the ability to recall instructions or a series of directions when I need them.

Feelings and attitudes

- Overall, I like reading as part of my coursework.
- Overall, I like writing as part of my coursework.
- I think that I have literacy problems at university.
- I have felt bored during lectures and when preparing assignments.

Time management

- Since September, I have tended to be late for my classes.
- I have not needed more time than my peers at university to complete written tests.
- I have felt that I take longer than I should to read a text from an academic book.
- I don't take longer than my peers to finish a regular university task (assignment).
-

Organisational skills

- If I have to describe my organisation skills with regard to my university work, I would say that I have been organised.

- I have the ability to keep my things in order (e.g. personal belongings).
- I have found it difficult to follow orders or instructions given by my teacher in class.
- I don't have a diary (paper diary or electronic diary) to record my lectures and deadlines.

Attention

- I have found it difficult to recognise mistakes in my written university work.
- I have found it difficult to keep track of what is being said in the class.
- I have the ability to concentrate sufficiently to finish university tasks (tests or assignments).
- I have found that I can maintain focus during lectures, even with minor distractions (such as soft voices outside the classroom).

Reading

- I have found that when it comes to my coursework, it is difficult to understand what I am reading.
- When I read my coursework I can evaluate what I have read.
- I have found it difficult to recall basic facts from a passage that I have read.
- I have found that I can skim and scan a paper for the main ideas and key points.

Writing

- I have found that when it comes to writing, I tend to make a lot of spelling mistakes.
- I know that my handwriting has been very difficult to read.
- I have found that copying a text from the blackboard is easy.
- I can write correctly from dictation.

3.7.2.1 Pilot Study

I piloted the questionnaire with students from the university who were not in the final sample. I asked the participants for feedback to identify ambiguities. The time taken to complete the questionnaire was recorded as approximately twenty-five minutes. No rewording was needed, because the participants' feedback was positive regarding clarity and the format of the questionnaire.

3.7.2.2 Administration of SSI

The researcher conducted the questionnaire in person. Participants who completed the first SADR questionnaire were asked to complete this second one after a period of six months. SSI took about twenty-five minutes to complete. It was administered in the same university auditoriums that were used to administer the SADR questionnaire. As stated earlier, the number of students who completed both the SADR and SSI was 188.

3.7.3 Third questionnaire: Teachers' reports on students' academic performance

This instrument consisted of seven items. These items were decided upon by asking the teachers who agreed to take part in the study about which questions they could answer. The teachers' reports on students' academic performance were originally based on the same scales as SSI, which are motivation, memory, feelings and attitudes, time management, organisational skills, attention, reading, and writing, with two questions for each scale, but it was shortened to one question per scale. This was due to feedback from teachers that they were willing to participate only if it was a short questionnaire, and that they will not be able to answer questions about motivation, memory and reading. Therefore, the questionnaire was constructed around feelings and attitudes, time management and organisational skills, attention, and writing. The first item described students' academic performance based on the following five levels: poor, average, above average, good, and excellent. The first item appeared as:

1. Please circle what you think best describes your student's academic performance: poor, average, above average, good, excellent.

However, the other six items were designed to explore the students' difficulties relating to learning and studying skills. They adopted a Likert-type rating scale, consisting of five points with the following ratings: do not know, never, rarely, sometimes, always. The items appeared as follows:

1. This student is enthusiastic about finishing this course.
2. This student has effective study skills.
3. This student can complete written tasks in the time allocated.
4. I have noticed that this student seems focused during lecture time.
5. This student can skim and scan a paper for the main idea and key points.
6. This student tends to have very few spelling mistakes.

3.7.3.1 Pilot study

The teachers' reports on students' academic performance were sent to two teachers via email to comment on the content. One suggestion from both teachers was to change the wording of question number 5, which was originally "I have noticed that this student seems focused". The words "during lecture time" were added, based on the teachers' suggestion.

3.7.3.2 Administration of teachers' reports on students' academic performance

A total of twelve consent forms were sent to teachers who were academic advisors and taught the selected students more than once a week; these students were those to whom the SADR and SSI questionnaires were administered. Six university teachers declined to participate, stating that they were too busy. One completed the questionnaire, then withdrew her consent, leaving a total of five university teacher participants.

The researcher conducted this part of the study by email. Electronic communication sets up a “democratisation of exchange” that avoids more orthodox research methodologies (Selwyn and Robson, 1998). The principal advantage of using email as a research tool is the speed and immediacy it offers. An almost immediate dialogue was possible between researcher and the teachers in the event that they wanted to clarify something. The potential for asynchronous communication that email offers is another attractive feature when considering its use as a research tool (Thach, 1995). Participants are not obliged to provide an immediate response but can communicate at their convenience. Using email as a means of distributing the teachers’ reports with the university teachers helped to a great extent because of their busy schedule. They were generally unwilling to take part in the research, without giving reasons; by using email as a communication method, the university teachers were more open to the idea of participating, without feeling pressurised into doing it.

The teachers were asked to complete the teachers’ reports on students’ academic performance based on their knowledge of the students; these teachers were selected based on the fact that they had taught the students at the beginning for the academic year, and they also acted as academic advisors to these students. the questionnaire was administrated at the same time as SSI, after six months after administering the SADR questionnaire.

3.8 Translation of the questionnaires

According to Esposito (2001), translation is a process that implies transferring meaning from one language (the source) to another language (the target). In this sense, the translator undertakes the process of interpreting the vocabulary and grammatical structure of the words, while taking into account the individual situation and the overall cultural context. Accordingly, the focus on generating accurate and meaningful data from the

process of translation is crucial. Since all the study instruments were written in English with the intention of being administered in an Arabic-speaking context, it was necessary to translate these instruments from English to Arabic, accounting for the fact that not all respondents had the necessary proficiency in English. Answers given in Arabic also required back-translation into English for use in the study.

Both translation and back-translation methods were performed thoroughly, to ensure no significant semantic loss or shift emerged between the Arabic and the English versions. Equivalence between the two versions was checked at two levels. Firstly, the original Student Academic at Risk (SADR) questionnaire was translated with the purpose of making the best sense and expressing the content in as natural Arabic as possible. The translation was completed first from English to Arabic by a certified translator. Care was taken not to produce a mechanical translation, as it is not always possible to convey the message effectively and naturally with a *word-for-word* translation. Secondly, the back-translation (Arabic to English) was completed by a different translator. For equivalence, the two translations were compared and combined into one single version by two academic professionals. Semantic equivalence between Arabic and English versions were checked through a double-fold translation and back-translation procedure. Initially, the English-Arabic translation was tested. Five expert bilinguals were invited to rate the equivalence of each item in the English and Arabic versions on a scale from one to ten, ten being 100% synonymous and one being not related at all. Statistical analysis revealed a 95.6% synonymy between the two versions, indicating a high level of match. Therefore, it is safe to say that the Arabic version used in this study sufficiently represented the content presented in the scale items of the English version.

3.9 Reliability and validity of the quantitative phase

For the quantitative phase, validity was achieved by piloting all three questionnaires. Before conducting the study, it was important to validate the questionnaires to be used. According to Shaughnessy et al. (2000), the validation process is known to be crucial for verifying any measuring instruments. Moreover, the validation process can be assured by relying on various methods, such as reliability, construct validity, and content validity (Creswell and Plano Clark, 2011). In order to guarantee the indicators of validity, and to enable a greater understanding of the factors that may influence the process of identifying those students who encounter academic difficulties related to literacy and study skills, validation in the form of content validation took place, in which the SADR questionnaire was evaluated by five specialists in education to evaluate and rate each item.

Later, I employed Cronbach's alpha, (α), one of the most commonly used tests of internal reliability, based on the rationale that items measuring the same dimension will highly correlate (Bryman 2008). Cronbach's alpha reliability coefficient was used to test the reliability of the two questionnaires, SADR and SSI, and test-retest reliability was also employed for the SADR questionnaire.

3.9.1 Data from GPAs

The GPA system is the standard way of calculating academic achievement in Saudi universities. Each course is allocated a certain number of units, depending on the content of the course. University courses have a workload of three units (approximately three hours of lectures per week). The GPA system assumes a grading scale of A+, A, B+, B, C+, C, D+, D, F. Each grade is assigned a number of grade points, which are detailed in Table 3-6.

GPA	Percentage	Grade
5.00	95-100	A+
4.75	90-94	A
4.50	85-89	B+
4.00	80-84	B
3.50	75-79	C+
3.00	70-74	C
2.50	65-69	D+
2.00	60-64	D
1.00	0-59	F

Table 3-6: GPA scores and grade

3.10 Philosophical assumptions for phase two

Table 3-7 summarise the philosophical assumptions of Phase Two.

Philosophical assumptions of Phase Two: Interpretivist paradigm	
Paradigm	Interpretivist paradigm
Ontology	Relativism position
Epistemology	Subjective position. There is no absolute knowledge.
Methods	Semi-structured interviews, medical records

Table 3-7: Philosophical assumptions for Phase Two

3.10.1 Paradigm

During this phase of the study, I moved from a scientific to an interpretivist paradigm. According to Pring (2015), the “purpose of research is to explain what is the case or what has happened” (ibid.: 80). In other words, it is a reason for seeking understanding and meaning. That is why this phase was conducted by adopting the interpretivist paradigm,

which is concerned with exploring phenomena from the interior (Flick, 2009). In attempting to interpret the students' answers from the SADR questionnaire, an adoption of the interpretivist paradigm has made it possible to answer the questions from the second phase of the study, which has a qualitative emphasis and supports the understanding that there are multiple truths and realities.

3.10.2 Ontology

The second phase of the study adopts a different kind of ontology, which is essentially that of a social world of meanings. This kind of ontology is called relativism: "Ontological relativism is about the nature of reality. It is the belief that reality *itself* is determined by our language or conceptual scheme" (Schwandt, 2007: 190), and that access to this reality is only through social constructions, such as language and shared meanings (Crotty, 2003). The interpretivist paradigm views reality subjectively—that is, individuals' realities are mediated by their senses (Scotland, 2012). The second phase of this study assumes that students in higher education have their own thoughts, feelings, interpretations and meanings; hence, the use of case studies as a research method focusing on the students' opinions, feelings, experiences and inner thoughts.

3.10.3 Epistemology

During the second phase of the research, the epistemology holds a construction of meaning that is transmitted within a social context, and this is shown in the interviews. The constructivist form of epistemology rejects this view of human knowledge and the idea of an objective truth waiting for us to discover it, claiming that "meaning comes into existence in and out of our engagement with the realities in our world" (Crotty, 2003: 9). Therefore, the epistemological stance in this phase was subjective, where "meaning does not come out of interplay between subject and object but is imposed on the object by the subject. Here the object as such makes no contribution to the generation of meaning"

(Crotty, 2003, p.9). So primarily, interpretivism relies on subjectivism by linking the world and the individual's knowledge.

Subsequently, the researcher will depend on the participants' views and how they see their reality using their voices and their interpretation for the second phase. Since the epistemology for the interpretive paradigm considers knowledge as being individual and subjective, it can answer the qualitatively focused questions.

3.10.4 Methods

During this phase of the study, the researcher conducted semi-structured interviews with six case study students. Semi-structured interviews allow participants the scope and time to share their opinions on any particular subject. The objective of the interviews in this study was to understand participants' perspectives. Ayres (2012) characterises semi-structured interviews as a qualitative data collection method where the researcher has more control over the topics of the interview than in unstructured interviews. The researcher asks participants a sequence of predetermined but open-ended questions, but does not expect a fixed range of answers.

In this sense, the semi-structured interview differs from the questionnaire. It attempts to understand the world from the subject's point of view and to uncover the meaning of their lived world. The interviews give voice to the interviewees, allowing them to freely present their life situations in their own words. They also allow for a close personal interaction between researcher and subjects.

3.10.5 Case study methodology

The case study methodology can be used in a diverse number of situations, based on the needs of the study being conducted. The first of these situations is where there is a need to answer the how and why questions, and how they are related to the study being

undertaken. Additionally, it is an important design when there is no possibility of manipulating the behaviour of individuals under study. It is also an important method to be employed when dealing with contextual issues, especially in situations where there is a belief that these issues are relevant to the study (Knafl and Breitmayer, 1989).

3.11 Sample

In total, 175 students were initially considered for participation in Phase Two; these were the students who had completed both SADR and SSI, and for whom there were GPA scores. Students were then selected for case studies based on their score in SADR, in relation to their GPA score, and if they had agreed to participate in this interview phase.

A standard deviation of two above mean for the total score of all of the reliable scales in the SADR was used. These reliable scales were reading, writing, attention and hyperactivity, motivation, compensatory strategies, social and emotional problems and memory. Therefore, any score above 221 was considered to mean that the students had some type of academic difficulty. With regard to the GPA scores used, a cut-off point of 2.5 was used, so any score above this was considered to mean that students encountered no academic problems. A score of less than 2.5 was considered to mean that students encountered academic problems. These criteria were then used to select the case study group, as illustrated in Table 3-8.

	True positive	False positive	False negative
GPA	GPA <2.5	GPA >2.5	GPA <2.5
Questionnaire	SADR >221	SADR >221	SADR <221

Table 3-8: Criteria were then used to select the case study group

The groups were chosen to understand how the SADR questionnaire can and cannot predict students' academic performance. The true positive group consisted of those students who achieved a high score in the SADR questionnaire – more than two

standard deviations above the mean (which may indicate academic difficulties) – and had low GPA scores; these are true positives, as the questionnaire predicted that they would have academic problems, and this was borne out by their GPAs. The false positive group consisted of those students who scored highly in the SADR questionnaire, but had average or above-average GPAs; these students are the false positives, whom SADR predicted would have academic difficulties, but this is not shown by their GPAs. The false negative group consisted of those students who scored low in the questionnaire (which may indicate a lack of academic difficulties) and had low GPAs; this group are the false negatives, for whom SADR did not predict academic difficulties, but their GPAs suggested that they do have difficulties.

The researcher received twenty-eight agreements from students willing to participate in the interviews, which is a satisfactory number if one considers that the interview-based approach is a rarity within the Saudi education system. A total of six female students were then randomly chosen, two from each of the three groups. Table 3-9 shows the number of students in each group and the number of students selected for interviews.

Group	Number of students in each group	Number of students who agreed to take part	Number of students selected
True positive	11	3	2
False positive	27	8	2
False negative	34	17	2

Table 3-9: Number of students in each group

3.12 Data collection

Due to geographical distance and location, it was initially intended that all the interviews would take place on Skype; however, circumstances changed and a choice of face-to-face interviews became possible. Despite this, some students still preferred to be interviewed via Skype. One student, Sophie, agreed to be interviewed on Skype and asked that her uncle be present as her supporter. Skype interviews were held without a camera due to Saudi cultural restrictions. Table 3-10 shows the type and length of these interviews. The students' names presented in this study were chosen by the participants and are not their real names.

	Type of interview	Duration
True positive/Sophie	Skype, accompanied by her uncle	45 minutes
True positive/Eve	Skype	40 minutes
False positive/Judy	Face-to-face	1 hour and 15 minutes
False positive/Sara	Skype	40 minutes
False negative/Britney	Face-to-face	30 minutes
False negative/Soma	Skype	1 hour

Table 3-10: Interview type and length

In carrying out the interviews, the researcher tried to establish a comfortable environment for the participants so that the interviews appeared to be more like a conversation. Interviews were digitally recorded, and permission to use a recorder was sought. In addition, written consent was obtained from participants before conducting the interviews (see Appendix VIII). The students were first asked to indicate on a scale (the pre-interview scale) how they felt about certain topics, in order to guide the interview and assist with questioning (see Appendix X). Therefore, the pre-interview scale was mainly

used to ask relevant follow-up questions and to help to obtain more specific or in-depth information.

The interviews were semi-structured, guided by open-ended questions (see Appendix IX). They were carried out in Arabic. The interview technique of verbal probing was used. Because the key to a successful interview is learning how get more information by probing effectively (Bernard, 1995), this meant ‘exploring’ silence, as well as summarising what participants said. Questions such as “Could you tell me more?”, “Can you explain more?”, or “What do you mean by that?” were asked. Therefore, the questions used to guide the interviews were broad, with the aim of expanding the topic and maintaining flexibility. The participants were frequently asked whether they would like to add to their answers or wished to comment further. At the end of each interview, participants’ ideas, opinions and so on would be summarised to ensure I had completely understood what had been expressed.

3.12.1 Data analysis

Once the researcher completed the interviews, the researcher listened to the audio recordings, before transcribing them into Arabic (see Appendix XI). Then, the researcher listened to the recordings again to make sure nothing had been missed. Prior to analysing the data, copies of the Arabic transcript were provided to each participant to allow them to check and modify the content; this gave participants the right to withdraw or change any part of an answer that, on reflection, they might see as inappropriate or too sensitive, but no changes were made. Next, the researcher translated the Arabic transcripts into English (see Appendix XII). After this, the researcher started to work through the transcript manually, first dividing the transcript into passages, using coloured pins to the create categories as they were read. Following this, the researcher recorded what the students had said and noted any common themes that became apparent. The researcher

then used this information to combine the notes on one sheet of paper per student (see Appendix XIII) and used colour-coded cards on this sheet to make some key headings (such as reading difficulties and other subheadings, such as comprehension). Finally, the researcher drew up a map of each student's themes to understand each case study.

Analysis thus followed these steps:

1. Produce the full transcript in Arabic.
2. Produce the transcript in English line by line
3. Divide the transcript into passages.
4. Create categories using coloured pins.
5. Use paper with colour-coded cards to determine the main themes for each student and draw a map to summarise the findings.

Based on the above process, the researcher wrote up each case (see Chapter Four) based on the themes that emerged from the analysis (see Table 3.11)

Themes	In school	In the university
Reported reading difficulties	Blending letter sounds Reading aloud	Reading fluency Comprehension
Reported writing difficulties	Spelling Illegible handwriting	Organizing thoughts Using the correct grammar Finding a starting point Translating ideas into words
Study skills	Colored cards Clay molding	Use of technology (recording devices and computers) Preparation (reading material beforehand) Time management Mind maps
Other reported problems	Self-image Social and personal problems	Attention Motivation issues

Table 3-11 Interview themes

3.12.2 Trustworthiness

Instead of the concepts of reliability and validity, trustworthiness is used to consider the quality of qualitative research. Several criteria are considered when ensuring trustworthiness; these include credibility, transferability, dependability, and confirmability.

3.12.3 Credibility

One of the most important criteria to be addressed in the second phase of the research is internal validity, which essentially seeks to make sure that the study is able to test for what is actually intended (Lincoln, 1995). Under such circumstances, the concept of credibility deals with matters concerning how the research is related to reality, and whether it can be applied to real situations. Therefore, ensuring credibility is one of the most significant aspects of qualitative research, because it brings about the establishment of trustworthiness.

In promoting credibility, there were several provisions that had to be put in place to make sure that confidence in the second phase of the study was established. The first of these was the adoption of a research design and methodology, and the establishment of a justification for the use of such a methodology, that would give confidence in the semi structured interview method used in the second phase. Secondly, the adoption of the correct standard measurement for concepts being studied was essential for establishing the means by which the study was conducted, while at the same time adhering to methods that eventually lead to the establishment of trustworthiness in the findings (Erlandson et al., 1993). Thirdly, a provision was put in place that the researcher was familiar with the culture of the university before an attempt to collect data took place. Similarly, it was essential to make sure that there was a random sampling of individuals who participated, in order to negate potential charges against the researcher that they may be biased towards a certain selection of participants (the group sampling was a purposive sample, but a

random sampling from within each group, as explained in the *Sampling* section). These, among other provisions, enhance the credibility of the qualitative research, which in turn improves its trustworthiness.

The researcher used peer examination, also known as auditing. Guba and Lincoln (1989) recommend the use of such an approach. In the current research, the manuscript drafts and all data were sent to a PhD student at the University of Exeter, whose role was the accurate transcription of the Arabic digital recorder from the interviews, and then the review of the Arabic and English versions of the transcript, to enhance and evaluate credibility.

3.12.4 Transferability

The extent to which the findings of a study can be applied to other situations is an important aspect of qualitative research. This is because it enhances the study's trustworthiness through its ability to be applied to a diverse number of situations that are connected to the subject matter of the study. Thus, transferability creates an environment where the results of the study can be applied to a wider population through the transfer of findings from one small population to other situations and populations (Firestone, 1993). Therefore, researchers are required to make sure that they adopt those methods that are likely to demonstrate findings and conclusions that can be applied widely, in order to improve the trustworthiness of the study. In practice, most studies that are conducted qualitatively cannot be generalised conventionally, because to do so would be to negate their credibility. Additionally, most of these studies tend to be conducted in a way that greatly enhances their specific contexts, making it extremely difficult for them to be generalised. However, the researcher made sure wherever possible to bring about the ability to generalise, even though each of the studies conducted might be unique, meaning that its transferability may either be accepted or rejected (Guba, 1981). However, despite the importance of transferability, there are instances where it might end up belittling the

significance of contextual factors that are essential for the advancement of the study, and which might be essential in advancing the credibility of the subject being studied.

3.12.5 Dependability

When seeking to address the issue of reliability, there is often an attempt to make sure that when the same procedure is undertaken, with varying methods and participants, it produces a similar result as before. However, the changing circumstances of subjects scrutinised by qualitative researchers tend to make it extremely difficult to repeat procedures when conducting other studies (Fidel, 1993). Nevertheless, using multiple methods, such as three questionnaires and semi-structured interviews, as well as the use of mixed methodology, it becomes possible to reduce the probability of misinterpretation and make sure that there is a degree of credibility in the study. In this way, credibility and dependability are related; one cannot happen without the other.

3.12.6 Confirmability

There is a constant difficulty in bringing about the achievement of real objectivity in any study, because most results tend to come about because of human perceptions and skills. The intrusion of researcher bias is an inevitable aspect of research, meaning that it is essential for the researcher to establish the concept of confirmability in their work (Van Maanen, 1983), especially when absolute objectivity in social research is impossible to achieve. The use of confirmability means that it is important for the researcher to be as free from prejudice and as completely unbiased in every step of the research as possible, and try to ensure the participants' meanings come through. All that the research can show is that the research was conducted in good faith; it should be clear that the researcher did not overtly control the conduct of the study and the findings derived (Lincoln and Guba, 1985).

3.12.7 Ethical considerations in mixed methodology

Firstly, before conducting this study, the research was approved by the Ethics Committee of Exeter University to conduct this research, an ethical approval signed by the researcher's supervisors was obtained (see Appendix XIV). Additionally, an official letter was sent by the researcher to the Saudi Cultural Bureau in London, requesting authorisation from the Saudi Ministry of Education to perform the research in Saudi Arabia. The letter contained details about the research methodology, the approximate number of participants that would participate in the study and the measures that would be taken to ensure that the participants' identities and personal information would not be comprised in any way. It also included the research questions and methods of data collection; a letter noting the knowledge and approval of my supervisors concerning the methodology for the research was also sent.

Before gathering data, one of the most fundamental ethical considerations when conducting research is that participants have to participate voluntarily in the study. This is mainly because it is a means through which to make sure that the participants are not only comfortable, but also better able to establish a strong relationship with the research. This then allows them to willingly provide more information than would have been the case otherwise. Additionally, it is highly pertinent that the participants have an understanding of the purpose and all the procedures involved in the study. The researcher has the responsibility of making sure that he or she informs the participants in advance concerning what to expect in the study and, as a result, seek to bring about the full cooperation of the participants (Bazely, 2004).

Moreover, it is the responsibility of the researcher to provide a copy of the results of the study to the participants, in order for them to see their contribution to the results. The participants have to be informed concerning the potential benefits that will be accrued by the study, but at the same time, the researcher has to make sure that their privacy is

maintained. It is also through an understanding of potential benefits that the researcher is able to ensure they possess an awareness of the environment within which they work and the potential impact that they might have on it, ensuring that such impact is minimised.

It is also essential that care be taken to identify and nullify any actual or perceived issues that might occur, where there is the potential for the abuse of power between the researcher and the participant (Johnson and Onwuegbuzie, 2004). In addition, the anonymity of participants was maintained through the entire study process, in such a way that even during the analysis of the data, the participants were given numbers and the data was locked in the researcher's personal computer with a passcode for the participants' data files. Due to the need to maintain participant anonymity, the use of different names was maintained throughout, and participants were never mentioned using their real names.

The researcher also had to be extremely careful when it comes to matters concerning the production of results and conclusions. The writing process of these parts of the research could have brought about the involvement of the personal opinions of the researcher, meaning that there was a high potential for bias to be shown to a particular group under study based on ethnicity, age or another factor. Therefore, there had to be an advancement of the interests of all parties involved in the research, through the strict observation of non-biased guidelines from King Faisal University ,that establish the credibility of the study. Finally, the details of the study were carefully explained throughout, in order to make sure that readers were able to judge its ethical quality for themselves.

The participants in this study gave their informed consent, and those who felt that they no longer wanted to participate dropped out of the study without interference from the researcher. Participants were not being subjected to harm in any way whatsoever. Whenever the participant wanted a break, or wanted to stop during both the questionnaires

administration and the interviews, the researcher ensured that this happened. Communication in the research was done with honesty and transparency. The highest level of objectivity was maintained throughout discussion and analysis during the research.

Another ethical consideration relevant to this study is to ensure that the student participants are not identifiable. Therefore, students who were identified, based on SADR, as having academic difficulties must remain anonymous. The researcher encouraged participants to choose their own aliases to ensure anonymity. Confidentiality was explained to each participant: the students' results remained confidential and were not shared with teachers, classmates, which ensured that their learning experience in university was not impacted negatively in any way. The students' data was kept safe, using codes and passwords known only to the researcher.

3.13 Methodological limitations

A primary setback in this study has been the lack of available data and previous studies on this topic, especially studies pertaining to the Middle East in general and to Saudi Arabia in particular. There has been no previous study looking at academic difficulties related to literacy from the current angle in the Saudi university system. This, of course, has limited the scope of analysis, and it emphasises the need for future research on academic difficulties related to literacy in HE.

With regards to the measure used to collect the data, after completing the interpretation of the findings the researcher discovered that the SADR questionnaire, which was the primary instrument in gathering the data, did not capture students' perceptions of their transition to university from school. In retrospect, such questions would have been valuable for this study. Including more questions might have yielded

more data about the transition from school to university, which emerged as a factor later in the study. The researcher acknowledges this limitation; however, it indicates that there is a need for more research to be carried out on the transition from school to university, and ways to help students cope through it.

In hindsight, it would have been beneficial to have been able to conduct all the interviews face-to-face, because these produced more data than Skype interviews. However, at the time of collecting the data, this simply was not practically feasible because many students declined the face-to-face interviews, and the researcher simply adhered to their wishes.

3.14 Summary

This chapter has provided the research design that the current research implemented, and the mixed methodology that was adopted.

The ontological and epistemological philosophical assumptions underpinning the study were discussed for each of the two phases of the study. Additionally, the sampling of each phase, procedures, data collection, and subsequent analysis were presented and explained. The related ethical considerations were also outlined.

Chapter Four

4 Results

4.1 Introduction to the quantitative data

The first part of the chapter is based on the analysis of the quantitative data from the questionnaires. This study is based on three main data sources: the Student Academic Difficulties and At-Risk questionnaire (SADR), the Student Self-Inventory questionnaire (SSI), and the teachers' reports on students' academic performance. The first section of this chapter will report the results from each of the questionnaires in relation both to GPAs and to each other. The first part of the chapter is divided into two sections: the first is descriptive and the second is inferential. The descriptive section aims to explain reliability tests and the inferential section discusses correlations between the three questionnaires and the GPAs; regression and cross-tabulation are also used. Inferential statistics allow results to be extrapolated from the limited sample to the wider population. The data from all three questionnaires were entered into a computer and an SPSS software programme (v.22) was employed to answer the first phase questions.

Phase One research question

How can we identify students in higher education in Saudi Arabia who have academic difficulties relating to literacy and study skills?

Sub-questions

1. How reliable is the Students' Academic Difficulties and At-Risk questionnaire (SADR)?

2. To what extent can SADR be used to predict end of year academic GPAs at the start of the year?
3. How stable are students' literacy and study skills over a six-month period?
4. To what extent do an end of year Student Self-Inventory (SSI) and teachers' reports on student's academic performance correlate with end of year academic GPAs?

4.2 Results related to research sub-question 1

How reliable is the Students' Academic Difficulties and At-Risk questionnaire (SADR)?

4.2.1 Reliability of the questionnaire

Internal reliability of SADR

In order to answer the research question, the internal consistency and reliability of SADR was measured through the Cronbach's alpha test. This test establishes the level of stability between answers within each of the eleven scales. The test (see Table 5.1) reveals that not all scales or constructs within the questionnaire were reliable. The table shows that the reliability of the reading scale is .906, writing is .848 and maths is .860. It also shows the reliability of motivation is .718 and self-esteem is .709. These results indicate highly internally reliable scales (using the convention of 0.7 as the cut-off point). However, other scales showed low reliability. For example, the attention and hyperactivity scale is .623, the compensatory strategies scale is .625, the social and emotional problems scale is .508, the problems with pragmatics scale is .601, the vision stress scale is .614 and the memory scale is .536.

Scale	Cronbach's alpha
Reading	.906*
Writing	.848*
Maths	.860*
Attention and hyperactivity	.623
Motivation	.718*
Self-esteem	.709*
Compensatory strategies	.625
Social and emotional problem	.508
Problems with pragmatics	.601
Vision stress	.614
Memory	.536

Table 4-1: Internal reliability (Cronbach's alpha) for SADR (* means > 0.7)

Test-retest reliability for SADR

These scales need to be stable over time, so the stability, or test-retest reliability, of these scales was assessed. This involved examining the consistency between answers for the 341 student participants at two points in time: when they were first given the questionnaire, and when they were given the same questionnaire three weeks later. The reliability was calculated using Pearson's R correlation coefficient in order to establish the relationship between answers in both questionnaires. The reliability was measured for the overall sums generated under each of the categories.

The results showed that there was a high consistency between answers in the first and second assessments: reading ($r=0.79$), written expression ($r=0.84$), maths ($r=0.97$), attention and hyperactivity ($r=0.73$), motivation ($r=0.98$), self-esteem ($r=0.92$), compensatory strategies ($r=0.88$), social and emotional problems ($r=0.98$), problems with pragmatics ($r=0.84$), visual stress ($r=0.91$), and memory ($r=0.98$). This questionnaire reflected high reliability, in that the measure was consistent over a three-week period.

Correlation between answers at each point in time for 341 students	
Reading	0.794**
Written expression	0.842**
Maths	0.973**
Attention and hyperactivity	0.732**
Motivation	0.984**
Self-esteem	0.921**
Compensatory strategies	0.880**
Social and emotional problems	0.980**
Problems with pragmatics	0.848**
Visual stress	0.911**
Memory	0.989**

Table 4-2: Consistency between variables using Pearson's correlation coefficient

4.3 Results related to research sub-question 2

To what extent can the SADR questionnaire be used to predict end of year academic GPAs at the start of the year?

Pearson's R correlation coefficient

This section will present the correlations between SADR scales, teachers' assessments of attainment and students' GPAs. The relationship will be assessed using correlational analysis and regression analysis, specifically Pearson's R correlation coefficient and multiple linear regression.

Pearson's R correlation coefficient is a statistical test that measures the correlation (relationship) between two variables; scores range between -1 and +1 (positive or negative correlation, respectively). A significant result leads to the conclusion that correlation exists between the two variables and the sign (- or +) indicates the direction of the relationship. A significant negative correlation indicates that an increase in one variable leads to a decrease in the other. A significant positive correlation indicates that an increase in one variable leads to an increase in the other. The results have to be significant ($p < 0.05$) to assume that a relationship exists.

Multiple linear regression

Multiple linear regression is a statistical test that allows the researcher to see whether one variable (dependent variable) can be predicted using one or more independent variables (predictors). In other words, it allows the researcher to comprehend to what extent one or more predictors explain variances in the dependent variable. This study used different predictors to predict students' GPA scores (for example by using the SADR questionnaire scales).

4.3.1 GPAs and teachers' reports on students' academic performance

Teachers evaluated students on six items that reflect different studying and learning skills. Teachers were asked to evaluate students based on whether the student was enthusiastic about finishing the course (enthusiasm), has effective study skills (study skills), can complete written tasks in the time allocated (writing skills), seems focused during lectures (focus), can skim and scan a paper for the main ideas and key points (skimming) and tends to make very few spelling mistakes (spelling). Different teachers and lecturers were asked to fill in this short questionnaire. Thereafter, an average was calculated for each of the questions, along with an overall academic average.

Higher scores reflected a higher level of skill (greater competence). Teachers' evaluations were taken at the end of the academic year and based on students' academic performance during the full year. Teachers' evaluations were correlated with GPA scores using Pearson's R correlation coefficient and the results indicated that there is a significant, low-to-medium, positive correlation between GPAs and academic skills (overall average): $R(83)=0.421$, $p=0.000$; study skills: $R(83)=0.332$, $p=0.002$; and skimming: $R(83)=0.270$, $p=0.013$. However, no significant correlation was found between GPA scores and enthusiasm: $R(83)=0.105$, $p=0.346$; writing skills: $R(83)=0.097$, $p=0.384$; focus: $R(83)=0.160$, $p=0.149$; and spelling: $R(83)=0.008$, $p=0.943$ (see Table 4-3).

It can be concluded that teachers' ratings of study skills and skimming skills are moderately related to higher GPA scores, while the overall academic outcome is also associated with higher GPA scores.

4.3.2 Correlation between teachers' evaluation items

The overall average of teachers' evaluation items was correlated significantly and positively with all other items ($p < 0.05$). All other items within the teachers' reports were correlated positively (from 0.20 to 0.68; $p < 0.05$). This indicates that if teachers assess a students' level as good in one of the learning skills, there is a tendency for them to also rate them as good in other skills. However, no correlation was found between spelling and enthusiasm and between focus and spelling ($p > 0.05$) (see Table 4-3).

Correlations									
		1	2	3	4	5	6	7	8
GPA	r	1							
	Sig.								
	N	177							
Teachers' average	r	.421**	1						
	Sig.	.000							
	N	82	94						
Enthusiasm	r	.105	.427**	1					
	Sig.	.346	.000						
	N	83	94	96					
Study skills	r	.332**	.690**	.327**	1				
	Sig.	.002	.000	.001					
	N	83	94	96	96				
Writing skills	r	.097	.634**	.276**	.484**	1			
	Sig.	.384	.000	.007	.000				
	N	83	94	96	96	96			
Focus	r	.160	.666**	.445**	.571**	.640**	1		
	Sig.	.149	.000	.000	.000	.000			
	N	83	94	96	96	96	96		
Skimming	r	.271*	.590**	.298**	.501**	.510**	.450**	1	
	Sig.	.013	.000	.003	.000	.000	.000		
	N	83	94	96	96	96	96	96	
Spelling	r	.008	.204*	-.135	.321**	.261*	.179	.250*	1
	Sig.	.943	.049	.189	.001	.010	.080	.014	
	N	83	94	96	96	96	96	96	96

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

* Correlation is significant at the 0.05 level (2-tailed)

Table 4-3: Correlation between GPA and items of teachers' evaluations

4.3.3 Correlation between SADR and teachers' reports on students' academic performance

The total scores of each of the scales in SADR were also correlated with teachers' evaluation of academic skills six months later. Given the correlations between GPA and teachers' evaluations, some predictive correlations would be expected. Table 4.4 clearly shows the correlation between the five scales from the teachers' evaluations (which were previously related to GPA scores) and the SADR scales. There is a different pattern of correlations in this table when compared to the correlations of the SADR scales with GPA scores. The significant correlations are fewer and at a lower level. For this reason, no further analysis was carried out into the predictive relationship of the SADR scales and attainment as indicated by teachers' academic evaluation ratings.

		Average/Academic	Study Skills	Skimming
Reading	r	-.225*	-.200	-.166
	Sig.	.029	.051	.106
	N	94	96	96
Written	r	-.168	-.080	-.219*
	Sig.	.106	.440	.032
	N	94	96	96
Maths	r	-.097	-.158	-.274**
	Sig.	.350	.124	.007
	N	94	96	96
Attention and hyperactivity	r	.016	-.090	.063
	Sig.	.880	.385	.539
	N	94	96	96
Motivation	r	-.239*	-.309**	-.235*
	Sig.	.020	.002	.021
	N	94	96	96
Self-esteem	r	-.011	-.030	-.018
	Sig.	.919	.769	.864
	N	94	96	96
Compensatory strategies	r	-.081	-.038	-.029
	Sig.	.437	.711	.782
	N	94	96	96
Social and emotional problems	r	-.033	.056	.070
	Sig.	.749	.590	.499
	N	94	96	96
Problems with pragmatics	r	-.116	-.066	-.076
	Sig.	.264	.521	.459
	N	94	96	96
Visual stress	r	.172	.016	.020
	Sig.	.098	.877	.847
	N	94	96	96
Memory	r	.319**	.268**	.247*
	Sig.	.002	.008	.015
	N	94	96	96

Table 4-4: Correlation between SADR and teachers' academic evaluations.

4.3.4 Pearson's correlation between GPA scores and SADR

The aim of this study is to see whether or not literacy difficulties as measured by the use of SADR can predict GPA over a six-month period. SADR included eleven constructs or scales measuring various academic characteristics. All scales were based on the total scores of items, where high scores indicate greater difficulties. It was important to determine whether or not GPA scores were correlated across all the eleven scales (overall total of each).

The Pearson's R correlation coefficient test was used to measure whether or not the different academic difficulties have significant correlations with students' GPA scores. The results (Table 4-5) show that GPA scores have a significant, low-to-medium, negative correlation (at $p < 0.05$ level) with reading comprehension: $R(177) = -0.552$, $p = 0.000$; written expression: $R(177) = -0.373$, $p = 0.000$; maths: $R(177) = -0.289$, $p = 0.000$; attention and hyperactivity: $R(177) = -0.201$, $p = 0.007$; motivation: $R(177) = -0.235$, $p = 0.002$; self-esteem: $R(177) = -0.186$, $p = 0.013$; and compensatory strategies: $R(177) = -0.155$, $p = 0.039$. This indicates that higher scores on these scales tend to predict, at low to moderate levels, whether students will have low GPA scores.

On the other hand, the GPA scores had a low, significant, positive correlation with memory: $R(177) = 0.235$, $p = 0.002$, which indicates that students with higher GPA scores tend to report more problems with memory. No significant correlation was found between GPA scores and social and emotional problems: $R(177) = -0.097$, $p = 0.197$; problems with pragmatics: $R(177) = 0.060$, $p = 0.427$; and visual stress: $R(177) = 0.026$, $p = 0.729$.

Pearson's correlation between SADR scales

Additionally, the scales in the SADR questionnaire were shown to be significantly correlated with each other (see Table 4-5). The reading scale was significantly and positively correlated with all other scales ($p < 0.05$), except that it correlated negatively with memory ($p < 0.05$) and had no correlation with visual stress ($p > 0.05$). Written expression was positively correlated with all scales ($p < 0.05$) apart from visual stress and memory ($p > 0.05$). Maths was positively correlated with all scales ($p < 0.05$) apart from social and emotional problems, problems with pragmatics, visual stress and memory ($p > 0.05$). Attention and hyperactivity showed a significant positive correlation with all scales ($p < 0.05$). Motivation showed a significant positive correlation with all scales, apart from memory ($p > 0.05$). Similarly, self-esteem showed significant correlations with all scales ($p < 0.05$), apart from memory ($p > 0.05$); compensatory strategies was also

significantly correlated with all scales apart from memory ($p < 0.05$). Social and emotional problems showed significant positive correlation with all scales, apart from maths ($p > 0.05$); problems with pragmatics also showed significant correlation with all scales apart from maths ($p > 0.05$). Visual stress showed significant positive correlation with all scales apart from reading comprehension, written expression and maths ($p > 0.05$).

Correlations													
		1	2	3	4	5	6	7	8	9	10	11	12
GPA	r	1											
	Sig.												
	N	177											
Reading	r	-.552**	1										
	Sig.	.000											
	N	177	341										
Writing	r	-.373**	.686**	1									
	Sig.	.000	.000										
	N	177	341	341									
Maths	r	-.289**	.454**	.474**	1								
	Sig.	.000	.000	.000									
	N	177	341	341	341								
Attention and hyperactivity	r	-.201**	.302**	.279**	.274**	1							
	Sig.	.007	.000	.000	.000								
	N	177	341	341	341	341							
Motivation	r	-.235**	.476**	.385**	.345**	.484**	1						
	Sig.	.002	.000	.000	.000	.000							
	N	177	341	341	341	341	341						
Self-esteem	r	-.186*	.387**	.327**	.263**	.411**	.562**	1					
	Sig.	.013	.000	.000	.000	.000	.000						
	N	177	341	341	341	341	341	341					
Compensatory strategies	r	-.155*	.318**	.231**	.273**	.410**	.506**	.465**	1				
	Sig.	.039	.000	.000	.000	.000	.000	.000					
	N	177	341	341	341	341	341	341	341				
Social and emotional problems	r	-.097	.154**	.136*	.037	.306**	.292**	.318**	.354**	1			
	Sig.	.197	.004	.012	.499	.000	.000	.000	.000				
	N	177	341	341	341	341	341	341	341	341			
Problems with pragmatics	r	.060	.154**	.165**	.102	.383**	.358**	.355**	.376**	.431**	1		
	Sig.	.427	.004	.002	.059	.000	.000	.000	.000	.000			
	N	177	341	341	341	341	341	341	341	341	341		
Visual stress	r	.026	.069	.066	.084	.288**	.213**	.249**	.328**	.329**	.445**	1	
	Sig.	.729	.207	.222	.121	.000	.000	.000	.000	.000	.000	.00000	
	N	177	341	341	341	341	341	341	341	341	341	341	
Memory	r	.235**	-.148**	-.094	-.242**	.219**	.028	.071	.106	.305**	.345**	.334**	
	Sig.	.002	.006	.082	.000	.000	.609	.191	.051	.000	.000	.000	.000
	N	177	341	341	341	341	341	341	341	341	341	341	341
		1	2	3	4	5	6	7	8	9	10	11	12

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

* . Correlation is significant at the 0.05 level (2-tailed)

Table 4-5: correlation between SADR scales, and correlation between SADR scales and GPA

4.3.5 Regression analysis: Predicting GPA from SADR

After testing for correlations between students' GPAs and the 11 different scales in SADR separately, the next step was to see whether or not such predictive correlations exist when all the variables were combined, which requires general linear regression analysis. The linear regression model produced the following result: $F(11,165) = 7.78$, $P = 0.000$, $\{R = 0.584$, $R^2 = 0.342$ adjusted $R^2 = 0.298\}$. Although GPA could be significantly predicted in this analysis, only the reading scale predicted GPA; the other scales made no independent contribution to predicting GPA at the end of the year. The predictive power of each of the scales makes it evident that only reading could significantly ($p < 0.05$) predict GPA at the end of the academic year ($Beta = -0.562$, $P = 0.000$). This clearly illustrates that students with greater problems with reading are likely to have lower GPAs. Other scales showed no significant prediction of GPA, as shown in Table 4-6.

Model Summary				
Model	R	R Square	Adjusted R Square	SD. Error of the Estimate
1	.584 ^a	.342	.298	.68012

Table 4-6: Model summary showing variances explained by the model using SADR scales

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.601	11	3.600	7.783	.000 ^b
	Residual	76.324	165	.463		
	Total	115.925	176			

Table 4-7: ANOVA results showing the significance of the mode

Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	SD. Error	Beta			Tolerance	VIF
(Constant)	4.754	.450		10.574	.000		
Reading	-.024	.005	-.562	-5.183	.000	.339	2.948
Written	.005	.009	.060	.599	.550	.397	2.518
Maths	-.002	.007	-.025	-.307	.759	.612	1.634
Attention and hyperactivity	-.020	.016	-.107	-1.285	.201	.574	1.742
Motivation	.009	.015	.054	.616	.539	.511	1.956
Self-esteem	.017	.024	.061	.728	.468	.566	1.768
Compensatory strategies	-.001	.016	-.006	-.077	.939	.615	1.626
Social and emotional problems	-.033	.024	-.104	-1.405	.162	.726	1.377
Problems with pragmatics	.036	.024	.119	1.467	.144	.606	1.650
Visual stress	-.010	.023	-.033	-.415	.678	.630	1.588
Memory	.038	.022	.136	1.724	.087	.640	1.561
a. Dependent variable: GPA							

Table 4-8: Regression coefficients of SADR scales when predicting

4.3.6 SADR: Cut-off point for those with reading problems

The range of SADR scores was divided into scores that represented a reading problem and those that did not; an 80th-centile cut-off point was selected. SADR scores were coded as 0 and 1, where 0 was the score for students scoring below the top 80th centile on the reading scale (low scores or no reading problem), and 1 for those scoring within the top 20 centiles (high scores, meaning they have reading problems). The top 20 centiles is a conventional cut-off point and was selected for that reason. This was another attempt to see whether or not the SADR scales can predict GPA when manipulating the data.

Accuracy of predicting GPA from SADR reading cut-off

To further test the ability of SADR to predict GPA, a reading scale cross-tabulation was performed; see Figure 4-1, which shows the frequency of GPA scores depending on whether students had a problem or no problem with their reading scores six months previously. This shows that the tendency is for those with prior identified reading problems to have lower GPA scores, although some with reading problems had higher GPA scores, within the range of those with no prior reading problems. The mean GPA score for those with no prior reading problems was 4.22, (SD=0.83), compared to those with a prior reading problem: 3.13, (SD=0.83). This was a statistically significant difference in the mean GPA scores ($t=7.6$, $df=172$, $p<0.000$).

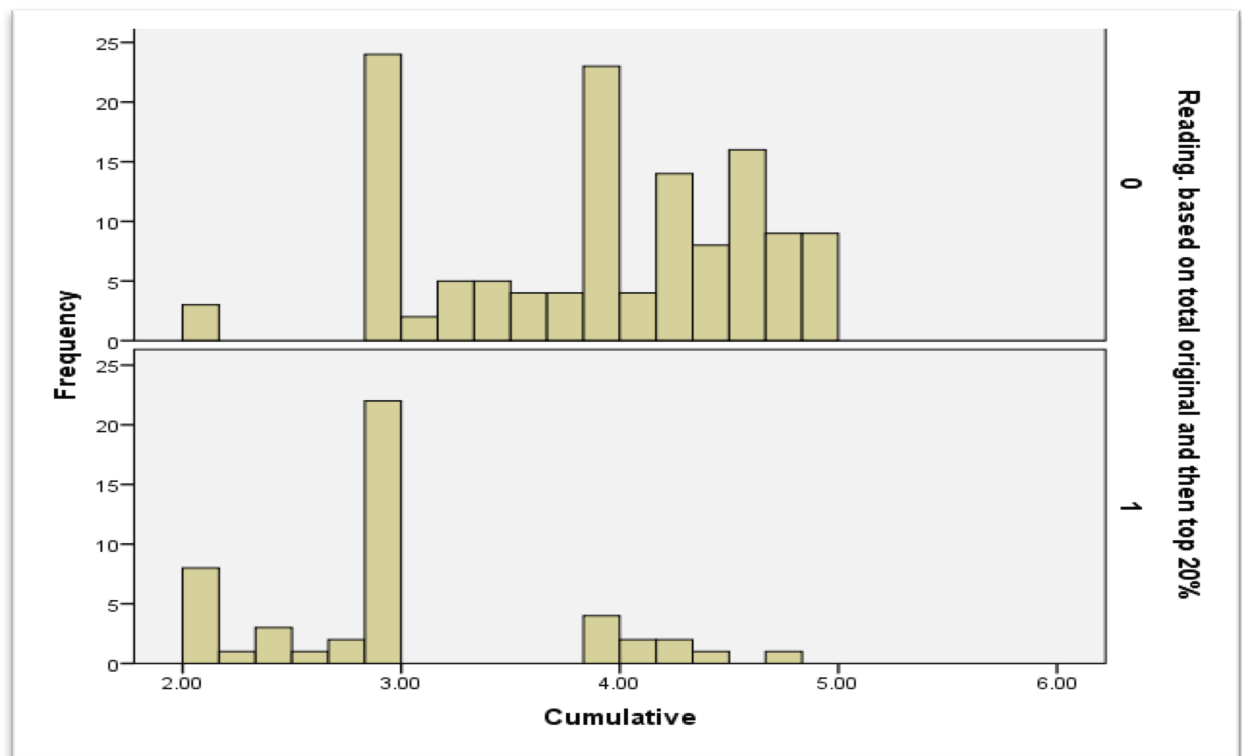


Figure 4-1: Frequency of students' GPAs based on top 20% reading scale cut-off (0 represents no academic difficulties and 1 academic difficulties)

In the first analysis, SADR was used to predict whether students would score low GPAs, using a GPA of less than 2.5 as the cut-off on the GPA scale. This is the point at which students are given a formal warning about their low GPA scores.

Count	Reading based on total original and then top 20 percent		Total
	0 = no problems	1= problems	
GPA < 2.5 1	3	9	12
GPA > 2.5 0	127	38	165
Total	130	47	177

Table 4-9: Number of students based on a 2.5 cut-off point GPA and reading score

Table 4-9 shows that 127 students reported no problems on the reading scale in advance and scored above 2.5 GPA (true negative; $127/177 = 71.7\%$). Of the 47 students identified with reading problems, 38 scored a higher GPA than 2.5 ($38/47 = 81\%$). This means that only 19% of students with reading problems scores had low GPAs (less than 2.5). Twelve students had low GPA scores (less than 2.5 GPA); of these students, nine were predicted six months in advance with the reading scale ($9/12 = 75\%$ true positives); three of the 12 ($3/12 = 25\%$) were not predicted. Of 130 identified in advance as having no reading problems, only three scored low GPAs ($3/130 = 2.3\%$); the majority were predicted correctly as scoring higher GPAs ($127/177 = 71.7\%$). Overall, 78.5% were predicted correctly as true positives or true negatives.

In the second analysis, reading scales were used again to predict whether students had low GPAs using a GPA of less than 3.00 as the cut-off point. This is the point at which students start to get a D-level grade, which means being at an inadequate level.

Count	Reading based on total original and then top 20 percent		Total
	0 = no problems	1= problems	
GPA < 3 1 1	10	37	47
GPA > 3 0 0	103	27	130
Total	113	64	177

Table 4-10: Number of students based on 3 cut-off point GPA and reading score

As shown in Table 5-10, 103 students reported no problems in advance and had GPAs higher than 3.00 (true negative; $103/113 = 91\%$), which may indicate no academic difficulties. Of the 64 students identified with reading problem, 27 turned out to have higher GPAs ($27/64 = 42.2\%$), and 57% ($37/64$) with lower GPAs.

Table 5-10 also shows that 47 students had low GPA scores (GPA lower than 3.00). Of these students, 37 were predicted six months in advance with the reading scale in SADR ($37/47 = 78.7\%$ true positives); 10 of the 47 were not identified ($10/47 = 21\%$). Of 113 identified in advance as having no reading problems, only 10 turned out to have lower GPAs ($10/113 = 2.3\%$); the majority were identified correctly as having higher GPAs ($103/177 = 58\%$). This makes the total percentage of accurately identified students, both those who had problems and those who did not have reading problems, was 79%.

Comparing the two analyses shows that the first analysis with a cut-off point of 2.5 for GPA showed a lower predictability, with only 19% of students with low GPA identified earlier by the reading scale in SADR as at-risk of having reading problems. But the second analysis, using 3.00 GPA as the cut-off, the prediction level increases from 19% to 57% accuracy in terms of students being identified as having problems from the reading scale in SADR and also

having low GPA scores, which shows an increase of 38% in the reading scale’s ability to predict students with low GPAs.

4.3.7 Predicting GPA from the demographic questions

Students were asked to state whether or not they had learning difficulties or health conditions that could impact their studies, and frame their replies as a yes/no answer. Using regression analysis, it was shown that the model was not significant overall: $F(8,168) = 1.09$, $p = 0.372$ $\{R = 0.222, R^2 = 0.049, \text{adjusted } R^2 = 0.004\}$. However, when examining each of the variables as predictors, it was shown that GPA can be predicted using overall difficulties, i.e. those who have some form of difficulty in school are likely to have low GPA scores ($B = -0.386$, $p = 0.045$). However, it can be concluded that none of the other variables was a significant predictor of GPA.

Model Summary				
Model	R	R Square	Adjusted R Square	SD. Error of the Estimate
1	.222 ^a	.049	.004	.80992

Table 4-11: Model summary of variances explained by the module

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.721	8	.715	1.090	.372 ^b
	Residual	110.204	168	.656		
	Total	115.925	176			

Table 4-12: ANOVA showing the significance of the regression model

Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	SD. Error	Beta			Tolerance	VIF
(Constant)	3.725	.089		41.961	.000		
Any kind of difficulty in school	-.386	.191	-.154	-2.024	.045	.973	1.028
Premature at birth	-.193	.355	-.043	-.543	.588	.896	1.116
Complications during birth	.287	.200	.110	1.437	.153	.968	1.033
Complications after birth	.130	.272	.039	.478	.633	.862	1.160
Long illness that involved school absence	-.028	.143	-.015	-.196	.845	.960	1.041
Auditory problems	.131	.495	.021	.265	.792	.908	1.101
Vision problems	-.058	.137	-.032	-.425	.672	.977	1.024
Delayed or deficient speech	-.380	.336	-.091	-1.131	.260	.865	1.156
a. Dependent Variable: GPA							

Table 4-13: Regression coefficients for predictors

4.4 Results related to research sub-question 3

How stable are the students' literacy and study skills over a six-month period?

To answer this research question, there is a need to first assess the internal reliability of SSI. The SADR and SSI scales will then be correlated with each other.

4.4.1 Internal reliability (Cronbach's alpha) for SSI

The internal consistency/reliability of SSI was measured using the Cronbach's alpha test, which measures the level of internal consistency or reliability of the items making up the scale. It should be noted that some of the items were written positively, and were therefore reverse coded (positive to negative) to ensure one direction for all items within all scales. Overall there were eight scales, each including four items. All scales proved themselves reliable, as can be seen in Table 4-14. This demonstrates that all scales/constructs within the questionnaire were

reliable; all scales within the questionnaire have acceptably high levels of internal reliability, except for the motivation scale, which is below the usual 0.7 level.

Scale	N	Cronbach's alpha
Motivation	4	0.603
Memory	4	0.725
Feelings/attitudes	4	0.725
Time management	4	0.834
Organisational skills	4	0.860
Attention	4	0.849
Reading	4	0.870
Writing	4	0.870

Table 4-14: Cronbach's alpha reliability tests for each of the scales in SSI

4.4.2 SADR scales correlation with scales in SSI

This section assesses whether or not scales within the SADR questionnaire have a predictive correlation with scales in SSI. Using Pearson's correlation coefficient, it was found that reading comprehension, writing expression and motivation all showed significant positive correlation with their corresponding scales in SSI ($p < 0.05$). Reading from SADR was correlated with reading from SSI (.666); written expression correlated with writing (.559); attention and hyperactivity correlated with attention (.199); motivation correlated with the motivation scale in SSI (.389); compensatory strategies correlated with two corresponding subscales, time management with a correlation of .203, and organisational skills (.281); and social and emotional problems correlated with feelings and attitudes in SSI (.426). Therefore, all scales correlated positively with their corresponding scales in SSI, except for memory ($p < 0.05$).

SADR scales	SSI scales	Correlation
Reading	Reading	.666**
Written	Writing	.559**
Attention and hyperactivity	Attention	.199**
Motivation	Motivation	.389**
Compensatory strategies	Time management	.203**
	Organisational skills	.281**
Social and emotional problems	Feelings/attitudes	.462**
Memory	Memory	-.318**

Table 4-15: Correlation between SADR and corresponding SSI scales (** mean $p < 0.05$)

4.4.3 Cross-tabulation of students identified above 80th centile in SADR and SSI

To summarise the relationship between two sets of variables, which are the scales from SADR and their corresponding scales from SSI, the researcher used cross-tabulation, working with those identified as having reading problems in both SADR and SSI at the 80th centile cut-off point. The tables below show the number of times that each of the possible category combinations occurred in the data, which are: reading from SADR with reading in SSI, written expression in SADR with writing in SSI, attention and hyperactivity in SADR with attention in SSI, motivation in SADR with motivation in SSI, compensatory strategies in SADR with both time management and organisational skills in SSI, social and emotional problems from SADR with feelings and attitudes in SSI, and memory from SADR with memory in SSI.

Reading SADR scale	Reading SSI scale		Total
	No problem	Problem	
No problem	132	4	136
Problem	15	34	49
Total	147	38	185

Table 4-16: Cross-tabulation between reading scales in SADR and SSI

Table 4-16 indicates that students who reported having reading problems in SADR continued to have problems in SSI (34/38, or 89%), while those who reported having problems in SADR and not in SSI were 15/147, or 10.2%, and only 4/38, or 10.5%, reported difficulties in SSI but not in SADR. Students who reported having no problems in both scales were 132/147, or 89.7%. Therefore, 166/185 or 89.7% were identified in advance as students who either have or do not have reading problems.

Writing SADR scale	Writing SSI scale		Total
	No problem	Problem	
No problem	127	13	140
Problem	25	24	49
Total	152	37	189

Table 4-17: Cross-tabulation between writing scales in SADR and SSI

Table 4-17 shows that students who reported having writing difficulties in the SADR scale and still reported having writing difficulties in the SSI scale were 24/37, or 64.9%, while students who reported not having writing difficulties in SADR and not having difficulties in SSI were 127/132, or 83.5%, and students who were identified in SADR as having writing difficulties but did not report any difficulties in SSI were 25/152, or 16.4%. Students who reported having

writing difficulties in SSI but not in SADR were 13/37, or 35%. Therefore 151/189, or 79.8%, of the students were identified in advance as either having or not having problems.

Attention and hyperactivity SADR scale	Attention and hyperactivity SSI scale		Total
	No problem	Problem	
No problem	118	28	146
Problem	28	15	43
Total	146	43	189

Table 4-18: Cross-tabulation between attention and hyperactivity scale in SADR and SSI

Table 4-18 shows that 15/43, or 34.9%, of students who reported attention and hyperactivity problems in SADR continued to have those problems in SSI. The number of students who reported having problems in SADR but not in SSI was 28/146, or 19%, the students who reported problems in SSI but not in SADR were 28/43, or 65%, and the students who reported not having a problem in both scales was 118/146, or 80%. Therefore 133/189, or 70%, of students were identified in advance as having or not having problems with attention and hyperactivity disorder.

Motivation SADR scale	Motivation SSI scale		Total
	No problem	Problem	
No problem	130	13	143
Problem	39	6	45
Total	169	19	188

Table 4-19: Cross-tabulation between motivation scale in SADR and SSI

Table 4-19 shows that students who reported motivational problems in SADR and still reported problems in SSI were just 6/19, or 31%, students who reported having motivational problems in SADR but not in SSI were 39/169, or 23%, and students who reported having problems in SSI but not in SADR were 13/19, or 68%, and students who reported no problems on both scales were 130/169, or 76.9%. This means the percentage of students who were identified by both scales as either having or not having problems was 136/188, or 72%.

Compensatory strategies SADR scale	Organisational skills SSI scale		Total
	No problem	Problem	
No problem	119	26	145
Problem	26	13	39
Total	145	39	184

Table 4-20: Cross-tabulation between compensatory strategies scale in SADR and organisational skills in SSI

Table 4-20 shows that students who reported not developing compensatory strategies in SADR and not having organisational skills in SSI were 13/39, or 33%, students who reported having problems in SADR but not in SSI were 26/145, or 17.9%, students who reported having problems with organisational skills in SSI but did not report problems in the corresponding scale in SADR were 26/39, or 66.6%, and students who reported no problems in both scales were 119/145 or 82%; this means that the students that were identified by both scales in advance as either having or not having problems were 132/184, or 71.7%.

Compensatory strategies SADR scale	Time management SSI scale		Total
	No problem	Problem	
No problem	119	29	148
Problem	26	13	39
Total	145	42	187

Table 4-21: Cross-tabulation between compensatory strategies scale in SADR and time management in SSI

Table 4-21 shows that students who reported not developing compensatory strategies in SADR and having problems with time management in SSI were 13/42, or 30%, students who reported having problems in SADR but not in SSI were 26/145, or 17.9%, students who reported having problems with time management in SSI but not reported problems in the corresponding scale in SADR were 29/42, or 69%, and students who reported not having a problem in both scales were 119/145, or 82%. This means that the students that were identified by both scales in advance as either having or not having problems were 132/187 or 70% of students.

Social and emotional problems SADR scale	Feelings/attitudes SSI scale		Total
	No problem	Problem	
No problem	102	53	155
Problem	22	11	33
Total	124	64	188

Table 4-22: Cross-tabulation between social and emotional problems scale in SADR and feelings and attitudes in SSI

Table 4-22 shows that students who reported having social and emotional problems in SADR and problems with their feelings and attitudes in SSI were 11/64, or 17%, students who reported having problems in the scale in SADR but not in SSI were 22/124, or 17%, students who reported having problems with feelings and attitudes in SSI but did not report problems in the

corresponding scale in SADR were 53/64, or 82.8%, and students who reported no problems on both scales were 102/124, or 82%. This means that the students that were identified by both scales as either having or not having a problem in advance were 113/188, or 60% of students.

Memory SADR scale	Memory SSI scale		Total
	No problem	Problem	
No problem	81	34	115
Problem	66	7	73
Total	147	41	188

Table 4-23: Cross-tabulation between memory scale in SADR and memory in SSI

Table 4-23 indicates that students who reported having memory problems in both SADR and SSI were only 7/41 or 17%, while those who reported having problems in SADR and not in SSI were 66/147, or 44%, students who reported problems with memory in SSI and not in SADR were 34/41, or 82%, and students who reported no problems in both scales were 81/147, or 55%. This means that the total number of students who were identified as either having or not having memory problems was 88/188, or 46.8%.

A summary of the cross-tabulation between the SADR and SSI scales is presented by Table 4-24. This summary shows that only the reading scale has above 80% accuracy in predicting problems over a six-month period; 89% of students reported having reading problems in both SADR and SSI.

	Percentage of students identified as having problems in both SADR and SSI	Percentage of students identified as not having problems in both SADR and SSI	Total percentage of students who were identified by both scales as either having or not having problems
Reading	89%	89.7%	89.7%
Writing	64.9%	83.5%	79.8%
Attention and hyperactivity	34.9%	80%	70%
Motivation	31%	76.9%	72%
Compensatory strategies with organisational skills	33%	82%	71.7%
Compensatory strategies with time management	30%	82%	70%
Social and emotional problems with feelings and attitudes	17%	82%	60%
Memory	17	55%	46.8%

Table 4-24: Summary of the cross-tabulation between SADR and SSI scales

4.5 Results related to research sub-question 4

To what extent does an end of year Student Self-Inventory (SSI) and teacher's report on student's academic performance correlate with end of year academic GPA?

4.5.1 Correlation between SSI scales

Pearson's correlation coefficient was calculated to measure the extent of the correlation between the eight SSI scales, as can be seen in Table 4-25. It clearly indicated that all scales were significantly and positively ($p < 0.05$) correlated with each other. Some correlation coefficients appear to be larger than others. It can be concluded from this that participants who had problems (or score highly on one scale) were likely to score highly on any other scale. Evidently motivation, memory, feelings/attitudes, time management, organisational skills, attention, reading and writing were all correlated with each other.

Correlations										
		1	2	2	3	4	5	6	7	8
GPA	r	1								
	Sig.									
	N	177								
Motivation	r	-.196**	1							
	Sig.	.009								
	N	176	188							
Memory	r	-.236**	.630**	1						
	Sig.	.002	.000							
	N	176	187	188						
Feelings/attitudes	r	-.182*	.495**	.630**	1					
	Sig.	.016	.000	.000						
	N	176	187	187	188					
Time management	r	-.597**	.366**	.421**	.524**	1				
	Sig.	.000	.000	.000	.000					
	N	177	186	186	186	187				
Organisational skills	r	-.549**	.441**	.531**	.545**	.784**	1			
	Sig.	.000	.000	.000	.000	.000				
	N	173	183	183	183	183	184			
Attention	r	-.527**	.450**	.494**	.578**	.731**	.749**	1		
	Sig.	.000	.000	.000	.000	.000	.000			
	N	177	188	188	188	187	184	189		
Reading	r	-.599**	.430**	.519**	.608**	.756**	.737**	.804**	1	
	Sig.	.000	.000	.000	.000	.000	.000	.000		
	N	173	184	184	184	183	181	185	185	
Writing	r	-.598**	.334**	.394**	.503**	.787**	.749**	.770**	.814**	1
	Sig.	.000	.000	.000	.000	.000	.000	.000	.000	
	N	177	188	188	188	187	184	189	185	189
** Correlation is significant at the 0.01 level (2-tailed)										
* Correlation is significant at the 0.05 level (2-tailed)										

Table 4-25: Pearson's correlation coefficients indicating the correlation between different scales in SSI and between SSI and GPA

4.5.2 Teachers' reports on students' academic performance items and SSI

The overall average of teachers' evaluations was significantly and negatively correlated with motivation, memory, time-management, organisational skills, and attention ($p < 0.05$).

Enthusiasm was shown to have a negative correlation with motivation and organisational skills ($p < 0.05$). Studying skills were negatively correlated with memory and organisational skills ($p < 0.05$). Writing was negatively correlated with feeling/attitude and organisational skills as well as attention and reading ($p < 0.05$). Being focused was correlated negatively with motivation, memory and time-management. Skimming was not correlated with any of the scales in SSI ($p > 0.05$). Finally, spelling was only negatively correlated with writing ($p < 0.05$).

Correlations								
		Overall	Enthusiasm	Study-skills	Written skills	Focused	Skimming	Spelling
Motivation	r	-.339**	-.260*	-.152	-.095	-.240*	-.137	.026
	Sig.	.001	.011	.144	.364	.020	.189	.804
	N	92	94	94	94	94	94	94
Memory	r	-.313**	-.133	-.248*	-.195	-.210*	-.147	-.134
	Sig.	.002	.200	.016	.059	.042	.158	.197
	N	92	94	94	94	94	94	94
Feelings/attitudes	r	-.126	-.150	-.180	-.250*	-.182	-.117	-.050
	Sig.	.233	.148	.083	.015	.079	.260	.630
	N	92	94	94	94	94	94	94
Time-management	r	-.284**	-.165	-.154	-.191	-.224*	-.052	-.001
	Sig.	.006	.114	.139	.067	.031	.618	.994
	N	91	93	93	93	93	93	93
Organisational skills	r	-.331**	-.279**	-.335**	-.230*	-.200	-.155	-.139
	Sig.	.002	.008	.001	.029	.059	.144	.193
	N	88	90	90	90	90	90	90
Attention	r	-.263*	-.081	-.146	-.314**	-.190	-.113	-.148
	Sig.	.011	.436	.159	.002	.066	.274	.151
	N	93	95	95	95	95	95	95
Reading	r	-.203	-.136	-.164	-.251*	-.091	-.158	-.147
	Sig.	.056	.199	.119	.017	.390	.134	.165
	N	89	91	91	91	91	91	91
Writing	r	-.044	.044	-.019	-.103	-.002	-.047	-.254*
	Sig.	.675	.669	.856	.319	.983	.653	.013
	N	93	95	95	95	95	95	95

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

Table 4-26: Correlation between items in teachers' reports on students' academic performance and SSI

4.5.3 Predicting GPA from SSI

SSI included seven scales, all of which were used as predictors to explain variances in GPA. Using multiple linear regression, it was evident that the resulting model was significant, in that it explains variances in GPA: $F(8,158)=17.11$, $p=0.000$ $\{r=0.681$, $R^2=0.464$, adjusted $R^2=0.437\}$. By looking individually at each of the scales, it was shown that reading ($B=-0.075$, $p=0.002$), feelings/attitudes ($B=0.067$ $p=0.001$) and writing ($B=-0.046$ $p=0.047$) were all significant predictors of GPA. It could be predicted that students with problematic reading and poor writing skills were likely to have a poor GPA, and also those who stated problematic feelings/attitudes were more likely to have lower GPA scores. On the other hand, memory ($B=-0.023$ $p=0.356$), organisational skills ($B=-0.023$, $p=0.305$), reading ($B=0.003$ $p=0.913$), attention ($B=-0.024$ $p=0.280$) and motivation ($B=0.017$ $p=0.508$) did not significantly explain variances in GPA.

Model Summary				
Model	R	R Square	Adjusted R Square	SD. Error of the Estimate
1	.681 ^a	.464	.437	.61416

Table 4-27: Model summary showing variances explained by the model using SSI scales

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.653	8	6.457	17.118	.000 ^b
	Residual	59.597	158	.377		
	Total	111.250	166			

Table 4-28: ANOVA results showing the significance of the regression model

Coefficients							
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	SD. Error	Beta			Tolerance	VIF
(Constant)	4.513	.178		25.308	.000		
Motivation	.017	.025	.052	.664	.508	.562	1.779
Memory	-.023	.025	-.082	-.926	.356	.432	2.316
Feelings/attitudes	-.067	.021	.288	3.243	.001	.431	2.318
Time management	.003	.025	.014	.109	.913	.207	4.837
Organisational skills	-.023	.023	-.117	-1.030	.305	.261	3.830
Attention	-.024	.023	-.125	-1.085	.280	.255	3.926
Reading	-.075	.023	-.372	-3.223	.002	.254	3.930
Writing	-.046	.023	-.260	-1.998	.047	.200	4.991

a. Dependent Variable: Cumulative

Table 4-29: Regression coefficients of SSI predictors when predicting GPA

4.6 Summary of the quantitative data results

To answer the first research questions about reliability, a Cronbach's alpha test was employed, which showed that the SADR reading, writing, and maths results indicated high internal reliability, and that motivation and self-esteem had a reliability that was higher than 0.7, which was used as a cut-off point; the other scales had lower reliability. The second reliability test, which was test-retest, was used to test the stability of SADR over time that showed high reliability for all SADR scales.

To answer the second research question about SADR's ability to predict students' GPAs, the results of the teachers' reports on students' academic performance indicated that there was a significant, low-to-medium, positive correlation between GPAs and academic skills, study skills and skimming. However, no significant correlation was found between GPA scores and enthusiasm, writing skills, focus and spelling, and there was a low correlation between teachers' questionnaires and SADR, therefore no further tests were conducted. A Pearson's R correlation coefficient test was used to measure whether or not the different academic difficulties have significant correlation with students' GPA scores. The results showed that there was a significant negative correlation (this indicates that higher scores on

SADR scales tend to predict, at low-to-moderate levels, whether students will have low GPA scores) between GPA and reading, written expression, maths, attention and hyperactivity, motivation, self-esteem, compensatory strategies and memory. No significant correlation was found between GPA scores and social and emotional problems, problems with pragmatics and visual stress. Furthermore, the scales in the SADR questionnaire were shown to be significantly correlated with each other.

Regression analysis showed that only the reading scale predicted GPA; the other scales made no independent contribution to predicting GPA. It was apparent from the analysis that only reading could independently and significantly predict GPA at the end of the academic year. This clearly illustrates that students with greater problems in reading were likely to have a lower GPA. Further to the regression analysis, cross-tabulation was carried out to get a better understanding of the predictive ability of the reading scale in SADR. The test was carried out twice, one with a 2.5 GPA cut-off point, and a second time with a 3.0 GPA cut-off point. The 2.5 GPA cut-off point showed that only 19% of students with high reading problem scores turned out to have low GPAs, but using the 3.0 GPA showed that 58% of students who reported reading problems turned out to have low GPAs.

Regression analysis was conducted on the demographic questions as well. The analysis showed that GPA can be predicted using overall difficulties, i.e. those who have some form of difficulty at school are likely to have low GPA scores; the individual demographic questions were not significant.

Results related to the third research question showed that all eight scales of SSI were internally reliable. Pearson's correlation analysis, testing the correlation between SADR scales and their correspondent scales in SSI, found that reading had the most significant correlation, while others had medium-to-low significance with their correspondent scales in SSI; written expression, attention and hyperactivity, motivation, compensatory strategies and emotional

problems all correlated positively with their corresponding scales in SSI except for the memory. To summarise the relationship between the two variables, the scales from SADR and their corresponding scales from SSI, the researcher used cross-tabulation. Students who reported having reading problems in SADR and continued to have problems in SSI were 89%, students who reported having writing difficulties in SADR and still reported having writing difficulties in SSI were 64.9%, 34.9% of students who reported attention and hyperactivity problems in SADR continued to have those problems in SSI, students who reported not developing compensatory strategies in SADR and not having organisational skills in SSI were 33%, students who recorded motivational problems in SADR and still reported those problems in SSI were 31%, and students who reported having memory problems in both SADR and SSI were only 17%.

For results related to the fourth research sub-question, the Pearson's correlation coefficient was calculated to measure the correlation between the eight SSI scales. The results showed that all scales significantly and positively correlated with each other, and the teachers' reports on students' academic performance again showed negative correlation. Regression analysis was used to measure SSI's ability to predict GPA; the resulting model was significant in that it explains variances in GPA. By looking individually at each of the scales, it was shown that reading, writing, and feelings and attitudes were all independent significant predictors; those who stated having issues with reading, writing, or feelings/attitudes are more likely to have lower GPA scores. On the other hand, memory, organisational skills, reading, attention and motivation did not significantly explain variances in GPA.

4.7 Introduction to the qualitative data

The second part of the chapter presents the results obtained from the qualitative phase of the study. These findings are drawn from data collected from interviews with a sample of six students from three groups. These students completed SADR and SSI questionnaires and were included in the teachers' questionnaire. The criteria used to choose these students have been explained in the methodology chapter.

Identifying and studying any problems concerning the real-life situations of a given set of individuals may be difficult if adopting a quantitative method alone. This type of difficulty arises because of the complexity associated with the nature of human beings, their psychological status and their social interactions (Shaughnessy et al., 2000). Therefore, the case study methodology paradigm was an optimal choice for investigating any human cases. Moreover, case studies provide the researcher with a thorough understanding of the phenomena under investigation. The current investigation addresses the experiences within a sample of purposely selected university students who might have encountered some kind of academic difficulties concerning literacy and study skills. Through selected cases, this phase of the current research aimed to explore students' academic and non-academic experiences to understand the questionnaire's limitations with regards to predictability, and explore true positives, false positives and false negatives. Some themes emerged (see Appendix XV)

4.8 Results related to the Phase Two research question

To what extent do the academic and non-academic experiences of selected case studies help in understanding how the questionnaire can predict students' academic performance?

The study undertaken in Phase Two gave a broad overview of the current situation concerning academic difficulties related to literacy in Saudi Arabia. The first phase was supposed to identify students with academic difficulties and predict students' future

performance, while the second phase investigated SADR's ability to predict students' academic difficulties and the role of the social and academic experiences of students, thereby complementing and validating the findings of Phase One by gaining a deeper insight into the psychological, social and academic background of adult students in Saudi Arabia. This was achieved through the use of a case study methodology, where in-depth semi-structured interviews with the students concerned were conducted with the help of a semi-structured questionnaire. The interviews were conducted once with each participant.

4.8.1 Case study 1

Sophie was from the true positive group; she scored highly in the SADR questionnaire and had a low GPA, which may point to academic difficulties.

As shown in Table 4-30, Sophie's reading score for the SADR questionnaire was 106, with a mean of 66 and SD of 16, which is more than two SDs above the mean. This may indicate academic difficulties related to literacy; Table 5-31 shows that Sophie's reading score on SSI was 18 with a mean of 9.50 and SD of 4.04, which also may indicate reading problems. This implies that Sophie's reading problems continued into higher education. She also had a score of 55 for writing in SADR, with a mean of 32.39 and SD of 7.8, which may indicate some academic difficulties in writing, and she scored 19 for writing on SSI, with a mean of 8.60 and SD of 4.46. For attention and hyperactivity, she scored 23 with a mean of 24.6 and SD of 4.19 and 8 with a mean of 9.45 and SD of 4.07, in SADR and SSI respectively; this student's scores do not indicate a problem in this area. For motivation, in SADR the student scored 25 with a mean of 22.47 and SD of 4.50, and her corresponding score in SSI was 8 with a mean of 8.10 and SD of 2.53, which may indicate that she does not have a problem in that area either.

In compensatory strategies, she scored 9 with a mean of 18.37 and SD of 4.15; her scores in the corresponding scales in SSI were 19 for time management, with a mean of 8.66 and SD of 3.95, and a score of 4 for organisational skills, with a mean of 9.09 and SD of 3.95, which may mean that she has problems with time management, but not with organisational skills. For social and emotional problems, the student scored 20 with a mean of 14.38 and SD of 2.59 in SADR, which may indicate a problem in that area. Her score on the corresponding scale in SSI, feelings and attitudes, was 18, which may also indicate a problem. For memory, Sophie scored 28 with a mean of 14.12 and SD of 2.88, which may indicate a problem in memory, but the corresponding scale in SSI does not show a problem in that area, where Sophie scored 10 on the memory scale, with a mean of 9.02 and SD of 2.95; in memory it seems that the student reported a problem in school but it did not continue in university.

Table 4-32 includes scores on the post-interview scale (this scale was used to help guide the interview process), which included five statements; on this scale, the student circled a number that is most representative of their state. Sophie's scores indicated negative feelings towards all the scale questions (the score is out of ten, with ten being the most negative).

	Student score	Minimum	Maximum	Mean of all students' scores	SD
Reading	106	37.00	146.00	65.95	16.26
Writing	55	19.00	74.00	32.39	7.80
Attention and hyperactivity	23	10.00	38.00	24.63	4.19
Motivation	25	10.00	37.00	22.47	4.50
Compensatory strategies	9	8.00	30.00	18.37	4.15
Social and emotional problems	20	6.00	22.00	14.38	2.59
Memory	28	5.00	20.00	14.12	2.88
Cumulative GPA	2.50	2.00	5.00	3.67	.82

Table 4-30: Sophie's scores in SADR compared to group mean scores

	Student score	Minimum	Maximum	Mean	SD
Motivation	8	4.00	19.00	8.10	2.53
Memory	10	4.00	17.00	9.02	2.95
Feelings/attitudes	18	4.00	19.00	10.35	3.47
Time management	19	4.00	20.00	8.66	3.95
Organisational skills	4	4.00	20.00	9.09	3.95
Attention	8	4.00	20.00	9.45	4.07
Reading	18	4.00	20.00	9.50	4.04
Writing	19	4.00	20.00	8.60	4.46

Table 4-31: Sophie's scores in SSI compared to group mean score

Statements	Student indication
School attainment satisfaction	8
Feelings about your GPA	10
Reading ability	6
Writing ability	6
Academic support	10

Table 4-32: Sophie's indications in the pre-interview scale

Findings

The following findings regarding Sophie's case were gathered from investigating and analysing scores from the SADR and SSI questionnaires, her GPA, medical records and her interview responses.

Age of onset: In Sophie's case, the signs of academic difficulties were observed during her first year in school. Specifically, as indicated by her uncle and herself, Sophie has exhibited low levels of literacy and study skills since she was a child. The causes of her difficulties are unknown to her, and those difficulties still persist as she struggles in her studies in higher education.

Health condition: In general, Sophie is in good health, and she has not suffered from any serious health problems, although she thinks there is something physically wrong with her:

"There must be something wrong with my wiring, in my brain".

IQ test: An IQ test was administered to Sophie during senior high school. She scored below the average on that test; she then undertook another where her scores were within the norm:

"I was diagnosed by a specialist from Egypt, and after a one-hour test he told my uncle that I am mentally challenged. Although I was expecting that there

was something wrong with me, I was really disappointed, and so was my uncle, who wanted to seek another opinion. I felt broken and kind of defeated, but then the other specialists said I was fine, only slow”.

Parent’s awareness of the condition: Both of Sophie’s parents are aware of her academic problems but they lack sufficient information about the IQ test that she took. Her uncle is the only one with that information, but her parents are consistent in their attempts to provide her with assistance while studying.

School attainment: Sophie encountered many studying problems throughout her schooling. She failed to pass the first and second grades, although her attainment in mathematics was satisfactory.

It seems that the main struggle when Sophie was in the early years of school was the blending of sounds and words correctly.

“I couldn’t blend like other students did... I would spend twelve hours studying, but barely get by. I became more and more aware that there was something wrong with me”.

By the seventh grade, she started reading, but she still thought that it took her far longer than her peers; it seemed that she had a problem with her reading speed:

“...but I could read so I was over the moon.... I still take a long time to read questions on an exam or read textbooks, and when I finish I have to read it again to understand”.

Sophie also had writing difficulties, finding spelling the most difficult aspect of writing, especially when younger and with barely legible handwriting. Now she uses computers for her assignments, and has found organising her thoughts in a coherent manner to be challenging, along with using appropriate grammar:

“It seems that my thoughts are not expressed in the right words and sentences. I get feedback from the university teachers with something along those lines, like saying ‘you should have explained more’”.

Sophie was unquestionably positive that she had no difficulties in mathematics, with her problems in mathematics being mainly when questions are expressed in written form:

“I can solve problems in my head. I visualise the steps, and the answer comes to me”.

University attainment: Sophie has encountered problems with studying at university. These problems are reflected in her low GPA, and she always feels at risk of having severe academic problems, which she attributes mainly to a problem with her time management:

“I think if I only had more time to do stuff like, you know, homework and assignments, that I would do much better”.

It seems that Sophie still has problems with slow reading even at university level and she thinks that her reading speed is not as it should be, especially when she compares it to her friends. She explained that seeing a word that she does not know terrifies her because she feels like:

“... a toddler having to spell each letter, it is a very embarrassing situation for me”.

Sophie has some difficulties in effective comprehension, which could explain the effort she puts into concentrating on her reading speed.

However, for Sophie listening comprehension seemed much easier than having to read and then understand. She said that she thinks she would understand subjects presented to her much faster if her friends or teacher read the material aloud for her:

“But I know that when one of my university teachers says something ... [whether] reading or PowerPoint, I get it right away”.

Assistance received: Sophie received assistance from her family and relatives, especially her uncle. She indicated that her teachers were careless regarding her condition and felt that the assistance she received was not sufficient and not specialised. She implied more than once that she did not know the exact nature of her problem, although she felt that the teacher should have. She had negative feelings concerning the support provided by her school, which at one time made her hate school, with her feeling stigmatised and not smart, or as she put it, “dim”, which didn’t help with her literacy problems at all. Moreover, she thought special classes were no more than a means to get her out of the classroom, and thought that in addition her social life was affected, which contributed to her problems:

“I couldn’t write at all, and my teachers were mean. Instead of trying to help me, I was sent to a special class [taquaia] outside the classroom. I hated it. The other students were mean as well. I hated school at that time ... It was supposed to help me with my reading and writing, but I really don’t think I got any real help at all”.

She suggested that any assistance from her friends would be valuable, but they were busy all the time with their own studies.

Social life: She encountered serious social problems, since she failed to build real friendships with her peers within school, and so felt isolated. In contrast, out of school this problem was absent and she was able to make friendships:

“I was doing well in everything but school. Outside school, my family and friends would swear that I was smart, but in school, I couldn’t even make friends”.

Personal traits: Her responses manifested that she may encounter low self-esteem. Sophie kept comparing herself to other students who were at the same level. She was aware of having a problem early on:

“I knew there was something wrong. I could not really blend in like other students did. All the other students were doing much better than me. In grade four, they were writing and reading, and it seemed that everyone was doing much better than me.

I was being caged and I did not talk with anyone about it, but I felt all my teachers wanted to do was to get me out of the way so they could teach the smart kids”.

Despite suffering with her condition, she always attempted to do her best, which reflects high levels of motivation:

“I don’t know why, but I never got the grades that I work so hard for. I know it’s me”.

Self-awareness: Sophie frequently showed during the interview that she possesses high levels of awareness regarding her literacy and study skills. She always compares her performance with her peers. She recognised that her problems were in reading and writing and indicated that she was slow in reading and writing.

Coping strategy: Sophie used many strategies in order to cope with her literacy and study difficulties, but she relied on memorising as a means of gathering knowledge:

“I take a very long time to get my homework done ... I have a very strong memory”.

Moreover, she used another compensatory strategy by implementing coloured cards to help her with blending letters:

“I had short sounds in one colour then long sounds in another, and I put single letters in between. But to be frank, I still used memorisation—and I still do”.

Sophie developed her earlier technique of using coloured cards by adding pictures and drawings

“What I did was highlight the letters that I got mixed up when I wrote. Then I drew a picture to help me remember ... I would spend hours just focused on my technique”.

Furthermore, she resorted to another compensatory strategy by using clay to formulate words, especially unfamiliar words. She found these strategies, which had emerged by the fifth grade, very useful in overcoming her problems. She indicated ongoing problems, but a slow improvement in her studies, and became able to read by the seventh grade, although compared to her peers her reading ability was limited. Later, she started using computers to accomplish her assignments, which helped to overcome her difficulties in handwriting, spelling, and organising her thoughts.

Summary of case study 1

Sophie indicated more than once that she feels shy and nervous around campus, and that she encounters social problems when interacting with peers; Sophie said she has a tendency towards isolation. The problems that Sophie has with literacy and study skills have been apparent since the first grade where she found herself lagging, which had negative implications later on for Sophie in her academic life. In many situations, Sophie was able to evaluate her condition and improve her self-image and performance, and has always appeared to be self-motivated. Despite the negative perceptions she thinks are held by her peers and teachers, Sophie persists in working towards finishing her degree. To help herself, she has sought out coping strategies that enable her to learn more effectively, such as techniques involving

coloured cards, drawings, pictures, clay and the use of computers. Sophie's reading problems started early in school with difficulty in blending sounds, and she was late to start reading independently. Although she had family support, especially from her uncle, and supportive classes at school.

4.8.2 Case study 2

Eve was from the true positive group, where students scored highly in SADR and had a low GPA, which may indicate academic difficulties. Her scores are shown in Tables 4-33 and 4-34. Eve's reading and writing were above the mean questionnaire scores, which may indicate that this student was at risk of academic difficulties in reading and writing. The student's score for reading in SADR was 98, and in SSI it was 16; in writing her score in SADR was 49 and in SSI it was 17. Both questionnaires show that Eve has difficulty with reading and writing, indicating that she has academic difficulties related to literacy that continued into higher education.

On the attention and hyperactivity scale, the student scored 32 in SADR and 18 in SSI; both indicate that the student might have a problem in that area. On the motivation scale, in SADR the student scored 10, and her score on the corresponding scale in SSI was 8; in both questionnaires the student's scores indicate that she does not have a problem with motivation. She scored 17 on compensation strategies in SADR; for time management in SSI she scored 11, and for organisational skills she scored 15, which may show that she did not have a problem in these areas before going to the university, confirmed by the implication that she also did not have these problems upon starting university. In social and emotional problems, the student scored 14, and she scored 10 on the corresponding scale in SSI; it seems from both scores that the student does not have a problem in this area. In memory she had a score of 14 in SADR and 7 in SSI, which may indicate that the student does not have a problem here either.

Table 4-35 shows the student-indicated scores on the post-interview scale of five statements; Eve's scores indicate generally negative feelings towards all the scale questions, especially towards her reading.

	Student score	Minimum	Maximum	Mean of all students' scores	SD
Reading	98	37.00	146.00	65.95	16.26
Writing	49	19.00	74.00	32.39	7.80
Attention and hyperactivity	32	10.00	38.00	24.63	4.19
Motivation	10	10.00	37.00	22.47	4.50
Compensatory strategies	17	8.00	30.00	18.37	4.15
Social and emotional problems	14	6.00	22.00	14.38	2.59
Memory	14	5.00	20.00	14.12	2.88
Cumulative GPA	2.50	2.00	5.00	3.67	.82

Table 4-33: Eve's scores in SADR

	Student score	Minimum	Maximum	Mean	SD
Motivation	8	4.00	19.00	8.10	2.53
Memory	7	4.00	17.00	9.02	2.95
Attitudes/feelings	10	4.00	19.00	10.35	3.47
Time management	11	4.00	20.00	8.66	3.95
Organisational skills	15	4.00	20.00	9.09	3.95
Attention	18	4.00	20.00	9.45	4.07
Reading	16	4.00	20.00	9.50	4.04
Writing	17	4.00	20.00	8.60	4.46

Table 4-34: Eve's scores in SSI

Statements	Student indication
School attainment satisfaction	4
Feelings about your GPA	4
Reading ability	5
Writing ability	5
Academic support	4

Table 4-35: Eve's indications in the pre-interview scale

Findings

The following findings regarding Eves' case were gathered from investigating and analysing scores from the SADR and SSI questionnaires, her GPA, and her interview responses. Eve's medical records were not available.

Age of onset: Eve showed some indication of academic difficulties during her years in school, but overcame them with the help of her parents, and never repeated a year. She says she found schoolwork challenging but loved reading; she hated maths and writing. Her low achievement became more prominent whilst at university, which could be attributed to a lack of help and support at this level.

Health condition: In general, Eve said that she has good health and does not suffer from any serious health issues, although her medical records were not accessible.

Feelings towards university attainment: She has negative feeling towards the university system and blames the education system and teaching methods at the university for her low achievement:

“I just thought that it would be so much different than the ugly reality. I was shocked and saddened that I still have to rely on memory and my malzma [a folder that has everything the student should read]. I would've loved to explore by myself. I know that I am very good at that, exploring and solving problems, but no. We had to be treated like elementary kids”.

University support: In terms of support, Eve feels that the university is not supportive or understanding of her needs. She seemed to hold the university accountable for her low achievement:

“Yes, I am doing well considering that the university doesn’t really appreciate great minds. I have no doubt that I am smart enough to do what I want. Well, I felt a little thick in school, but my parents always assured me that I was not”.

Self-concept: Eve seemed to have a positive image of herself, despite her low achievement; she demonstrated confidence and seemed sure of her abilities.

Family support: Eve had what seemed like strong family support. Her reading confidence was enhanced by this family support. Her mother and father helped her with her assignments until she graduated from high school; even at university level she still got some help from her father. Eve’s statements show that her mother’s support played a major role in helping her reach university. It seems that Eve is convinced that her school and teachers did not help in any way. This could be because she didn’t show any signs of difficulty:

“Without any doubt, in my mind it’s my mum, through repetition and building my confidence. Knowing that she believed in me made me believe in myself ... My mum worked on my reading even before I went to school, and she would sit with me each day after school. It was fun. She would let me tell my little sister her bedtime story, and I think that gave me confidence. I know I can read”.

Motivation: Eve seemed motivated and was a hard worker, although perhaps not all the time; this could be a result of repeated frustration. She seemed to like reading and indicated that she reads for personal gratification and to attain knowledge. When I asked her if she thought that her GPA reflected her achievement, she didn’t seem sure about whether it did or not:

“Well, sometimes I work really hard, sometimes I don’t. So I think it does in a way reflect my studies—like in a small way”.

She implied more than once during the interview that she put in a lot of hours and effort to get the university work done:

“I struggled, but I passed my exams with Bs and Cs in school. It seems a bit harder now. I did it with a lot of hard work. I sometimes end up somewhat disappointed because I think I deserve better and still work hard. Comprehension is definitely not a problem. Whenever I am reading or hearing someone else read, I don’t have a problem there”.

Impulsivity and attention disorder: Eve indicated that in her daily life she makes hasty decisions that she later regrets, which might indicate impulsivity. In addition, she drifts into daydreams effortlessly—not just during lectures, but even when she is doing things she enjoys, such as reading a book. This could indicate attention and focus problems. She explained that daydreams happened early on in school, before she enrolled at university, but she seemed to blame the teachers’ methods for her lack of focus and interest:

“Right now my main problem is that I cannot keep focused on the task for a long time. Whatever it is, I have lots of daydreams—not that I can help it, but there is a lot to think about, lots of hopes, and they seem to choose lecture times to suit themselves.

...I always found it difficult to maintain any sort of focus for a long time on anything, especially in the classroom. They go on and on, and it just puts me to sleep mentally. I mean, I’ll be snoring and having a dream.

...I just lose interest in doing stuff. Like I’ll be cooking with mum and leave halfway through. I want things to be done quickly—over and done—but instead they drag on and on”.

Time management: Eve indicated that she manages her time well, but it all depends on her workload. She seems to think that teachers do not care what the students achieve. Therefore,

she blames her teachers for her work overload and explained that she found it difficult at times to manage her studies:

“Some weeks we have no assignments at all, and others we would have like three assignments to work on at one time. I think the teachers don’t really care to organise this matter so they can ensure that it won’t happen. They don’t bother—why would they? We don’t really matter”.

Reading and writing: When it comes to reading and writing in school, the data suggest that Eve’s reading and writing problems might be caused by a lack of fluency, but she did not seem to view this as a problem. Eve specified that she enjoys reading, although she had some difficulties in school with both reading and writing:

“I enjoy reading and writing, but I read really slowly compared to my classmates”.

According to Eve, her reading problems related to phonics and blending. However, she later contradicted this statement and seemed confident that it has nothing to do with her phonics and blending; rather, she seemed to think that her only problem was speed. When she started school, she received crucial support from her parents:

“I have always been good at that, but it just takes me longer than what it should. Then again, mum always says that there is not a ‘should’ in reading time, just read at your own pace. That’s what she says and what I did”.

She appeared sure that she didn’t really have a problem, although her answers indicated that she did. Eve either doesn’t recognise or doesn’t want to admit to having academic difficulties, although her statement shows that she might have difficulties. Eve repeatedly said that she did not have a problem, so I asked why she indicated a five on her rating scale. Her answer suggested that she is content that she is doing her best, but she is not satisfied with her current

grades. However, she is simultaneously proud of her achievements. It seems that her academic difficulties have become more pronounced at university than they used to be, and this again may be related to fluency:

“I think it is more speed than anything else. It could be memory as well. I can’t memorise that well for sure. Attention—well, sometimes it is an issue, especially if there is something on my mind. I can’t put it on hold. It just pops up and I can’t really control that.

I was strong; I just needed more time to get things done”.

She believes that she has illegible handwriting and bad spelling. Eve’s writing difficulties are evident in speed and spelling, especially with long and short sounds. Eve seemed more aware of her writing problems than her reading issues.

She indicated that when it comes to writing, her main problem was finding a starting point; she also has problems determining how to translate her thoughts into ideas and organising and presenting them in a coherent manner.

“My handwriting was also of poor quality, and I was slow at both [i.e., reading and writing]. Thank God for computers.

As for my writing, I always find it a bit difficult to find what and where I should begin and how to organise those ideas. In my mind, they seem great, but in writing ... they do not seem to be understandable for other people ... It seems that sometimes my ideas are all over the place. They make sense to me, but apparently not to my teachers, so I try to put small numbers at the start of each paragraph and then rewrite the paper based on what I think makes sense”.

When I asked her to explain further, Eve stated that what she does is write everything down. After finishing, she reads it out loud and then numbers the paragraphs to indicate what she thinks is the right order. After that, she types the text up on her computer.

Nevertheless, she still seems to blame the educational system for her inability to achieve her full potential in school, and she pointed out that she thought the school's methods relied heavily on memorisation:

“In school, you don't have to be smart to succeed. You only have to have a good memory for each subject. For teachers, it's always the same: memorise this by heart, like your own name. So anyone with even a tiny memory problem will undoubtedly have a very hard time surviving school”.

When she was in school, Eve avoided reading out loud because of her feelings of embarrassment about being slower than her peers, but her teachers forced her to stand up and read. She thinks this contributed to her low achievement because it made her avoid reading class by taking lots of water and toilet breaks:

“Back in school, I think it was reading out loud time. A teacher asked me to stand up and read. I was 14 and I felt insulted in a way because I had talked to my teacher before and I told her that I am willing to read one on one, but not in front of the class. She said she understood, so I was surprised when she called on me, and I felt sick. I didn't read, although the teacher said that I would lose points if I didn't. I never stood in front of the whole class again. I take longer than the other kids to spell. I do it slowly, but I am not unintelligent. I am much better at it now than I used to be, but I still need time to get it right”.

As for comprehension, Eve seems confident that she can fully comprehend what she reads and critique it at the same time.

Maths difficulties: Eve seemed convinced that she did not have any problems in this area; although she showed some difficulties with multiplication tables, these apparently are not to a great extent. She indicated that she had a problem with written maths. She seems to think that the main problem is the time consumed when reading the problem, but according to her, once she read them, she could solve them:

“I didn’t struggle with maths—maybe just a bit, very early on, but once I got it, I got it. I mean, multiplication tables were a problem because we were asked to memorise them and I have the memory of a fly, but I think with repetition and reasoning I got that, so I don’t think I have problems in that area”.

Compensatory strategies: Eve implied that she used some strategies while studying, especially with writing. These included using a computer, writing down her ideas and organising these using numbers for the paragraphs, before typing them up on a computer. Eve specified how she studied and used specific strategies, such as highlighting key points:

“I try to choose a really quiet place away from any noise or distractions. Then I use a highlighter to indicate the key points”.

Self-regulated learning (SRL): Eve is convinced that all she needs is discipline, and that she is well-disciplined:

“I know I have to work harder than my younger sister, but I am okay with it. It’s all about discipline. I plan my studying and my breaks, and I am doing okay”.

Memory: Eve seems to think that she has a memory problem that is causing her other academic difficulties. She seems to think that she has profound problems when it comes to her memory, but did not want to elaborate:

“Notes cover my life, and even with that I keep forgetting, but I don’t think that would have been a problem if I studied anywhere but Saudi Arabia”.

Summary of case study 2

Eve experienced low academic achievement. Her problems with literacy and study skills started early, while at school, where she had problems with phonics and blending sounds; she found it especially difficult to read aloud in the classroom when she was in school. Her reading problems persist at the university level and her main problem is reading speed. She seems to have writing difficulties; although she said that the use of computers has helped her, she uses other strategies as well, such as numbering her paragraphs and writing down her ideas. She also has difficulty with maths, but centred around written maths, which could be related to her reading difficulties.

Although Eve recognised that she has a problem, she seemed to blame the school and university system, stating more than once that no one offered to help her. She stated that she had difficulty concentrating for a long time on any given task, but blamed teachers’ methods for her “forced daydreams”, which might indicate an attention disorder. Beyond that, Eve seemed motivated and eager to graduate. Eve had strong family support and described her parents as her “rock”, who helped her past school obstacles to the point where her reading and writing difficulties did not reflect on her grades in school. However, at university level it seems that her difficulties became more apparent.

4.8.3 Case study 3

Sara was in the false positive group, which consists of students who scored highly in SADR, which may indicate academic difficulties, but their GPAs do not show low achievement. Sara scored 140 for her reading in SADR and 6 for reading in SSI, as shown in Tables 4.36 and 4.37, which may indicate reading problems in school, but that problems with reading did not

continue into higher education, as her reading score in SSI does not indicate any difficulties. Sara's writing score in SADR was 67, and 7 in SSI; the SADR questionnaire score indicates that she may have difficulty with writing, but her score on the corresponding scale in SSI shows that she does not have a problem with writing.

Sara's score for attention and hyperactivity in SADR was 32, and in SSI was 5, which again indicates a problem on the first scale but not the second; she had a problem with attention and hyperactivity in school but not in higher education. Sara scored 10 on the motivation scale in SADR and 5 on the corresponding scale in SSI; both scores indicate that the student does not have a problem in this area.

Sara scored 21 on compensatory strategies in SADR, which may indicate that the student does not have a problem in developing or implementing strategies, and scored 8 for time management and 5 for organisational skills in SSI, which also indicate no problems in these areas. Sara's score for social and emotional problems in SADR does not show problems in this area, and the same for the corresponding scale in SSI, feelings and attitudes, where the student scored 10. Sara's score for memory in SADR was 18, and for the corresponding scale in SSI was 9; both scores indicate that the student does not have a problem in this area.

Table 4-38 shows the student-indicated scores on the pre-interview scale; Sara's scores indicated mostly positive feelings towards university support and her GPA.

	Student score	Minimum	Maximum	Mean of all students' scores	SD
Reading	140	37.00	146.00	65.95	16.26
Writing	67	19.00	74.00	32.39	7.80
Attention and hyperactivity	32	10.00	38.00	24.63	4.19
Motivation	10	10.00	37.00	22.47	4.50
Compensatory strategies	21	8.00	30.00	18.37	4.15
Social and emotional problems	20	6.00	22.00	14.38	2.59
Memory	18	5.00	20.00	14.12	2.88
Cumulative GPA	3.00	2.00	5.00	3.67	.82

Table 4-36: Sara's scores in SADR

	Student score	Minimum	Maximum	Mean	SD
Motivation	5	4.00	19.00	8.10	2.53
Memory	9	4.00	17.00	9.02	2.95
Attitudes/feelings	10	4.00	19.00	10.35	3.47
Time management	8	4.00	20.00	8.66	3.95
Organisational skills	5	4.00	20.00	9.09	3.95
Attention	5	4.00	20.00	9.45	4.07
Reading	6	4.00	20.00	9.50	4.04
Writing	7	4.00	20.00	8.60	4.46

Table 4-37: Sara's scores in SSI

Statements	Student indication
School attainment satisfaction	9
Feelings about your GPA	9
Reading ability	7
Writing ability	7
Academic support	8

Table 4-38: Sara's indications in the pre-interview scale

Findings

The following findings regarding Sara's case are based on the investigation and analysis of her responses to the SADR and SSI questionnaires, her GPA, and her interview responses.

Age of onset: Sara started to experience academic difficulties that manifested during her school years (i.e., before university), especially during elementary school and junior high school. They stopped being as severe when she started high school, which was when she noticed a change in her overall scores. In high school, she studied science and loved physics and maths:

“I always loved maths. It is the only subject that has never been challenging—or challenging, but in a good way. Not in an ‘I can’t do it’ way, but in an ‘I have to work harder at it’ way”.

Health condition: Although no medical records were reviewed in Sara’s case, based on her statements she is not suffering from any medical conditions other than a tremor in her hand, which is embarrassing to her. Based on her statements, this tremor is not triggered by any illness. She has experienced it for a long time, and it gets worse only when she is tired or under stress.

School attainment: Sara has encountered several problems while studying:

“I found it hard to follow what the teacher was saying. For example, I was at a new school, where they taught level three reading, whereas I only reached level one in my old school”.

She insists that her grades are the direct result of her family moving a lot, which she blames for her academic difficulties:

“The instability of it all—a new home, sometimes a new city, a new neighbourhood; I hated having friends, because it meant making moving hard”.

Sara refused to discuss her reading and writing in detail. She seemed to regard that period as painful and repeatedly said that she does not want to remember it:

“All I know is that I was not doing well. I was hardly passing, so any problem you can think of, I had. My reading was bad, so was my writing, but that was then. I am doing much better now”.

University attainment: Sara seems to enjoy university life, as she indicated that she finds her discipline really interesting. She wants to work with troubled children who are experiencing what she has been through. She chose this discipline as she thinks that she can make a difference:

“I believe that, in order to understand someone’s experiences, you have to walk in their shoes. I had difficult family circumstances, and I come from a broken home. I can help those who have experienced those unfortunate circumstances. I can make a difference”.

Time management: Sara thinks that her time management and the hours that she spends make a considerable difference. Having had a tutor for the last four years also helps:

“No one knows that in the university or they would be laughing at me, but I have a tutor who reads my work and helps me with my study skills. She is a friend of my mum. She started helping me in high school. I really owe her”.

She compliments herself for doing the best that she can. It seems that she is focused in her efforts:

“I believe with all of my heart that everything that happened to us as a family (and a lot has happened) is because of my mum’s lack of education and her not having a job, so I am determined to have both”.

Assistance received: Sara has never received any assistance from her school, perhaps because she has not stayed in one school long enough to be recognised as needing help, or because she

has never asked for it. She indicated that her maths teachers were always impressed by her performance:

“My only real problem was reading, blending mostly. I see now that it was a lack of practice. No one read to me or helped me study. My father was gone most of the time and mum just didn’t, so since year one I have studied by myself. Moving didn’t help either”.

Coping strategy: Sara used many strategies in order to cope with her reading problem during her school years, before university. Most of her efforts have focused on coping with the stress of moving. She explained that she used her imagination a lot, but she did not fully explain how. She said to cope with everything, she imagined her life to be different and planned and lived it accordingly:

“I hate to say it, but I think what really helped me was being selfish. I stopped thinking of mum’s problems, the moving and helping; I only thought of me. I mean someone should. I hated that about myself sometimes, but then when we moved in with my grandparents, grandma actually encouraged me, saying ‘Think only of Sara’. The more time I spent thinking of me, the better things got for me”.

Sara’s tutor also helped her develop her coping strategies, such as mind maps, scanning and highlighting important ideas:

“She doesn’t do my work, she just showed me how”.

Sara reads the notes related to a lecture and tries to fully understand them. She researches the topics beforehand so she can participate, and she always gets full marks on her participation:

“I need to feel prepared, so during the lecture I can concentrate more on what is being said and not spend time reading the PowerPoint slides. My teachers

are so understanding, and they provide me with printed PowerPoint slides, which I can read to be prepared ... After the lecture, I study right away; otherwise, I will forget”.

She seemed keen on being prepared, explaining that it helps her organise her thoughts and develop an overall picture. She stated that lectures help her understand the secondary subjects:

“If I don’t really fully comprehend the full picture, I won’t be able to understand anything. I won’t get the little sub-topics if I don’t get the whole picture”.

Exams are the most difficult for Sara because she needs more time to understand the questions. She explained that it takes time to read the questions, although she thinks that there is nothing wrong with her reading. She just needs time to read and re-read them, in order to understand them. She said that she earned a high grade when a teacher allowed her to take the exam in her office and did not limit her time, telling her to take as much time as she needed.

Self-perception: Sara thinks that her levels of stress have affected her self-perception, which have in turn affected her academic performance:

“I was so worried every time I started a new school. My heart would start pounding, my hands would be sweating, and then my hand would start to shake, which made everything much worse because I knew that everyone could see it. All that I could think was ‘they don’t like me, they hate me, they think I am odd’.
...I just wanted to make everything go away. It would have been better if I had. I wanted the teachers to just leave me alone. I didn’t want to read. I didn’t want to look like a fool, reading like a child”.

She found it hard to cope with a different environment each time she moved. She envies other students who did not have to go through such experiences:

“Some of my friends who never changed schools don’t know how lucky they are. I feel so envious sometimes, wondering ‘why me?’”.

Family support:

Neither of Sara’s parents offered any kind of support. She indicated that her father was between jobs, which put him in a “sour” mood, and her mother just did not offer any help. Help came when her parents divorced and the family moved in with her grandparents; although illiterate, her grandmother encouraged Sara and her sisters to read and write. Then she asked a friend of Sara’s mother called *N* to help. She paid for these lessons, which—based on Sara’s statement—have played a crucial role in helping Sara understand school and schoolwork:

“When N came, everything changed. I can see things differently now. I stopped being angry that nobody cared and started caring for me. She showed me how to study. I was 16 at the time, and no one had ever studied with me or showed me how. She showed me that I am super smart. I mean, I never repeated a year, which Nadia explained was an accomplishment in itself, even if I didn’t have good grades”.

Summary of case study 3

Sara’s parents are divorced, and her father has a new wife and three children from this marriage. Sara lives with her mother and grandparents, whom she regards as her support system, especially her grandmother. Her grandmother does not know how to read or write, but encourages Sara and her sisters to read to her, especially the Qur’an, which she has said helps her with her reading. Her academic difficulties seem to be mainly because of her family situation and constant moving; she refused to discuss in detail her reading and writing difficulties and stated more than once that it was a problem that passed. Sara stated that her only current problem is with reading, and that she uses several coping strategies such as

preparing before a lecture and preparing notes. Despite issues with her reading speed, she stated that she is doing well in university, which is reflected in her GPA.

4.8.4 Case study 4

Judy was in the false positive group, those students with high scores in the SADR questionnaire but which are not reflected in their GPAs. Her scores in SADR and SSI are shown in Table 4-39 and Table 4-40, respectively. Judy's scores for reading and writing indicates that she may encounter academic difficulties. Her reading score was 146, which is the maximum score for the reading scale in SADR, and she scored 17 for reading in SSI, which may indicate that she still encounters academic difficulties related to literacy. Judy's score on the writing scale in SADR was 47, and in SSI she scored 20 on the writing scale. This may indicate that the difficulties encountered by her in school continued to the university level.

Judy's score for attention and hyperactivity in SADR was 23, and on the corresponding scale in SSI was 18; it appears from both scales the student encounters problems in this area. However, her motivation scores in both SADR, where she scored 25, and SSI, where she scored 11, show that the student does not have a problem with her level of motivation.

In the SADR questionnaire, her score for compensatory strategies was 17, and on the corresponding scales in SSI, for time management it was 8 and organisational skills was 13, which may point to the student not having a problem in this area. For social and emotional problems, the student's score was 16 in SADR, and on the corresponding scale of feelings and attitudes in SSI, the student's score was 6, which may indicate that the student has no problems when it comes to her feelings and attitudes. For memory, the student scored 15 on the SADR scale and 16 on the SSI scale, which may indicate that the student encounters some problems with memory.

Table 4-41 shows the student-indicated scores on the pre-interview scale, with Judy's scores indicating generally positive feelings towards all the scale questions, especially towards academic support.

	Student score	Minimum	Maximum	Mean of all students' scores	SD
Reading	146	37.00	146.00	65.95	16.26
Writing	47	19.00	74.00	32.39	7.80
Attention and hyperactivity	23	10.00	38.00	24.63	4.19
Motivation	25	10.00	37.00	22.47	4.50
Compensatory strategies	19	8.00	30.00	18.37	4.15
Social and emotional problems	16	6.00	22.00	14.38	2.59
Memory	19	5.00	20.00	14.12	2.88
Cumulative GPA	3.25	2.00	5.00	3.67	.82

Table 4-39: Judy's scores in SADR

	Student score	Minimum	Maximum	Mean	SD
Motivation	11	4.00	19.00	8.10	2.53
Memory	16	4.00	17.00	9.02	2.95
Feelings/attitudes	6	4.00	19.00	10.35	3.47
Time management	8	4.00	20.00	8.66	3.95
Organisational skills	13	4.00	20.00	9.09	3.95
Attention	18	4.00	20.00	9.45	4.07
Reading	17	4.00	20.00	9.50	4.04
Writing	20	4.00	20.00	8.60	4.46

Table 4-40: Judy's scores in SSI

Statement	Student indication
School attainment satisfaction	6
Feelings about your GPA	7
Reading ability	7
Writing ability	7
Academic support	10

Table 4-41: Judy's indications in the pre-interview scale

Findings

The following findings related to Judy's case are based on the investigation and analysis of her responses to the SADR and SSI questionnaires, her GPA, and her interview responses.

Age of onset: Judy had some academic difficulties that manifested during her elementary school years. Judy also has a long medical history of sick cell anaemia. Her academic issues continued, although she explained that she has been able to deal with her illness, which she sees as a cause of her low achievement. Because of her illness, she said that she is in constant pain and suffers from a lack of sleep and chronic fatigue:

“I am tired all the time”.

Over time, she has developed strategies to deal with her illness, in order to prevent the effects from taking over her academic life. She had great admiration for her teachers and school before entering university, and greatly appreciates their understanding and support; she seems to have positive feelings toward her university teachers as well.

Health condition: Judy’s medical records show that she has sickle cell anaemia and that she has been suffering from the side effects of this disease, including dehydration, infection, sudden changes in temperature, stress, episodes of excruciating pain, and an enlarged spleen. Throughout her life, she has often been hospitalised as a result of one or more of these issues, and seems to hold her illness accountable for her academic problems at school.

School attainment: Judy encountered several problems at school due to being late to submit homework and being absent from school, but she explained that her reading and writing skills were not affected. Judy explained that she loved reading and never found it difficult, and believes that her grades have been a direct result of her condition. She explained that her frequent school absences due to sickle cell complications contributed to her poor academic performance:

“I am absent most of the term and it is worse in winter. In third grade, over the whole academic year, I attended for only four months; I had to repeat the year.”

My mum studies all the subjects with me and makes mock exams for me at home”.

Judy is very proud of her reading and writing skills:

“It takes me longer to do everything but once I get it, that is it. I read a lot, especially at the hospital... When I am at the hospital everything gets boring—playing games, watching TV, everything! But not reading. I read and it takes me away from everything”.

University attainment: Judy loves university. She finds her discipline intriguing and the prospect of holding down a job very exciting. She has high opinions of teachers in general and her university teachers in particular:

“They are so understanding and helpful. I don’t have to worry about deadlines or exam dates. Before when they didn’t really know me, they would ask for medical reports, but now I don’t even have to bring anything. It’s enough for me to say I had an episode or was at the hospital and that would be enough. There are not enough words to describe my gratitude to them all”.

Assistance received: Judy has received help from her schools and university, such as repeating an exam if she was absent, being provided with lecture notes, and being given extra time to complete the exam. Her parents have made sure that her schools were aware of her situation, and Judy stated that her parents made sure that they kept in communication with the headmaster and her teachers:

“My father has a folder where he keeps notes on my health condition, medical reports, and some of his own research about my sickle cell, especially when I was in elementary school. He would call my teachers in person and make sure that they read and understood it.

In return, I think they were very understanding and very helpful. I hated the pity, but I needed the help. They were understanding of my need to be absent and I think they tried to understand the pain, although again I have to say I didn't like the 'you poor thing' looks".

Pain control and effect on studies: According to Judy, her grades got better as she got older. Following her doctor's instructions to the letter enabled her to get a "firmer grip", as she explained, and over time it helped her health improve, which meant she could concentrate more on her academic life. She stated that the healthier she felt, the better grades she got:

"I kept well hydrated. And I kept cool but not too cold, so I know now not to allow myself to be really hot or cold. I have frequent rest periods so I don't overwork myself trying to keep up with everyone else. I have enough sleep. I found simple things like daily warm baths take the edge off the pain.

I think with maturity comes understanding and acceptance. I thought when I grew up I would get cured. In a way, I am living healthier now. Although I will never be cured, I know that I will be fine".

Body image problem: During the interview, Judy stated that she hated the way she looks. At one point, it made her hate going to school. She referred to her looks more than once. On some occasions, she brought up the matter when it had no relation to what she was saying at the time, using words such as "ugly" and "revolting" to describe the way she looked:

"I look like a skinny boy. I really hate the way I look. I can wear thobe [traditional clothes for Saudi males] and no one would know I am a woman".

Coping strategy: With the help of her parents and teachers, Judy has used strategies to cope with her academic achievement problems, such as having a big board in her bedroom where her parents and her brothers help her with studying:

“I had a schoolroom in my room, so there was a board and magnetic numbers and letters. Every day I would have a lesson. I never minded because I loved learning. Learning meant that I didn’t have to think of anything else. I would do my homework from school and from my parents. It became a habit. My university teacher would ask for one report and I would submit two”.

She said that her friends record lectures that she has missed, and she appreciates that some teachers do not object, although she has heard from more than one friend that recording lectures was not allowed and they have to do it behind the teacher’s back. She stated that she is really good at making mind maps and scanning:

“I help my friends understand when they feel lost. They take one look at my concept map and understand all the information included in the lectures”.

According to Judy, she is always prepared and tries to read and understand the information before the lecture, especially if she is feeling the beginnings of a pain episode:

“It saves time so in case I don’t attend, I won’t miss that much. I will know what the lesson is about. It’s only difficult with some teachers who don’t give me the material in advance”.

Judy also uses course selection as a coping strategy. She chooses subjects that are taught early in the morning and tries to avoid taking courses late in the afternoon. She makes arrangements for any subjects that might be taught late in the day:

“One of my teachers tries very hard to change the timing of her section so I can register for it”.

In addition, she tries to choose subjects that reportedly require less effort.

Family support: Both of Judy’s parents have played a major role in her education. She stated more than once that they supported her fully and unconditionally.

Summary of case study 4

Judy demonstrated average academic attainment. She has been diagnosed with a severe case of sickle cell anaemia. Her total score on the questionnaire may indicate academic difficulties in terms of her reading and writing scores. But it seems that her difficulties were caused mainly by her health problem; she was late in submitting homework and was often absent from school. She insists that she loves reading and never found it difficult; she explained that the reason why she answered the questionnaires the way she did was because she encountered difficulties at every stage of her life, but not because she did not understand or because it was difficult. The difficulties were in her opinion caused by her repeated absence from school. She received support from both her family and the university; she also developed several coping strategies, including course selection depending on time of day to avoid late lectures, using a recording device for lectures, and preparing and reading the materials before lectures.

4.8.5 Case study 5

Britney was from the false negative group, containing students who scored low in the SADR questionnaire, which indicates no academic difficulties, but had below average GPAs. Tables 5-43 and 5-44 show Britney's scores in the SADR and SSI questionnaires, respectively. Her reading score in the SADR questionnaire was 48, which may indicate the absence of academic difficulties. Britney also scored 5 on her SSI reading scale, which may also suggest no difficulties with reading. She also got low scores on both the SADR and SSI scales for writing: 27 in SADR and 6 in SSI.

From Tables 4-42 and 4-43, it can be seen that Britney had a high score, 23, on the attention and hyperactivity scale in SADR and a score of 6 on the corresponding attention scale in SSI; for both scales the score indicates that the student does not have a problem in that area. Her motivation score in SADR was 30 and in SSI was 13; in both scales the score implies that

the student has a motivation problem. For compensatory strategies in SADR, the student scored 28, and on the corresponding scales in SSI, the student scored 14 for time management and 15 for organisational skills; in both questionnaires Britney’s scores indicate that she may have a problem in this area that started in school and continued into higher education. On the social and emotional problems scale, the student scored 18 in SADR, and on the corresponding scale in SSI the student scored 8 on feelings and attitudes; these scores may mean that the student does not have a problem in this area. For memory, the student scored 5 in the SADR questionnaire and 7 on the corresponding scale in SSI; scores in both questionnaires mean that the student does not have a problem with memory.

Table 4-44 includes the student-indicated scores on the pre-interview scale; on that scale, Britney’s scores indicated mostly negative feelings towards university support and her GPA, but indicated positive feelings towards her reading and writing abilities.

	Student score	Minimum	Maximum	Mean of all students’ scores	SD
Reading	48	37.00	146.00	65.95	16.26
Writing	27	19.00	74.00	32.39	7.80
Attention and hyperactivity	23	10.00	38.00	24.63	4.19
Motivation	30	10.00	37.00	22.47	4.50
Compensatory strategies	28	8.00	30.00	18.37	4.15
Social and emotional problems	18	6.00	22.00	14.38	2.59
Memory	5	5.00	20.00	14.12	2.88
Cumulative GPA	2.68	2.00	5.00	3.67	.82

Table 4-42: Britney’s scores in SADR

	Student score	Minimum	Maximum	Mean	SD
Motivation	13	4.00	19.00	8.1	2.53
Memory	7	4.00	17.00	9.02	2.95
Feelings/attitudes	8	4.00	19.00	10.35	3.47
Time management	14	4.00	20.00	8.66	3.95
Organisational skills	15	4.00	20.00	9.09	3.95
Attention	6	4.00	20.00	9.45	4.07
Reading	5	4.00	20.00	9.50	4.04
Writing	6	4.00	20.00	8.60	4.46

Table 4-43: Britney's scores in SSI

Statements	Student indication
School attainment satisfaction	7
Feelings about your GPA	6
Reading ability	10
Writing ability	10
Academic support	5

Table 4-44: Britney's indications in the pre-interview scale

Findings

Age of onset: In Britney's case, no indications of academic difficulties were observed during her years in school. According to her, she found schoolwork easy, loved reading and had

beautiful handwriting. Her low achievement started at university, which could be attributed to her lack of interest and her feelings of being overwhelmed at times.

Health condition: In general, Britney has good health and does not suffer from any serious health issues.

University support: Britney indicated a lot of negative feelings towards the university and stated that university teachers were detached and not interested in students, or their achievements or lack thereof:

“Because they don’t care, nobody really cares. My family used to worry. Now all they worry about is me getting good enough grades that I don’t fail”.

Britney previously studied in what is known in Saudi Arabia as a Qur’an memorisation school. Qur’anic schooling is frequently used to refer to an institution that focuses almost exclusively on facilitating the memorisation of the Qur’an or some Qur’anic verses. In this sense, ‘Islamic’ is simply an adjective to designate a school whose mission is, to some degree, religious (Boyle, 2004):

“I was in Qur’an memorisation schools, [which use] different methods [and] different teaching styles. So I think the whole going to university thing was a jump. There should be a class or like a year or something between school and university”.

Britney blames her low achievement on her unsuccessful transition from school to university. She complains that there are no supportive teachers and programmes to assist her as a student coming from completely different methods of learning. Furthermore, she has a negative attitude toward her GPA:

“... that’s unfair. I’ve been through a lot personally, and I don’t want to talk about that, so don’t ask what. That affected my grades so no matter what I do

to make it better, it won't really work. So why bother? I will graduate and I will work, hopefully".

In addition, Britney has negative opinions concerning her university lectures. It appears that she is not attentive and not interested:

Sometimes [they are] long and boring, but fine I guess. I get what's been said if that is what you want to know, but it's just boring".

Academic preparation: Britney's main problem, besides her lack of interest, appears to be insufficient preparation. She came from a Qur'an memorisation school, where the Qur'an was a main component of all courses taught. She stated more than once that she did not feel prepared for university and feels disoriented and lost. When it came to university processes and procedures, such as the application process, she complained that it was confusing, especially at the beginning. She criticised the university system and stated that all her friends felt the same, because they were not aware of the resources available to them:

"I felt like [I] am stepping into the unknown. At first it was exciting, but then it became annoying".

Parents' awareness of the condition: Britney's parents are aware of her low GPA, but, based on her statements, they do not seem to object as long as she graduates from university.

School attainment: Britney had no studying problems in school. She achieved As and Bs without even trying hard, according to her own comments. She had negative feelings toward the memorisation aspect of her school, but loved composition and still does a lot of creative writing:

"I write all the time. I started writing and reading really early. Mum said I started before my older brother. And I know that my handwriting is exceptional.

...In school I hated it when we had to memorise large paragraphs of poetry and the Qur'an. I hated math. I loved composition—that was where I got my A. My teacher would say that [my compositions] were a joy to read”.

University achievement: Britney faces some problems when studying at university. These problems are reflected by her low GPA. She has a list of reasons explaining her low achievement. This list mainly includes negative feelings and attitudes towards the curriculum, teaching methods, assessments and courses, which she thinks are boring or not interesting. Its location was the only reason that she chose this particular university. She chose it even though it does not offer courses that match her interests. It seems that she is really convinced of her ability to attain higher grades and a better GPA:

“... considering that I don't do much work. Anyway, I know I can be a 'nerd' if I want to, I just don't. I am satisfied. I am getting better grades even than those who spend their weekend studying. All that really matters is getting by, not failing”.

Britney has mixed feelings about the quality of support and performance she gets from her adviser. Although she seems displeased with their services, she did not want to elaborate on the subject and was worried that she might get in trouble for talking negatively about authority figures at the university. When she talked about her adviser, it seemed that she did not think that she could help in any way:

“I did not need to see her. We only see her to ask about our sections—when they are full and we need other sections to open, or to transfer from one to another. That is what she told us, so I don't want to talk about that next question”.

Assistance received: Britney received some extra tutoring when she was in grade three to help her with her mathematics lessons, especially with regards to multiplication. She stated that she had a tutor for a year and that was all the help provided.

Social life: Britney stated that the only reason she comes to the university is to see her friends. She seems to have a sense of belonging to a group of friends and seemed generally happy and to have self-worth, because she thinks that she is helping her friends cope with university stress just by being there.

Personal traits: Her responses demonstrated high self-esteem. She does not seem to be affected by her low GPA and seems sure of her abilities. In conversation, she indicated that she is highly motivated to finish university and get her degree, but she does not really care about her academic GPA. She seems to have a positive attitude despite her low academic achievement, but takes no responsibility for it.

Self-awareness: Britney does not regard her low GPA as a problem. She seems confident of her abilities to change her GPA, but is indifferent about it.

Coping strategy: Britney uses notes for exams:

“What I do before an exam—and only if I have a formal test, not those mock tests—is scan, take in the key points, and—on exams—build up my answers from that. And that is why I like short-answer exams, not multiple choice”.

Perceived solutions: As Britney takes no responsibility for her low achievement, she considers the solution to be the responsibility of the university system and teachers. One of the solutions she suggested is bridging the gap between school and university and building stronger relationships between students and university advisors.

Summary of case study 5

Britney does seem to be confident about her academic abilities and despite her low GPA, she never encountered any difficulties prior to enrolling at university. She holds the university accountable for her low academic achievement and she appears to be uncaring at times of her academic achievement; despite apparently having the potential to excel academically, it seems that her problem is self-discipline, as she indicated more than once during the interview.

It was observed during the interview that the main cause of her low achievement seems to be her detached attitude towards university. Britney comes from a big family; both of her parents are very busy, and neither had time to help her learn. According to Britney, her parents do not really have high expectations for her education other than graduating. She is studying to become a teacher and does not have any social problems in terms of interacting with her peers, seeming to be social with lots of friends. Britney graduated from high school with high grades, mostly As and Bs. She excelled in writing and showed me a sample of her work (see Appendix XV), demonstrating that she can write in Kufic, a form of Arabic script that is a highly decorative combination of fine and ornamental writing, including scrolls painted in brown ink (Dimand, 1947).

Her academic problems started during her university years, and seem to mainly stem from her negative attitude towards her courses and the curriculum, the teaching methods used at university and the methods of assessment. Part of her negative attitude may also be due to her transition from a Qur'an memorisation school to university, which has very different methods of teaching, without bridging this gap and lacking any preparation.

4.8.6 Case study 6

Soma was in the false negative group, containing students who scored low in the SADR questionnaire, which indicates no academic difficulties, but had below average GPAs. Tables

4-45 and 4-46 show her scores in SADR and SSI, respectively. Soma's reading score on the questionnaire was 65, less than two SDs above the mean, and 8 in the SSI questionnaire, both of which indicate the absence of reading difficulties. Soma scored 30 for writing in SADR, and had a writing score of 5 in SSI; both scores indicate that the student does not have difficulty with writing. Soma had a score of 10 on the attention and hyperactivity scale in SADR, and a score of 7 on the corresponding attention scale in SSI; both scores imply that Soma does not have difficulties in this area. She also seems not have a problem with motivation, as she scored 10 in SADR and 4 SSI, which are the minimum scores. Moreover, according to the SADR scales, Soma scored 19 for compensatory strategies in SADR, which indicates no problems in this area, but the corresponding scales in the SSI questionnaire, where in both time management (scored 15) and organisational skills (scored 19) she had scores that were two SDs above the mean, indicate that she may have issues with these skills. Soma scored 12 on the memory scale in SADR and 9 on memory in SSI; both questionnaires indicate that she does not have a problem with memory.

As shown in Table 4-47, Soma's scores in the pre-interview scale indicated mostly positive feelings towards university support, although her answers indicate that she is not satisfied with her GPA, and she also indicated positive attitudes towards her reading and writing abilities.

	Student score	Minimum	Maximum	Mean of all students' scores	SD
Reading	65	37.00	146.00	65.95	16.26
Writing	30	19.00	74.00	32.39	7.80
Attention and hyperactivity	10	10.00	38.00	24.63	4.19
Motivation	10	10.00	37.00	22.47	4.50
Social and emotional problems	18	6.00	22.00	14.38	2.59
Vision stress	10	6.00	24.00	16.65	2.86
Memory	12	5.00	20.00	14.12	2.88
Cumulative GPA	2.55	2.00	5.00	3.67	.82

Table 4-45: Soma's scores in SADR

	Student score	Minimum	Maximum	Mean	SD
Motivation	4	4.00	19.00	8.1	2.53
Memory	9	4.00	17.00	9.02	2.95
Feelings/attitudes	9	4.00	19.00	10.35	3.47
Time management	15	4.00	20.00	8.66	3.95
Organisational skills	19	4.00	20.00	9.09	3.95
Attention	7	4.00	20.00	9.45	4.07
Reading	8	4.00	20.00	9.50	4.04
Writing	5	4.00	20.00	8.60	4.46

Table 4-46: Soma's scores in SSI

Statements	Student indication
School attainment satisfaction	8
Feelings about your GPA	5
Reading ability	10
Writing ability	10
Academic support	7

Table 4-47: Soma's indications on the pre-interview scale

Findings

The following findings regarding Soma's case are based on the investigation and analysis of her responses to the SADR and SSI questionnaires, her GPA and her responses to interviews.

Age of onset: In Soma's case, academic difficulties manifested during her university years.

Health condition: Although no medical records were reviewed in Soma's case, based on her statements, she is not suffering from any medical condition.

School attainment: Soma has never encountered any problems studying:

"Before university, I had time to study and I was an A student".

She explains that what happened to her grades was the result of family obligations, which she blames for her academic difficulties:

"Life happened. I got married, then kids. I have two: one is three, and my little one is one".

Family obligations: Soma is a wife and a mother of two. She lives with her husband's family, which means she is responsible for certain household chores. She explained that her grades are

a reflection of her being overwhelmed by family matters, including taking care of her two small children and the house:

“...between home and kids I do not have time for anything else”.

University attainment: Soma indicated that, although she did not find her discipline very interesting, she chose it because she did not think that it required as much work as other fields. She feels overwhelmed and thinks that she does not have enough time to complete her university work:

“Yes, [it’s] interesting enough, and it doesn’t really need much of an effort. That’s why I chose it ... I mean, I cannot really put in long hours of work, and in my area I don’t have to do that. I am getting by. I am not failing, and that is all I need. I just want to get my degree to get a job and that is all. Do I want to get honours? Sure. Do I have time to do that? No, I don’t. I feel overwhelmed as it is. I hardly have time at all. My husband has a full-time job, and when he is home he hardly helps at all with the kids and cleaning. I live one floor above his family, so there are always social obligations, which leave no time for anything else”.

Time management: Soma thinks that her lack of time is what has affected her GPA. She explained that she is doing the best she can. It seems that she is swamped by responsibilities:

“I can’t do more than what I am doing right now. It’s not humanly impossible. I wake up around seven, bathe the kids, dress them, and take them to my mum’s. The trip to my mum’s house is about thirty minutes, then another thirty to the university. During any breaks between my lectures, I try to get my homework and assignments done. I try not to socialise a lot with my friends so I can get as much as I can done. Afterwards, I go to mum’s to pick up the kids and get home

around 4. I make lunch, put the kids down for a nap, and then down for the night around 8. I am always too tired to do anything but lie down in front of the TV and sleep. Before, when I had time, studying was easy—even enjoyable. Now it's something I have to get done to get on with my life”.

Assistance received: Soma has never received any assistance from her school—nor has she ever needed it. She indicated that her teachers were always impressed by her performance and expressed that to her and her parents. The only difficulty Soma said that she faced seemed to be *Tajweed* (the knowledge and application of pronunciation rules during the reading of the Qur'an), which she explains as not being a problem, but rather more of a challenge. She thought it was challenging learning all the rules associated with *Tajweed*, but explained that she was ultimately able to excel and even help her friends who needed help in this area:

“I didn't really like Tajweed because it was complicated, but I always got a high grade. Getting high grades was really important because I wanted to study medicine”.

Coping strategy: Soma has used many strategies in order to cope with her lack of time. She explained that at university she uses some strategies that she used to use in school, including compensatory strategies such as mind maps, quickly scanning and highlighting important ideas, and using a recording device for lectures. However, Soma also indicates some resentment towards the university. In her opinion, she could use more help from the university and more understanding from her teachers:

“Right now, I can use more hours in a day, but all I can do is quickly scan and highlight ideas and that is it. I use a recorder, but my teachers don't know that. It's not allowed, although I explained how much I need to do that. They don't understand. When I went to another university staff member to help with that

matter, she said that she couldn't help, so I use it anyway. No one seems to care that I've got other responsibilities and need help. I think I could do much more with just a little help. The recorder—I need it because sometimes I am too tired to listen to everything. And I draw mind maps from those recordings just to remind myself what I need to concentrate on for the exams”.

Summary of case study 6

Soma got married directly after graduating from high school, when she was 17 years old, and has two boys. She seems to be overworked, exhausted by her family obligations, and under stress because of her academic performance. Nevertheless, she repeatedly said that she is working hard and using her coping strategies to improve her grades, as indicated by her answers in the interview. She is sure that she never encountered academic difficulties related to reading or writing, and achieved high grades throughout her school life.

She seems to be experiencing a conflict between her roles as a full-time university student, and as a wife and mother of two, which contribute to her poor academic performance. Although she seems confident, she appeared to be struggling to integrate the demands of academic work with her obligations as a wife and mother. She also indicated feelings of guilt towards her sons, which are the greatest concern in her mind. In particular, her younger son throws tantrums in the morning when she drops him at her mother's house.

Soma's stress could arouse feelings of fear that her low attainment might result in the postponement of her graduation. She indicated that she has never encountered such difficulties before the advent of her obligations as a wife and mother. She perceives the university as a means to an end and is hoping to find a job after graduating that would enable her to achieve her goal of supporting herself. She is extremely proud of the fact that she earned excellent grades in high school and gained admission to a top university, but she is disappointed that she was not accepted into medical college, which was her plan when she was in high school as she

excelled in science. Ultimately, she had to make a career choice based on her family situation, and pursuing a degree in medicine seemed too challenging and time consuming. Therefore, she eventually chose another major, but states that she is not interested in it.

4.9 Summary of case studies

From Table 4-48, it can be inferred that out of the six students in the interview process, four students (Sophie, Britney, Sara and Judy) had academic and study-related difficulties. Of the remaining two students, Soma, who is a mother of two, has no specific academic difficulty; she is not motivated and there is a lack of interest in her chosen discipline. The other student, Sara, faced academic difficulties early in her life, but managed to cope with them and has shown improvement in subsequent years.

	Specific difficulty	Social/behavioural attributes	University/teaching assistance	Parental assistance
Sophie	Reading, writing, time management, blending of sounds, pronunciation	Shy, nervous, difficulty in interpersonal communication, tendency towards isolation	Lack of support	Strong support
Eve	Impulsivity, attention disorder, difficulties in reading, writing and maths	Self-confident	Lack of support	Strong support
Sara	Academic difficulties in reading and writing, which abated with time	High stress levels that affected self-perception	Lack of assistance due to changing schools frequently	Late support
Judy	Academic difficulties due to chronic disease: sickle cell anaemia	body image problem	Strong support	Strong support
Britney	Demotivated, lack of interest and self-discipline, carelessness	No social problems, highly social, high self-esteem	Lack of support	No support
Soma	Demotivated but no study-related difficulties	Stressed, overworked, exhausted	Lack of support	No support

Table 4-48: Content summary of case studies

An interesting and relevant point that can be inferred from the case studies is the kind of assistance or support these students received from their university, teachers and parents. It can be observed that in the majority of the cases, the students were not satisfied with the assistance that their university gave. They specifically mentioned a lack of attention and support from their teachers. They stated that the teachers were not specialised enough to detect their condition or encourage them in the right direction. One student (Eve) also mentioned that their teaching methods were at fault as they did not help her to improve. Only one student found

their teachers supportive; that was Judy. As far as parental support is concerned, most of the interviewees consider their parents to be a strong support system who have encouraged them to achieve better results.

These results highlight the fact that literacy problems and academic problems are very complex in nature, and dyslexia is only a small part of the issue. It is suggested that help should be provided equally to all students. Moreover, these case studies show that academic difficulties can be caused by a number of reasons, such as slow learning, dyslexia, high levels of stress, nervousness, anxiety, exhaustion, lack of self-discipline, lack of attention, lack of interest in the student's chosen discipline, impulsivity and suffering from chronic diseases such as sickle cell anaemia. However, with proper guidance and support, there is scope to lessen the impact of these difficulties. Furthermore, there is a need for academic bodies to bridge the gap between education at school level and at university level. This is essential to develop parity between academic difficulty levels at the two institutions. This will ensure that students do not become confused by the demands of academic work while transitioning from school to university, as this may hamper their overall performance.

Chapter Five

5 Discussion and Conclusion

5.1 Introduction

This chapter is based on an in-depth discussion of the findings of the current study, in line with the study's aims and objectives. The findings will be discussed with close reference to the research questions in order to shed light on the research topic under study: an investigation and identification of academic and study skills difficulties for university students in Saudi Arabia, with a specific focus on the development and implementation of a screening questionnaire. The study also examines specific students' experiences.

The main aim of this chapter is to provide a brief summary and a detailed discussion of the empirical findings of the current study. The current study contains two phases. The aim of the first phase was to design a screening questionnaire identifying students in higher education who experience literacy and study skills difficulties, and to evaluate the screening questionnaire in terms of its reliability and predictability. The aim of the second phase was to test the limitations of the SADR questionnaire's findings in terms of predictability of end of year academic attainment, choosing six case study students from three different groups to test. The case studies were positive prediction, false positive prediction, and false negative prediction.

Findings obtained from the SADR questionnaire used as a screening questionnaire at the start of the academic year will be outlined. A discussion will follow as to whether this screening questionnaire is good enough to identify and predict students who are at risk of having academic difficulties in higher education, with close reference to reliability issues. Next, findings will be outlined from the Student Self-Inventory (SSI) questionnaire, which aims to assess students' study skills and academic difficulties while studying at university;

these findings will be discussed in an attempt to measure the continuity of academic difficulties uncovered in the SADR questionnaire. As far as teachers' perspectives on the academic achievement of their students is concerned, data collected from teachers' reports on students' academic performance will be discussed, in accordance with the findings from the aforementioned questionnaires.

5.2 Using the Student Academic Difficulties at Risk questionnaire (SADR) to identify and predict students at risk of experiencing academic difficulties in higher education

5.2.1 Reliability of the SADR questionnaire

Reliability was first tested through Cronbach's alpha, then test-retest. The SADR questionnaire has strong reliability for some scales, above .7, although some were weak (below .7). Those above .7, and therefore considered reliable, are reading, writing, attention and hyperactivity, motivation, compensatory strategies, social and emotional problems and memory; the scales below .7, and therefore considered unreliable, were maths, self-esteem, problems with pragmatics and vision stress.

Test-retest was also employed to test the reliability of SADR scales. In the current study, the relationship between the first and second administration of SADR showed a high positive correlation, which showed high reliability for all scales in the SADR questionnaire; all had a reliability score above .7, indicating that the SADR questionnaire is stable over time.

Therefore, in terms of reliability, the scales that can be used are reading, writing, attention and hyperactivity, motivation, compensatory strategies, social and emotional problems and memory. In these scales, the reliability test score was above .7 for both Cronbach's alpha and test-retest. This means that some scales in SADR can be used while the others should be discarded, in terms of the adequacy of their use for prediction.

5.2.2 SADR's ability to predict end of year academic GPAs

As the purpose of the use of SADR is to identify students who may have academic difficulties, the scales in the SADR questionnaire were tested to see whether any or all of the scales have the ability to predict future performance in HE. The ultimate goal therefore is to provide help in the early stages of university studies in order to prevent academic failure. Therefore, the test of SADR's prediction capability is whether it is able to predict students' GPAs. Other explanatory SPSS analysis were preformed (see Appendix XV)

The predictability of the scale was measured through correlation and regression between the SADR scales and student's GPA, and between the SADR questionnaire and teachers' ratings. The second analysis examined predictive accuracy through cross-tabulation analysis.

5.2.3 First analysis: Correlation and regression

The analysis showed a moderately strong, significant, negative correlation between students' reading skills and their GPA scores. This finding implies that the greater the difficulties the students reported at the start of the academic year in relation to their reading skills, including oral reading, reading habits and word recognition, the lower their GPA score was six months later. It is therefore also reasonable to assume that the higher the students' GPA score was, the fewer difficulties they reported having experienced in relation to their reading skills, based on this analysis. Since causation cannot be established in correlational studies, it is important to highlight that the findings are restricted to potential associations between GPA score and reading difficulties, without any inference of causality in either direction. As previously documented by Reid and Kirk (2001), dyslexic students indeed tend to struggle with pace and accuracy when reading, and this has a strong enough effect to have a negative impact on their academic performance in higher education. Reference to dyslexia is made here even though those with reported reading difficulties might not be dyslexic. However, most research done

on university literacy difficulties has been done on what are believed to be dyslexic students; the available literature has a tendency towards diagnostics, labelling, and oversimplification, which is not the case in this study.

Although weak, significant negative correlations were also found between students' writing, maths, attention and hyperactivity, motivation, self-esteem and compensatory strategies on the one hand, and their GPA score on the other. Individual scales had lower levels of correlation with GPA score than reading. Higher scores on these scales tend to predict, at low-to-moderate levels, that students will have low GPA scores. On the other hand, GPA scores had a low, significant, positive correlation with memory, which indicates that students with higher GPA scores tend to report more problems with memory. This result is hard to explain, since previous studies support the belief that academic achievement and reading ability are correlated positively with memory; when there is a problem with reading, there is usually a reported problem with memory (Nation et al., 1999; Gathercole et al., 2006, Alloway et al., 2010). However, this was not the case in this research. The correlation was also further analysed by regression analysis, which will be discussed next.

A second statistical analysis was performed based on the 80th percentile of the sample and with the use of regression analysis. This showed that reading skills was the only significant predictor of GPA for both the top 20% and bottom 20% of students, which places even more emphasis on the important role played by reading ability in relation to the academic performance of university students. It seems that there is still a dearth of research on the predictive power of reading skills in the domain of academic achievement in HE, similar to other study skills, which were not found to be significant predictors of students' GPAs. Whether the non-significant outcomes of any predictive relationship between the other SADR scales explored in this study and academic performance at university level can be generalised

to other samples of university students, including in the context of Saudi Arabia, is something to be further investigated empirically, using cross-tabulation as a further measure of predictability.

The most important finding was that, amongst all the constructs investigated using the SADR questionnaire, only reading was found to be a significant independent negative predictor of students' GPAs through regression analysis. That is, identifying the reading level of Saudi students has the potential to predict their GPAs in the future. This is an important result to consider in educational research, that difficulties in reading seem to have a negative effect on academic achievement in HE.

Past research, such as the report by Cassan and Kingdon (2007), also found a significant association between poor reading scores and later low achievement in educational career. As the focus of this study is on the SADR questionnaire's ability to identify and predict, it is safe to say that only the reading scale can identify students with academic problems. The reason for this may be that the SADR reading scale's inter-correlation with all other scales is strong, so that reading is the only predictor that is picked up by the regression analysis. It seems that the reading scale has the ability to a certain extent to determine students who are at risk of reading difficulties, which could help students to be identified as early as possible. If the student is discovered early, chances are that with appropriate intervention strategies, educators can reduce or even prevent future difficulties.

Sub-skills within reading have been used to predict reading in the SADR questionnaire; further research can test whether these skills are better predictors. Having said that, this regression analysis gives an overview of the situation and does not operate at the individual case level, so if the reading scale is used by universities, it should be used with care as it gives a general view and there is always the possibility with this kind of questionnaire of predicting

false positives and false negatives. This called for a closer look at the individual case level with cross-tabulation analysis to examine predictability using the SADR reading scale.

5.2.4 Second analysis: Cross-tabulation

The second analysis that was performed with SPSS was cross-tabulation, and it was performed to get even more precise information about whether the SADR reading scale can be used to identify students who are at risk of academic difficulties related to literacy at university, by showing the frequencies with which reading difficulties were reported. Based on the findings of the reading scale in the cross-tabulation analysis, the students' scores were divided into those who have reading problems and those who did not, using a 20th-centile cut-off point for the reading scale in SADR; they were chosen based on a 2.00 GPA score cut-off point. The analysis was used to further investigate the predictability of the SADR reading scale.

The test revealed that the reading scale can only truly predict 19% of students who had low GPAs; these are students who scored high on the questionnaire and also had low GPAs. This shows that, in terms of prediction ability, although the reading scale showed a strong predictive correlation with GPA, which was confirmed by the regression analysis, it cannot be depended on to predict on a case-by-case level when using a cross-tabulation analysis with a cut-off point of a GPA of 2.5. The researcher then tried to test the results by changing the cut-off point to a GPA of 3.0, which is, according to the university where the research took place, the point at which students become below average. The proportion of students who were true positive – scoring high on the reading scale and with a GPA of 3.00 or less – was 57%. The increase in value might suggest that the reading scale has a higher predictive value if we were to choose a 3.0 GPA as the cut-off point. Therefore, if the reading scale is to be used in universities to identify students who may achieve a low GPA, it must be used with care, because closer investigation shows that this predictability is not strong enough to determine whether a student will have academic difficulties.

Therefore, caution must be exercised over the use of the reading scales in HE. All that reading scales can show is that a student is at risk of having reading difficulties. So it can be used as an indicator that a student needs further assessment, but there is low probability that students whose scores indicate that they have academic difficulties related to literacy will show a low GPA score. This is because as the case studies in phase two show, there are a variety of factors that could influence low attainment, that is not related to literacy, such as, motivational, emotional, attitudes, feelings, environmental and others.

Since at this point it became clear that prediction is a complicated issue that might be affected by different and sometimes intertwined factors, the researcher began to question the idea of a questionnaire's ability to predict academic difficulties, as shown by low GPAs. Researchers ought to be careful in interpreting the significance of prediction based solely on regression, because it could lead to false negatives and false positives. Thus, examining prediction through multiple analyses is important, because it gives a more accurate view of individual cases. In the case of the current research, the SADR reading scale could not predict most students' GPAs. Although the SADR reading scale was shown to be reliable by two test analyses, correlated moderately with GPA, and was a predictor in the regression analyses, it cannot be relied on to identify individual students' academic achievements as represented by their GPAs.

5.3 Using teachers' reports on students' academic performance to predict student academic difficulties with SADR

The teachers' reports on students' academic levels were compiled six months after the administration of the SADR questionnaire, in order to measure the predictability of the SADR questionnaire. However, with seemingly limited research available on the specific association between students' academic performance in HE and their teachers' perceptions of their

academic level, including with regards to literacy and study skills, it is hard to explain why the correlation is weak, other than that it seems that the teachers did not know their students very well. It could be that university teachers, and specifically where the current research took place, are overworked with a limited number of staff working with a large number of students. In some cases, a teacher has up to seventy students at a time; this may mean that teachers do not spend enough time with students to be able to judge their abilities. However, these reasons are only speculation, and require further investigation.

Therefore, no further tests were done with the teachers' reports on academic performance because the correlation between teachers' reports and students' GPAs were also shown to be weak. According to Wilson (2002), teachers' perceptions are rather difficult to capture and are usually influenced by the teachers' operational learning theories, which refer to the processes through which teachers acquire their teaching education and experience by discovering the 'best' teaching skill through reinforcement. This is an essential point to take into account when interpreting the findings in the present study, as factors influencing the perceptions of the teachers with regards to the academic performance of their students were not considered or examined in this study.

With this in mind, the extent to which the findings obtained from the teachers' viewpoints are valid remains somewhat questionable. Moreover, it needs to be highlighted that since only five university teachers were selected to report on their students' academic performance, some criticism can be levelled against the use of such a small sample in relation to the generalisability of any findings from the teachers' reports. Having said that, the chosen sample of teachers taught the students for at least one semester, and these teachers were also academic advisors to the participating students, which implies that they had regular contact with the students and hence were in a good position to identify their learning needs and difficulties. However, this was shown not to be the case in the current research.

5.4 Using the Student Self-Inventory (SSI) questionnaire to test the stability of students' academic difficulties and study skills over a six-month period

The SSI questionnaire was used in conjunction with the SADR questionnaire, in order to measure the continuity of the academic and study skills difficulties tested in the SADR questionnaire. Importantly, while the SADR questionnaire was used as a screening tool for any association between a list of learning difficulties and academic performance at the beginning of the university term, the SSI questionnaire was administered in term two, i.e. while the students were involved in their university studies and attending lectures. The point at which each questionnaire was administered is crucial for an understanding and discussion of the findings, as the identification of the students' learning needs differed in relation to whether they were answering questions with regards to the stage before university level or during their academic studies at university.

5.4.1 SSI questionnaire reliability

In terms of the SSI questionnaire's reliability, the Cronbach's alpha result showed that the questionnaire's scales were all reliable, with scores of .7 and above, which indicates that in terms of reliability, the scale is consistent if used again as a measurement.

5.4.2 SSI scale correlation with SADR scales, correlation and cross-tabulation

First analysis: correlation

The first analysis concluded that all the scales in SADR correlated positively with their corresponding scales in SSI, with one exception: memory in SADR correlated negatively with memory in SSI, which meant that if a student reported a problem with memory in SADR, they did not report one on SSI, and vice versa.

Second analysis: cross-tabulation

The analysis showed that the reading scale, which measured students' perceptions of their reading problems at the beginning of the year through SADR and after six months through SSI, shows continuity and predicted over 89% of students who had continued difficulty in reading. From the SADR questionnaire, students with reading problems can be identified and the analysis shows that they will probably continue to have these reading problems. Therefore, help and support can be provided at any early stage.

Writing also showed a high level of continuity; 64% of students who reported having a writing problem in SADR continued to have a writing problem in SSI, which means the students identified as having writing problems at the beginning of year are more likely than not to have a problem at university. This supports the suggestion that the SADR questionnaire has, to a certain extent, the ability to identify students who have reading and writing problems, but that this ability is stronger for the reading scale than for writing. However, although these students reported problems with literacy, this was not necessarily reflected in their academic GPAs.

Reading and writing are the only scales that show continuity at university level, with a high probability that students who report problems in either reading or writing will also have problems at university level, which is then reflected in their GPAs, as indicated earlier by the cross-tabulation test. This could be because, based on previous studies, students who find reading difficult usually continue to have reading difficulties in higher education (Ingesson, 2009; Collinson & Penketh, 2010). Students with reading problems such as dyslexia have been found to be slower when reading words and non-words, in naming tasks and in phonological and orthographic work, which are issues that continue throughout their lives (Wolff et al., 1990). From the case studies that are discussed later in this chapter, it could be concluded that early reading and writing difficulties, as identified by the reading scale in SADR, may

have been caused by other reasons, rather than basic difficulties in reading-related phonological abilities, such as those caused by dyslexia.

As a self-designed screening questionnaire scale, writing was conceptualised in terms of composition, spelling, omission, substitution, inversion/transposition, insertion, visual discrimination and handwriting. Cassan and Kingdon (2007) also reported a significant association between poor writing scores measured in primary school and later low achievement. It is important to note that an indication of problems with both reading and writing among students prior to starting their HE education is alarming given that, according to a report of the Ministry of Education of New Zealand (1994), literacy paves the way for effective participation in all spheres of life. People struggling with reading and writing are at a serious disadvantage, which has been found to have a negative impact on their performance at university as well as in the job market.

Therefore, based on this, it could be argued that the use of SADR as a screening tool in the present study gains support given that it provides an approximate identification of at-risk students in reading and writing at the start of their university studies. It also helps to flag up students in need of relevant academic support at an early stage. It therefore seems plausible to suggest that using SADR as a screening tool can also help to draw attention to possible cases of student academic difficulties at university level that might need more investigation. This is relevant to the aim of the current research, because SADR flags up students who are at risk and who might need extra help, regardless of the causes of their difficulties; it identifies those who had problems in school and continue to struggle academically in the university.

Unfortunately, since most other studies have focused on dyslexia in HE as one form of academic difficulty, the current study will be discussed in relation to this specific field of study. However, it is important to emphasise again that although dyslexia is referred to in order to explain some of the results, this does not mean that students identified in this study have

dyslexia; it is simply because of a lack of studies into general literacy difficulties involving poor readers and academic difficulties that the research has to employ studies concerning dyslexia. Consequently, according to Emmons and Anderson (2005), there is evidence to suggest that dyslexia underlies language and reading difficulties, as well as, in some cases, illegibility caused by a writing disorder. In other words, a scale like SADR can help with more in-depth identification of specific learning difficulties (SpLDs) using more specific instruments, although it can perhaps also be argued that writing and reading difficulties do not necessarily always overlap with SpLDs.

This observation is supported in the work of Elliott and Grigorenko (2014), who clearly find it difficult to distinguish students that have similar problems to dyslexic students (such as poor reading) but who are not dyslexic; they also tried to come up with methods of identification and intervention for all students experiencing reading difficulties. The current study suggests that SADR may provide a useful contribution to this area by identifying, in general, students who are at risk of academic difficulties in HE, rather than just students with SpLDs. At the same time, the SADR questionnaire scale may also pick up some students who have specific academic difficulties and need further diagnosis.

The results of the current research showed a negative correlation between both students' reading scale and writing scale on one hand, and their GPAs on the other, meaning that a student who reported having reading and writing difficulties scored low in their GPA. Previous research noted that there is increasing evidence pointing towards what is identified as dyslexia as one of the biggest impacts on student attainment. Dyslexic students often struggle with both reading and writing at university level (Miller-Shaul, 2005; Peer and Reid, 2000), which has a negative effect on their academic performance (Mayes et al., 2000). Grant (2010) also found that dyslexic students often struggle with the organisation of their academic work, note taking and the ability to express ideas, particularly in writing. It is therefore not surprising to also find

that this group of students achieved far less than their counterparts academically. This is borne out in the current research, where students' writing skills and compensatory strategies correlated with their GPAs, meaning that student GPAs were affected by difficulties reported in those areas. To further support the association found between learners' writing skills and academic performance in this study, the British Dyslexia Association (2015) also found that dyslexic students in HE struggle with writing.

The use of SADR as a screening questionnaire for both reading and writing difficulties is further supported by a manual published by the Saudi Ministry of Education, Regulation of Special Education Programs and Institutions (2002), which states that students experiencing underlying issues related to listening, thinking, talking, reading, writing, spelling or arithmetic skills could be classified as students with either literacy difficulties or SpLDs, and hence be in need of extra support and help. This classification also helps to distinguish between students with literacy difficulties and those with non-literacy difficulties, which can perhaps aid in tailoring teaching strategies accordingly. As stated by Heward (2009), SpLDs in general and dyslexia in particular can have a serious effect on each person's educational practices and their ability to acquire and improve literacy skills. As such, it is worth highlighting that screening students at an early stage in their education has the potential to provide them with education that is specifically adapted to their learning needs, whether they have literacy difficulties or SpLD.

In conclusion, there is a high probability that students reporting reading and writing problems in SADR are still going to report those problems in SSI, which indicates a continuity of literacy difficulties that might not be evident from student GPAs.

5.4.3 SSI scale correlation and regression analysis with GPA

The correlation analysis showed a moderately strong, significant, negative correlation between the students' reported scores in SSI and their GPAs. This finding implies that the greater the difficulties students encountered in relation to the aforementioned skills and abilities, the lower their GPA scores were; it can be equally assumed that the higher the students' GPA scores were, the fewer the difficulties they encountered in relation to these skills. It can be concluded that reading problems still seem to be an issue among students at university level, and the highest correlation was reported for reading. In terms of SSI difficulties reported, other than reading skills, significant predictors were recorded, such as writing skills, and feelings and attitudes.

Reading and writing were both predictors of academic difficulties when regression analysis was used. According to the Ministry of Education of New Zealand (1994), people who struggle with reading and writing continue to do so on a long-term basis and in different spheres of life, including university studies and employment. Perhaps the identification of writing skills as a negative predictor of GPA score in the present study could be explained by the seemingly long-term negative influence of writing difficulties on several aspects of life, including education. Further support is derived from the work of Wadlington et al. (1996), who found that dyslexia often presents itself as an enduring problem with writing, which individuals struggle with throughout their lives.

5.5 Questionnaire prediction limitations

Semi-structured interviews were conducted with six female participants who had different SADR and GPA results. These case studies were selected based on true positive, false positive, and false negative predictions, where two students were chosen from each group. The main aim of engaging in a more in-depth exploration of Saudi female students' experiences in HE through these interviews was to develop a better understanding of SADR's ability to identify

and predict students who are at risk of experiencing academic and study skills difficulties in HE.

5.6 Experiences of HE students with academic difficulties at school and university

This section consists of a discussion of the six main themes that emerged from the semi-structured interviews, as major topics that affects levels of achievement for those students who participated in the case studies. These themes are: (reported reading difficulties, reported writing difficulties, reported maths difficulties, reported study skills, motivation-related factor differences between the three groups, university and teacher support, support from friends and family, and other reported difficulties

Close attention is paid to understanding the prediction limitations of the SADR questionnaire and any overlap with the questionnaire findings that may point towards recommendations on the usefulness and effectiveness of the SADR questionnaire as a self-designed screening questionnaire to identify and predict students who are at risk of experiencing academic difficulties in higher education.

5.6.1 Reported reading difficulties

Four of the six students – the two students from group one (true positive) and the two from group two (false positive) – stated that their academic difficulties manifested while they were at school, before coming to university. These students started experiencing academic difficulties related to reading and writing, which in turn affected their ability to deal with everyday homework. Neither student from the false positive group reported academic difficulties at university. Students from the true positive group who reported having a problem in the SADR reading scale seem to have had a profound problem with literacy-related difficulties early on in their school lives, which persisted at university; they reported those

difficulties in SSI, and those difficulties were reflected in their GPA. Assuming that they may have a dyslexia-type difficulty, their experience aligns with the Rose report statement that dyslexia presents as an enduring problem with writing and reading that individuals will struggle with all their lives (Rose, 2006).

Although each of the true and false positive students had specific issues, some were common to all four. The common reading difficulty reported by three of the four students from these two groups was reading speed and fluency. This problem of speed and fluency seems to be shared by other students, as reported by Parrila et al. (2007); adult students' problems with reading tend to concern reading rate (speed). Generally, if a student does not read fluently, they will need to dedicate a significant amount of time and effort to decoding, which consequently has a negative impact on their comprehension (Cotter, 2012). This seems to be the case with two students from the true positive group, and one student from the false positive group. In one case in particular, it seems that her reading-related difficulties are more profound than the others at the word level, where she still struggles, especially when introduced to a new word if she has dyslexia or not, that a matter which should be investigate further.

As Moody (2007) explains, dyslexia is typified by difficulties in fluent and/or accurate word identification and by the lack of decoding abilities and poor spelling, which seem to be the case with this particular student. Moody also considers the root of dyslexia difficulties to be the inadequate provision of classroom instruction, which the current case study emphasises, the consequence of which is a reduced reading experience and lower reading comprehension, which in turn can lead to a reduced rate of growth in terms of a student's background knowledge and vocabulary. This student, Sara (see Chapter Four), stated that she had problems early on related to phonology which made her struggle with speech production. She developed strategies to deal with processing phonological information, which included encoding and retrieving.

5.6.2 Reported writing difficulties

Writing-related difficulties were reported by the true positive and false positive groups, as was the case with reading. The type of writing difficulty is different from one student to another, with similarities within each group and between groups. Both students in group one reported writing difficulties that relate to illegible handwriting, and both students had problems organising their thoughts in a coherent matter. Both students from the true positive group had problems at school related to spelling. For Eve in particular, the problem was writing short and long sounds (see Chapter Three), because she kept getting them confused; other writing problems reported were related to the use of correct grammar, finding a starting point when writing and translating ideas into written work.

Difficulties related to handwriting competency in school can have a negative impact on students' academic success. Handwriting is a complex 'occupational task', and many underlying skills are linked to handwriting, such as visual perception, attention and sensory awareness, among others (Feder & Majnemer, 2007). Whether a student's illegible handwriting in the current research is a result of issues with one or more of these skills is something that needs further investigation, but it could be a result of their reading difficulties, as reading and writing are corresponding skills. As a result, it is generally thought that the development of reading and writing, as well as the manifestation of reading and writing disabilities, are dependent on each other. If there are difficulties with one, there is a high probability of there being a problem with the other, and also a high probability of the difficulty persisting into adulthood (Graham & Hall, 2016). This seems to be the case with the students from group one, where both students had reading and writing difficulties that started early in life and persisted into adulthood. While the false positive students reported writing difficulties in school, they seem to have overcome and/or compensated for them at university level.

As for the false negative students, although their academic GPAs suggested academic difficulties, this group did not report any writing difficulties. One of the students, Britney, in fact excelled at a very difficult, artistic form of Arabic writing.

5.6.3 Reported maths difficulties

As was the case for reading and writing, maths difficulties manifested in different forms, although on a much smaller scale than reading and writing. Students reporting that their problems were minor. In one case, the student found it difficult to comprehend when the questions were expressed in words; due to her reading difficulties in school, she found that kind of question challenging. It has been reported that the presence of academic difficulties related to reading can have a negative impact on the development of many maths-based skills (Gersten et al., 2005). Another student found multiplication tables hard to master. Neither student stressed the severity of their problems in this area. Also, none of the students reported maths problems in SSI; although the true positive students showed continuity in their difficulties in reading and writing, reporting difficulties in reading in writing both in SADR and SSI, they did not report continued academic difficulties in maths in SSI, although they reported maths difficulties in SADR, which can be explained by observing that the students interviewed were studying in disciplines where maths was not a required skill.

5.6.4 Reported study skills

In terms of the use of study skills, some students developed their own individualised compensatory strategies, which they used in school and university, while some study skills were shared by students from different groups. In the true positive group, both students stated that they used computers to write up their assignments, probably because they have academic difficulties related to writing. The use of technology helps students with academic difficulties by contributing towards making their workload easier. In the true positive group, one student

used memorisation as a compensatory strategy to cope with her literacy and study difficulties. This is interesting, as it offers an explanation of the unusual significant positive correlation found between memory difficulties and academic performance in the screening questionnaire. The student explained that memorisation was actually used as a learning strategy, which reinforces the argument made previously in this chapter that perhaps students with literacy difficulties put extra effort into their studies in an attempt to compensate for well-documented memory issues among learners with literacy difficulties.

The use of compensatory strategies at university was also noted by Miller-Shaul (2005) and Reid (2000). As suggested by Steenkeen (2000), coloured cards to help with the blending of phonemes were also used as a strategy, especially in school, as was clay modelling. At university, this student mostly used pictures and drawings in the margins of her books to help her read faster. Another student reported writing as the most difficult aspect of her academic studies, so she wrote her ideas down before re-reading them and numbering the paragraphs to help her organise her thoughts. She also used highlighters and self-regulation to remind herself to do things at certain times in order to manage her time well.

The false positive students shared the use of preparation as a skill; both students stated that they tried to read lecture material beforehand. One student from the false positive group mentioned that her earlier coping strategies mostly consisted of a struggle to deal with the stress of her family situation, but she consciously tried to manage her time and stress when studying. Zimmerman (1998) reported the use of specific strategies during studies, such as self-regulation, which also includes time management (knowing how long it should take to complete a piece of homework or an assignment, and developing the necessary time management techniques to achieve this) and self-monitoring (systematically checking oneself and earning or withholding rewards, according to the work done). He found that high achievers reported using study strategies twice as often as low achievers.

A student from the false positive group used mind maps to organise her thinking, and also made course choices in order to minimise the impact of the tiredness caused by her health issue. She also scanned and highlighted her lessons. The existence of this set of skills in both students in the false positive group seems to be the reason for them overcoming their previously reported difficulties at school.

One false negative student used mind maps and a recording device, but stated that she fails with time management. This was the main skill issue for the false negative students. The other student in the false negative group used summarising notes before an exam as a strategy; although she encountered some difficulties while studying at university, she did not show much interest in her studies and did not feel well-equipped enough to embrace the challenges accompanying university studies, so she did not develop any study skills strategies. As Gettinger and Seibert (2002) stated, for study skills to be effective in developing academic competence, students must be willing and motivated, which was not the case for students in the false negative group. It seems that the main reason for their low achievement was motivational issues, in contrast to students from the false positive group who seemed to employ more study skills and were highly motivated.

5.6.5 Motivation-related factor differences between the three groups

Motivation to finish their university degree and overcome any academic or personal obstacles seems to be a shared characteristic of students from the true positive and false positive groups, but this is not the case for false negative students. As reported previously by Salem et al. (2013), who also based their research on a Saudi university, academic performance is significantly affected by motivation; although students from the false negative group seem to have the ability to achieve more at university, they are not motivated to do so. In the current study, it could be that one of the reasons for low motivation in group three is that these students were not interested in the subjects they were studying. The alignment of studies, personal interests and

dynamic positive self-perceptions is an important factor in ensuring that students with difficulties complete their degrees (Steenkeen, 2000). As proposed by the Hirsch model (Henning, 2007), there are different educational motivation levels exhibited in the current research.

It seems that true positive and false positive students demonstrated a high level of motivation to complete their degrees. The students in those two groups wanted to succeed academically; they acknowledged their limitations, but had no clear idea of how to complete their degrees. Students from group three are not motivated by the prospect of high achievement, although they want to complete their degrees. Here, it is important to have a help centre in the university that can offer support to all students in order to increase students' motivation levels and help students of all abilities achieve their goals.

Motivational problems related to family and personal issues was a major factor in understanding the false negative group; this was the group that was not identified by SADR as at risk but had poor GPAs. It seems that both students have low motivation; with one student this was related to making the transition from school to university without preparation. In this case, low grades were caused by issues relating to the transition from a traditional school that depended on memorisation to university where different methods of teaching were used. It is not unusual for a student's grades to be affected by the transition from school to university. Research shows the importance of social and academic integration, appropriate academic study skills preparation and the importance of student support (Crabtree & Roberts, 2008). The other student's issues were related to family obligations and a lack of family support for her studies, which might have affected her overall motivation. Table 5-1 above illustrates the factors that influence achievement for each group.

5.6.6 University and teacher support

All of the students (the exception being Judy from the false positive group, see Chapter Four) had very negative opinions of the support they had received from their university. One student believed that the university should be held responsible for her low academic achievement, given that she was not receiving the help she expected.

One student expressed concerns with regards to the amount of support that she received from university teachers. She believed that her university teachers did not give her enough constructive feedback and did not give her as much attention as she should have, given her academic difficulties. She also explained that teachers did not seem well trained enough to deal with students who are struggling academically, as they had limited knowledge of her and received minimal support from the university itself in terms of intervention schemes; she stated that at school, before coming to university, she had hated being taken out of her regular class for a special class, but at university no one even offered to help her. The same issues are also reported by Quinn et al. (2009), in their study investigating the extent to which students with dyslexia and other SpLDs are supported by universities.

These interview findings contribute to the existing literature, as attention has been drawn to a lack of educational research examining students' perceptions of teachers and the university learning environment (Wigfield and Wagner, 2005). The study by Singal (2006) revealed that in cases where students experience unwillingness on behalf of their teachers to perform the necessary inclusion measures, they feel like outsiders in the classroom, which ultimately has severe adverse effects on their social and academic skills. Inclusion is beneficial for all students, especially for students with SpLDs. Further supporting evidence comes from the study by Sung (2010), which showed that when students with SpLDs experience a deficiency of information and skills, this fault is attributable to the instructors, who in their opinion do not provide the students with the support and consideration they need. Moreover,

Cameron and Nunkoosing (2012) also found in their study that staff were usually too busy to offer extra support, especially to those with dyslexia.

Eve (see Chapter Four) also talked about her prior school experience, where she felt that in certain situations the teachers were not much help, but rather contributed to her stress and anxiety and reported the same feelings about university lack of support. Eve perceived a lack of support, care, attention and interest from the university and her teachers towards her as a student. In the false negative group, a student reported dissatisfaction with the teaching methods used at the university. This can be understood in relation to past research suggesting that while some teachers pay more attention to the principles of the subject that they are teaching, others tend to focus more on its application (Devlin, 2002). Hence each student may have their own preference, based on their own learning needs (Obiozor, 2009) and this could be considered to be a very challenging situation from the perspective of their teachers.

Judy, the student who has health issues, was the only one to report positive feelings towards the university, which she emphasised during the interview, where she also explained that she received the support she needed given that she was suffering from a serious medical condition. She stated that her teachers were understanding and helping, particularly in university where her teachers gave her extra time for exams and extended deadlines for assignments. Her perspective, however, was contradicted by the other students, who reported not receiving any help from the university. In her, case the university provided help and support due to her health issues, and with the evidence of a medical record; however, no help was provided for the other students whose difficulties were not related to health problems.

5.6.7 Support from friends and family

Students from the true positive and false positive groups have been supported in their academic achievement by a family member or a friend. Family support is a significant factor that can positively influence achievement at university (Shathele and Oommen, 2015). and although students from the true positive group still struggled with their academic achievement, as shown by their GPAs, it seems that without the help and support they were getting, their situation could have been worse, as corroborated by the students themselves. One true positive student had the support of her uncle, while Eve (see Chapter Four) reported strong support from her parents, who were well educated. Davis-Kean (2005) found that parents who are highly educated are in a better position to encourage their children to embrace further education at university level. This was the case with Eve, whose parents believed in her ability to achieve at school and had a positive perception of education. One study indicated that female Saudi students are at risk of dropping out of school and university because of their families' negative perceptions of education and a lack of awareness of its importance (Sandekian et al., 2015).

Support from a family member and parents was also shown to be a factor by students' statements that family support had made a great difference and increased their academic achievement. This confirms past research findings that suggest that when teachers and parents contribute to the learning development of students, especially those with academic difficulties, students can be encouraged to use their various abilities for academic purposes (Simon, 2002).

In the false negative group, it seems that both students were not getting help and support from their families. In Britney's case (see Chapter Four) it seems that she felt that nobody around her cared enough to help her, and that as long as she was not failing and her grades were acceptable, her parents were satisfied. Britney had very strong opinions about university support, as stated earlier. It has recently been suggested that of the many factors that are imperative for achieving a high GPA at university, partner and/or family support is the most

important (Shathele & Oommen, 2015). It seems, in the false negative group, that students' families were not supportive, which may have had a negative impact on their university achievement.

It is interesting to note that students who received help are from true positive, who reported academic difficulties in both SADR and SSI, and false positive, who reported academic difficulties in SADR but not in SSI, but in group three, neither student reported academic difficulties in either SADR or SSI and neither received help, which emphasises the role of family support in student academic achievement.

5.6.8 Other reported difficulties

It seems that there are other factors that can effect academic achievement, in one of the true positive group, it seems that one student from this group problem is a result of having trouble focusing her attention and daydreaming frequently, even if she is doing something she enjoys. This student, Eve (see Chapter Four), seems to have attention problems; those attention problems started at school and persisted at university level. Students with ADHD experience several difficulties, including poor academic underachievement and performance problems in schools (DuPaul & Stoner, 2003).

In relation to the predictability of SADR, the questionnaire performed well, in that it identified students whose academic difficulties seem to have resulted directly from literacy problems as true positives. The case studies also provided answers about why there were false positives, that although students' academic achievement as shown by their GPAs do not show a problem, the students reported having had literacy-related difficulties that did not continue in university. This may have resulted from the development of coping strategies while still struggling with reading speed and family support. These compensation strategies had an important positive role in all the student narratives, as will be discussed later.

One false positive student had parents who were divorced and some research has highlighted that this affects achievement in HE, as it affects the stability of the household and therefore is a potential risk factor for low academic achievement. The student had issues mostly revolving around her family moving house several times, leading to her having to adjust to a new environment each time. While doing so, she explained that feelings of stress affected her self-esteem, which in turn affected her academic performance. Stress has been identified in past research as a powerful factor that can hinder academic success (Steenkeen, 2000). The other student in the false positive group had a serious health issue; a part of the SADR questionnaire was about the student's health in general and health-related problems from birth to adulthood. The student suffered from a severe health problem that resulted in repeated absence from school and university; in her opinion, this had a direct negative effect on her academic attainment. It has been reported in a study by Schatz (2004) that frequent illness may have an impact on academic attainment, which was the case with Judy (see Chapter Four). Her levels of illness and tiredness were constant themes in her interview; therefore, it seems that her academic difficulties were a direct result of repeated absence from school resulting from her medical condition, and this was why she reported that she had academic difficulties in SADR. By the time she reached university, she was able to cope with her illness, as well as with her difficulties, by developing her study skills and with help from family, friends and, in the case of this student, the university as well, so her previously-reported difficulties were not reflected in her university GPA, which may explain the false positive results. Table 5.1 below summaries the factors that influence each group's achievement

Case study groups		SADR	SSI	GPA	Factors influencing achievement
True positives	Case 1	SADR predicts low achievement	SSI shows continued difficulties	Low GPA	Profound difficulties at the word level
	Case 2	SADR predicts low achievement	SSI shows continued difficulties	Low GPA	Difficulties in reading and writing
False positives	Case 1	SADR predicts low achievement	SSI does not show continued difficulties	Not low GPA	Factors that have to do with family and personal issues
	Case 2	SADR predicts low achievement	SSI does not show continued difficulties	Not low GPA	Factors that have to do with health
False negatives	Case 1	SADR does not predict low achievement	SSI does not show continued difficulties	Not low GPA	Motivational issues that have to do with personal issues and transition to university
	Case 2	SADR does not predict low achievement	SSI does not show continued difficulties	Not low GPA	Motivational issues that have to do with personal and family issues

Table 5-1: Factors that influence each group's achievement

5.7 Main findings: A brief summary

The mixed-method approach yielded findings from both quantitative and qualitative data analyses. The quantitative findings from the screening questionnaire (SADR questionnaire) show that, interestingly, only the reading scale was found to be a significant, moderate and independent predictor of students' GPAs. However, although the reading scale had statistical significance for predicting in general students that are more likely to encounter difficulties in their studies at university, it cannot predict accurately at the level of individual cases. Therefore, although SADR cannot accurately predict future performance at university, it can predict the continuation of academic difficulties, even if they were not reflected in student

academic achievement, which in this research was measured using student GPA. From the analysis of the data collected using the SSI questionnaire, reading and writing proved to be significant predictors for continued academic difficulties related to literacy, which emphasises the importance of literacy in student education.

Based on the qualitative analysis of the case studies, which were adopted to examine the semi-structured interviews of six female participants who represented true positive, false negative and false positive predictions, it was found that the true positive and false positive participants mainly reported reading and writing difficulties, while false negative participants did not report any academic difficulties. A variation was noted in terms of specific areas of difficulty across participants, such as in terms of their motivational levels, study skills, levels of attention, memory, self-confidence, maths difficulties, attitudes towards the university and lecturers with regards to supporting their needs, and also parental support. Participants in the case studies came from three groups: true positive (students who scored high on SADR, indicating academic difficulties, and who have low GPAs), false positive (students who scored high on SADR and have average GPAs) and false negative (students who scored low on SADR and have low GPAs). All the case studies from the true positive and false positive groups shared negative feelings towards their perceived underachievement. Each interviewee relied on different compensatory strategies to cope with the academic difficulties that they experienced.

It is also essential to highlight that the use of a mixed methodological approach has proven to be effective in this research, given that the interview findings mostly explained the pattern of true and false prediction, and the quantitative findings from the questionnaires. This adds further support to both data sets, as they complement each other, although each is of a different nature. The true positive case studies showed continuity with regards to their academic difficulties, and their difficulties appeared to be more profound and deep-rooted than those of the other groups, in that their literacy difficulties began earlier in their academic lives.

The false positive students experienced difficulties that started in school and were mitigated at university level; the reasons for this seem to be related to other factors such as health and family support. For the false negatives, the students' low achievement was explained by reasons other than literacy-related factors; it seems that motivation was a key issue in both cases.

The study began with the belief that literacy difficulties were the main causes of low GPAs in higher education, but the findings suggest that other factors that have no relation to literacy difficulties can cause low GPAs.

5.8 Conclusion

5.8.1 Introduction

This section sets out a conclusion, in accordance with the aims and objectives of the present study, that provides concluding remarks and suggestions in relation to the extent to which a screening questionnaire such as the SADR questionnaire can be used as a reliable instrument to predict students' future academic achievement, as measured by their GPAs. Attention is also drawn to the contribution and implications of the current study. The limitations of the current study and future recommendations based on its findings are then addressed.

5.8.2 The SADR questionnaire: Evaluation of its effectiveness at both identifying and predicting students who are at risk of having academic difficulties in higher education

Based on the discussion of the findings obtained from the questionnaires, it could be concluded that SADR is reliable for some scales, but not all, and that reading was the most useful scale. In the SSI questionnaire, all the scales were reliable. The corroboration of findings between the SADR and SSI questionnaires indicated some continuity of academic difficulties, mainly in reading and writing. This is a good indication of the potential to successfully combine these two questionnaires, in order to both identify and predict whether students are at risk of having

academic difficulties in HE (SADR), and then confirm their difficulties subsequently through the second questionnaire (SSI).

Using the reading scale in SADR to identify students who are at risk of having academic difficulties in higher education, prior to them starting tertiary education, is very useful as it provides a starting indication of where the students are as learners, based on their previous educational experience. Moreover, using the SSI questionnaire, which mostly assesses students' skills while they are studying, also helps to identify the extent to which any pre-existing learning difficulties remained stable or changed during the study period. It would be plausible to assert that any observed significant positive change could perhaps be explained by reference to the positive impact of the tertiary education system on the student, while the absence of any change could be attributed to a lack of support on behalf of the university and lecturers, or other causes specific to the background of the individual student.

To summarise the above, it could be suggested that, given the sample of undergraduate students involved, the findings from the SADR and SSI questionnaires are a useful reflection of the students' experience, academic achievement and academic difficulties. Nevertheless, it is also worth emphasising that in terms of prediction capability with regard to GPA scores, the findings from SADR do not support the idea that SADR has the ability to predict students' GPAs with any precision. This is partly because, although students may experience academic difficulties, their academic difficulties may not be related to literacy.

It should also be pointed out that the common conception that if a student has a reading problem, it means that they will get a low GPA, and that conversely if they do not have problems with reading, they will get a high GPA, is not borne out by the current research, because in the case of the students in the false positive group, it seems that one has literacy-related difficulties, but this is not reflected in her university GPA.

5.8.3 Contribution and implications of the current study

The study's contribution to the existing literature stems from the way the questionnaire was designed, and the conceptualisation of the issue of academic difficulties that relate to literacy. So far, most studies on the subject of academic difficulties have focused on issues concerning dyslexia. In this study, the researcher has taken a more general view of academic difficulties that relate to literacy, rather than engaging in labelling and diagnosis. The SADR questionnaire on which the research is based takes a holistic view, where the idea is to identify any student with academic difficulties including, but not limited to, students with dyslexia.

Another contribution comes from the results obtained from the questionnaires and interviews, which emphasise that a student can have academic difficulties that are related to literacy, but not necessarily be dyslexic. Of the six students who were interviewed, only one appears to have profound problems at the individual word level that might or might not be dyslexia; in either case, this study takes a more general view of the problem of academic difficulties, based on general identification with the future aim of providing help and assistance, if needed, for all students who struggle academically.

University environments are interactive and students, no matter what their abilities are, should enjoy the whole experience. However, this is not the case with some students with academic difficulties, as is shown in the current study. Therefore, in terms of the implications of the findings of the current study, it could be suggested that the findings are extremely useful as they help to identify students at risk of academic difficulties using the screening questionnaire at the start, following this up during their tertiary education, and in doing so, contributes to the development of relevant intervention schemes, including support groups tailored to cater for students' specific needs as learners. There is statistical evidence, quoted in the literature review outlined in Chapter One, which suggests that very few of these students have been identified and supported with programmes and services by their school, As far as

universities are concerned, although in Saudi Arabia some universities do have academic advice centres, these are not very common and have very limited services.

Along the same lines, and taking into account that some participants who experienced academic difficulties at school continued to do so at university, it is clear that a major implication of this study is to draw attention to the need to bridge the gap between school and university, in order to empower students to overcome any learning difficulties that they might experience in the early stages of their university studies. Learning is an ongoing process, and students should be well equipped throughout this process, while also being in a good position to identify their strengths, and perhaps even more importantly their weaknesses, in order to address them with support from the education system. The existing discrepancy between learning difficulties at school level and university level is empirically supported by Mayes, Calhoun and Crowell (2000), who concluded that methods and concepts that may be suitable for application in a school situation, to support schoolchildren with literacy difficulties, become problematic when they are applied to HE learning. Thus there is still some work to be carried out in this area in order to minimise this gap with the right support, and specifically tailor the education experiences to meet the needs of students as they progress in their education.

It is safe to state that the Saudi educational context carries its own uniqueness in terms of its conceptualisation of academic difficulties; unfortunately, in Saudi Arabia there has been limited research into academic difficulties in a broad sense, as the focus has largely been on dyslexia as one form of difficulty, which implies that the current research could have a culturally-based influence on both learners and the education system in Saudi Arabia. Furthermore, as previously mentioned at the beginning of this thesis, dyslexia was only recognised in the early 1990s in Saudi Arabia (al-Hano, 2006). As such, the examination of literacy and study skills difficulties for university students in Saudi Arabia, by developing a screening questionnaire, is still in its early stages. More importantly, since Saudi Arabia does

not have a standardised assessment tool to identify students with SpLDs, with currently virtually no focus on post-secondary school students, the findings of the present study have importance in terms of helping these students to successfully progress at university level. This research topic is also particularly relevant given that there are specific societal rules and regulations, often governed by Islam (as part of Saudi culture), which give rise to social issues such as gender-based discrimination, restricted transport for women, and very limited opportunities to promote women's education and work without their guardian's permission (Sandekian et al., 2015). These all play a key role in decreasing academic achievement among females (UNESCO, 2004). Hence it becomes even more imperative to support females with academic difficulties with the aim of helping them achieve to the best of their ability and empowering them to self-actualise.

Ali et al. (2009) studied low achievement in HE in medical schools in Saudi Arabia and identified a list of factors affecting student achievement. Teaching methods were found to be a factor. Based on another study by Salem et al. (2013) in a Saudi university, academic performance was significantly affected by students' motivation levels and study skills, suggesting that teachers do not know their students very well. It is of significant importance to draw the Saudi government's attention to this, given that Alshehri (2014) also revealed an underdeveloped professional development and decision-making programme for teachers, a lack of improved instructional methods, and a lack of student understanding regarding self-evaluation and critical thinking in the Saudi HE system.

Moreover, based on the findings that emerge from the regression analysis, across all the questionnaires used in this study, reading skills proved to be the overriding parameter that identifies the academic achievement of university students. This is indeed a very important finding, as it places considerable emphasis on the consideration of the reading ability of students in order to ensure they succeed academically, especially with regards to reading speed

and comprehension. Globally, education systems, including in Saudi Arabia, should be more aware of this in order to help students improve their reading skills from a very early age. Schoolchildren should be actively encouraged and supported by their teachers to acquire good reading skills as they progress in their learning. By doing so, they will ensure that students will be better equipped to obtain a good grade as they move into tertiary education.

Bearing in mind past Saudi educational research and the findings of the current study, the implications are mostly geared towards finding ways and means to sensitise the Saudi government to the topic, in order for them to put more effort into both recognising and supporting students with SpLDs. This group of students is very much a part of mainstream HE, need to be supported using the right approaches, and must not be neglected by any means. This research found several significant associations between various academic and literacy attributes/problems and academic achievement at university level, using specific screening instruments. These need to be recognised on a wider level both academically and governmentally, in order to contribute to the improvement of the Saudi educational system as a whole by implementing stronger strategies.

Above all, there is a need to emphasise that there is still a dearth of research in this area in Saudi Arabia, which implies that there is also limited information on students with learning difficulties. Along the same lines, as supported very recently by Elliot and Grigorenko (2014), educational achievement has to be shared by both general and specific students in an endeavour to further promote equal opportunities in education for all.

5.8.4 Evaluation of the current study and future research

As discussed in this chapter, this study certainly has various strong points and implied benefits. Nevertheless, this research also has drawbacks that need to be highlighted in an attempt to direct future studies, in order to further expand knowledge on this topic. Along with some

already identified gaps in knowledge that have previously been discussed in this chapter, this section will emphasise additional under-researched areas that future studies could focus on.

Given that this study only focused on female Saudi university students, with a rather small sample size under study (students and teachers), the findings are not representative of all Saudi universities, and hence cannot be generalised. The researcher anticipated using a larger sample size; however, as a result of a lower than expected response rate to the questionnaires, it was difficult to collect data from a bigger sample. Also, only six students were interviewed as part of the sequential mixed-method design, which is not a wide sample, and which limits the extent to which the qualitative findings are conclusive. Along the same lines, two students were chosen from each of three different groups. Therefore, it is recommended that future research should aim to use a larger sample size of both students and lecturers, while also focusing on ways and means to increase response rates, perhaps by using incentives that could help to achieve this aim.

Another major limitation in this study was a rather high dropout rate among the student participants. It was not clear to the researcher as to why this was the case, given that the students had the right to withdraw at any time from this research without any obligation to provide any explanations. However, this remains an important barrier in the data collection process and one that certainly needs to be taken into consideration in new research. Some relevant measures should be taken to encourage students to participate, while also emphasising the importance of this research to parents.

Since only five lecturers provided information at the academic level on their students, future research should examine teachers' perceptions using a larger sample size that could help to make the results more generalisable. There is certainly a need to place more emphasis on the importance of exploring teachers' perspectives, as there are existing discrepancies between teachers' and students' perceptions, as noted by Ramsden (2003).

Since SADR and SSI were both self-designed and proved to be effective in this study, there is a need for more research to be conducted using the reading scale in the SADR questionnaire, in order to further test its reliability and validity. The current structure of SADR is long and this could have undermined the quality of the responses. Therefore, it is suggested that future research should work on a shorter version of the reliable scales and retest the results.

Questionnaires other than SSI should also be used in order to adopt a more sensitive approach to identifying students with academic difficulties, given the complexity of this issue. The SSI questionnaire was used as a screening tool for academic difficulties during the educational experience of university students, which leads us to use the findings to infer whether any learning problems identified in advance remain stable or change during the educational experience of the learners. However, there was no validated instrument used alongside this to specifically assess the cause of any observed change (positive or negative), which could have helped to show whether changes could be attributed to the role played by the university and its staff. This should be considered in new research, perhaps by using other research instruments that could help to establish causation.

The present study sheds light on existing significant associations between reading difficulties and the GPA scores of university students. However, these correlational relationships do not imply any causation, which leaves some gaps in knowledge that could perhaps be addressed in future research using a different or more elaborate research methodology. The current research shows that although there is a predictive correlation, it is not enough to predict students' GPAs precisely, because GPAs are not solely influenced by academic difficulties related to literacy, and there are other intertwined reasons behind student academic achievement as recorded by GPAs.

Given the dearth of research in this area in the context of Saudi Arabia, this study provides an essential contribution to existing literature from a cross-cultural perspective.

Moreover, students with academic difficulties in general, and students with SpLDs in particular, have long been overlooked in the Saudi educational system, with due recognition only given to them recently (Smythe et al., 2004). Therefore, it could be argued that the present study is a stepping stone for further research to be conducted in this area by addressing the identified limitations of this study in order to boost the reliability, validity and generalisability of the findings.

This implies that more research on this subject would help to support these endeavours at a macro level. Having said that, based on the findings gathered from the sample of Saudi students, which included what appeared to be poor readers, as well as one case of a dyslexic student, it should also be noted that from an interventional perspective, the focus should not solely be on dyslexia, but rather help should be provided equally to all students who are achieving well below their target grade, regardless of whether they have been diagnosed with an SpLD.

Based on the above, it should be further reinforced that demographics remain important factors to consider in future research, as doing so can help to capture any influence that these may have on the findings, especially as moderating factors. Studying the effect of demographics is also beneficial in cross-cultural research, as this helps to provide a strong foundation for comparisons across contexts and cultures, enhancing one's understanding of educational research across countries around the globe. The findings point towards a number of reasons that could lead to academic difficulties among students; some of these reasons were revealed during the case study interviews. Therefore, this is also an area for future qualitative research to further examine, in order to enhance our understanding of how a student's social background, including their present situation, could also account for academic difficulties.

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Appendix I



The kingdom of Saudi Arabia map adopted from

http://www.lib.utexas.edu/maps/atlas_middle_east/saudi_arabia.jpg

Appendix II

Information sheet

Introduction

You are being asked to participate in a research study of literacy and study skills difficulties in university. You were selected as a possible participant because the research needs to find out about your experiences. We ask that you read this form and ask any questions you may have regarding the research.

Purpose of Study

The purpose of the study is to identify students with literacy difficulties in university. Ultimately, this research may be published as a research paper or as part of a book.

Description of the Study Procedures

If you agree to be in this study, you will be asked to do the following things:

- Answer a questionnaire about your school experience before the university (SADR).
This may take up to 45 minutes to complete
- After six months of the first questionnaire you will be asked to answer a questionnaire about university experience (SSI). This may take up to 25 minutes to complete.
- Finally, you may take a part in an interview which will be digitally recorded. The length of the interview cannot be decided in advance.

Confidentiality

This study is anonymous. Your results will not be shared by name with anyone, and the records of this study will be strictly confidential. All the data files will be protected by a password only known to the researcher. The audio tapes will be kept safe to allow a fellow researcher to hear them without jeopardising your identity in anyway. The researcher will not include any information about you in the report we may publish that would make it possible for anyone to identify you.

Right to Refuse or Withdraw and the right to ask questions

You have the right to withdraw your consent at any time and that will not affect your relationship with the researcher in any way. You have the right not to answer any question in the questionnaires. Participation in the interview is entirely up to you. If you decide to take part in the interview, you will have the right to check your answers and change them if you want to. You have the right to ask questions about this research and if you have any more questions or concerns you can contact me directly or my research supervisor.

Appendix III

Students' Academic Difficulties at Risk Questionnaire (SADR)

Name:

Dear student,

Please read these instructions carefully before you begin. This questionnaire is part of a PhD educational research project, and is designed to give a general indicator of literacy and study skills difficulties faced by students. It will help us to establish whether further investigation in regards to this matter is needed, and will provide help to all students

The answers you give will not affect your academic studies and will be confidential. You do not have to participate in this project and you can withdraw at any time but any information you provide will be highly appreciated.

If you decide to take part, please consider the following:

1. Read the questions carefully.
2. Choose **one** answer for each question. Questions 1 to 129 will look like this:

I have noticed that, when it comes to copying from a board or a piece of paper, I

Struggle to do

Am capable of doing it

Very much like me	Like me	Like me	Very much like me
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Read the first sentence carefully then chose which of the two sentences apply to you. Next, choose to what extent you believe this to be true by circling either 'Like me' or 'Very much like me'. Do not miss any questions out.

3. Questions 130 to 149 are personal and family related. Read each one carefully and remember there is no right or wrong answer.

Thank you

If at any time you have any questions about this research, please don't hesitate to contact me:

Mobile number: 07500224136

Email: ab493@exeter.ac.uk

Alternatively, you can contact my research supervisor:

Hazel Lawson: H.A.Lawson@exeter.ac.uk

Thank you again for your help.

1. Reading comprehension

1.1 Literal comprehension

1. When asked by a teacher in the class room to recall a sequence of a story I just heard another student read...

I can recall the sequence of the story.

I forget the sequence of the story.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2. When asked by a teacher in the class room to extract the main idea out of a paragraph that I have just read orally...

I can extract the main idea.

I struggle to extract the main idea.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

1.2 Inferential comprehension

3. When asked by a teacher in the class room to interpret in other words what I have just silently read...

I can interpret what I silently read.

I cannot interpret what I silently read.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

4. When I am asked to summarise a paragraph that I have just read silently...

I can summarise what I've read silently.

I cannot summarise what I've read silently.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5. When I am asked about the meaning of a paragraph that I have just read...

I can give the meaning.

I cannot give the meaning.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

1.3 Listening comprehension

6. When I am listening to another student reading and I am asked about the main theme of what they read...

I can give the main theme.

I cannot give the main theme.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

7. When I am given a set of instructions by my teacher in the class room...

I can follow the instructions.

I get lost.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

1.4 Critical comprehension

8. When I read a story or a book **outside** the class room...

I can evaluate what I read.

I cannot evaluate what I read.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

9. When I read a passage in the **class room** and asked by the teacher to evaluate what I read...

I can evaluate what I read.

I cannot evaluate what I read.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

1.5 Affective comprehension

10. When asked by a teacher in the class room to recall basic facts about a passage I read silently...

I am confident of the answer.

I feel confused about the answer.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

11. I have been told by my teacher or I have noticed that when I finish reading orally a paragraph in my reading book.

I feel calm.

I feel stressed.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

12. When it comes to reading orally in the class room...

I approach this confidently.

I want to avoid it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

1.6 Lexical comprehension

13. When I read a new word in the context of a passage...

I can work out the meaning.

I cannot work out the meaning.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2. Oral reading (loud reading)

2.1 Omission

14. I have been told by my teacher or I notice that when asked to read a sentences orally...

I read it correctly.

I tend to skip a word.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

15. I have been told by my teacher or I notice that when reading a paragraph orally in the class room...

I read it correctly.

I tend to skip a whole sentence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2.2 Substitution

16. I have been told by my teacher or I notice that when asked to read orally in the class room...

I read it correctly.

I tend to replace a word by another that have the same meaning.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

17. I have been told by my teacher or I notice that when asked to read orally in the class room...

I read correctly.

I tend to replace a word by another that is completely different.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

18. I have been told by my teacher or I notice that when reading orally in the class room...

I read it correctly

I reverse letters in a word

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2.3 Gross mispronunciation

19. I have been told by my teacher that when asked to read orally...

I pronounce the words correctly.

I give a pronunciation that bears no resemblance to the word I am reading.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2.4 Hesitation/ Repletion

20. When pronouncing a **new word** for the first time while I read orally in the class room...

I tend to read it fluently.

I tend to hesitate.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

21. When pronouncing a word that **I know** in the class room while I am reading orally...

I tend to read it fluently.

I tend to hesitate.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2.5 Inversion / Transposition

22. When it comes to reading orally several sentences in the passage I tend to...

Read them in the correct order.

Change the order of the sentences.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

23. When reading orally in the class room I give punctuation such as pausing for a comma and stop for full stop...

Full regard.

Total disregard.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

24. When I read orally I tend to accommodate what I am reading by...

Changing the volume and tone of my voice.

Not changing the volume and tone of my voice.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

2.6 Insertion

25. I have been told by my teacher or I noticed that when I read orally I tend to...

Read correctly.

Insert a word that is not in the sentence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

3. Reading habits

3.1 Tension movement

26. When reading in the class room I have been told by my class mates that I look...

Relaxed.

Stressed.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

27. When I might be asked to read in the class room...

I feel calm.

I feel a strong headache.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

3.2 Insecurity

28. When the teacher ask me to read I feel...

Prepared to read.

My heart races and my hands are sweating.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

3.3 Loses place

29. When reading **silently** in the class room I tend to...

Read it without losing my place in the passage.

Lose my place in the passage.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

30. When reading **orally** in the class room I tend to...

Read it without losing my place in the passage.

Lose my place in the passage.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

3.4 Holds material close

31. When I am reading, I tend to hold my book...

At a normal reading distance.

Close to my eye.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

4. Word recognition

4.1 Mispronunciations

32. I have been told by my class room teacher or I have noticed that when reading...

I can associate sounds with letters.

I cannot associate sounds with letters.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

33. I have been told by my class room teacher or I noticed that when reading...

I can combine letter sounds.

I cannot combine letter sounds.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

4.2 Unknown words

34. When it comes to reading and pronouncing words without having to spell them

I can recognise and remember words.

I cannot recognise and remember words.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

35. When it comes to the ability to use the text that I am reading to help me pronounce a strange or new word...

I have the ability.

I don't have the ability.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

4.4 Fluency

36. When reading a passage in the class room...

I read as fast as others in the classroom.

I read slower than my friends.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

37. When it comes to reading speed, I have been told by my class room teacher or I notice that...

I read with fluency.

I should practice reading at home.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5. Written expression

5.1 composition

38. When I have a written assignment for school I...

Have no trouble generating ideas.

Struggle to generate ideas.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

39. When I have a written assignment I...

Can express my ideas using correct grammar.

Cannot express my ideas using correct grammar.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.2 Spelling

40. In my written assignments I...

Have correct spelling.

Lose grades because of my spelling.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.3. Omission

41 I have been told by my teacher or I notice that when it comes to writing a sentences...

I write correctly.

I tend to skip a word.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

42. I have been told by my teacher or I have noticed that when writing by dictation in the class room I tend to...

Write it in the correct way.

Skip a whole sentence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

43. I have been told by my class room teacher that I tend to get some letters confused for example D and T.

All the time.

Never.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

44. I have been told by my class room teacher or I notice that when it comes to writing sentences I tend to...

Write them correctly.

Omit the middle of the sentence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.4 Substitution

45. I have been told by my teacher or I notice that when asked to write by dictation in the class room I tend to...

Write it correctly.

Replace a word by another that have the same meaning.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

46. I have been told by my teacher or I notice that when asked to write by dictation in the class room I tend to...

Write it correctly

Replace a word by another that is completely different.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.5 Inversion / Transposition

47. I have been told by my teacher or I notice that when it comes to writing a sentences I tend to...

Put them in the correct order.

Change the order of the sentences.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

48. I have been told by my class room teacher or I notice that when it comes to spelling I tend to put the letters of the word in the...

Correct order

Wrong order

2	1	1	2
Very much like me	Like me	Like me	Very much like me

49. I have been told by my teacher that my writing assignments have...

Total regard to punctuation.

Total disregard to punctuation.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.6. Insertion

50. I have been told by my teacher or I notice that when writing by dictation in the class room I tend to...

Write correctly.

Insert a word that is not in the sentence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.7 Visual discrimination

51. I have been told by my class room teacher or I notice that when writing I tend to...

Write correctly.

Invert letters for example U or N or M for W.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

52. I have been told by my class room teacher or I notice that when it comes to spelling I spell words...

Correctly.

Phonetically (for example tuff instead of tough.)

2	1	1	2
Very much like me	Like me	Like me	Very much like me

5.8 Hand writing

53. My hand writing is described by my class room teacher as being...

Readable.

Illegible.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

54. When it comes to copying a text in the class room...

I can easily do it.

I struggle with it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

55. I have been told by my class room teacher or I notice that when it comes to the way I hold the pen when I write...

I hold is loosely

I hold it tightly

2	1	1	2
Very much like me	Like me	Like me	Very much like me

56. When it comes to drawing a simple picture like a square...

I can do it.

I struggle with it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6. Math

6.1 Incorrect operation (calculation disorder)

57. I have been told by my math teacher or I have noticed that when choosing an operation to solve math problem I tend to choose...

The correct operation.

The wrong operation.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.2 Incorrect number fact (basic number fact disorder)

58. I have been told by my math teacher or I have noticed that when recalling simple number fact such as $1/1=1$

I can totally do it.

I struggle with simple concepts.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.3 Incorrect algorithm

59. I have been told by my math teacher or I have noticed that upon solving a math problem I tend to...

Follow the right steps.

Skip a step.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

60. I have been told by my math teacher or I have noticed that when I solve a written math problem I tend to apply the correct steps...

And the right sequence.

But the wrong sequence.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.4 Mathematical Estimation disorder

61. When it comes to judging the number of objects in a group, I feel that I...

Can do it.

Cannot quantify the number of objects.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.5 Mathematical language disorder

62. When it comes to solving math problems that are formulated with words...

I can do it...

I struggle with it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.6 Mathematical measurement disorder

63. When dealing with concepts of measurement, speed, and temperature I feel...

In total control.

Lost.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.7 Mathematical navigation disorder

64. When it comes to navigating back and forth when counting numbers (for example 101, 102, 103)...

I can do it.

I cannot do it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.8 Mathematical organization disorder

65. When it comes to making a visual picture in my head of the location of a number like on a phone or a clock...

I can totally do it.

I struggle with it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

66. When it comes to visualising in my head the location of my city on a map...

I can do it.

I cannot do it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.8 Mathematical sequence disorder

67. I have been told by my math teacher or I noticed that when it comes to reading numbers, I read them...

Correctly

I read them out of sequence

2	1	1	2
Very much like me	Like me	Like me	Very much like me

68. I have been told by my math teacher that when it comes to writing numbers I tend to write them...

Correctly.

Incorrectly.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.9 Symbolic mathematical operation disorder

69. When it comes to understanding words that explain numbers, I feel...

Capable of it.

Lost.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.10 Temporal/monetary math disorder

70. When it comes to dealing with cash transactions and balancing my check book...

I can do it.

I cannot do it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

71. I find it..... to tell the time.

Easy.

Difficult.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

6.11 Visual spatial math disorder

72. I have been told by my math teacher or I noticed that when it comes to aligning numbers in to their proper column...

I do it correctly.

I get it wrong.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

7. Attention and Hyperactivity.

73. When asked by a teacher in the class room to focus on a task I have noticed that...

I cannot focus on a task for a long time.

I can focus on a task for as long as it takes.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

74. I have been told by my parents or I have noticed that when it comes to activity or task management, I am...

Organised in doing my tasks.

I struggle to organise my tasks.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

75. When I am sitting in my chair in the class room I have noticed that...

I can sit quietly throughout the class.

I need to keep moving.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

76. I have noticed that when it comes to my personal things (books, notes etc.) I keep...

Misplacing my things.

My things in order.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

77. I have been told by my friends that when we have a conversation I seem...

To drift away (don't listen).

To be listening to every word.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

78. When it comes to doing my university work I...

Keep close attention to details.

I don't keep close attention to details.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

79. I have been told by my parents that when someone is speaking I tend to...

Interrupt and not wait my turn.

Listen and wait my turn.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

80. When I am in the class room I tend to...

Stay in the class until the end of the lesson

Invent reasons to go out.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

81. I have been told by my class room teacher that when it comes to answering questions I tend to...

Wait until I fully comprehend the question.

Blurt the answer out before the question is completed.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

82. I have noticed that when I am in the classroom...

I drift in my thoughts (daydream).

My thoughts are with what the teacher is saying.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

8. Motivation.

83. When it comes to my view about my future...

I see myself being in a great position.

I think it is vague.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

84. I have been told by my parents that when it comes to ambition I seem to have....

Big ambitions and plans for my future.

No ambition and plans for the future.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

85. I have been told by my teacher or I have noticed that when it comes to school work I seem to...

Lose interest quickly

Be really interested.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

86. I have been told by my parents or I have noticed that I..... the work that I started.

Finish.

Don't finish.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

87. I have been told by my parents or I have noticed that when it comes to doing my university work I.....

Start immediately

Put it off.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

88. I know that when it comes to academic success I am...

Absolutely fine

Worried

2	1	1	2
Very much like me	Like me	Like me	Very much like me

9. Self-esteem.

89. When it comes to answering questions about myself I find it easier to talk about...

My bad qualities

My good qualities.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

90. I know that if I start working on a school project I am going to...

Mess it up.

Do a great job.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

91. I have been told by my friends that I tend tofor little mistakes...

Apologise a lot.

Not care.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

92. When I am in the class room, I have been told by my class mates that I look...

Relaxed.

Stressed.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

93. I feel full of in my ability in doing school work.

Confidence.

Doubt.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

94. I believe that I amof great things in life.

Worthy

Unworthy.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

10. Compensatory strategies

95. When reading I teach myself to...

Memorise certain words to improve my speed.

I approach every piece of reading fresh.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

96. In order to remember what has been said in the class room...

I record all of my classes and write them down when I am home.

I write during the lecture.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

97. In order to complete my home work in time I.....

Do it as early as possible.

Do it whenever I can.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

98. In order to ease the process of recognising words.

I make associations between words and mental pictures

Just read them

2	1	1	2
Very much like me	Like me	Like me	Very much like me

99. When reading a difficult word, I teach myself to...

Sound the letters in my head.

Read them as I see them.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

100. I have been told by my teacher that I seem..... with a pencil and note book.

Always ready.

Never ready.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

101. When I know that we are going to start a new reading passage I...

Practise reading it at home.

Don't have to practise reading it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

102. In the class room I get distracted easily, so....

I chose a corner place a way from outside noise.

I don't do anything about it.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

11. Social and emotional problems

103. I feelwhen I am at school with my peers.

Accepted

Rejected.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

104. The most frequent feeling I have when I am at school is.....

Anxiety.

Assurance/ calmness.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

105. When it comes to making friends I find it really...

Easy.

Hard.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

106. In working on a university project I would rather be...

The leader.

a participant.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

107. As in regards of friends I have noticed that can make new friends...

But cannot keep them.

And I can keep them.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

108. When I have lots of work I feel

Flustered.

In control.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

12. Problems with pragmatics

109. I have been told by my friends that when I have conversation I say...

Appropriate things.

Inappropriate things.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

110. I have noticed that when it comes to nonverbal signs in a conversation...

I don't understand them.

I understand them.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

111. I have been told by my friends that my facial expression...

Doesn't match my speech.

Matches my speech.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

112. I have been told by others who are close to me that when it comes to understanding a conversation...

I take words in their literal meaning.

I understand what the words mean.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

113. I have been told by my friends that when it comes to understanding hidden meanings in a conversation I Don't understand the meaning

Understand the meaning.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

114. I have noticed that when I am with a group of friends joking I...

Don't get the jokes

I understand the jokes.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

13. Vision stress

115. When I read it seems that the letters are...

Blurred or out of focus

Clear and focused

2	1	1	2
Very much like me	Like me	Like me	Very much like me

116. When I read it seems that the letters are...

Shimmering or shaking

Clear and focused

2	1	1	2
Very much like me	Like me	Like me	Very much like me

117. When I read I have noticed that I...

Suffer from headache afterwards

Am just fine

2	1	1	2
Very much like me	Like me	Like me	Very much like me

118. I have noticed that it isto read large font on widely spaced print.

Easier.

Does not make a difference.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

119. I have noticed that it isto read on different coloured paper.

Easier

Does not make a difference

2	1	1	2
Very much like me	Like me	Like me	Very much like me

14. Memory

120. I have been told by my friends or I have noticed that I....given by my friends.

Don't remember messages.

Remember my messages.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

121. I have noticed that when it comes to people names that I...

Cannot remember them on sight.

Have difficulty remembering names.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

122. When it comes to my personal items I...

Keep forgetting where I put my things.

I know where everything is.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

123. When it comes to remembering telephone numbers I find myself...

Incapable of doing it

Able to do it

2	1	1	2
Very much like me	Like me	Like me	Very much like me

124 I have noticed that when it comes to copying from a board or a sheet that I...

Struggle to do it.

Am capable of doing it

2	1	1	2
Very much like me	Like me	Like me	Very much like me

125. When it comes to keeping track of ideas that I have for a university project I found myself...

Not knowing exactly where to start.

Knowing exactly what to do.

2	1	1	2
Very much like me	Like me	Like me	Very much like me

16.1 Family history

16.1 Parents' academic level

126. My mother's education level is:

- elementary
- junior high
- high school
- university graduate
- other

127. My father's education level is:

- elementary
- junior high
- high school
- university graduate
- other

16.2 Family literacy

128. How frequent do you see your mother read (books, newspapers, magazines)?

- once a day
- twice a day
- more than twice a day
- never

129. How frequent do you see your father read (books, newspapers, magazines)?

- once a day
- twice a day

- more than twice a day
- never

130. How often do your parents buy books?

- once a week
- once a month
- more than twice a month
- never

16.3 literacy support

131. Has any member of your family had literacy support? If yes, can you explain the nature of the support?

- you father
- you mother
- one of your spelling
- more than one member.
- other.....

132. What kind of support did your family member(s) receive?

- in class support
- special classes in school
- special classes outside school
- private tutor.
- other

133 Did you have any kind of difficulty in school?

- yes
- no

134. In which subject you had the most difficulty?

- reading
- writing
- math
- other.....

135. What kind of support did you get for your difficulty?

- in class support
- special classes in school

- special classes outside school
- private tutor.
- other.....

136. To what extent has your educational support helped you?

- very much.
- some help
- little help
- no help at all

137. How would you describe your school experience?

- great
- good
- bad
- good and bad

138. In which level of your education did you receive support?

- elementary
- junior high
- high school
- university level

16.4. Birth history / general health

139. Were you a premature at birth?

- yes
- no

140. Were there any complications during your birth?

- yes
- no

141. Were there any complication after birth?

- yes
- no

142. Do you have any long illnesses that involve school absence? If yes, please specify.

- yes (.....)
- no

143. Do you have auditory problems?

- yes
 - no
148. Do you have problems with your vision?
- yes
 - no

144. Do you have delayed or deficient speech?

- yes
- no

بسم الله الرحمن الرحيم

استبيان الصعوبات الأكاديمية والمهارات الدراسية لطلاب المرحلة الجامعية

الاسم

عزيزي الطالبة يرجى قراءة هذه التعليمات بعناية قبل البدء في الإجابة.

هذا الاستبيان هو جزء من البحث التربوي الخاص بالحصول علي درجة الدكتوراه، وهو عبارة عن سلسلة من الأسئلة التي قد تعطي مؤشرا عاما من صعوبات القراءة والكتابة ومهارات الدراسة في المرحلة الجامعية والغرض من ذلك هو معرفة ما إذا كان قد نحتاج الي تشخيص اضافي في ما يخص هذه المسألة، ولتقديم مساعدة عامة لجميع الطلاب ولكن تجدر الاشارة الي ان هذه المساعدة لن تقدم علي الفور انما هو الهدف العام من الرسالة، ونتائج إجاباتك لن تؤثر على دراستك الأكاديمية، وسيتعامل مع جميع الاجابات من شخصكم الكريم بغاية السرية وتجدر الاشارة انه لديك الحق في رفض أو سحب المشاركة من هذه الدراسة في أي وقت، ولكن إذا قررت أن المشاركة الرجاء التأكد من أن تأخذ بعين الاعتبار ما يلي:

1. قراءة الأسئلة بدقة حقا.

2. للحصول على كل سؤال يجب عليك اختيار إجابة واحدة فقط والتي تصف موقفك من السؤال رقم 1 إلى السؤال 125.

مثال - إذا طلب مني المعلم تذكر احداث قصة سمعتها للتو بعد ان قراها أحد الطلاب في الص

أنسي احداث القصة

أستطيع تذكر احداث القصة

ينطبق علي كثيرًا	ينطبق علي حدًا ما	ينطبق علي كثيرًا	ينطبق علي حدًا ما
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عليك ان تبدأ بقراءة الجملة الأولى بعناية ثم تختار أي من جملتين تنطبق عليك أكثر وذلك في أي مرحلة من مراحل الحياة الأكاديمية. الاسئلة من السؤال 130 إلى السؤال 149 من الأسئلة هي عبارة عن اسئلة شخصية وعائلية ارجو قراءة كل سؤال بعناية وتذكر أنه لا يوجد صح أو خطأ

شكرا جزيلاً

إذا كان لديك استفسار في أي وقت كان لديك أي أسئلة بخصوص هذا البحث يرجى عدم التردد في الاتصال بي على:

أمانى بوخمسين رقم الهاتف النقال: 07500224136

البريد الإلكتروني: ab493@exeter.ac.uk

أو بدلا من ذلك يمكنك الاتصال بمشرف البحث

الدكتورة هايزل لواسون H.A.Lawson@exeter.ac.uk

اكرر شكري وتقديري لوقتكم

1- إذا طلب مني المعلم تذكر احداث قصة سمعتها للتو بعد ان قراها أحد الطلاب في الصف.

أنسي احداث القصة

أستطيع تذكر احداث القصة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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2- إذا طلب مني المعلم استنباط الفكرة الرئيسية لقطعة قراتها للتو في الصف الدراسي.

لا أستطيع استنباط الفكرة الرئيسية

أستطيع استنباط الفكرة الرئيسية

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
-----------------	-----------------	---------------------	---------------------

3- إذا سألني المعلم في الفصل ان اوجز ملخصا بكلمات من عندي عما قراته سرا.

لا أستطيع ذلك

أستطيع ان اوجز ما قراته سرا

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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4- إذا طلب مني المعلم ان اذكر ملخصا لفقرة قراتها سرا.

لا أستطيع ان اخص ما قراته سرا

أستطيع ذكر ملخص لما قراته سرا

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
-----------------	-----------------	---------------------	---------------------

5- إذا سئلت عن المغزى العام لمحتوى فقرة قراتها للتو في الصف الدراسي.

لا أستطيع ذلك

أستطيع ذكر المغزى العام

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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6- عندما استمع الى طالب اخر اثناء قراءته وسئلت عن الموضوع الرئيسي لما كان يقرؤه.

لا أستطيع ذلك	أستطيع معرفة الموضوع الرئيسي
ينطبق علي كثيرا	ينطبق علي كثيرا
ينطبق علي إلى حد ما	ينطبق علي إلى حد ما

7- إذا اعطاني المعلم مجموعة من التعليمات في الفصل.

لا أستطيع اتباع تلك التعليمات	أستطيع اتباع تلك التعليمات
ينطبق علي كثيرا	ينطبق علي كثيرا
ينطبق علي إلى حد ما	ينطبق علي إلى حد ما

8- إذا قرأت قصة او كتابا خارج الفصل الدراسي.

لا أستطيع تقييم ما قرأته	أستطيع تقييم ما قرأته
ينطبق علي كثيرا	ينطبق علي كثيرا
ينطبق علي إلى حد ما	ينطبق علي إلى حد ما

9- إذا قرأت قطعة في الفصل وسألني المعلم ان اقوم بتقييم ما قرأته.

لا أستطيع تقييم ما قرأته	أستطيع تقييم ما قرأته
ينطبق علي كثيرا	ينطبق علي كثيرا
ينطبق علي إلى حد ما	ينطبق علي إلى حد ما

10- إذا طلب مني المعلم ان اذكر الحقائق الاساسية عن قطعة قراتها سرا.

اكون واثقا من الاجابة	اكون محتارا في ذكر الاجابة
ينطبق علي كثيرا	ينطبق علي كثيرا
ينطبق علي إلى حد ما	ينطبق علي إلى حد ما

11- لقد أخبرني المعلم او لاحظت انني عندما انتهي من قراءة فقرة بصوت عال.

أبدو مرتبكا

أبدو هادئا

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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12- عندما يتعلق الامر بالقراءة الجهرية في الفصل.

اتمنى لو انني أستطيع تفادي ذلك

اقوم بذلك بكل ثقة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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13- عندما اقرأ كلمة جديدة في سياق قطعة جديدة.

لا أستطيع ايجاد المعنى

أستطيع ايجاد المعنى

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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14- لقد أخبرني المعلم او لاحظت انني إذا طلب منى قراءة جملة بصوت جهري.

احذف كلمة او أكثر

أستطيع القراءة بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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15- لقد أخبرني المعلم او لاحظت انني عند قراءتي لفقرة بصوت جهري في الفصل.

بدا كأنني قد تخطيت جملة كاملة

اقرأ بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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16- لقد أخبرني المعلم او لاحظت انني إذا طلب مني القراءة بصوت جهري في الفصل.

استبدل كلمة بأخرى لها نفس المعني

اقرأ بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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17- لقد أخبرني المعلم او لاحظت انني إذا طلب مني القراءة بصوت جهري في الفصل.

استبدلت كلمة بأخرى مختلفة عنها تماما

اقرأ بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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18- لقد أخبرني المعلم او لاحظت انني وعند القراءة بصوت جهري في الفصل.

اعكس حروف الكلمة

اقرأ بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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19- أخبرني معلمي بأنني عندما أقرأ بصوت جهري.

انطق الكلمة بصورة مخالفة لما هي عليه

انطق الكلمات بصورة صحيحة

ينطق علي كثيرا	ينطق علي كثيرا	ينطق علي إلى حد ما	ينطق علي كثيرا
ينطق علي إلى حد ما			

20- عند نطقي لكلمة جديدة للمرة الأولى عند قراءتها بصورة جهرية في الفصل

اكون مترددا

أقرأها بطلاقة

ينطق علي كثيرا	ينطق علي كثيرا	ينطق علي إلى حد ما	ينطق علي كثيرا
ينطق علي إلى حد ما			

21- عند نطقي لكلمة مألوفة عند قراءتي في الفصل بصورة جهرية في الفصل

اكون مترددا

أقرأها بطلاقة

ينطق علي كثيرا	ينطق علي كثيرا	ينطق علي إلى حد ما	ينطق علي كثيرا
ينطق علي إلى حد ما			

22- عندما يتعلق الأمر بقراءة عدة جمل بصوت جهري في قطعة فانا أحاول ان

أقوم بتغيير ترتيب الجمل

أقرأها بالترتيب الصحيح

ينطق علي كثيرا	ينطق علي كثيرا	ينطق علي إلى حد ما	ينطق علي كثيرا
ينطق علي إلى حد ما			

23- بالنسبة لعلامات الترقيم أثناء القراءة الجهرية، مثل التمهّل عند الفاصلة أو التوقف عند علامة الوقف.

أهمّها تماماً

اراعيتها بالكامل

ينطبق علي كثيرًا	ينطبق علي حدّا	ينطبق علي كثيرًا	ينطبق علي حدّا
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24- عندما اقرأ بصوت جهري، احاول ان اتماشي مع النص الذي اقرأه

لا اقوم بتغيير نغمة صوتي

اغير من ونغمة صوتي

ينطبق علي كثيرًا	ينطبق علي حدّا	ينطبق علي كثيرًا	ينطبق علي حدّا
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25 - لقد لاحظت انني وعند القراءة بصوت جهري فإنني

اقوم بإدخال كلمة ليست موجودة في الجملة

اقرأ بصورة صحيحة

ينطبق علي كثيرًا	ينطبق علي حدّا	ينطبق علي كثيرًا	ينطبق علي حدّا
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26- لقد أخبرني زملائي أو معلمي بأنني عندما اقرأ بصوت جهري في الفصل فانا أبدو

متوترا

هادئا

ينطبق علي كثيرًا	ينطبق علي حدّا	ينطبق علي كثيرًا	ينطبق علي حدّا
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27- إذا طلب ان اقرأ في الفصل

اشعر بصداع شديد

أبدو هادئا

ينطبق علي كثيرًا	ينطبق علي حدّا	ينطبق علي كثيرًا	ينطبق علي حدّا
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28- عندما يطلب مني المعلم ان اقرأ، اشعر بانني

تتسارع نبضات قلبي وتتعرق يداي

مستعد للقراءة

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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29- عندما اقرأ قراءة صامته في الفصل فأني

أفقد المكان الذي وصلت اليه

أقرأ بدون أفقد المكان الذي وصلت اليه في القطعة

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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30- عند القراءة بصوت جهري في الفصل فأني

أفقد المكان الذي وصلت اليه

أقرأ بدون أفقد المكان الذي وصلت اليه في القطعة

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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31- عند القراءة، احمل كتابي

بالطريقة الصحيحة

قريبًا جدًا من عيني

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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32- لقد أخبرني معلمي او لاحظت انني عند القراءة الصامته.

لا أستطيع الربط بين الحرف وصوته

أستطيع ان اربط بين الحرف وصوته

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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33- لقد أخبرني معلمي او لاحظت انني عند القراءة الجهرية.

لا أستطيع جمع اصوات الحروف

أستطيع جمع اصوات الحروف

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

34- عندما يتعلق الامر (بقراءة الكلمات من خلال النظر) ونطقها بدون تهجيتها فأني

لا أستطيع التعرف على الكلمات و تذكرها

أستطيع التعرف على الكلمات وتذكرها

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

35- عندما يتعلق الامر باستخدام سياق النص الذي اقرأه لمساعدتي في نطق الكلمات الجديدة و الغريبة فأنا

ليست لدي القدرة على ذلك

لدي القدرة على ذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

36- عند قراءة قطعة في الفصل

اقرأ بصورة ابطأ من زملائي في الصف

اقرأ بنفس سرعة زملائي في الفصل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

37- عندما يتعلق الامر بالسرعة، اخبرني معلمي و لاحظت انني

ينبغي ان أتمرن أكثر على القراءة في المنزل

اقرأ بطلاقة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

38- عندما يكون لدي واجب تعبير فأني

اعاني كثيرا في توليد الافكار

لا اواجه مشكلة في تولد الافكار

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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39- عندما يكون لدي واجب تعبير فأني

لا أستطيع التعبير عن افكاري بالقواعد الصحيحة

أستطيع التعبير عن افكاري مع قواعد مقبول

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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40- في واجباتي الكتابية

أفقد الدرجات بسبب الازطاء الاملائية

لا ارتكب اخطاء املائية

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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41- لقد أخبرني معلمي او لاحظت بأنني عندما اكتب الجمل

اتخطى الكلمة

اكتبها بصورة صحيحة

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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42- لقد أخبرني معلمي او لاحظت انني عند كتابتي ما يمليه علي المعلم

أخطى جملة كاملة

اكتب بطريقة صحيحة

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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43- لقد أخبرني معلمي في الفصل بأنني اخلط بين الحروف المتشابهة مثل حرف “ت” و “د” أو “ض” و “ظ”.

ولا مرة

في كل الاوقات

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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44- لقد أخبرني معلمي او لاحظت بأنني وعند كتابة الجمل

اتخطى وسط الجملة

اكتبها بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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45- لقد أخبرني معلمي او لاحظت بأنني إذا طلب مني كتابة الاملاء فإنني

استبدل كلمة بأخرى لها نفس المعنى (استخدم المرادف)

اكتبها بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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46- لقد أخبرني معلمي او لاحظت بان إذا طلب مني كتابة الاملاء فإنني

استبدل كلمة بأخرى لها معنى مختلف تماما

اكتبها بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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47- لقد أخبرني معلمي او لاحظت بأنني اذا طلب مني كتابة بعض الجمل فإنني

اقوم بتغيير ترتيب الجمل

اكتبها بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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48- لقد أخبرني معلمي او لاحظت انني وعندما يتعلق الامر بالإملاء فإنني اضع حروف الكلمات

بترتيب خاطئ

بالترتيب الصحيح

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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49- بالنسبة لعلامات الترقيم في الواجبات “ التمارين “ الكتابية فأني

أهملها بالكامل

اراعي علامات الترقيم مثل الفاصلة و علامة الوقف

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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50- لقد أخبرني معلمي او لاحظت انني وفي تمارين الاملاء في الفصل

ادخل كلمة ليست موجودة في الجملة

اكتب بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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51- لقد أخبرني معلمي في الفصل او لاحظت انني اثناء الكتابة

اقوم بعكس الحروف بان اكتب س مكان ش او ض مكان ظ

اكتب صورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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52- لقد أخبرني معلمي في الصف او لاحظت انني وعند تهجي بعض الكلمات

ارتكب اخطاء في التحريك المرتبط بنطق الكلمة

اتهجاها بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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53-يصف معلمي في الصف خطي على انه

غير مقروء

مقروء

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

54-عند نسخي لنص في الفصل

اواجه صعوبة في ذلك

أستطيع القيام بذلك بسهولة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

55-لقد أخبرني معلمي في الصف او لاحظت فيما يتعلق بطريقة امساكي بالقلم عند الكتابة بانني امسكه

أثبته جيدا

بصورة مرتخية

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

56-عندما يتعلق الامر برسم صورة بسيطة مثل المربع

اعاني في القيام بذلك

أستطيع القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

57- لقد أخبرني معلمي او لاحظت وعند اختيار عملية لحل مسألة رياضية فانا اختار

العملية الصحيحة	العملية الخاطئة
ينطبق علي كثيرا"	ينطبق علي كثيرا"
ينطبق علي إلى حدًا" ما	ينطبق علي إلى حدًا" ما

58- لقد أخبرني معلم الرياضيات او لاحظت تذكر رقم بسيط مثل $1 = 5/5$

لا أستطيع القيام بذلك	اعاني في حل المسائل البسيطة
ينطبق علي كثيرا"	ينطبق علي كثيرا"
ينطبق علي إلى حدًا" ما	ينطبق علي إلى حدًا" ما

59- لقد أخبرني معلم الرياضيات او لاحظت انني عند حل المسائل الرياضية

اتبع الخطوات الصحيحة	لا اتبع الخطوات الصحيحة
ينطبق علي كثيرا"	ينطبق علي كثيرا"
ينطبق علي إلى حدًا" ما	ينطبق علي إلى حدًا" ما

60- لقد أخبرني معلم الرياضيات او لاحظت بانني و عند حل مسألة رياضية مكتوبة فانا اقوم بـ

العملية الرياضية الصحيحة	باختيار العملية الرياضية الخاطئة
ينطبق علي كثيرا"	ينطبق علي كثيرا"
ينطبق علي إلى حدًا" ما	ينطبق علي إلى حدًا" ما

61- عندما يتعلق الامر بالحجم والعدد ومعرفة عدد الاشياء في مجموعة سواء كانت صغيرة او كبيرة، اشعر بأنني

أستطيع القيام بذلك بسهولة	اعاني ضعف في تقدير الحجم
ينطبق علي كثيرا"	ينطبق علي كثيرا"
ينطبق علي إلى حدًا" ما	ينطبق علي إلى حدًا" ما

62- عندما يتعلق الامر بحل مسألة رياضية مصاغة بكلمات

لا أستطيع ذلك بسهولة

أستطيع القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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63- عند التعامل مع مفاهيم مثل القياس، السرعة ودرجة الحرارة، اشعر بأنني

غير قادر على فهمها

قادر على فهمها

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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64- عندما يتعلق الامر بالبعد العكسي او الى الامام (مثل 103,102,101 العكس) اشعر بأنني

لا أستطيع ذلك

أستطيع القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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65- عندما يتعلق الامر بوضع صورة مرئية ذهنية لموقع رقم مثل رقم في الهاتف او الساعة

أجد صعوبة في ذلك

أستطيع القيام بذلك بسهولة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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66- عندما يتعلق الامر بوضع تصور ذهني لموقع مدينتي في خريطة

لا أستطيع ذلك

أستطيع القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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67- لقد أخبرني معلم الرياضيات او لاحظت بانه و عند قراءة الارقام، فانا اقرؤها

بالترتيب الخطأ

بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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68- لقد أخبرني معلم الرياضيات او لاحظت بانه و عند كتابة الارقام، فانا اكتبها

بالترتيب الخطأ مثل 65 بدلا من 56

بصورة صحيحة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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69- عندما يتعلق الامر بنحويل الكلمات التي تعبر عن الارقام مثل (عندما يتم تحويل مضاعفات العشرة الى اسماء)، اشعر

بأنني

لا أستطيع

قادر على القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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70- عندما يتعلق الامر بالتعامل مع المعاملات النقدية ورسيد دفتر حسابي مثل كم يتبقى لي عند الدفع للبقال

لا أستطيع

أستطيع القيام بذلك

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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71-أجد في تحديد الزمن في الساعة

سهولة			صعوبة
ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما

72-لقد أخبرني معلم الرياضيات او لاحظت انني وعند ترتيب الارقام في الحقل الصحيح

اقوم بذلك بصورة صحيحة			ارتكب الازخطاء
ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما

73-عندما يطلب مني المعلم في الفصل بالتركيز في التمرين، لاحظت انني

لا أستطيع التركيز على التمرين لمدة طويلة			أستطيع التركيز على التمرين بالقدر المطلوب
ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما

74-لقد أخبرني والداي او لاحظت فيما يتعلق بإدارة التمرين او الانشطة بالنسبة لترتيبها في اليوم بأنني

منظم في اداء التمارين والواجبات			اعاني في تنظيم يومي
ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما

75- عند جلوسي على الكرسي في الصف، لاحظت انني

اتحرك باستمرار

أستطيع الجلوس بهدوء طوال فترة الحصة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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76- لقد لاحظت فيما يتعلق بمتعلقاتي الشخصية (الكتب، الدفاتر....) فانا دائما

جميع اغراضي مرتبة

لا اعرف اين وضعتها

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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77- لقد أخبرني اصدقائي بانني عندما ادخل في نقاش فينني

استمع لكل ما يقال

لا استمع باهتمام

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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78- عندما يتعلق الامر بأداء اعمال الجامعة فانا

لا اهتم بالتفاصيل

اهتم بكافة التفاصيل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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79- لقد أخبرني والداي بأنني عندما يكون هناك شخص يتحدث

استمع جيدا حتى يحين دوري في التحدث

اقاطعه ولا انتظر حتى يحين دوري

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

80- عندما اكون في الفصل فانا

اختلف الاعذار حتى أستطيع الخروج

أبقي في الفصل حتى نهاية الدرس

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

81- لقد أخبرني معلمي فيما يتعلق بإجابة الاسئلة، بأنني

اتسرع في الاجابة قبل فهم السؤال

انتظر حتى افهم السؤال جيدا

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

82- لقد لاحظت انني عندما اكون في الفصل

يكون تركيزي منصبا على ما يقوله المعلم

فاني أغرق في احلام اليقظة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

87- عندما يتعلق الامر بنظرتي للمستقبل ارى انه

يلفه الغموض

سيكون لي شأن عظيم

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

88- لقد أخبرني والداي فيما يخص طموحي بأنه يبدو ان لي

لا توجد لدى طموحات ولا خطط مستقبلية

طموحات عريضة وخطط مستقبلية

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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89- لقد أخبرني معلمي او لاحظت انه عندما يتعلق الامر بواجباتي المدرسية، فانا

في غاية الاهتمام

أفقد الاهتمام بسرعة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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90- لقد أخبرني والداي او لاحظت انني العمل الذي ابداه.

لا اكمل

أكمل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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91- عندما يتعلق الامر بأداء اعمالي الجامعية فانا

أؤجله لأخر لحظه

اشرع في العمل فوراً

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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92- اعتقد انه عندما يتعلق الامر بالتميز الأكاديمي فانا

قلق لهذا الشأن

لا باس بي على الاطلاق

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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93- عندما يتعلق الامر بالإجابة على اسئلة تتعلق بي فانا اجد انه من السهل التحدث عن

صفاتى الجيدة

صفاتى السيئة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

94- انا مدرك بانه عندما يتعلق الامر ببحث خاص بالجامعة فإنني

سأقوم بعمل جيد

لن اجيد العمل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

95- لقد أخبرني زملائي بأنني عند ارتكابي الاخطاء البسيطة

لا اهتم بالاعتذار

أكثر من الاعتذار

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

96- لقد أخبرني زملائي بانني عندما اكون في الفصل فانا ابدو

متوترا

هادئا

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

97- اشعر في مقدرتي على الاداء الجيد في الجامعة

بالشك

بالتقة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا
ينطبق علي إلى حد ما			

98-لدي اعتقاد بأنني بأشياء عظيمة في حياتي

لا أستطيع

أستطيع القيام

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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99 -اثناء القراءة فانا احاول ان اعلم نفسي

ابدأ كل نص بدون اي استراتيجية الحفظ

حفظ كلمات معينة لتحسين سر عتي

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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100-من اجل تذكر كل ما قيل في قاعة الدرس

اكتب اثناء المحاضرة

أسجل محاضراتي واكتبها بعد الرجوع الى المنزل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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101 -من اجل اكمال واجباتي المنزلية في موعدها فانا

اقوم بها متى ما استطعت ذلك

اقوم بها في أسرع وقت ممكن

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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102-من اجل تسهيل عملية التعرف على الكلمات، فانا

اقرأها فقط

اربط بين الكلمات والصورة الذهنية

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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103-عند قراءتي لكلمة صعبة فانا

اقرأها فقط بمجرد رؤيتها

استرجع اصوات الحروف في ذهني

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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104-لقد أخبرني معلمي بأنني دائما اكون.....بقلمي ودفترتي

غير جاهز

اكون جاهزا

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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105-عند علمي باننا سنقرا نصا جديدا

لا استذكره

استذكره في المنزل

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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106-عندما يتشتت انتباهي في الفصل

لا افعل أي شيء حيال هذا الامر

اختار مكانا في الركن بعيدا عن الازعاج

ينطبق علي كثيرا"	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"
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107-لدي شعور بأنني.....من قبل اقراني في المدرسة

مرفوض

مقبول

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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108-أكثر شعور أحس به وانا في المدرسة هو

الارتياح /الثقة

القلق

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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109-بالنسبة لي تكوين صداقات جديدة

صعب جدا

في غاية السهولة

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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110-عند المشاركة في بحث او عمل في الجامعة فانا عادة اكون

مشارك

القائد

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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111-فيما يتعلق بالأصدقاء، فقد لاحظت انني يمكنني

يمكنني المحافظة عليهم

الحصول على الاصدقاء ولكن لا احافظ عليهم

ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما	ينطبق علي كثيرا"	ينطبق علي إلى حدًا" ما
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112- عندما يكون لدي عمل كثير، اشعر بـ:

بالثقة والقدرة على الانجاز

بالارتباك والخوف من عدم الانجاز

ينطبق علي كثيرا	ينطبق علي كثير	ينطبق علي إلى حد ما	ينطبق علي كثيرا
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113- اصدقائي يخبروني بأنني عندما ادخل في نقاش فإنني اقول

اشياء غير ملائمة

اشياء ملائمة

ينطبق علي كثيرا	ينطبق علي كثير	ينطبق علي إلى حد ما	ينطبق علي كثيرا
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114- لقد لاحظت انه فيما يتعلق بالإشارات الغير حرفية في النقاش (لغة الجسد) كإشارات اليد فأني

أفهمها جيدا

لا افهمها

ينطبق علي كثيرا	ينطبق علي كثير	ينطبق علي إلى حد ما	ينطبق علي كثيرا
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115- لقد أخبرني اصدقائي ان تعابير وجهي

تتطابق مع ما اقول

لا تتفق مع الكلمات التي اقولها

ينطبق علي كثيرا	ينطبق علي كثير	ينطبق علي إلى حد ما	ينطبق علي كثيرا
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116- لقد أخبرني اشخاص مقربون لي انه فيما يتعلق بفهمي لأي نقاش بأنني

افهم ما تعنيه الكلمات بالضبط

اخذ الكلمات بمعناها الحرفي

ينطبق علي كثيرا	ينطبق علي كثير	ينطبق علي إلى حد ما	ينطبق علي كثيرا
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117- لقد أخبرني اصدقائي بانه فيما يتعلق بفهمي المعنى المستتر في أي نقاش بانني

افهم المعاني

لا اعرف كيف استنبط المعنى

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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118- لقد لاحظت انني عندما اكون مع مجموعة امن الاصدقاء نتبادل النكات، فانا

افهم النكات

لا افهم مغزى النكات

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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119- عندما اقرأ يبدو لي ان الاحرف

واضحة ومركزة

متداخلة غير مركزة

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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120- عندما اقرأ، اشعر بان الاحرف

واضحة وثابتة

تهتز

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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121- عندما اقرأ، لاحظت انني

اكون على ما يرام

اعاني من الصداع فيما بعد

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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122- لقد لاحظت انه قراءة الكلمات المكتوبة بحجم كبير وبمسافات متباعدة

ليس مهما ان تكون كذلك

من السهل على

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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123- لقد لاحظت انه قراءة الكلمات عندما تكون على صفحات ملونه

ليس مهما ان تكون كذلك

من السهل على

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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124- لقد أخبرني اصدقائي او لاحظت انني التي يعطيني لها اصدقائي

لا أنسي

أنسي الرسائل

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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125- لقد لاحظت انني فيما يتعلق بتذكر اسماء الناس فإنني

اجد صعوبة في تذكرهم

لا اتذكرهم عند رؤيتهم

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
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126- عندما يتعلق الامر بأغراض الشخصية

اتذكر مكان كل شيء بالتحديد

دائما ما أنسي اين وضعت اغراضي

ينطبق علي كثيرا	ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي إلى حد ما
-----------------	-----------------	---------------------	---------------------

127- عندما يتعلق الامر بتذكر ارقام الهاتف، أجد نفسي

غير قادر على ذلك

قادر على القيام بذلك

ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا	ينطبق علي إلى حد ما
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128- لقد لاحظت انني وعند النسخ من السبورة او من ورقة فإنني

أجد صعوبة في ذلك

قادر على القيام بذلك بسهولة

ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا	ينطبق علي إلى حد ما
-----------------	---------------------	-----------------	---------------------

129- عندما يتعلق الامر بتتبع مسار افكار معينة تكون لدي بشأن بحث جامعي فأجد نفسي

لا اعرف من اين ابدأ بالضبط

اعرف بالضبط ما يجب على فعله

ينطبق علي كثيرا	ينطبق علي إلى حد ما	ينطبق علي كثيرا	ينطبق علي إلى حد ما
-----------------	---------------------	-----------------	---------------------

2. ارجو وضع دائرة حول الاجابة الاكثر تطابقا مع الواقع وفي هذا الجزء يمكنك وضع اكثر من اجابه للسؤال الواحد.

130- اخر مستوى وصلت اليه والدتي في تعليمها هو:

- الابتدائي
- المتوسطة
- الثانوية
- خريجة جامعية
- غير ذلك (توضيح.....)

131- اخر مستوى وصل اليه والدي في تعليمه هو:

- الابتدائي
- المتوسطة
- الثانوية
- خريج جامعي
- غير ذلك (توضيح.....)

132-كم مرة ترين والدتك تقرأ (كتابا، مجلة او صحيفة)

- مرة في اليوم
- مرتين في اليوم
- أكثر من مرتين في اليوم
- ولا مرة

133-كم مرة ترين والدك يقرأ (كتابا، مجلة او صحيفة)

- مرة في اليوم
- مرتين في اليوم
- أكثر من مرتين في اليوم
- ولا مرة

134-كم مرة ترين والديك يشترون كتابا:

- مرة في اليوم
- مرة في الشهر
- أكثر من مرتين في الشهر
- ولا مرة

135- هل هناك عضو في اسرتك تلقى دعماً في تعلم القراءة والكتابة.. إذا كانت الإجابة نعم حدد

- أبوك
- أمك
- أحد أعضاء الأسرة
- أكثر من فرد في الأسرة
- غير ذلك (توضيح.....)

136- ما هو نوع الدعم الذي تلقاه (العضو في الأسرة)

- دعم في فصل دراسي
- حصص خاصة في المدرسة
- دعم خاص خارج المدرسة
- مدرس خصوصي
- غير ذلك (توضيح.....)

137- هل تعاني من أي صعوبات في المدرسة

() نعم

() لا

138- ما هي المادة التي تواجهك فيها صعوبات

- القراءة
- الكتابة
- الرياضيات
- غير ذلك (توضيح.....).

139- ما هو نوع الدعم الذي حصلت عليه للتغلب على تلك الصعوبات دعم في فصل دراسي

- حصص خاصة في المدرسة
- دعم خاص خارج المدرسة
- مدرس خصوصي
- غير ذلك (توضيح.....)

140- الى أي مدى كان الدعم التعليمي التي تلقته مفيدا:

- ساعدني كثيرا
- ساعدني بعض الشيء
- ساعدني قليلا
- لم يساعدني

141- كيف تقيم تجربتك المدرسية

- عظيمة
- جيدة
- سيئة
- جيدة وسيئة

142- في أي مستوى تعليمي حصلت على الدعم

- الابتدائي
- المتوسط
- الثانوية
- الجامعة

143- هل انت طفل مولود قبل الاوان “ خديج “

() نعم

() لا

144-هل كانت أي تعقيدات اثناء الولادة :

() نعم

() لا

145-هل حدثت أي تعقيدات بعد الولادة

() نعم

() لا

146 - هل اصبت في أي مرض تسبب في تغييبك عن الدراسة

() نعم

() لا

147-هل تعاني من أي مشكلة سمعية

() نعم

() لا

148-هل تعاني من أي مشاكل في النظر

() نعم

() لا

149-هل عانيت من أي تأخر او عجز في الكلام

() نعم

() لا

Appendix IV

Student Self-Inventory (SSI) questionnaire

Name:

Dear student,

Please read these instructions carefully before you start each answer. This is a questionnaire which is part of a PhD educational research. It is a series of questions that might give a general indicator of literacy and study skills difficulties. Your answers will not affect your academic studies. Your answers, along with your information, will be highly appreciated and every measure of complete secrecy will be taken to protect your identity and personal data. You have the right to refuse or to withdraw at any point during the questionnaire. If you decide to do so, please make sure to read the following statement and answer them with the respect to your **typical study experiences since September 2012**. Check only one item for each question.

Thank you.

If at any time you have questions regarding this research, please do not hesitate to contact me on:

Mobile number: 07500224136

Email: ab493@exeter.ac.uk

Alternatively you can contact my research supervisor:

Hazel Lawson: H.A.Lawson@exeter.ac.uk

Thank you again for your help.

N	Questions	Rate				
		Does not apply	Never	Rarely	Some times	Always
Motivation						
1	I am very enthusiastic about finishing university and getting my degree.					
2	I have a set of goals that I want to reach after I graduate from university.					
3	I have felt discouraged about my academic work since September.					
4	I have found it difficult to complete a task that I have started.					
Memory						
6	I have the ability to remember things that have been discussed in the class room.					
7	I can remember what is said in the classroom in regards of my university homework.					
8	I have difficulty recalling dates or days in regards to deadlines and meeting times.					
9	I don't have the ability to recall instructions or a series of directions when I need them.					
Feelings /Attitude						
10	Overall I like reading as part of my course work.					
11	Overall I like writing as part of my course work.					
12	I think that I am having literacy problems at university.					
13	I have felt bored in the class room during lecture time and during assignments.					
Time Management						
14	I have tended to be late for my classes.					
15	I have not needed longer time than my peers in the university to complete written tests.					
16	I have felt that I take longer than I should to read a text from an academic book.					
17	I don't take longer than my peers to finish a regular university task (homework).					

N	Questions	Does not apply	Never	Rarely	Some times	Always
Organisation skills						
18	If I have to describe my organisational skills with regards to my school work, I would say that I have been organised.					
19	I have the ability to keep my things in order (for example, personal belongings).					
20	I have found it difficult to follow orders or instructions given by my teacher in the class.					
21	I don't have a diary to record my lectures and deadlines (paper diary or electronic diary).					
Attention						
22	I have found it difficult to recognise mistakes in my written university work.					
23	I have found it difficult to keep track of what is being said in the class room.					
24	I had the ability to concentrate long enough to finish tasks (tests or assignments)					
25	I have found that I can focus my attention during lecture time with minor distraction (like small voices outside the class room)					
Reading						
26	I have found that when it comes to my course work, it is difficult to understand what I am reading.					
27	When I read my course work I can evaluate what I have read.					
28	I have found it difficult to recall basic facts from a passage that I have read.					
29	I have found that I can skim and scan a paper for the main ideas and key points.					
Writing						
30	I have found that when it comes to writing I tend to have a lot of spelling mistakes.					
31	I know that my hand writing has been very difficult to read.					
32	I have found that copying a text from the blackboard is easy.					
33	I can write correctly by dictation.					

بسم الله الرحمن الرحيم

التقرير الذاتي عن المهارات الاكاديمية في المرحلة الجامعية

الاسم:

عزيزي الطالبة يرجى قراءة هذه التعليمات بعناية قبل البدء في الإجابة.

هذا الاستبيان هو جزء من البحث التربوي الخاص بالحصول علي درجة الدكتوراه، وهو عبارة عن سلسلة من الأسئلة التي قد تعطي مؤشرا عاما من صعوبات القراءة والكتابة ومهارات الدراسة في المرحلة الجامعية والغرض من ذلك هو معرفة ما إذا كان قد نحتاج الي تشخيص اضافي في ما يخص هذه المسألة، ولتقديم مساعدة عامة لجميع الطلاب ولكن تجدر الاشارة الي ان هذه المساعدة لن تقدم علي الفور انما هو الهدف العام من الرسالة، ونتائج إجاباتك لن تؤثر على دراستك الأكاديمية، وسيتعامل مع جميع الاجابات من شخصكم الكريم بغاية السرية وتجدر الاشارة انه لديك الحق في رفض أو سحب المشاركة من هذه الدراسة في أي وقت، ارجو قراءة كل جملة بعناية مع التدقيق عند الاجابة على التركيز علي الست الاشهر الماضية وتحديدًا من بدء شهر سبتمبر.

شكرا جزيلًا

إذا في أي وقت كان لديك أي أسئلة بخصوص هذا البحث يرجى عدم التردد في الاتصال بي على

رقم الهاتف النقال: 07500224136

البريد الإلكتروني: ab493@exeter.ac.uk

أو بدلا من ذلك يمكنك الاتصال بمشرف البحث

الدكتورة هايزل لواسون H.A.Lawson@exeter.ac.uk

اكرر شكري وتقديري لوقتكم

رقم	السؤال	تقدير الاجابة			
		دائما	احيانا	نادرا	ابدا
1	انا متحمسة جدا لفكرة التخرج من الجامعة والحصول على الشهادة الجامعية.				
2	لدي اهداف معينة اطمح لإنجازها عند التخرج من المرحلة الجامعية.				
3	منذ شهر سبتمبر وانا احس بالهزيمة فيما يخص انجازي الاكاديمي.				
4	اجد من الصعوبة اكمال عمل اكاديمي بدأت فيه.				
5	استطيع تذكر ما تم ذكره مسبقا في الصف الدراسي.				
6	استطيع تذكر ما قيل في الصف الدراسي بما يخص الواجبات الجامعية.				
7	اجد من الصعوبة تذكر امور خاصة بمواعيد تسليم الواجبات.				
8	لا استطيع تذكر مجموعة من التعليمات او الارشادات عندما احتاج لذلك.				
9	بشكل عام انا احب القراءة كجزء من المنظومة التعليمية.				
10	بشكل عام أحب الكتابة كجزء من العملية التعليمية.				
11	اعتقد انه لدي مشكلة في القراءة.				
12	أحس بنوع من الملل والضجر عندما اكون بالصف الدراسي.				
13	منذ بداية شهر سبتمبر وانا أتأخر بالحضور الي الجامعة وفي تأدية الواجبات الجامعية.				
14	لا أخذ وقت اطول من زملائي لتأدية واجباتي الجامعية التي تحتاج كتابة.				
15	لدي احساس (تصور) اني أخذ وقت طويل لقراءة مقطع من كتاب.				
16	لا أخذ وقت اطول من زملائي لتأدية واجباتي الجامعية بشكل عام.				
17	انا منظم فيما يخص قدراتي على تنظيم حياتي الاكاديمية.				
18	استطيع تنظيم اولياتي في حياتي الشخصية.				
19	اجد من الصعوبة اتباع تعليمات المعلم داخل الصف الدراسي.				
20	لا توجد لدي مذكرة شخصية (سواء العادية او الالكترونية) لتذكيري بأوقات تسليم واجباتي.				
21	اجد من الصعوبة التعرف علي اخطائي في الواجبات المكتوبة.				

					اجد من الصعوبة التركيز علي ما يقال في الصف الدراسي.	22
					لدي القدرة على التركيز لوقت كافي لإنجاز مهمة دراسية (واجب او بحث)	23
					استطيع التركيز على مجريات الدراسة في الصف الدراسي حتى مع وجود مشتتات بسيطة.	24
					اجد من الصعوبة فهم ما اقرأ (الكتب والملزم الخاصة بالجامعة)	25
					عندما اقرا كتاب استطيع تقييم ما قرأت.	26
					اجد من الصعوبة تذكر الافكار الرئيسية لكتاب قرأته بالتو واللحظة.	27
					اجد اني قادر علي اجراء مسح سريع واستخراج الافكار الرئيسية من ورقة او بحث.	28
					عند الكتابة توجد لدي الكثير من الاخطاء الاملائية.	29
					اعرف انه خطي تصعب قرأته بشكل كبير.	30
					اجد عملية النسخ من السيورة امر سهل.	31
					لا اجد صعوبة بالإملاء .	32

Appendix V

Teachers' report on students' academic performance

Dear university staff,

I would like to ask you to take part in my PhD educational research, knowing that any information given will be highly appreciated and very helpful. All participants will be anonymous and all information will be treated confidentially. It is hoped that the study will ultimately make a major difference in the lives of students with academic difficulties in higher education.

Knowing the views of someone in your position who is involved in decision-making and planning for students is essential. It will enable me to fully understand the student in question, and to link with the rest of my data.

However, you should know that you have the complete freedom to refuse to take part in this study. If you choose to take part, please read these statements carefully. Answer to the best of your knowledge, knowing that you're helping a fellow researcher and your university students.

If you have any questions, please contact me.

Amani Bukhamseen

Mobile: 07500224136

Email: [ab493@ Exeter.ac.uk](mailto:ab493@Exeter.ac.uk)

Alternatively, you can contact my research supervisor:

Hazel Lawson: H.A.Lawson@exeter.ac.uk

Teacher name:

Student name:

1. Please circle what you think best describes your students academic performance: poor average above average
good excellent

N	Questions	Rate				
		Do not know	Never	Rarely	Some times	Always
2	This student is enthusiastic about finishing the course.					
3	This student has effective study skills.					
4	This student can complete written tasks in the time allocated.					
5	I have noticed that this student seems focused during lecture time.					
6	This student can skim and scan a paper for the main idea and key points.					
7	This student tends to have very few spelling mistakes.					

بسم الله الرحمن الرحيم

تقرير معلمات الجامعة عن طلاب المرحلة الجامعية

السلام عليكم ورحمة الله وبركاته.....عزيزتي استاذ الجامعة المحترمة.

أود أن أطلب منك أن تكوني جزءا من البحث التربوي المقدم كجزء للحصول على درجة الدكتوراه. أي معلومات ستذكر في هذه القائمة سوف تكون محل تقدير كبير وسوف تعامل بسرية كاملة. مع التنويه أن لديك الحرية الكاملة في رفض المشاركة في هذه الدراسة، ولكن إذا اخترت للمشاركة يرجى قراءة هذه البيانات بعناية، والإجابة بصدق كامل. الأسئلة التالية خاصة بالطالبة من وجهة نظرك الشخصية ومن خلال تجربتك العامة معها بالإضافة الى نتائجها الأكاديمية.

إذا في أي وقت كان لديك أي أسئلة بخصوص هذا البحث يرجى عدم التردد في الاتصال بي على

رقم الهاتف النقال: 07500224136

البريد الإلكتروني: ab493@exeter.ac.uk

أو بدلا من ذلك يمكنك الاتصال بمشرف البحث

الدكتورة هايزل لواسون H.A.Lawson@exeter.ac.uk

اكرر شكري وتقديري لوقتكم

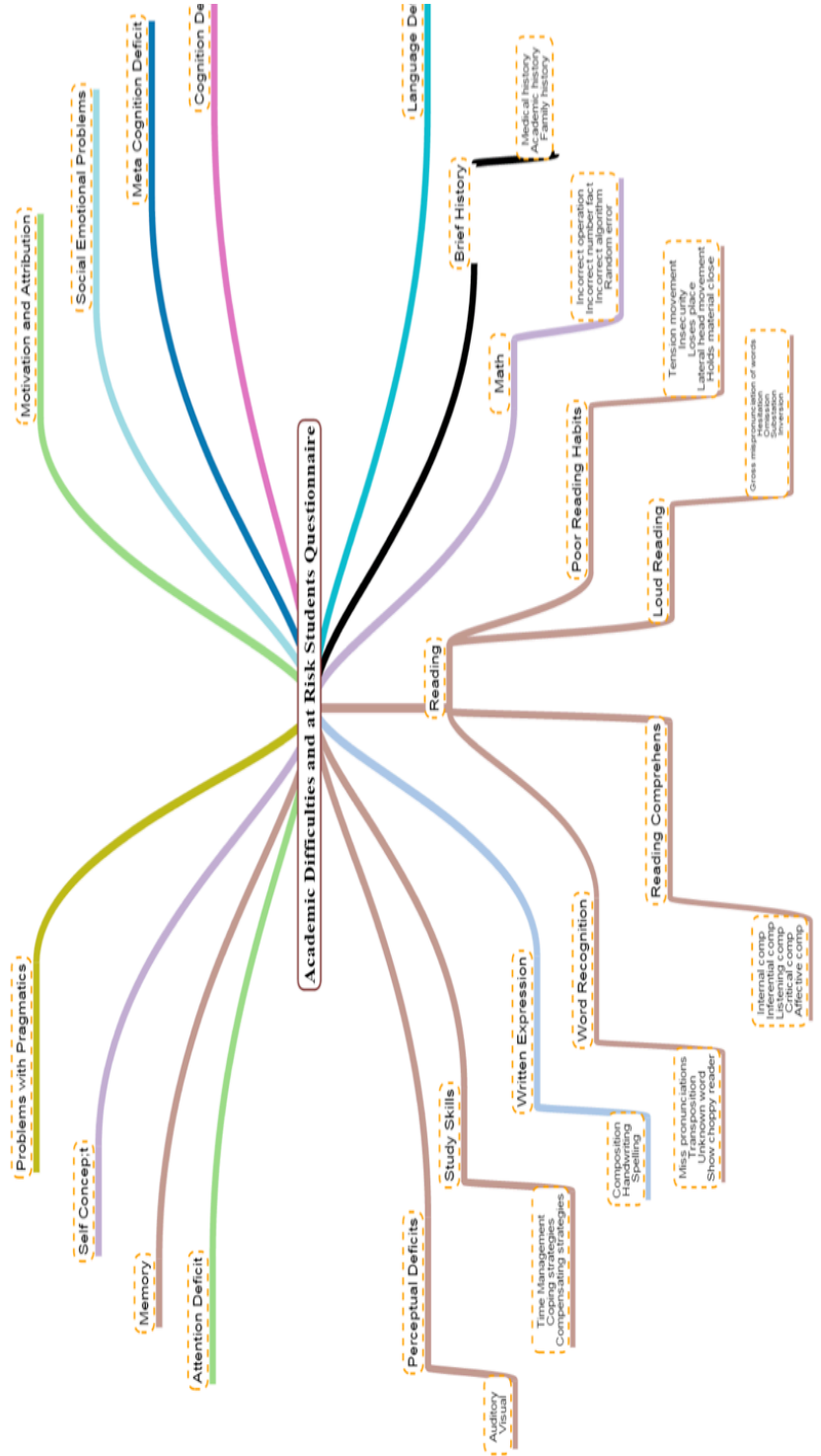
أسم المعلمة:

أسم الطالبة:

تقديرك للمستوى الدراسي للطالبة: ضعيف متوسط جيد جيد جدا ممتاز

الرقم	السؤال	مدى انطباق الجملة			
		لا أعلم	أبدا	نادرا	بعض الوقت دائما
1	هذه الطالبة لديها الحماس والرغبة بالحصول على الدرجة الجامعية.				
2	هذه الطالبة لديها مهارات دراسية فعالة تظهر من خلال انجاز الطالبة الدراسي.				
3	تستطيع هذه الطالبة إنهاء مهامها الأكاديمية في الوقت المعطى (لا تطلب وقت إضافي).				
4	يبد وعلى هذه الطالبة التركيز خلال وقت المحاضر.				
5	تستطيع هذه الطالبة القيام بمسح عام لورقة العمل المعطاة خلال وقت المحاضرة واستخراج الأفكار الرئيسية.				
6	عندما تقدم الطالبة واجبا مكتوبا يكون فيه عدد قليل جدا من الأخطاء الإملائية.				

Appendix VI



Appendix VII

Dear student,

Any feedback you have regarding the research will be highly appreciated. Please read each question and try to rate it based on your understanding of the checklist:

1. What did you think of the length of the questionnaire?

Very long 1 2 3 4 5 Not long

2. In general, please indicate how clear the questions were to you.

Very clear 1 2 3 4 5 Not clear

3. Are there questions that caused you to hesitate?

No 1 2 3 4 5 Yes

4. Did you have enough times to answer the questions?

Enough time 1 2 3 4 5 Not enough

5. How familiar was the checklist form?

Very familiar 1 2 3 4 5 Not familiar at all

بسم الله الرحمن الرحيم

عزيزتي الطالبة

ارجو منك تعبئة الاستمارة واعطاء رأيك الخاص بمحتوي الاستبانة الخاصة بمهارات الدراسة والمشاكل التعليمية بالمرحلة الجامعية لا توجد اجابة صحيحة او خاطئة انما هو رأيك بكل صراحة.

1. كيف وجدتني طول الاستبانة بشكل عام
ليست طويلة 1 2 3 4 5 طويلة جدا
2. ما مدي وضوح الاستبانة بشكل عام
واضحة 1 2 3 4 5 غير واضحة
3. هل يوجد سؤال تسبب لك في حيرة
لا يوجد 1 2 3 4 5 يوجد
4. هل تعتقد ان الوقت المعطى لإكمال الاجابة على الاستبيان
كافي 1 2 3 4 5 غير كافي
5. هل بدى لك شكل الاستبانة
مألوف 1 2 3 4 5 غير مألوف

Appendix VIII

Interview consent form

I consent to being interviewed and digitally recorded for the purpose indicated above. I give my consent on the understanding that the recording will be kept confidential and will be stored securely in a locked filing cabinet when not in use, and that it will be used only for the purposes of research.

I am aware that the recording will be erased once the research purposes have been fulfilled, at which point the recording will be erased or securely destroyed. I acknowledge that I have the full freedom to withdraw my consent at any time and have the recording erased.

Purpose: academic research

I consent to the use of digital recordings.

Student name

Signed:Date:

Appendix IX

Dimensions	Questions	Examples
University Attainment	Do you think that your GPA reflects your attainment? What do you think the factors influencing your GPA?	Motivation Attention Interest Teaching methods Time management Environmental factors
	Are you meeting your academic expectations?	Personal expectations Family expectations Teacher's expectations
Academic Strengths or weakness	What do you think your strong points academically? Have you experience any academic difficulties? Are your academic difficulties related to literacy?	
Academic Difficulties	How do you feel about your difficulties?	Self-esteem, Social and emotional feelings
	Is your academic difficulties related more to reading?	Speed, Text reading paper reading Attention Impulsivity Memory Comprehension

	Is your academic difficulties related to writing?	<p>Linking sentences and paragraphs by using Appropriate cohesive devices.</p> <p>Making an appropriate transition of ideas between Sentences in the written text to show unified Information</p> <p>Translating ideas to written words</p> <p>Composition such as finding ideas</p> <p>Getting details</p> <p>Getting started</p> <p>Hand writing</p> <p>Spelling</p>
Compensating Strategy	What kind of compensating strategy did you use if any?	Study skills
Support	<p>Did you get any academic support?</p> <p>Who provided your support</p> <p>How did you feel about your help?</p> <p>Do you think you support helped you?</p>	<p>family member</p> <p>private tutor</p> <p>Special classes inside school</p> <p>Special classes outside school</p> <p>Other form of help</p> <p>More than one kind</p>

Appendix X

The pre-interview scale

Name:

Instructions: Please read each statement carefully before answering. Indicate how you feel by circling the number that you feel is most descriptive of your state.

1. School attainment satisfaction:

Very satisfied.

Totally dissatisfied.

1 2 3 4 5 6 7 8 9 10

2. Your feelings about your GPA:

Happy.

Worried.

1 2 3 4 5 6 7 8 9 10

3. Your reading ability:

Capable.

Having difficulties.

1 2 3 4 5 6 7 8 9 10

4. Your writing ability:

Capable.

Having difficulties.

1 2 3 4 5 6 7 8 9 10

5. Your academic support:

Helped a lot.

Did not help at all.

1 2 3 4 5 6 7 8 9 10

مقياس خاص بإجراء المقابل

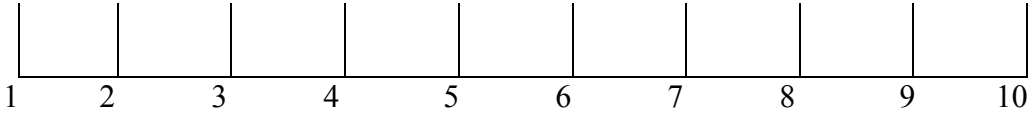
الاسم:

التعليمات: يرجى قراءة كل عبارة بعناية قبل الإجابة، تكري كيف كنت تشعرين وضعي دائرة حول الرقم اللذي تشعرين
بانه هو أكثر وصفا لوضعك في المرحل الجامعية.

مدي رضاك عن التحصيل الدراسي

غير راضية نهائيا

راضية جدا



شعورك حول معدلك التراكمي

قلقة

سعيدة



قدرتك على القراءة

توجد صعوبات

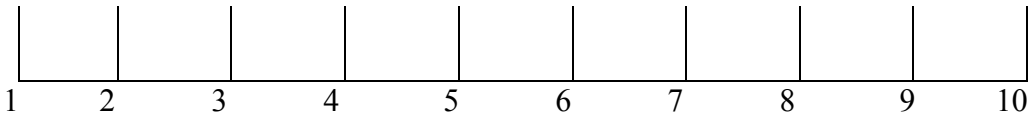
قادر



قدرتك على الكتابة

توجد صعوبات

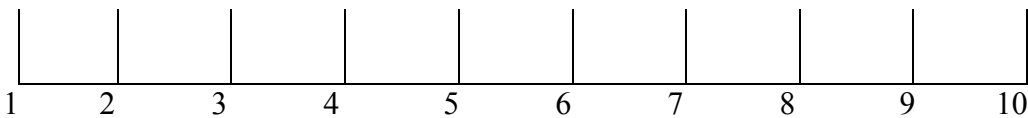
قادر



الخدمات الاكاديمية المساندة

لم تساعد على الاطلاق

ساعدت كثيرا



Appendix XI

Interviews scripts in Arabic

“نموذج من المقابلات “

الباحثة: السلام عليكم ورحمة الله وبركته.

٣: وعليكم السلام ورحمة الله وبركاته.

الباحثة: اعرفك بنفسي “ انا امانى محمد بوخمسين ” طالبة من جامعة اكستر في المملكة المتحدة أقوم حاليا بكتابة رسالة الدكتوراه في موضوع” “، ومن ضمن متطلبات رسالة الدكتوراه، عمل مقابلات مع الطلبة والقيام بدراسة حالتهم، والتي ستساعد في اثراء البحث وتحديد ان كانت هناك مشكلة من عدمه ومدى تأثيرها على التحصيل الأكاديمي. في البداية، اود ان اوضح لك بان كل ما سيتم من حوار في هذا اللقاء سيكون في غاية السرية ولن يستخدم خارج أغراض البحث وسيتم وضع اسم مستعار لك. بالإضافة الي ذلك، انه لن يتم ذكر اسمك الشخصي في أي مرحلة من مراحل البحث او أي تفاصيل شخصية تدل على هويتك وعلى هذا الاساس اود أن أخذ موافقتك على القيام بهذا المقابلة في البداية. وعلى هذا الأساس هل توافقين على اجراء هذه المقابلة؟

٣: أوافق على إجراء المقابلة. وشكرا لك لأنك ذكرتي لي بانه لن يتم استخدام البيانات التي سيتم ذكرها في المقابلة خارج نطاق البحث، كما أنه لن يتم استخدام اسمي الشخصي أي شيء يدل على هويتي.

الباحثة: هل لديك أي تحفظات او موانع تودين الإفصاح بها قبلها إجراء هذه المقابلة؟

٣: لا. لا يوجد أي موانع تحفظات ولكن هل من الممكن لا أرد أنا بعض الأسئلة إذا كانت شخصيا جدا؟

الباحثة: طبعاً لا مانع من ان تقومي بإيقافي عند أي سؤال ان كان لديك أي تحفظ عليه. كما اود ان اوضح لك بان المقابلة ليس الزاما عليك ولكنها تطوعا منك كي أستطيع ان اتم متطلبات البحث، فاذا وجدت نفسك عند أي مرحلة تريدين التوقف فلا تترددي ابدأ، واعلمي انني سأكون سعيدة جدا بمعرفة ان كان السؤال يسبب لك أي حرج او ان لديك أي تحفظ. حيث انني لا اريدك ان تشعر في أي مرحلة من مراحل المقابلة أنك تحت ضغط.

٣: شكرا أستاذة والله يعطيك العافية ما قصرتي على توضيح الموضوع، وتأكدي بأنني سأكون في غاية الصراحة والشفافية معك أثناء اللقاء وخصوصا عندما اجد بان هناك حرج او أي تحفظ علي الإجابة علي الأسئلة أثناء المقابلة سأقوم بإخبارك اني لا أستطيع الإجابة

الباحثة: هل تعاني من تعانين من أي مشاكل صحية؟

٣: كلا لا اعاني من أي مشاكل صحية والله الحمد.

الباحثة: ما هو مدى رضاك عن تحصيلك الجامعي؟

٣: أنا راضية تماما عن درجاتي في الجامعة ولكنني لست راضية عن الجامعة بشكل عام يوجد لدي إحساس انه الجامعة لا يفرق معها نهائيا نحن الطلاب يعني أستاذة وجودنا وعدمه واحد ولذلك لا اجاول بذل جهد إضافي

الباحثة: لماذا لديكي هذا الأحساس بعدم الرضا عن الجامعة؟

٣: لأنه لا أحد يهتم في الجامعة والحقيقة أن إنني أجد بان الجامعة لا تهتم بالطالبات الذين يدرسن بها. كما أنه أسرتي لا تهتم الا بما حصل عليه من درجات ويجب ان احصل علي درجات كافية، للحصول على درجة البكالوريوس وعدم الرسوب في أي مادة من المواد وبالطبع هذا امر مؤسف جدا إنني عندما افكر اجد بأنه من الأفضل عدم ذكر هذا الكلام ولكنني اريد أن أكون صريحة. و في واقع الأمر أنا راضية تماما على درجاتي كما انني اراعي كثير من الامور أنا طالبة جامعية والحمد لله سعيدة بوصولي للجامعة بس أكره الدراسة، ويضيق بها صدري وعلي طول عندي عدم الرغبة في المذاكرة، وإذا أجبرت نفسي وذاكرت لا أفهم شيئاً، وأثناء المحاضرات ملل يكون ما بعده والا قبلخ ملل

الباحثة: ماهي الأشياء التي تقرتحينها لتغيير هذا الوضع؟

٣: هل بالإمكان تغيير إجابة الأسئلة في الورقة القادم إذا كنتي تسمحني لي بذلك (لقد قامت الطالبة بأخذ ورقة جديدة وتغيير الإجابات لآخر 5 أسئلة والتي تدل علي رضا كامل).

٣: حسن أنا لا ابذل الكثير من الجهد في المذاكرة، ولكنني أحصل على درجات عالية، وكثير من الأحيان فإن الدرجات التي أحصل عليها أفضل بكثير من الطالبات اللواتي قضينا وقت طويل في المذاكرة. إن أهم ما في الأمر عدم الرسوب. وأنا لا ارسب يعني حتي لو اني لا اذاكر فانا انجح وهذا المهم

الباحثة: لماذا أشرتني الى الرقم خمسة اجاباتك على الأسئلة؟

٣: أنا لم أكن أفكر قيل الإجابة على الأسئلة ولكنني كنت اختار الرقم 5 لأنه يعبر عن منتصف الإجابة. هل تسمحين لي بتغيير الإجابات اذا كان ذلك ممكن.

الباحثة: نعم لا مانع من ذلك. ولكنني أود لو إني أسألك لماذا انت غير راضية عن الجامعة؟

٣: في البداية اود أن اذكر لأنه لم يسبق اني سألت هذا السؤال من قبل وان دل علي شي انما يدل علي انا نا أقوله صحيح وهو نحن كالتطلبات لانهم الأساتذة نهائيا

الباحثة: أي سؤال تقصدين؟

٣: السؤال الذي ذكرت لي سابقا أن كنت راضية تحصيلي الجامعي؟

الباحثة: هل تعتقدين بأنك ستكونين راضية عن الجامعة لو تغيير معدك التراكمي؟

٣: لا اعلم، ربما اشعر بالرضا، ولكن أعتقد انه من الأفضل عدم التفكير بموضوع الرضا او عدمه المهم اكمال المرحلة الدراسية والتخرج هذا هو الشئ الوحيد المهم

الباحثة: ماذا عن مشرفك الأكاديمي؟

٣: لا نحتاج الي رؤيتها، فقط قابلتها عندما احتجت الي تغيير الشعبة عندما كانت مغلقة. وكنا بحاجة لفتح شعبه جديدة لتسجيل الطالبات او اراها أحيانا اذا احتجنا الي التحويل من شعبه الي شعبه أخرى. وهذا ما كانت تقوله لنا المشرفة الأكاديمية. عفوا لا اريد الحديث عنها والوقوع في مشاكل مع إدارة الجامعة هل من أسئلة اخري.

الباحثة: لا مانع من ذلك، وإذا كنت لا ترغبين نستطيع الحديث عنه فيما بعد.

٣: نعم فيما بعد.

الباحثة: بالتأكيد، هل تعتقد بين بان درجاتك تعكس تحصيلك الأكاديمي؟

٣: ماذا تقصدين هذا السؤال؟

الباحثة: هل تعتقدين بأنه متوسط درجاتك تظهر واقع عملك؟

٣: نعم، نوعا ما (الطالبة تضحك)، لأنني لا أبذل جهدا كبيرا، وأعتقد بان احتساب المعدل غير عادل.

الباحثة: لماذا؟

٣: حسنا هل تعرفين كيف يتم احتساب المعدل. حيث يتم احتساب المعدل من أول اختبار في الجامعة الي آخر اختبار حاليا. إن هذا الأمر غير عادل لأن الشخص يمر بالعديد من الامور الشخصية والتي لا اود الحديث عنها وأتمنى ألا تسألين عنها. علما بأنها اثرت على درجاتي ولكن لا يهم جعل هذا الأمر لن يتعدل فلماذا أفكر فيه، سوف اتخرج وأتمنى أن أحصل على عمل.

الباحثة: انطلاقا من الظروف الشخصية التي مررت بها كيف اثرت على تحصيلك الأكاديمي؟

٣: لا افهم قصدك هل تقصد ان هناك شيء قمت بعمله. كما قلت لكي انني لا اهتم فأنا آتي الى الجامعة لرؤية صديقاتي والاستمتاع بالوقت والحصول على الدرجة الجامعية.

الباحثة: إذا هل هذا يعني بأن إنجازك لم يؤثر هذا حياتك الاجتماعية في الجامعة؟

٣: كلا على الإطلاق، لدي العديد من الصديقات المقربات، وليس صديقة واحدة فقط.

الباحثة: لقد اشرت الي ان مستوي الصعوبات الاكاديمية ٣ فلماذا ذكرت ذلك؟

٣: لا توجد لديه صعوبات اكايدمية ولكن بما ان المعدل التراكمي ليس جيدا بشكل كبير، فلم اضع درجة عالية في الاستبيان لهذا السبب. ولكن عندما يأتي الأمر الي القوة الأكاديمية فانا قوية وأستطيع أن أكون كذلك لم اعاني قط في المواد الاكاديمية السابقة كل درجاتي كانت جيدة ولا اقلق على موضوع النجاح كباقي الطالبات فانا عندما منتقي المدرسة الموضوع حفظ صم ولا اسهل

الباحثة: أنا افهم هذا الأمر ولكن هل بالإمكان الحديث عن مزيدا من التفصيل؟

٣: (لا توجد إجابة)

الباحثة: هل تعتقد ين بأنه من الأفضل أن نتكلم عن مهاراتك دراسية؟

٣: (لا توجد إجابة)

الباحثة: هل نستطيع عندما نتكلم عن أشياء تقومين بعملها ساعد في كفاءتك التعليمية وتساعد في إدارة تعليمك، مثل ادارة الوقت.

٣: لا يوجد شيء تحديدا، في بعض الأحيان استخدم المحدد ولكنني اجد بأنني أقوم بتحديد كامل الورقة. وبالتالي لا أستطيع أن أسلم الواجب في الوقت المقرر. في أغلب الأحيان أقوم بتسليم الواجبات متأخرة. أنا فقط لا أحب الجامعة، ليس هناك شيئا مثيرا ولكنني في حين رغيتي بالتسليم في الوقت المحدد فإني قادرة على ذلك. لقد أتيت من الثانوية العامة الى الجامعة وقد شعرت بالضيق لعدم وجود يوم تعريف بالجامعة او أي برنامج يخدم الطالبة، وقد شعرت بأنني في وسط البحر بدون التفكير في السباحة. فكل شيء مختلف.

الباحثة: هل بالإمكان تشرحين أكثر ما هو الاختلاف الذي وجدته في الجامعة؟

٣: لقد كنت في مدرسة تحفيظ القرآن، المنهج مختلف والدراسة مختلفة وعندما أتيت الى الجامعة كانت قفزة كبيرة لا بد أن يكون هناك فصل دراسي او سنة دراسية بين المدرسة والجامعة لمعالجة هذا الاختلاف في مرستي السابقة كان اعتمادي على الحفظ بالدرجة الاولى ولا يطلب منا التفكير حتي في المواد التي تحتاج تفكير مثل الرياضيات المطلوب هو الحفظ المعلمة وان كنت اعرف انك لن تصدقيني كانت تقول لنا "لا تفكرين حفطي فقط غير مطلوب منك تكونين عالمة"

الباحثة: ماذا عن المدرسات وطبيعة المناخ الدراسي في الجامعة، هل تعتقد ين بانهما اثرى على التحصيل الأكاديمي بشكل أو بآخر؟

٣: أوه، أنا لا أحب المدرسات ولا طبيعة المناخ الدراسي في الجامعة. لان أساسا اذا حضرنا الجامعة او لم نحضر ما تفرق

الباحثة: ما هو الشيء الذي لا تحببته في مدرساتك او المحاضرات او الجامعة في شكل العام؟

٣: إنهم لا يهتمون وبالتالي أنا لا اهتم. بهم هل ستقولين لهما ما اخبرتك به؟

الباحثة: كلا بالتأكيد لن أخبر أحد بذلك. دعينا نعود الي حديثنا، ماذا عن المحاضرات؟

٣: المحاضرات جيدة في بعض الأوقات ولكن في بعض الأوقات الأخرى الوقت طويل ومملة. ولكن لا بأس فأنا أستطيع انه أدرك كل ما يتم في المحاضرة ان كان هذا ما تقصدين، ولكن يظل الامر لأن المحاضرة مملة جدا.

الباحثة: ما هي نقاط القوة الأكاديمية لديك؟

٣: كل شيء تمام أنا ذكيه ولا يوجد خلل ما.

الباحثة: أنا متأكدة بأنك ذكيه، ولكن هل بالإمكان الإشارة الى نقاط القوة الأكاديمية لديك من خلال دراسة الجامعة؟

٣: أنا أستطيع أن افهم سريعا، بمجرد النظر الي الموضوع أستطيع أن افهم المحتوى. أعتقد بأن هذه النقطة هي أبرز نقاط القوة التي امتلكها عوضا عم العديد من النقاط الأخرى. فانا أستطيع عمل مسح عام لأي قطعة أكاديمية واعرف عن أي موضوع تتكلم في الحال.

الباحثة: مثل ماذا؟

٣: أنا أذاكر في نفس يوم الاختبار وأنجح.

الباحثة: لماذا تعتقد دين بأننا هذه هي نقطة قوة هل النجاح هو كل شيء ام المعدل الأكاديمي؟

٣: لأنني أستطيع أن افهم بشكل سريع بمجرد النظر الى الورقة نعم النجاح كل شيء اخر همي المعدل الأكاديمي انا لا اهتم ابدأ ان تكون درجاتي اعلي نفس الوظيفة ونفس الراتب ما يهم المهم التخرج بحد ذاته ولا تقولين لي أستاذة عن المعرفة لان ما احد يقيس المعرفة بالاختبارات كلها أسئلة تعجيزية وكأنها أسئلة تحدي

الباحثة: عندما نعود الى درجاتك هل تعتقد ين بأن قدرتك يا القراءة والكتابة تأثرت بشكل أو بآخر في المستوى الأكاديمي الحالي؟

٣: أنا ليست جيدة في الرياضيات ولازلت أعاني صعوبات في جدول الضرب ولكنني جيد جدا في الكتابة لأنها كانت افضل المواضيع لدي، فقد كنت أكتب طوال الوقت وأفضل الأوقات في الكتابة كانت وقت المحاضرات المملة. أن الكتابة تعتبر حياتي فأنا اكتب طوال الوقت، فقد بدأت القراءة والكتابة منذ سن مبكرة جدا. أمي تقول بأنني بدأت القراءة أو الكتابة قبل أخي الأكبر. أن خطي في الكتابة مميزة جدا و اكتب بالخط الكوفي وحتى الان يتميز الخط لدي كثيرا عن باقي الطالبات والجامعة في الاحداث التي تحتاج الي الكتابة علو قطع عرض كبيرة يطلبون مني المساعدة، و القراءة ايضا كما قلت لك متميز الي اخر حد والله الحمد لم اعاني قط فانا كنت ابدأ بالقراءة في المرسلة الي ان انتهي دون تلغثم او اخطأ والكتابة أيضا ما في مشاكل يعني كيف ستكون لدي مشاكل وانا في الجامعة اقصدي يعني لو ما اعرف اقرأ او اكتب كان ما وصلت المرحلة الجامعية اكيد ستكون قراءتي وكتابتي ممتازة

الباحثة: كيف تعرفين عن كتابتك باليد؟

٣: أنا أعرف. فالكثير يقول ذلك حتى مدرساتي في المدرسة ولان في الجامعة خطي اكثر من مميز

الباحثة: ماذا عن القراءة هل ممكن ان تتحدثني عنها اكثر مثلا سرعة القراءة عند رؤيتك كلمات جديدة؟

٣: القراءة تمام. أستطيع القراءة بشكل جيد وسريع ولكن لا ينطبق على قراءة الكتب المدرسية يعني يعتمد علو الكلاب ادا اقرأ للترفيه انتهي في دقيقة، عند قراءة الروايات أستطيع أن أنتهي من القراءة في يوم واحد. يوجد لدي رف كامل في مكتبة والدي ولدي العديد من الكتب.

الباحثة: هل بالإمكان أن تتكلمين ما هي الأسباب التي تعيق المعدل الأكاديمي ؟

٣: انه ليس قصور في الاهتمام فأنا أهتم. ولكن لا يوجد ما هو مثير للحديث عنه يعني ببساطة ما عندي إجابة ثانية غير اني جيت من أسلوب تدريس الي أسلوب اخر في التدريس ومالي مزاج او رغبة ان ابذل جهد الي التعلم والدراسة من جديد

الباحثة: أنا اتفهم ذلك ولكن هل تعتقدين أن هناك أسبابا أخرى نستطيع الحديث عنها ولو بالقدر القليل؟

٣: أمممممم. لا أعتقد بان هناك المزيد من الحديث نستطيع الكلام عنه حاليا. ولكن في المدرسة كنت اكره حفظ المواضيع الطويلة من الشعر والقرآن كما إنني أكره الرياضيات ولكنني احب مواضيع التعبير ودائما كنت أحصل علي درجة مميزة في الكتابة. وقد كانت مدرستي تستمع كثيرا بما كنت أكتب.

الباحثة: هل انت راضيه عن درجاتك في المدرسة قبل المرحلة الجامعية؟

٣: نعم لقد كانت جيدة وخصوصا أنني وضعت جهدا في السنة الأخيرة الحصول على درجة عليا تمكنني من دخول الجامعة يعني أستاذة لما ابي درجة احصل عليها ما يهمني شيء.

الباحثة: هل هناك أي نوع من أنواع الدعم من المدرسة قبل الجامعة؟

٣: لا لا يوجد لكن انا قبل الجامعة درجاتي جيدة ما كنت اعاني يعني اموري كانت ماشية لان حتي في المدرسة اخر همي الدرجات المهم انجح ولا ارسب بس الدرجات غير مهمة لا عندي ولا عند اهلي.

الباحثة: ولكنك وضعت رقم 5 في هذا استبيان؟

٣: صحيح عائلتي تدعمني ولكن ليس المدرسة. والدي يقضي الكثير من الوقت معي في الرياضيات والذي كان يساعدني بدرجة مقبولة. كما أن لديه مدرسة خاصة والتي كانت تساعدني في تلخيص المواضيع مثل القراءة والحديث بالإضافة الى المواد التي علي اختبار فيها لكن بمجرد دخول الجامعة سحب ايده الوالد نهائيا يقول لي اعتمدي علي نفسك ماله شغل فيني وبعدين بصراحة انا بعد ما اطلب المساعدة يعني لواني طلبت المساعدة يمكن يساعدني بس شلون يساعدني يسمع لي مثلا واتصور الوقت الي سأطلب فيه المساعدة سيبدأ وضع الحواجز علي حياتي اليومية يعني سيبدأ الكلام انه بدل ما تطلعين ذاكري والا بدل التلفزيون ذاكري وهكذا يعني بصير تحطيم من كل جانب وانا لله الحمد راضية لماذا افتح لي باب

الباحثة: هل المدرسة الخاصة التي ذكرتها سابقا من المدرسة؟

٣: نعم لقد كانت المدرسة من نفس المدرسة والاسرة تدفع لها النقود على الدروس الخصوصية. كما أنها لا تدرسي في الفصل بل تقوم بتدريس فصل آخر.

الباحثة: ما هو قدر المساعدة الذي قدمته لك المدرسة الخاصة؟

٣: لقد كانت تقوم تلخيص الدروس وبالتالي لا أضطر الى قراءة المواد بشكل كامل وهذا بالنسبة لي ممتاز جدا. لكن ليس تدريسيها لي كان باني ضعيفة في أيا من المواد انما التدريس لان لا يوجد أحد لمساعدتي في أداء الواجبات عندما كنت صغيرة فعلي الاعتماد على المدرسة لكي تساعدني بالواجبات وهذا عندما كنت صغيرة فالمدرسة لم تموت موجودة لتدريسي لن هناك ضعف لم اكن ضعيفة يوم في حياتي.

الباحثة: هل فكرتي ان تقومي بعمل تلخيص و إنت في المرحلة الجامعية؟

٣: كلا. لست متأكدة الي أي درجة أستطيع ان أقوم بالتلخيص. وأنا لم أفكر بذلك.

الباحثة: هل فكرتي في استخدام استراتيجيات أخرى؟

٣: أعتقد بأنه من الممكن ذلك في حال إنني قمت بمذاكرة أي شج. ولكن ما أقوم به عندما يكون هناك اختبار لدي نماذج بالاختبارات أقوم بالاطلاع عليها وبناء على ذلك أقوم بوضع الإجابات كما إنني أحب الإجابة عن الأسئلة القصيرة ولا أحب الإجابة علي الأسئلة التي بها اختيارات. وهذه الاختصارات التي أقوم بها او النماذج تساعدني في الاختبارات لان أساسا لا احب المذاكرة الا عندما تكون لدي اختبارات.

الباحثة: هل يوجد هناك أي دعم من قبل الجامعة؟

٣: لا أعتقد بان هناك شيء من هذا القبيل. هل يوجد؟ في الواقع أنا لا أعرف ولكنني لا أحتاج الى المساعدة فإذا احتجت الى المساعدة أحتاج الى رفع درجاتي. ولكن هذا الامر لن ينفع فهو متأخر جدا. كما أود أنا أقول لكي بأن هذا الأمر لا يضايقني. لقد كان صعبا في البداية الحياة الجامعية وخصوصا مع الضغط من قبل الوالدين. ولكنني أعتقد بانهما استسلما بالأمر الواقع. وكما تقول أمي إنني من يختار طريقه وأعتقد أن هذا يناسبني وانا مرتاحة بهذا الوضع. لا أنكر أنني رغبت في فترة من الفترات اني احسن وضعي الاكاديمي الا انه أسلوب التخويف والترهيب الذي يتبعه بعض الأساتذة، وعدم الحرص يعمل علي الاحباط

انتهت المقابلة بعد هذا السؤال لانشغال الطالبة

Appendix XII

Amani: how satisfied are you with your university attainment

The student 3: I am satisfied with my university grades but I am not satisfied at all with the university (*The student state does not feel the support of the university*)

Amani: Why is that?

The student3: Because they don't care nobody really cares, my family used to worry now all they worry about is getting enough grades that I don't fail (*Family expectation and support: the student later confirms that the family used to support her, when she was at school, her father paid for private tutor and spent time with her to help with math*)

You know when I think of it really hard I want to change my answer I am *really* satisfied with my grads (*University attainment she seems to very confident that her grades are not a reflection of her ability but of her lack of interest*), and school work yes I am doing OK considering

Amani: Considering what?

Can I change my answer on the other sheet (she takes the sheet and change her answer from number 5 to number 1 which indicate very satisfied)

The student3: Well, to answer your question considering That I don't do much work (*Lake of interest*), any way I know I can be a 'NURD' if I want to(*Self-esteem: she seems to be sure of herself and her ability*) I just don't, so I am satisfied (*Personal expectation: satisfied of her grades in general she sees them as an achievement*).

I am getting even better grades then those who spend their weekend studying .all what really matters is getting by not failing.

Amani: Why did you indicate 5 before on the scale sheet?

The student3: I wasn't thinking (*Impulsive: the student seems impulsive throughout the interview she seemed to be comfortable but in haste at the same time she answers too quick not really taking the time to think of her answers*). I put most of them in the middle so I might change some answers if that is OK

Amani: Yes it is. So why aren't you satisfied with the university?

The student3: to start with no one asked me the question before.

Amani: which question?

The student3: if I am satisfied with my university attainment.

Amani: do you think it would have changed you current GPA?

Student3: I don't know, could be, but I think it nice to think that some one cared enough to ask I would love to explore choices of study maybe I don't know, any way no one asked.

Amani: how about your academic advisor?

Student3: did not need to see her (*University support: the student indicate that no real help was provided from the academic advisor*), we only see her to ask about our sections when they full and need other sections to open or transfer from to another that is I, she told us so, I don't want to talk about that next question.

Amani: OK as you wish if you want we can talk about it later

Student3: no later.

Amani: Sure, do you think your GPA reflects your attainment?

The student3: What do you mean?

Amani: do you think that your grade point average doses show your work?

The student3: Oh yes kind of (laughs) because I don't really work and I think The GPA is calculated unfairly

Amani: Why?

The student 3: will do you know how its calculated, its calculated from all of my first exams since I entered university till now, that's unfair I've been through a lot personally (*Feelings : the student describe her feeling about GPA at the time of the interview it showed that at one point or another she wanted to change the outcome but couldn't because she was almost graduating*) and I don't want to talk about that so don't ask what, and that effected my grades so no matter what I will do to make batter it won't really work, so why bother I will graduate and I will work hopefully..

Amani: Apart from your personal circumstance what do you think affected your GPA?

Student3: I don't understand wait you mean like something am doing. I told you already, I don't care. I come to see my friends and have fun and get a degree.

Amani: so your achievement has not affected your social life in the university?

Student3: not at all I have loads of close friends and not so close ones (*Social and emotional feelings: she seems to be doing well*).

Amani: you indicated 4 on your academic difficulties can you tell me why?

Student3: I don't have a difficulty but since my GPA isn't that good I thought I can't put number one but I truly think that when it comes to academic strength that I am strong if I want to be I could be (*Confidence: seems confident that she can achieve better grades*).

Amani: I understand that but can we talk about that abet more?

Silence

Amani: Do you think it well be all right if we talked about your study skills

Silence

Amani: Can we talk about things that you do that make you an effective learner and manage your own learning for example time management?

Student3: Never really thought about that, sometimes I use high lights(*Study skills*) and end up highlighting the whole page, and I could never meet my dead line(*Time management:*

seems to miss her deadlines but that could be because of her lack of interest). I always submit late I just don't like the university, nothing interesting but I know that I could if I wanted it. I came from high school to university and felt kind of lost they didn't do orientation or anything I felt I was like at middle of the sea without being taught to swim (*Feelings: it showed dismay at the gap between school methods and university methods*) everything was different.

Amani: Can you explain more how is it different?

Student3: I was in Quran memorization (*Teaching method in school*)

schools, different methods different teaching, so I think the whole going to university thing was a jump there should a class or like a year or some between school and university

Amani: How about your teachers and the university environment did it affect your attainment in any way?

Student3: Oh I don't like those two

Amani: What do you not like about them, your teachers, lectures or the university in general?

Student3: They don't care so I don't care (*Feelings: the student seems convinced that the university don't really care about her achievement*), are you going to tell them I Saied that

Amani: No absolutely not. If we go back to our discussion how about your lectures

Student3: They are Ok sometimes long and boring (*Feelings: again, the student confirm that she is not interested*) but fine I guess I get what it's been Saied if that what you want to know but it just booooooring

Amani: What do you think your strong points academically?

Student3: Everything I am smart (*Self-esteem: shows again confidence in her ability*)nothing wrong with me.

Amani: I am sure you are. But I mean if you could point out what could be strong point while you study

Student3: Will...I understand quickly like I look at paragraph and I understand the content I think that my strongest among many (*Speed: doesn't see to have trouble with reading*)

Amani: Such as what

Student3: I study the morning before an exam and I pass.

Amani: why do you think that is a strong point?

Student3: I understand quickly and I scan the paper and get it.

Amani: Going back to your grades do you think your reading ability or writing has an effect at all on your current academic level.

Student3: I am not good with math still don't know my multiple chart, but I am very good at writing it was my favourite subject I write all the time, my great inspiration come during lectures specially boring ones (chuckles), It is basically my life, I write all the time, I started writing and reading really early, mum Saied I started before my older brother, and I know that my hand writing is exceptional (*Writing and reading ability: the student confident of her reading and writing ability and doesn't seem to have any difficulties when it comes to that regard*).

Amani: How do you know that about your hand writing?

Student3: I know and I've been told by many including my school teachers.

Amani: And how about you're reading?

Student3: Reading is OK. I can read really well (*Reading ability: again she confirms that she has no problems when it comes to reading*) and quick but not the text book I can finish a romantic novel in a day in fact I adored it I have got a bookshelf in my dad's study just for my books.

Amani: Can we talk about what is holding your back academically speaking other than your lack of interest

Student3: It's not my lack of interest I am interested. They don't have anything interesting to say.

Amani: I understand but do you think that there are other reasons we can talk about that a little

Student3: Ummmm I don't think there is anything more now, but in school I hated when we have to memorise large paragraphs (*Teaching methods: she shows resentment to a teaching method used in her school which emphasis memorizing.*) of poetry and Quran, I hated math, I loved composition that where I got my A my teacher would say that they are joy to read.

Amani: Were you satisfied with your grades in school?

Student3: Yes they were OK I put an extra effort in my last year of high school to get the grades (*Achievement: can change her grade level when she put extra effort*) that I need to be accepted in the university.

Amani: Has any support been provided in your school

Student3: No

Amani: but you indicated 5 about the question in your scale sheet?

Student3: Oh yes family helped but not school, my father (*Family support*)

would spend extra time with me for math and it helped a lot, and I had private tutor, who made me summaries of each subject though like reading or hadith and I would only study those for the exam

Amani: Was this private tutor from school?

Student3: It was a teacher from school but those private lessons were paid for by my family, she was not my teacher she taught different class

Amani: How helpful were they

Student3: somewhat but her summaries meant that I don't have to study a whole lot which is a good thing (thumbs up)

Amani: Did you ever try to make a summarization in the university

Student3: No I am not really sure I would know how to summarize, umm never thought of that.

Amani: have you used any other study strategies?

Student3: I think that I would if studied, what I do before an exam and only if I have a formal test not those mock tests is: scan take the key points and in exams build up my answers (*Study skill/ compensating strategies*)

from that, and that is why I like short answer exams not multiple choice.

Was getting ready to leave that's when I concluded the interview

Amani: Has any help been provided by the university

Student3: I don't think there is such a thing, is there?? (*University support: no support has been provided by the university*) I really don't know, but I don't need help if I want I'll get my grades up, but it won't change anything it's too late now .you have to know It doesn't upset me, it was abet tricky at the begging when I started UNI because my parents were at my throat, but I guess they gave up and kind except it mum says have it your way all the time now which suits me just fine.

Appendix XIV

Graduate School of Education

Certificate of ethical research approval

DISSERTATION/THESIS

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications> and view the School's Policy online.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER (the form will expand to contain the text you enter).
DO NOT COMPLETE BY HAND

Your name: Amani Bukhamseen

Your student no: 590053922

Degree/Programme of Study: : PhD Education 3 year

Project Supervisor(s): Dr. Hazel Lawson & Dr. Brahm Norwich

Your email address: ab493@exeter.ac.uk

Tel: 07875409191

I hereby certify that I will abide by the details given overleaf and that I undertake in my dissertation / thesis (delete whichever is inappropriate) **to respect the dignity and privacy of those participating in this research.**

I confirm that if my research should change radically, I will complete a further form.

Signed:



.....date: 14/10/2012

***NB** For Masters dissertations, which are marked blind, this first page must **not be included** in your work. It can be kept for your records.*

Your student no:
590053922

Title of your project: An exploration of academic and social lives of students with specific learning difficulties in higher education in Saudi Arabia

Brief description of your research project: The aim of this study is to explore the academic and social lives of students with Specific learning difficulties in higher education in Saudi Arabia. This involves 3 phases. In the first phase a large sample of HE students will be assessed in terms of their learning experiences and history as regards specific difficulties in learning. This phase will include: a baseline survey questionnaire applied to adult female university students in two sittings. The second phase of the study will involve following up this group at the end of one College year, examining their students' records and grades, and implementing a questionnaire to students and their teachers about their academic progress and difficulties over the year. The baseline measures will then be examined to see if they predict low attainment or academic difficulties. The third and final stage will involve in-depth case studies to explore students' academic and social life one year after the baseline assessment

Give details of the participants in this research (giving ages of any children and/or young people involved): The main group of participants are student-teachers. These are all females aged between 19 and 24 years old and their ethnic background is Saudi. They are students at a College of Education (COE) in Saudi Arabia. The sample size for the first phase is around 300 students and for the final case study phase is yet to be determined, but will probably be around 10 students.

University teachers are also participants. There are going to be around 8 teachers from the College of education in Saudi Arabia . The final number will be determined according to the teachers' knowledge of the students, which will be decided according to how much time is spent with the student , a minimum of three classes is required.

Give details (with special reference to any children or those with special needs) regarding the ethical issues of:

- a) **informed consent: Where children in schools are involved this includes both headteachers and parents). Copy(ies) of your consent form(s) you will be using must accompany this document.** a blank consent form can be downloaded from the GSE student access on-line documents:

The researcher will request informed consent from the participants (student teachers from the College of Education (COE) in KSA) (using an Arabic version of the consent form which is available on the university web-site). The researcher will ensure that the participants understand the nature of the research and the process in which they will be engaged prior to the start of the research, "including why their participation is necessary, how it will be used and how and to whom it will be reported" (BERA,

2004). According to BERA (2004) the researcher will also make clear to the participants that they have the right to withdraw from the research at any time if they so wish.

b) anonymity and confidentiality

Confidentiality and anonymity are taken into consideration in the study. The researcher will not reveal the identity of the participants or the college/university in any part of the thesis.

Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

The data collection methods used are questionnaire, interviews and documentary analysis of the students.

In the first phase the questionnaire will consist of 150 items, a quantitative data analysis: Descriptive statistical tests will be applied, using the Statistical Package for social sciences (SPSS) computer software, to summarise the results of the analysis of the items of the questionnaire. In the second phase a quantitative data analysis also well be used for the teachers questionnaire and for the students questionnaire. For the final phase all interviews will be recorded by using audio recording, then transcribed. These transcripts are provided to each of the participant before the start of the next interview for their scrutiny, confirmation or criticism.

Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recorded interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):

An ethical issue might rise in the event that the study shows that a participant in the study has experienced academic and emotional problems. In that event the researcher will ensure that help will be provided by their university.

Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

The researcher works in the same university, so an ethical issue might rise from the influence of authority which is a major influence in Saudi culture, This situation should not be allowed to pressure the participants to take part in, or remain as participants in the study if they do not wish to.

This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's Research Support Office for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.

N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period:

until:

By (above mentioned supervisor's signature):

..... **date:**.....

N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occur a further form is completed.

GSE unique approval reference:.....

Signed:.....**date:**.....

..

Chair of the School's Ethics Committee

Appendix XV

Frequency Table

Reading scale

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	37.00	1	.3	.3	.3
	41.00	4	1.2	1.2	1.5
	42.00	5	1.5	1.5	2.9
	43.00	4	1.2	1.2	4.1
	44.00	3	.9	.9	5.0
	45.00	2	.6	.6	5.6
	46.00	11	3.2	3.2	8.8
	47.00	11	3.2	3.2	12.0
	48.00	10	2.9	2.9	15.0
	49.00	7	2.1	2.1	17.0
	50.00	4	1.2	1.2	18.2
	51.00	12	3.5	3.5	21.7
	52.00	7	2.1	2.1	23.8
	53.00	9	2.6	2.6	26.4
	54.00	4	1.2	1.2	27.6
	55.00	10	2.9	2.9	30.5
	56.00	7	2.1	2.1	32.6
	57.00	3	.9	.9	33.4
	58.00	7	2.1	2.1	35.5
	59.00	8	2.3	2.3	37.8
	60.00	11	3.2	3.2	41.1
	61.00	7	2.1	2.1	43.1
	62.00	15	4.4	4.4	47.5
	63.00	7	2.1	2.1	49.6
	64.00	9	2.6	2.6	52.2
	65.00	11	3.2	3.2	55.4
	66.00	1	.3	.3	55.7
	67.00	4	1.2	1.2	56.9
	68.00	7	2.1	2.1	58.9
	69.00	8	2.3	2.3	61.3
	70.00	11	3.2	3.2	64.5
	71.00	6	1.8	1.8	66.3
	72.00	5	1.5	1.5	67.7
	73.00	9	2.6	2.6	70.4
	74.00	8	2.3	2.3	72.7
	75.00	7	2.1	2.1	74.8
	76.00	4	1.2	1.2	76.0
	77.00	5	1.5	1.5	77.4
	78.00	6	1.8	1.8	79.2
	79.00	3	.9	.9	80.1
	80.00	6	1.8	1.8	81.8
	81.00	3	.9	.9	82.7
	82.00	3	.9	.9	83.6
	83.00	7	2.1	2.1	85.6
	84.00	5	1.5	1.5	87.1
	85.00	7	2.1	2.1	89.1
	86.00	2	.6	.6	89.7
	87.00	3	.9	.9	90.6
	88.00	6	1.8	1.8	92.4
	90.00	3	.9	.9	93.3
	91.00	2	.6	.6	93.8
	92.00	3	.9	.9	94.7
	93.00	4	1.2	1.2	95.9
	94.00	1	.3	.3	96.2
	95.00	1	.3	.3	96.5
	96.00	1	.3	.3	96.8
	97.00	1	.3	.3	97.1
	98.00	1	.3	.3	97.4
	99.00	1	.3	.3	97.7
	100.00	1	.3	.3	97.9
	101.00	1	.3	.3	98.2
	104.00	2	.6	.6	98.8
	106.00	2	.6	.6	99.4
	140.00	1	.3	.3	99.7
	146.00	1	.3	.3	100.0
Total		341	100.0	100.0	

Writing scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	19.00	3	.9	.9	.9
	20.00	2	.6	.6	1.5
	22.00	5	1.5	1.5	2.9
	23.00	6	1.8	1.8	4.7
	24.00	13	3.8	3.8	8.5
	25.00	23	6.7	6.7	15.2
	26.00	27	7.9	7.9	23.2
	27.00	15	4.4	4.4	27.6
	28.00	25	7.3	7.3	34.9
	29.00	26	7.6	7.6	42.5
	30.00	29	8.5	8.5	51.0
	31.00	15	4.4	4.4	55.4
	32.00	21	6.2	6.2	61.6
	33.00	11	3.2	3.2	64.8
	34.00	19	5.6	5.6	70.4
	35.00	13	3.8	3.8	74.2
	36.00	6	1.8	1.8	76.0
	37.00	11	3.2	3.2	79.2
	38.00	8	2.3	2.3	81.5
	39.00	7	2.1	2.1	83.6
	40.00	9	2.6	2.6	86.2
	41.00	6	1.8	1.8	88.0
	42.00	5	1.5	1.5	89.4
	43.00	7	2.1	2.1	91.5
	44.00	3	.9	.9	92.4
	45.00	3	.9	.9	93.3
	47.00	4	1.2	1.2	94.4
	48.00	6	1.8	1.8	96.2
	49.00	2	.6	.6	96.8
	50.00	3	.9	.9	97.7
53.00	1	.3	.3	97.9	
54.00	2	.6	.6	98.5	
55.00	1	.3	.3	98.8	
58.00	1	.3	.3	99.1	
60.00	1	.3	.3	99.4	
67.00	1	.3	.3	99.7	
74.00	1	.3	.3	100.0	
Total	341	100.0	100.0		

Math's. scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	16.00	9	2.6	2.6	2.6
	17.00	7	2.1	2.1	4.7
	18.00	10	2.9	2.9	7.6
	19.00	20	5.9	5.9	13.5
	20.00	14	4.1	4.1	17.6
	21.00	13	3.8	3.8	21.4
	22.00	20	5.9	5.9	27.3
	23.00	21	6.2	6.2	33.4
	24.00	10	2.9	2.9	36.4
	25.00	14	4.1	4.1	40.5
	26.00	8	2.3	2.3	42.8
	27.00	18	5.3	5.3	48.1
	28.00	23	6.7	6.7	54.8
	29.00	15	4.4	4.4	59.2
	30.00	12	3.5	3.5	62.8
	31.00	10	2.9	2.9	65.7
	32.00	8	2.3	2.3	68.0
	33.00	12	3.5	3.5	71.6
	34.00	11	3.2	3.2	74.8
	35.00	12	3.5	3.5	78.3
	36.00	8	2.3	2.3	80.6
	37.00	8	2.3	2.3	83.0
	38.00	12	3.5	3.5	86.5
	39.00	3	.9	.9	87.4
	40.00	7	2.1	2.1	89.4
	41.00	6	1.8	1.8	91.2
	42.00	5	1.5	1.5	92.7
	43.00	2	.6	.6	93.3
	44.00	4	1.2	1.2	94.4
	45.00	3	.9	.9	95.3
46.00	1	.3	.3	95.6	
47.00	3	.9	.9	96.5	
48.00	4	1.2	1.2	97.7	
49.00	1	.3	.3	97.9	
50.00	2	.6	.6	98.5	
53.00	1	.3	.3	98.8	
54.00	1	.3	.3	99.1	
58.00	1	.3	.3	99.4	
59.00	1	.3	.3	99.7	
63.00	1	.3	.3	100.0	
Total	341	100.0	100.0		

Attention scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	10.00	2	.6	.6	.6
	13.00	3	.9	.9	1.5
	14.00	1	.3	.3	1.8
	16.00	4	1.2	1.2	2.9
	17.00	3	.9	.9	3.8
	18.00	6	1.8	1.8	5.6
	19.00	10	2.9	2.9	8.5
	20.00	17	5.0	5.0	13.5
	21.00	25	7.3	7.3	20.8
	22.00	27	7.9	7.9	28.7
	23.00	32	9.4	9.4	38.1
	24.00	42	12.3	12.3	50.4
	25.00	37	10.9	10.9	61.3
	26.00	33	9.7	9.7	71.0
	27.00	16	4.7	4.7	75.7
	28.00	23	6.7	6.7	82.4
	29.00	18	5.3	5.3	87.7
	30.00	12	3.5	3.5	91.2
	31.00	12	3.5	3.5	94.7
	32.00	9	2.6	2.6	97.4
33.00	1	.3	.3	97.7	
34.00	6	1.8	1.8	99.4	
37.00	1	.3	.3	99.7	
38.00	1	.3	.3	100.0	
Total	341	100.0	100.0		

Motivation. Scale	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	10.00	1	.3	.3	.3
	11.00	1	.3	.3	.6
	13.00	4	1.2	1.2	1.8
	14.00	6	1.8	1.8	3.5
	15.00	9	2.6	2.6	6.2
	16.00	9	2.6	2.6	8.8
	17.00	15	4.4	4.4	13.2
	18.00	19	5.6	5.6	18.8
	19.00	23	6.7	6.7	25.5
	20.00	27	7.9	7.9	33.4
	21.00	30	8.8	8.8	42.2
	22.00	29	8.5	8.5	50.7
	23.00	27	7.9	7.9	58.7
	24.00	30	8.8	8.8	67.4
	25.00	33	9.7	9.7	77.1
	26.00	19	5.6	5.6	82.7
	27.00	15	4.4	4.4	87.1
	28.00	17	5.0	5.0	92.1
	29.00	7	2.1	2.1	94.1
	30.00	7	2.1	2.1	96.2
31.00	3	.9	.9	97.1	
32.00	3	.9	.9	97.9	
33.00	1	.3	.3	98.2	
34.00	3	.9	.9	99.1	
35.00	1	.3	.3	99.4	
36.00	1	.3	.3	99.7	
37.00	1	.3	.3	100.0	
Total	341	100.0	100.0		

Self- esteem scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	6.00	2	.6	.6	.6
	8.00	5	1.5	1.5	2.1
	9.00	10	2.9	2.9	5.0
	10.00	18	5.3	5.3	10.3
	11.00	30	8.8	8.8	19.1
	12.00	40	11.7	11.7	30.8
	13.00	52	15.2	15.2	46.0
	14.00	52	15.2	15.2	61.3
	15.00	39	11.4	11.4	72.7
	16.00	30	8.8	8.8	81.5
	17.00	28	8.2	8.2	89.7
	18.00	19	5.6	5.6	95.3
	19.00	7	2.1	2.1	97.4
	20.00	5	1.5	1.5	98.8
	21.00	2	.6	.6	99.4
22.00	2	.6	.6	100.0	
Total	341	100.0	100.0		

Compensatory strategies					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	8.00	4	1.2	1.2	1.2
	9.00	2	.6	.6	1.8
	10.00	4	1.2	1.2	2.9
	11.00	3	.9	.9	3.8
	12.00	6	1.8	1.8	5.6
	13.00	14	4.1	4.1	9.7
	14.00	26	7.6	7.6	17.3
	15.00	20	5.9	5.9	23.2
	16.00	35	10.3	10.3	33.4
	17.00	40	11.7	11.7	45.2
	18.00	32	9.4	9.4	54.5
	19.00	25	7.3	7.3	61.9
	20.00	36	10.6	10.6	72.4
	21.00	20	5.9	5.9	78.3
	22.00	21	6.2	6.2	84.5
	23.00	16	4.7	4.7	89.1
	24.00	8	2.3	2.3	91.5
	25.00	8	2.3	2.3	93.8
	26.00	11	3.2	3.2	97.1
	27.00	3	.9	.9	97.9
28.00	3	.9	.9	98.8	
30.00	4	1.2	1.2	100.0	
Total	341	100.0	100.0		

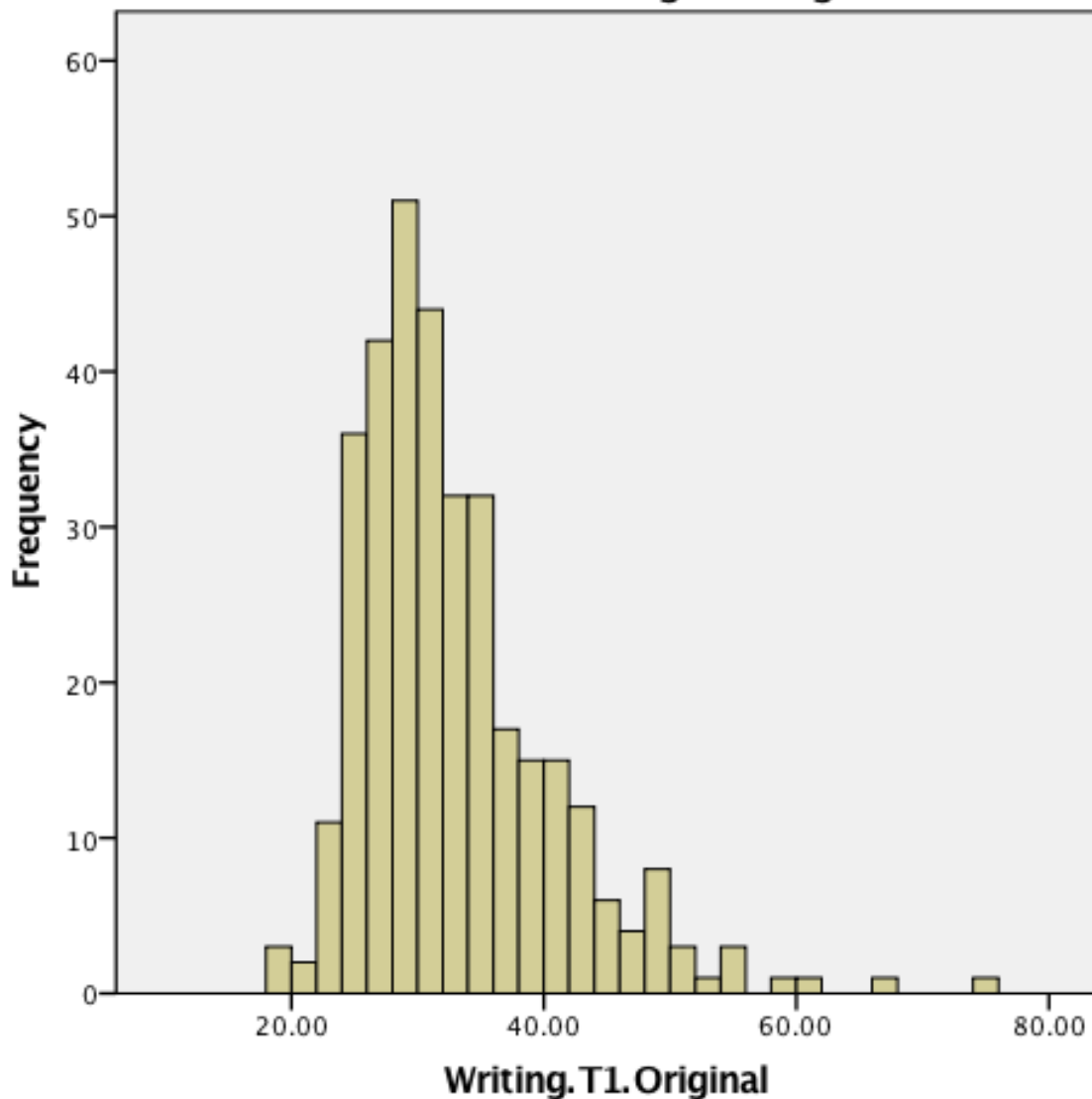
Social and emotional problem					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	6.00	2	.6	.6	.6
	8.00	5	1.5	1.5	2.1
	9.00	2	.6	.6	2.6
	10.00	10	2.9	2.9	5.6
	11.00	23	6.7	6.7	12.3
	12.00	31	9.1	9.1	21.4
	13.00	52	15.2	15.2	36.7
	14.00	56	16.4	16.4	53.1
	15.00	53	15.5	15.5	68.6
	16.00	39	11.4	11.4	80.1
	17.00	23	6.7	6.7	86.8
	18.00	23	6.7	6.7	93.5
	19.00	16	4.7	4.7	98.2
	20.00	4	1.2	1.2	99.4
	21.00	1	.3	.3	99.7
22.00	1	.3	.3	100.0	
Total	341	100.0	100.0		

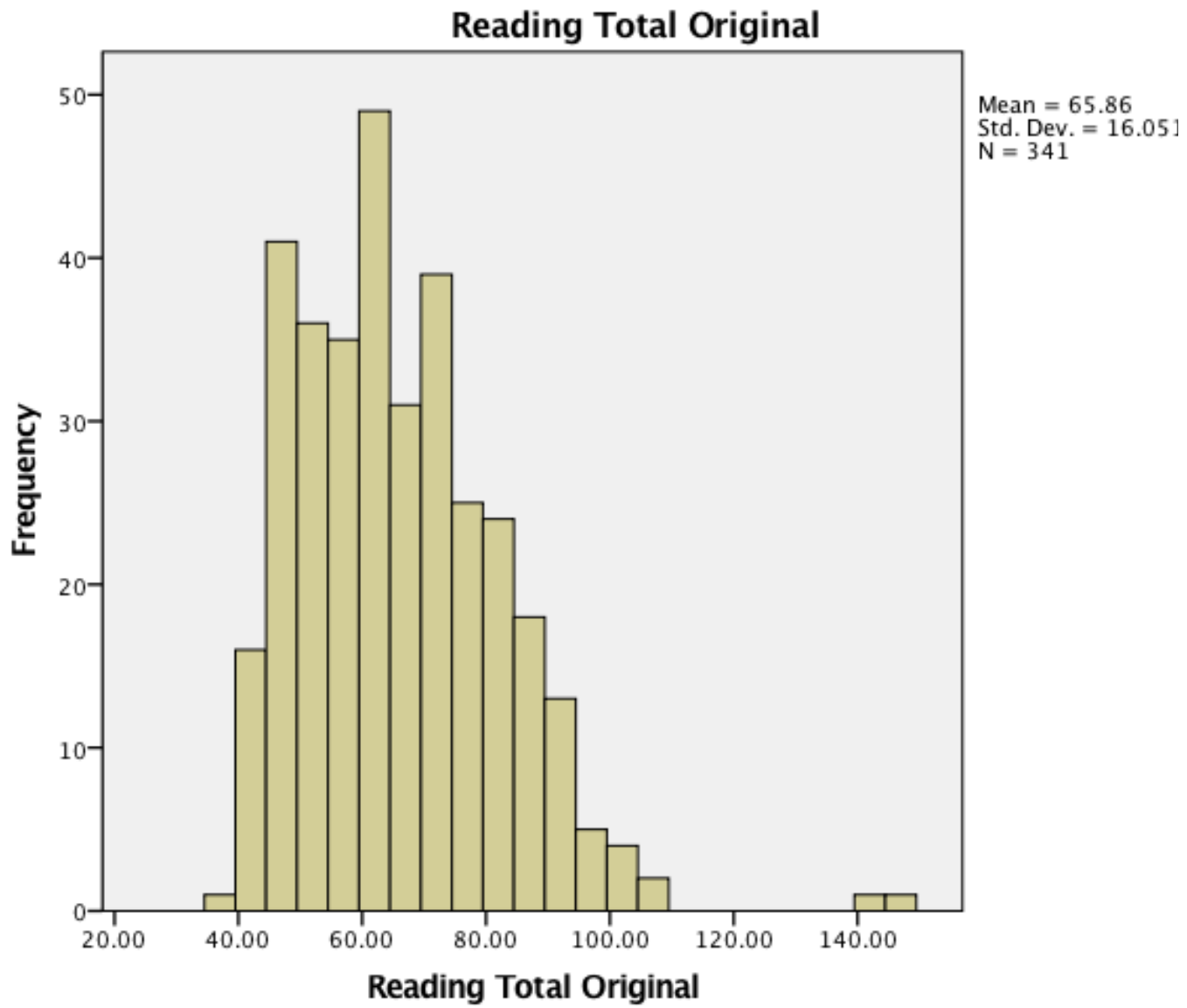
problem with pragmatics scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	6.00	2	.6	.6	.6
	7.00	1	.3	.3	.9
	8.00	2	.6	.6	1.5
	9.00	1	.3	.3	1.8
	10.00	2	.6	.6	2.3
	11.00	5	1.5	1.5	3.8
	12.00	4	1.2	1.2	5.0
	13.00	5	1.5	1.5	6.5
	14.00	12	3.5	3.5	10.0
	15.00	25	7.3	7.3	17.3
	16.00	61	17.9	17.9	35.2
	17.00	45	13.2	13.2	48.4
	18.00	68	19.9	19.9	68.3
	19.00	44	12.9	12.9	81.2
	20.00	32	9.4	9.4	90.6
	21.00	16	4.7	4.7	95.3
	22.00	14	4.1	4.1	99.4
	23.00	1	.3	.3	99.7
	24.00	1	.3	.3	100.0
	Total	341	100.0	100.0	

Vision stress scale					
	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	6.00	2	.6	.6	.6
	7.00	1	.3	.3	.9
	8.00	1	.3	.3	1.2
	10.00	4	1.2	1.2	2.3
	11.00	5	1.5	1.5	3.8
	12.00	11	3.2	3.2	7.0
	13.00	14	4.1	4.1	11.1
	14.00	41	12.0	12.0	23.2
	15.00	35	10.3	10.3	33.4
	16.00	33	9.7	9.7	43.1
	17.00	52	15.2	15.2	58.4
	18.00	54	15.8	15.8	74.2
	19.00	43	12.6	12.6	86.8
	20.00	24	7.0	7.0	93.8
	21.00	7	2.1	2.1	95.9
	22.00	9	2.6	2.6	98.5
	23.00	3	.9	.9	99.4
24.00	2	.6	.6	100.0	
Total	341	100.0	100.0		

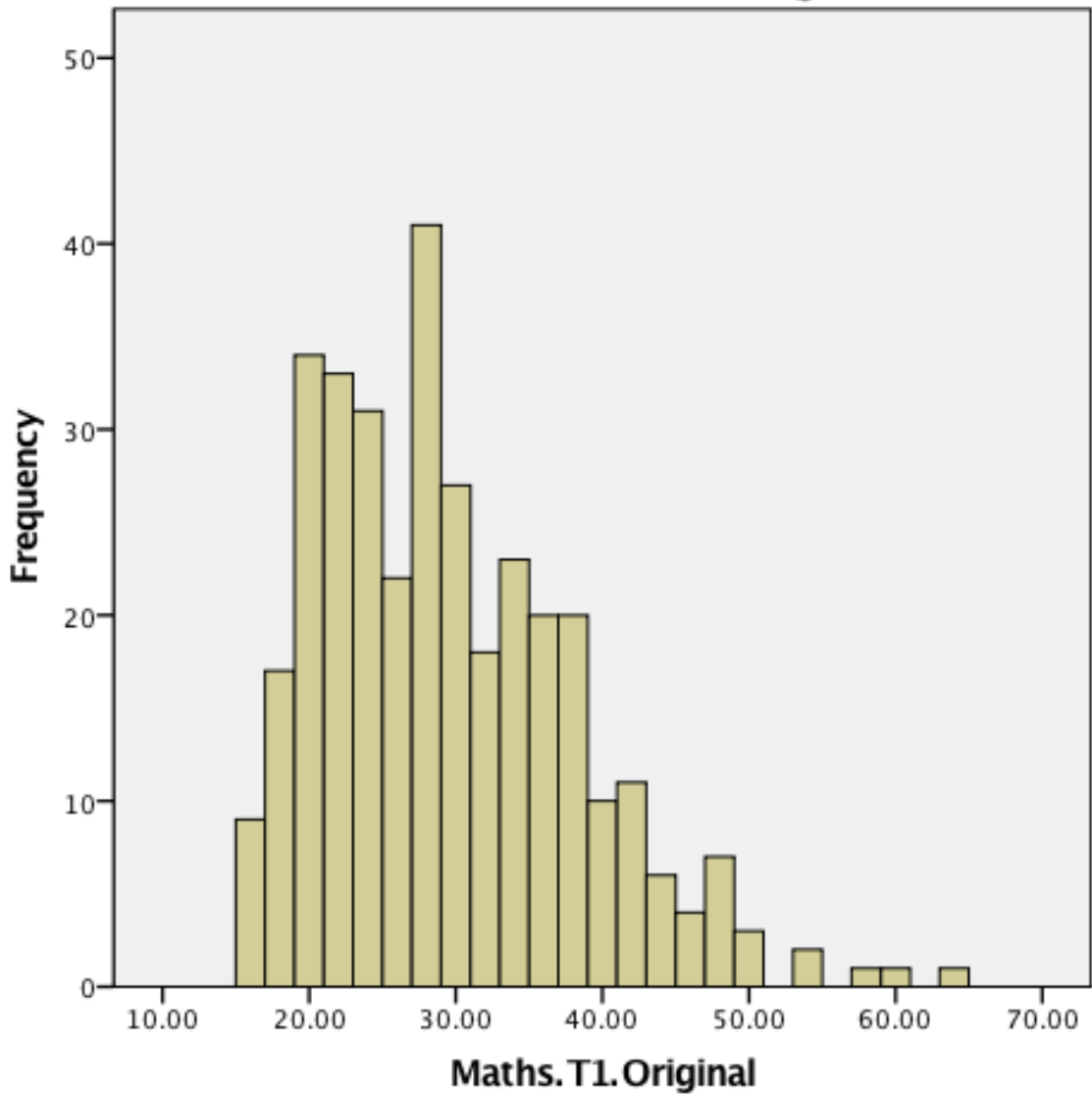
Memory scale						
	Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	5.00	1	.3	.3	.3	
	7.00	5	1.5	1.5	1.8	
	8.00	9	2.6	2.6	4.4	
	9.00	15	4.4	4.4	8.8	
	10.00	8	2.3	2.3	11.1	
	11.00	22	6.5	6.5	17.6	
	12.00	28	8.2	8.2	25.8	
	13.00	43	12.6	12.6	38.4	
	14.00	48	14.1	14.1	52.5	
	15.00	34	10.0	10.0	62.5	
	16.00	64	18.8	18.8	81.2	
	17.00	25	7.3	7.3	88.6	
	18.00	23	6.7	6.7	95.3	
	19.00	11	3.2	3.2	98.5	
	20.00	5	1.5	1.5	100.0	
	Total	341	100.0	100.0		

Writing.T1.Original





Maths.T1.Original



Mean = 28.98
Std. Dev. = 8.74
N = 341

Attention.T1.Original

