SELF-CONCEPT AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL BOYS IN RIYADH, SAUDI ARABIA

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ABSTRACT

The present study has set out to investigate the relationship between self-concept and academic achievement in Saudi Arabia, and to seek answers for the questions raised concerning the relationship between the self-concept variables (the independent variables), global self-concept, academic self-concept, motivation and attitude; and academic achievement (the dependent variable) as measured by examination marks at the end of the intermediate stage and the first term of the secondary stage.

A stratified random sample of 536 secondary school boys from Riyadh, Saudi Arabia, was selected and a battery of measures: Harter (1985), Brookover (1965), Rosenberg (1965) Robinson (1986), Lunn (1970) and Morton-Williams (1968). The measures were translated into Arabic and modified to suit the Saudi society. They were administered and data was collected, processed and analysed using several statistical analyses such as factor analysis, correlations and regressions.

Findings indicated that general self-concept has a positive, significant but rather weak relationship with academic achievement. Harter (1985) subscales of scholastic competence and conduct/morality show a significant correlation of 0.35 and 0.14. For the remaining subscales, small correlations were obtained. Academic self-concept has a much stronger and highly significant relationship with academic achievement, whether measured on the Harter or Brookover scale (0.35 to 0.40 for results of pre-achievement and 0.21 to 0.42 for post-achievement).

The relationship between the self-esteem variables and academic achievement was functionally weak, replicating the great diversity of results that are reported by other studies in this context. When self-concept of academic ability (Brookover) is controlled in the relationship between the self-esteem variables (Harter and Rosenberg) and academic achievement, the correlation falls greatly to 0.004 and 0.03 respectively. The influence of self-esteem on academic achievement is therefore seen as acting through, or mediated by, academic self-concept.

Achievement motivation, attitude to school and interest appear to relate to achievement but only indirectly through academic self-concept.

The best predictors of academic achievement in the present study are self-concept of ability in specific school subjects (Brookover) and scholastic competence (Harter). Only 16.4% of the variance of achievement is accounted for by the self-concept of ability and this is raised to 0.18 by the addition of the variable of scholastic competence.

A model was proposed by the study to ascertain the relationship between self-concept of ability and academic achievement. This relationship was assumed to be mediated by motivation and attitude. The results in general do not appear to offer support for the model and indicate that self-concept is directly related to achievement.

DECLARATION

This is to certify that the work contained in this thesis is my own work, except where acknowledged and stated in the text.

Signed:

OTHMAN AL-MANEEA

Date: July 1990

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INTRODUCTION

An exciting development in contemporary education in Great Britain and the USA is the growing emphasis being placed on the student's perception of himself as a major influence on his success in school. For many years the self-concept has been largely ignored by educationalists but, of late, interest has been stimulated by the large body of research pointing to evidence that shows a relationship between self-concept and academic achievement.

Self-concept is a major and important construct in the field of psychology. It has been defined by Atkinson et al. (1981) as "the composite of ideas, feelings and attitudes people have about themselves", or, more broadly, "a person's perception of himself". A notion underlying many self-concept theories (Combs and Snygg, 1959; Rogers, 1951) is that global self-concept is a critical factor in determining human behaviour. Many studies have used the global self-concept as one of the variables in investigating a possible relationship with academic achievement (Williams and Cole, 1968; Bauer, 1981). Although these studies support the existence of a positive relation between academic achievement and self-concept, other studies do not (Borislaw, 1962; Schwarz, 1967, Williams, 1973). This has been attributed by Brookover, Erickson and Joiner (1967, p. 19) to "loose definitions of self-concept and instruments".

The ambiguity of results from investigations into the relation between global self-concept and academic achievement have been explained as the result of confounding the variables, global and

academic self-concept. The research of Brookover et al. (1967) separated the academic self-concept from the general self. Brookover's study was based on the assumption that specific academic self-conceptions would be superior to general self-perception items when attempting to predict academic achievement.

Many of the studies investigating the self have used the terms self-esteem, self-worth and self-concept interchangeably. Self-esteem is usually defined as the individual's perception of his worth. It is seen to emerge largely within a social frame of reference and it has been posited that the person's response to the social environment is a function of self-esteem.

Self-esteem has been described as facilitating functioning in an effective manner in a variety of situations, determining the way people perceive themselves as fulfilled and happy. In short, self-esteem is seen as "a personal judgement of worthiness that is expressed in the attitudes the individual holds towards himself" (Coopersmith, 1967, pp. 4-5), and so must relate to his performance, especially his academic achievement.

The ambiguity of results from investigations into the relation between self-concept and academic achievement has also been attributed to the predominance of one or more "third" variables (Potterbaum, Keith and Ehly, 1986). It is postulated that these intervening variables are possibly achievement motivation and attitude to school. Achievement motivation is seen as the "pattern of planning, of action, some internalized standard of excellence" (Vidler, 1977, p. 67). Haetal, Welberg and Weinstein (1983, p. 85) stated that

the "presage conditions considered by the various theorists must often include cognitive and attitudinal attributes of individual learning". Most self theorists would agree that the self is dynamic rather than static, and attitude and motivation are proposed to interact with the self as it seeks stability and consistency (Beane and Lipka, 1986).

Previous research in the West has shown that a relationship exists between a complex idea of self-concept and achievement. Studies have also shown that there is not a simple causal link between the two, the relationship is complex and self-concept is seen to influence performance and achievement influences self-concept.

In education, teachers must be aware of the dynamic relationship between self-concept and academic achievement. They have a duty to aid the "self development which is vital if children are to mature into well-adjusted and socially constructive human beings" (Fontana, 1988). If the self is viewed as the organised cognitive structure derived from experience (Hamachek, 1985), the teacher has a demanding and sensitive role to play in setting the scene for successful learning and personal growth.

The personal interest of the researcher in the relationship between the self-concept and achievement has emerged and been strengthened by many years of work and experience in teaching and administration in secondary schools in Saudi Arabia. Such an interest became very strong through his work as a lecturer and his readings in psychology.

The present topic of research was prompted by the apparent scarcity of empirical studies investigating the self-concept of students within the Saudi education system. In fact, few studies have investigated the self-concept of students in the Arab societies (Reheim, 1980; Bamashmous, 1986; and Taisir, 1989).

Saudi society is strongly influenced by Islam and the moral values imposed by religion have a major effect on the individual's behaviour, including his effort and conduct in school. In such a culture, great emphasis is placed on conformity to the norms and standards of society. The concept of self held by an individual is said to be deeply influenced by family characteristics (Zahran, 1977).

In the Saudi society, great importance is placed on academic success. The successful student is greatly appreciated and rewarded by the family, school and society, while failure results in demoralization with few alternative ways being available to the student to regain his self-respect and maintain his self-esteem (Zaidan, 1985).

This contrasts greatly with Western societies which try (for example in Britain) to ensure a level of achievement for all pupils by setting examinations with a wide range of pass grades A to G in the new GCSE examinations, with few failures.

The topic of the present research became very persistent in the mind of the researcher when he realised that success and achievement are the criterion by which society views the individual and how the individual sees himself. Moreover, it became very

clear that if a relationship could be established between self-concept and academic achievement, and if some action could be taken to deal with the matter and improve both self-concept and achievement, then the relevance and importance of the present study would be worthwhile both to the educational system and to the Saudi society. However, if the present study would only succeed in verifying this relationship between self-concept and academic achievement within the context of the Saudi culture and the educational system, it would have achieved its aim and paved the way for more research in this field of psychological domain.

Finally, the present study in setting out to investigate the empirical relationship between self-concept, self-esteem, attitude, motivation and academic achievement in the Saudi society would help to show whether the results achieved are similar to or different from those results established by Western studies. It is possible that the results would be similar or there might be differences when the results of the present study are compared with other societies: differences that may be attributed to upbringing, the influence of home, society, peers, teachers or the school system; and differences that could be explained by the specific characteristics of the cultural structure of the Saudi society in comparison with other societies.

CHAPTER TWO

SAUDI ARABIA

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2.1 Society and Culture

Saudi Arabia occupies four fifths of the Arabian peninsula in the South East of Asia comprising an area of 900 thousand square miles. It is bordered by the Arabian Gulf and the other Gulf states on the east. The coast on the Red Sea forms its longest western border. Jordan and Iraq are on the north, and Oman and Yemen form the southern border. Deserts form much of Saudi Arabia's area. The weather is generally hot and dry in the summer when a humid climate prevails along the east and west coasts. The winter is short and mild. The main cities are Riyadh (the capital), Jeddah and Dammam, and the two holy cities of Islam, Mecca and Medina. It is divided into 13 administrative regions. The King heads the government, and the Council of Ministers is the executive and administrative body. The Saudi Arabian constitution is based on the Koran and Sharia law. It is regarded as the heartland of Islam, where all over the globe Muslim people turn their faces towards its destination five times daily for prayers, and where around 2 million pilgrims come to the Hajjin in the final month of every Hejri year. Islam determines the Hejre calendar and guides the Saudis in their daily lives, governing behaviour, dress, eating habits and business dealings. The Saudi Arabian population was estimated in 1983 to be 9.7 million, of which 15% are thought to be Bedouins. For the past half century, a progressive and persistent development programme in every aspect of life has changed the face of the Kingdom. Oil discovery in 1938 had a profound effect on the economy. The Kingdom's

revenue has increased 40 times in the period between 1970-1980, and the traditional, poor and mostly Bedouin country began to develop and modernize rapidly (Milaat, 1990).

No relationship is expected between wealth and education because education (including that to university level) is free. Moreover, a monthly scholarship is available for students at university level, and some financial allowances are available during secondary school education. There are a number of private schools. More people attend private school now than was the case a few years ago.

The family tie is strong in Saudi Arabian society. It is not uncommon to find some married sons living with their parents. It is a tradition in Islam for young people to ask their parents' permission to marry. Many parents share their sons' marriage costs, and some of them pay all the marriage costs for their sons (in Saudi Arabia the man pays all the marriage costs). Divorce is only considered as a final option. The woman's role as a mother is accorded a very high status in Islam and a woman may dress as she chooses in the presence of her family or other women who are her friends, but she must cover herself when she is in public. A widow or divorced woman is free to marry whomever she chooses. A wife is expected to obey the orders of her husband, due to his status as the person running the family; but anything earned by a Muslim wife is hers to own and dispose of as she wishes (Al-Juwayer, 1983).

Conformity to social norms is high in Saudi Arabia. For example, obedience to and respect for older people, especially parents, is highly recommended and reinforced. A man is expected to defend the honour of his family and extend help and support to its members. Within the family, the relationship with parents is clearly defined by religion and tradition. It is basically a relationship of submission and obedience to parents. These duties are prescribed by the Koran 17:23 and 24:

> "Thy Lord hath decreed that you worship none but Him, and that ye be kind to parents. Whether one or both of them attain old age in thy life, say not to them a word of contempt, nor repel them, but address them in terms of honour. And, out of kindness, lower to them the wing of humility and say: My Lord, bestow on them Thy mercy even as they cherished me in childhood."

There are no such places as nursing homes for old people, except one home in every large city for those who do not have relatives. Every family is supposed to take care of its elderly people. Even if a family wants to use a nursing home, social pressure prevents it from doing so.

There is no doubt that the moral values conveyed by religion have a major effect on the behaviour of an individual and of a community. More generally, the concept of 'self' in an individual is deeply influenced by the family characteristics (Zahran, 1977). Islam teaches and urges love for one's brother as one loves oneself. The Prophet (P.B.U.H.) said: "One of you is not a believer unless he loves his brother as he loves himself".

The Prophet (P.B.U.H.) also said:

> "The similitude bond of the believers in their love, affection and compassion is that of a single body; if one of its organs complain, the whole body will respond in sleeplessness and fever."

Islam has regulated the relationship between the individual and the authorities as explained in the following saying of the Prophet (P.B.U.H.):

> "A Muslim individual must listen and obey as long as he/she is not ordered to commit sin in which case he/she should neither listen nor obey."

The safe social interactions and successful social relationships strengthen the healthy and positive opinion a person has about him or herself (Coombs, 1969).

Islam places a special importance on learning and accords scholars a high status. Scholars have even been described by the Prophet (P.B.U.H.) as the heirs of the prophets.

The Prophet (P.B.U.H.) describes learning during childhood as important. He said: "Knowledge gained during childhood is permanent like stone-engraving". The Prophet (P.B.U.H.) went even further by urging Muslims to seek knowledge even if the distances they had to travel were long and difficult. Bearing this in mind, he said: "Seek knowledge even in China. Verily, knowledge is a duty urged upon every Muslim, men and women".

2.2 Education System

Saudi Arabian society is Islamic, and governed by the Islamic rules. Such a society has its own Islamic traditions and rules which organise the life of the people (Al Zaid, 1981, p. 39).

Saudi Arabian education remained haphazard until the message of the prophet Mohamed came from the Holy City of Mecca, like a light in the wilderness. However, the first education system in Saudi Arabia was established on 15 March 1926, as Abd-elwassie (1970) stated, and was established by the late King Abd-elzize Al-Saud, who unified the country and laid the foundations for peace and justice under Islamic rules. Schools then were opened in an organised form and this was the type of educational system which covered the primary and secondary levels.

Education is governmental (funded, controlled and supervised by the government) from elementary school to university level and even though there is a number of private schools in the large cities, the curriculum is the same as that used in public schools. Minor differences are expected between students in public and private schools because people from diverse backgrounds attend both types of schools. The system and the curriculum are the same throughout the kingdom and are run by a central administration. There are separate schools for girls and boys, not only at elementary and high school levels, but also in the colleges and graduate programmes. The girls' schools and colleges are administered by females and all the teachers and employees are female: deans, chairwomen, teachers, etc. This separation is expected to have some effect on self-concept.

2.2.1 Educational Administration

In Saudi Arabia there is no co-education. The Ministry of Education controls boys' schools, and the Presidency of Girls' Education controls schools for female students at all levels, including the Colleges of Girls' Education. The Ministry of Higher Education controls universities for both males and females.

(a) The Ministry of Education

The Ministry of Education holds responsibility for planning, developing and coordinating supervision at all levels of school education as well as teacher training, curriculum planning and development and educational administration in every major city and village. This includes responsibility for school buildings, furniture and materials and organising the technical and administrative aspects of educational supervision. In other words, the Ministry of Education is the authority on all matters of educational decisions at all stages of male education.

(b) The Ministry of Higher Education

The Ministry of Higher Education is in charge of the seven universities and provides education for both males and females in various colleges in different cities. It also gives the university colleges the opportunity to conduct scientific research and to give people the chance to continue their higher education.

(c) The Presidency of Girls' Education

The Ministry of Education supervises the education of boys and attends to its responsibilities towards them. So does the Presidency of Girls' Education in respect of girls. It is in charge of their education at all levels.

The Presidency was established in 1970; the education of girls was limited and was conducted by private institutions in very few towns of Saudi Arabia. The idea of girls' education met with strong opposition in some areas of Saudi Arabia when the Presidency first began to carry out its official duties (Al-Zaid, 1981, p. 31). However, this opposition has changed.

There is a growing awareness of the need for more positive attitudes towards girls' education within Saudi society.

2.2.2 The Educational Structure

The organised structure of the school system from primary to university level was made uniform throughout the country. The structure of primary, intermediate and secondary education is as follows:

(1) Primary school education extends for six years from grade one to grade six; the minimum age for entry is six years.

(2) Intermediate school education extends for three years from grade one to grade three to obtain the intermediate certificate which leads to secondary education.

(3) Secondary school education has been organised as a complete stage which leads to university. It extends for three years. The first year is general for all students, and the last two years are divided into two streams, namely, literary and scientific. The student who obtains the literary certificate can attend art, education, commercial, police and military colleges, while the holder of the scientific certificate can attend the scientific colleges on complying with their requirements and entrance examinations, as well as the art, police and military colleges. The Ministry of Education during the last few years has tried to decrease the number of classes in the literary section of the secondary school.

2.2.3 The Curriculum

The basic philosophy and the basic objectives of education were set out and various curricula have been designed to reinforce and achieve these objectives. The responsibility for curriculum development rests with the Ministry of Education; qualified teachers and inspectors operate or work with the department of curriculum (Mahdi, 1980).

Abdul-wassie (1983) reported that when the curriculum was constructed, two basic points were considered:

(a) The developmental stages, needs and psychological health of the students.

(b) The society with its Islamic legacy, civilised values, norms, hopes and its present and future goals.

Many changes have been brought about in the curriculum of secondary education during the past few years. However, the curriculum should be related to the government's educational aims.

Table 1 shows the curricula in academic secondary schools (boys and girls).

2.2.4 The Examination System

There are two types of examinations in general education; one at the end of the first term and one at the end of the year (second term): the former carries fifty per cent of the marks and the latter fifty per cent. Marks each term are distributed between three class exams (every month; fifteen marks) and one end of term exam (35 marks). In the last year of secondary school the first term follows the same system; in the second term the fifteen marks also follow the same system but the end of term exam (35 marks) is set by the Central Examination Board of the Ministry of Education. The student who has forty per cent or over will pass to the next year; this is the general rule in all subjects except Islamic Education and Arabic Language where the required pass mark is fifty per cent. Those with less than forty per cent will have a chance to take the exam again in the summer holiday. The national examination (or school-leaving exam) in Saudi schools is conducted at the end of intermediate school (this was changed two years ago) and at the end of secondary school.

National and promotion exams are held twice a year; the first one for all students, and the second for students who failed in

TABLE 1 : **Number of hours per student per week**

	Subject	First year General	Second year Lit.	Second year Sci.	Third year Lit.	Third year Sci.
Boys	Islamic	4	4	4	3	3
	Arabic	9	11	4	11	3
	Maths	5	-	7	-	7
	Science	6	-	12	-	12
	English	4	4	4	4	4
	Social Studies	4	8	-	8	-
	Physical Education	1	1	1	1	1
Girls	Islamic	4	4	4	3	3
	Arabic	9	11	4	11	3
	Maths	5	-	7	-	7
	Science	6	-	12	-	12
	English	4	4	4	4	4
	Social Studies	4	8	-	8	-
	Domestic Science and Art	1	1	1	1	1

Lit. = literary

Sci. = scientific

less than half of the subjects. The students who have failed in more than half the subjects must repeat the next year in the same level for one more chance, and if they fail again they have to drop out of school.

The examinations are conducted by education authorities in all accuracy and honesty to determine the level of information learned. The exam questions are drawn from textbooks, and answers are expected to follow the ideal answers which have been established for them (Mahdi, 1980, p. 69). Abdul-wassie (1983) pointed out that the students and teachers in Saudi Arabian schools depend on the textbooks as the only main source of the subject. On the other hand, the student has to memorise the contents, because the exam questions are decided by the book and these questions measure memory ability (recall) more than anything else.

The Saudi family places great importance on the exam. About one month before the exam, all family activities focus on passing the exam, pushing the student to study. If the child succeeds, the whole family celebrates; if the child fails, the whole family suffers.

According to the traditional examination system, a student who fails is given another chance to take the exam within the same year at the end of the summer holiday. One may speculate on the effects of such a failure on student self-concept. From the Saudian cultural point of view we will find that the family, the society and the school itself appreciates the successful student in many ways, and also his future employment will be assured. On the other

hand, nobody, even in the family, tries to know, or to ask the failed student the reason for his failure. The observer will not find any help for the failed student to enable him to try again, or to show him how he can organise himself. The result of this is that he can become depressed or demoralized, which has a bad psychological effect on his whole personality (Zaidan, 1985). Consequently, his self-concept will be strongly affected. His feeling will be that he is a failed person; he will not be able to get a good job; and he is not appreciated by any of the people around him. The way to be appreciated in this culture is by success in such exams, with few alternative ways to maintain self esteem, unlike in western countries which are trying to ensure achievement for all pupils.

Evidence on the relationship between self-concept and academic achievement from previous studies (Purkey, 1970; Hamachek, 1987; Wylie, 1979; Burns, 1982, 1986; Thomas, 1980; Beane, 1986) show that there are reciprocal effects on both variables. Purkey (1970) stated that "overall, the research evidence clearly shows a persistent and significant relationship between the self-concept and academic achievement" (p. 15). These western studies give us an additional indication about the relationship between the two variables. This emphasises the fact that the cultural meaning and modes of dealing with success and failure in academic achievement have greater importance in our culture than in western culture. The conclusion is that a strong reciprocal relationship is expected between self-concept and academic achievement. This relationship will be explored in greater detail in Chapter 3.

CHAPTER THREE

REVIEW OF LITERATURE

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REVIEW OF LITERATURE

In reviewing the literature supporting this study it is proposed to divide it into seven main areas: 1) a chronological history of the theoretical origins of the self-concept; 2) self-concept and self-esteem; 3) self-concept and its relationship to academic achievement; 4) self-concept, academic achievement and their relationships to motivation and attitude; 5) predictions of academic achievement; 6) the study model; and 7) the aim of the study.

3.1 Historical Trends

William James (1890, 1892) is often identified as the earliest "self" psychologist. He stated (1890, p. 289) that:

> "The altogether unique kind of interest which the human mind feels in those parts of creation where it can call me or mine may be a moral riddle, but it is a fundamental psychological fact."

His theory was based on personal insight and observations of others. He is most readily identified with the familiar I - ME dichotomy, in which the total self (or person) is differentiated into the self as the knower and the self as that which is known. In describing the self, James (1890, p. 291) further stated that:

> "a man's self is the sum total of all that he can call his".

This notion of identity is divided into three constituent parts: a material self which included a body and personal possessions, a social self which related to status and human relations skills, and a spiritual self which was determined by our emotions and desires.

James' writings are significant because they are among the first detailed descriptions by a psychologist of what was later called the self-concept. At this stage the development of self-concept was affected by wide criticism, similar to that being levied today. The theory was attacked as lacking experimental and empirical verification as it did not conform to the behaviour models of scientific psychology. Sociologists, not being constrained by this apparent lack of scientific rigour, became involved with the idea of self. Cooley (1902) confined himself to the aspect of self that James had labelled the social ME. He used the notion of the "looking glass self" as a means of describing the self-concept. The theory postulates that an individual's conception of self is determined by the perception of other people's reactions. He stated (1902, p. 184) that:

> "A self-idea of this sort seems to have three principal elements: the imagination of our appearance to the other person; the imagination of his judgement of that appearance; and some sort of self-feeling, such as pride or mortification."

Cooley's work supplied the beginnings for a developmental theory of self-concept. His writings stressed that our self-perceptions are largely the result of feedback we receive from other people who influence our lives.

George Herbert Mead (1934), like Cooley, saw the self as a product of interactions, a social phenomenon. The person is said to experience himself as reflected in the behaviour of others. Hall and Lindzey (1976, p. 521) stated that "Mead's self is a socially formed self. It can arise only in a social setting where there

is social communication". Initially the person is believed to be not innately self conscious, there being no self. The individual develops attitude and feelings about himself as a result of experience in which people react to him and he experiences these reactions.

Mead also postulated conceptions of multiple selves and a global self: stated to be complementary rather than contradictory. Over the course of maturation and experience and through the use of language the individual develops the ability to take the role not only of a specific other person with respect to himself, but also of a group of others - real and inferred.

Mead further described the self as being a collection of reflective attitudes which emerge in given social situations. In attempting to account for self conscious behaviour he stated (1934, p. 171) that: "He becomes a self in so far as he can take the attitude of another and act towards himself as others act".

3.1.1 Psychoanalytic Theories

Sigmund Freud (1900-1938) has been described by Child (1973) as the father of in-depth psychology orpsychodynamics. In his early teachings Freud emphasised the id; the ego being considered a weaker and less influential factor in understanding behaviour. In later writings more emphasis was placed on the ego as a component of the total personality. The personality was stated to be made up of three major systems - the id, the ego and the super-ego. These were described as possessing their own functions, properties,

dynamisms and mechanisms but interacting to produce behaviour.

Freudian theory suggested a dynamic purposive conception of the person. Like many descriptions of the self, Freud's was directed toward realistic adaptations to the world. It would appear to correspond at times to the self as knower or self as actor as described by William James.

Although Freud did not deal explicitly with self image action, the function of ego instincts clearly presumed such behaviour. Freud's concepts of ego and super-ego represented the psychological and social components of personality. Freud did not deal with reflected evaluations such as self concept but with strong emotions such as self-hate. He described the process of self-evaluation not as a result of repeated reinforcement or the experience of success or failure, but as a result of the identification with the ego ideal.

During the period 1900-1940 self theories were not developed further probably because the psychological scene was dominated by the behaviourists. Wylie (1974) quotes psychologists who stated that Freud's tenets and models lacked rigour, were not susceptible to empirical tests and incompatible with other theoretical models of psychology. This is obviously the view of behaviourists who believed that experimentation should be controlled in laboratory situations where variables could be carefully manipulated producing replicable results.

Theories which were influenced by Freud's psychoanalytic writings have dealt more directly with self concept and self esteem.

In contrast to Freud's assumption that man's behaviour is motivated by instincts, Adler (1927), Horney (1939) and Sullivan (1953; 1964) assumed that social urges provide the main motivation. According to Sullivan, the self is entirely a learned phenomenon that is built out of experience by means of reflected appraisals. The development of the self system was traced to childhood and it was described as being resistant to change. Sullivan (1953, p. 158) stated that "the self system thus is an organisation of educative experience called into being by the necessity to avoid or to minimise incidents of anxiety".

The psychodynamic theories of Horney, Adler and Sullivan all accentuate the social dimensions, the importance of social variables in shaping personality. The infant is described as possessing general potentialities which are shaped by society. Each person was seen as unique with inherent creative powers. Only Sullivan stressed the interpersonal nature of self and its learned nature.

There have been many recent variations of Freud's original theories. An integrative theory of self has been described by Jacobson (1965) with a realistic self concept developing from images of self. During the child's development fixation could occur if needs were not met. This was stated to result in incomplete personal growth with a flawless self image. Thomas (1980, p. 32), in commenting on this fixation stated that it was "to compensate for the unacceptable face of the self in reality".

3.1.2 Ego Psychologists

Little work was produced on self concept until the 1940s. The confusion in terminology was still perpetuated with related terms such as ego (Sherif and Cantrill, 1947), proprium (Allport, 1955), and identity (Erikson, 1956) being used interchangeably for the self concept.

Allport elaborated on ideas partly derived from those of Stern, James and McDougall. He defined the proprium, the synthesis of the ego and self constructs as "all the regions of our life that we regard as peculiarly ours" (1955, p. 40). He further identified seven aspects of the proprium that corresponded to the variety of images of the self concept in other theorists. He presumed an internalised self-enhancement motive and stated that "the proprium was not only tied to the need for survival and reality mediating but also to a process of continual growth, of 'becoming' rather than of being".

Symonds (1951) also attempted to develop the distinction between the self and ego, with the self generally represented as the reflexive aspect of behaviour. He believed that there was considerable interaction between the self and the ego and he further made a distinction between the core and the periphery of the self.

3.1.3 Clinical Perspectives

The mostly theoretical approaches of the ego psychologists was followed in the 1950s by work which attempted to give a clinical perspective to the consideration of self. Maslow (1954), with theories on higher and lower level needs and self-actualisation, made a major contribution to present thinking about self concept. He suggested a multitude of needs: physiological needs, safety and security needs, needs for love and belonging, self esteem needs and those for self-actualisation. He asserted that personality unfolds by maturation and by the active efforts of the person to realise his nature. He stated that:

> "full healthy and normal and desirable development consists in actualising this nature, in fulfilling these potentialities and in developing into maturity along the lines that this hidden, covert, dimly seen essential nature dictates, growing from within rather than being shaped from without". (p. 340)

The contributions of Carl Rogers (1951, 1959, 1969) brought self concept to the centre of all psychological dimensions and thinking. The clinical perspective afforded by the non-directive client centred therapy of Rogers greatly affected self theory. It was structured around the importance of the "self" in all human adjustment. The self, according to Rogers, was a phenomenological concept which was the major determining factor in all human behaviour. The self was described as that portion of the phenomenal field which gradually becomes differentiated. Rogers introduced the notion of the ideal self: what the person would like to be. He also proposed a notion of congruence and incongruence between the

self as perceived and the actual experience of the organism. In this the terms self concept and self structure were seen as synonymous. The self was described as "the organised, consistent, conceptual gestalt composed of perceptions of the characteristics of the 'I' or 'ME' to others and to various aspects of life, together with the values attached to these perceptions" (1959, p. 200).

The organism and self, although they possess the innate tendency to actualise themselves, are strongly influenced by the social environment. The organism becomes more differentiated, expanded, autonomous and socialised as it matures. Rogers in his consideration of the processes of socialisation focused upon the evaluation of individuals by others. He maintained that during childhood with the evaluation of individuals by others there was subsequent differentiation between approved worthy actions and feelings and the disapproved. The child was described as trying to be what others want him to be with unworthy feelings becoming excluded from the self concept.

Certain similarities exist between the work of Rogers and that of Jourard (1964). The latter related self feeling to the process of identification: the individual constructing his ideal self from the ideals of important others. His description of congruence between the real self and the ideal self and its association with self cathexis: the investment of affect in some object or person, is similar to that of Rogers.

Another integrative theory of self was proposed by Snygg and Combs (1949, p. 15), who stated that:

> "all behaviour, without exception, is completely determined by and pertinent to the phenomenal field of the behaving organism".

The phenomenal field is described as the totality of experience as it appears to the individual at any moment. The distinction between the phenomenal field and self is made in the statement that proposes that the phenomenal self "includes all those parts of the phenomenal field which the individual experiences as part or characteristic of himself".

Combs further described the concept of self as the central character of the individual economy, thus representing the guide to all behaviour. In 1957 Combs and Soper re-examined the conceptual basis used to describe the self. The self concept was described as "a patterned inter-relationship or gestalt" (1957, p. 136). Within the phenomenal field of the individual he proposed three areas: an outer including all the individual's perceptions, inside this an area containing all those perceptions which the individual holds about himself and finally a smaller area which includes only those aspects which are important or vital to the self. The latter is the self concept and it is described as being "the stable, important and characteristic organisation composed of those perceptions which seem to the individual pre-eminently himself" (1957, p. 136).

However this phenomenological approach in which research into the self is carried out by careful observation has attracted much criticism. Brewster-Smith (1950) criticised the practices of Snygg and Combs (1949), Combs (1949) and Rogers (1947), stating

that they confused phenomenology with the subjective frame of reference. In the exploration of the dynamics of the subject's behaviour by repeated processes of observation, inference, prediction and observation, the phenomenological approach provided a method of deriving subjective constructs. Brewster-Smith pointed out that not all subjective constructs need represent phenomenal entities.

3.1.4 Modern Theorists

Until recently, systematic reviews of self concept research emphasised the methodological shortcomings in empirical research (Burns, 1979; Wylie, 1974, 1979). The theoretical models have been further described as inadequate and the array of instruments used to infer the self concept as unmanageable and of poor quality.

In an attempt to remedy some of these problems, Shavelson et al. proposed a multifaceted, hierarchical model of the self concept. By integrating various characteristics that are common to the definitions of self concept, Shavelson (1976) constructed a working definition that identified seven features. He described the self as organised, multi-faceted, hierarchical, stable, developmental, evaluative and differentiable.

Shavelson further posited a general self concept defined by academic and non academic self concepts. The academic self concept was divided into self concept in particular content areas, e.g. English and Mathematics, and the non academic self concept was divided into social, physical and emotional self concepts.

By proposing this hierarchical model Shavelson et al. emphasised the domain specificity of self concept while still recognising a general concept. This is illustrated in Figure I.

Earlier factor-analytic studies of self concept (Coopersmith, 1967; Rotter, 1966, 1975) failed to identify domain specific factors. Coopersmith (1974, p. 198) stated that "the self concept consists of the beliefs, hypotheses and assumptions that the individual has about himself". His discussion of the central concept has been described by Wells and Marwell (1976, p. 31) as "something of an amalgam of analytical approaches centred around the necessity of different theories". Coopersmith focused on the processual characteristics by which various social phenomena become personally relevant to the self evaluation process.

Attempts to establish the divergent validity of the domain-specific measures of Coopersmith's (1974) construct were also unsuccessful. In a study by Marx and Winne (1978) of three self concept inventories, using a multitrait multimethod, little support was found for divergent validity.

Purkey (1970, p. 71) in an elaboration of the various concepts of self proposed by Lecky (1945), Rogers (1951), Combs and Snygg (1959) arrived at a composite definition of the self as "a complex and dynamic system of beliefs which an individual holds true about himself, each belief with a corresponding value". The concept is illustrated by Figure II.

In the diagram the unity of the organisation of the self is represented by a spiral. The smaller spirals represent beliefs

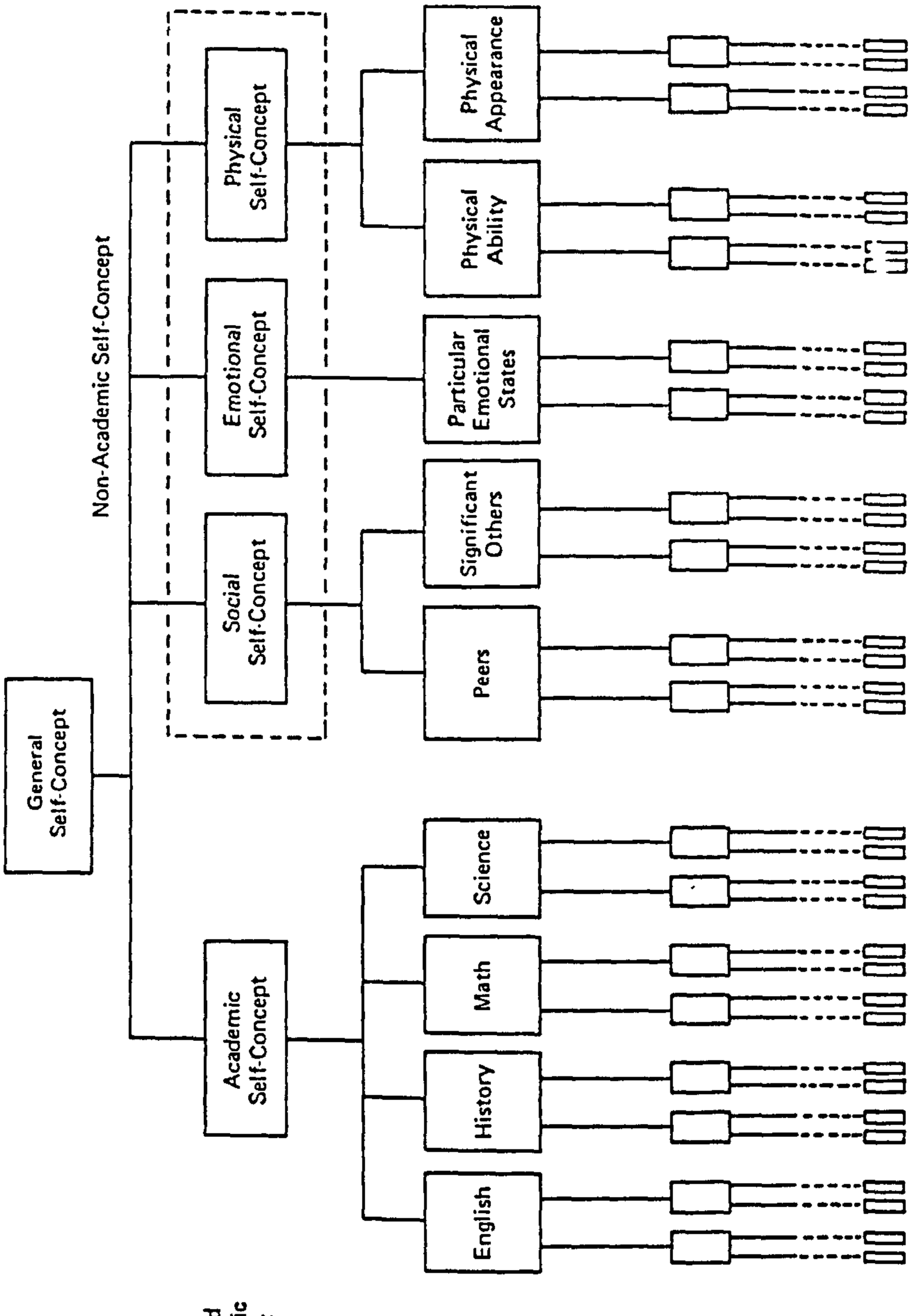
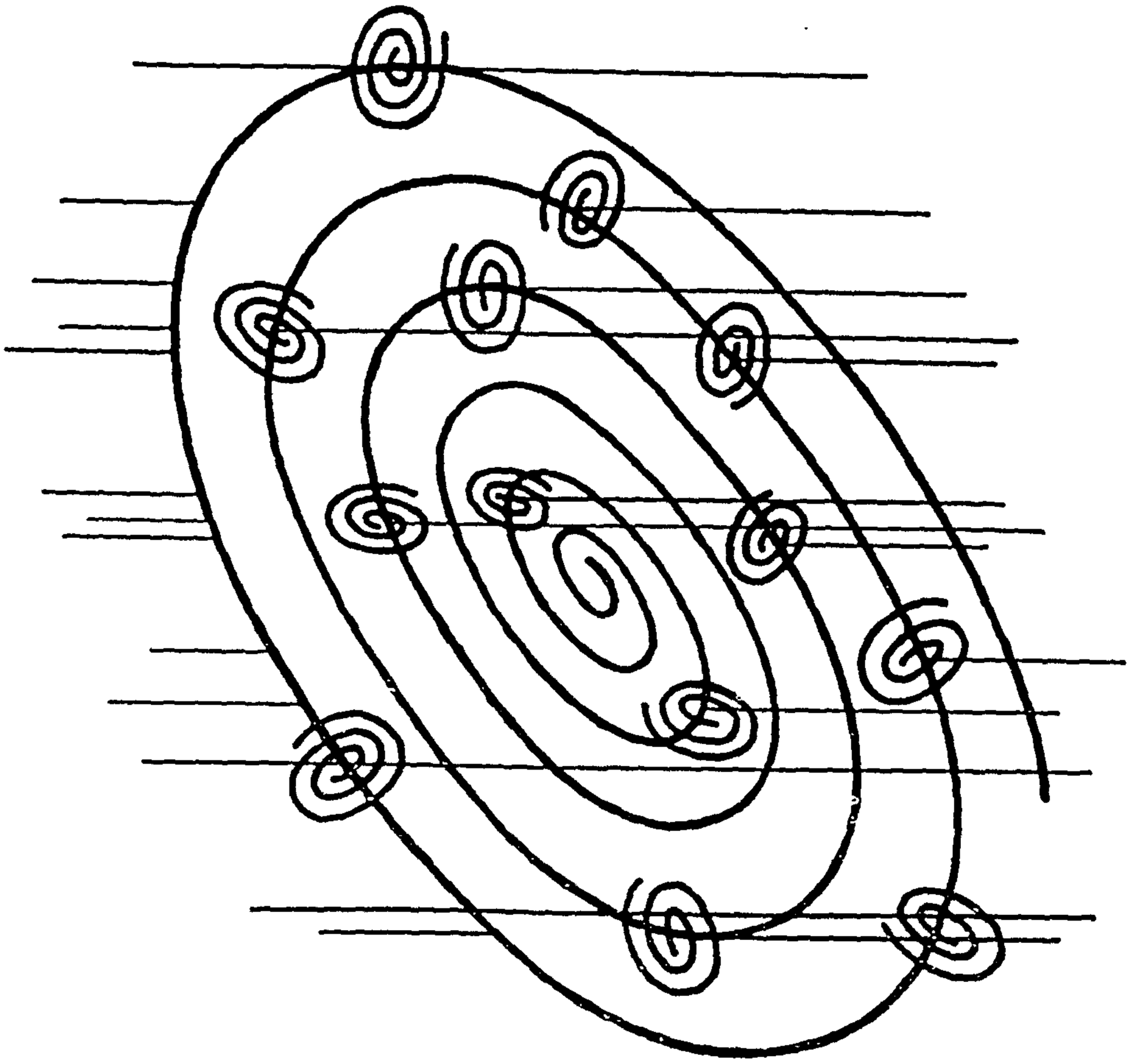


Figure 1: Structure of self-concept (Shavelson, Hubner and Stanton, 1976)

Figure 2: **Unity of organisation of self** (Purkey, 1970, p. 8)



which the individual holds about himself. Beliefs close to the essence of self are near the centre of the spiral and other, less important, are pictured towards the outside of the self. Finally, Purkey described the self as being unique.

> Lecky (1945, p. 155), who described the self as "the organisation of experience into an integrated whole", attempted to construct a three dimensional model to illustrate his theories. He compared the structure of the personality to that of an atom with the nucleus or centre of the atom consisting of ideas of the self. The ideas highly supportive of self are either positive or negative. Other ideas, according to the degree of their importance to ideas of self, are located in varying orbits.

This phenomenological approach to understanding the self is also seen in the theories and analyses of Snygg and Combs (1949). In agreement with Lecky, Rogers, and Snygg and Combs, Jersild (1960) also emphasised the dynamic and stable qualities of the self. Jersild referred to the phenomenal self as the "custodian of awareness" and as the "composite of thoughts and feelings which constitute a person's awareness of his individual existence, his conception of who and what he is" (1952, p. 9). Jersild (1960, p. 124) further described the self as having three components: the perceptual, conceptual and attitudinal. He further described the self as having two major dimensions: the known and the unknown. The known self is the person's own subjective evaluation and is composed of apparent convictions. The unknown dimension of the self is the non-phenomenological self and is affected by numerous unconscious

influences and so is unrecognised by the individual.

Many other researchers have viewed the self concept as multi-faceted. Brookover, Thomas and Patterson (1964) conducted a study to establish whether the self concept was differentiated into specific self concepts. They concluded that the self concept is a "complex of several segments including the self concept of ability" (p. 271). This research however was only concerned with one aspect of the self concept: the person's conception of his own ability to learn the accepted types of academic behaviour.

In his extensive consideration of the nature of the self concept, Rosenberg (1979) unusually clarifies the self concept by indicating what, in his view, it was not. He stated (p. 7) that the self concept is not Freud's 'ego' and also not the "real self" (Horney, 1950), the "self-actualized person" (Maslow, 1954; Moustakas, 1956), the "productive personality" (Fromm, 1947), the "impulsive self" (Turner, 1976), or the "I" (Mead, 1934). The self concept was further distinguished from "ego-involvements" (Sherif and Cantrill, 1947), and the existential self. Rosenberg (1979, p. 8) finally described the self as "the totality of the individual's thoughts and feelings with reference to himself as an object", a concept to which he ascribed breadth and depth, one with profound consequences and ramifications both for the individual and society.

In attempting to spell out just what fits under the rubric of the "self concept", Rosenberg distinguished three broad regions: the extant self (how the individual sees himself); the desired

self (how he would like to see himself); and the presenting self (how he shows himself to others). In describing the structure of the self, Rosenberg (1979, p. 18) recognised three points: 1) that the self concept components are of unequal centrality to the individual's concerns and are hierarchically organised in a system of self-values; 2) that the self concept can be viewed at both the specific and global levels; and 3) that the self concept may consist primarily of a social exterior or of a psychological interior.

Hurlock (1974) also viewed the self concept as multi-dimensional and the organisation of qualities that the individual attributes to himself. The elements present in the self concept were listed as the physical self image, psychological self image, real self image of what the individual believes others think of him and ideal self image (what the person would like to be, physically and psychologically).

Harter (1982, 1983) also addressed many of the issues of a multi-dimensional self concept in her review of self concept theory and research. She argued for the need to consider both domain specific components and a general, superordinate component of self. Harter (1987) focused on the more evaluative self in which the individuals are required to make judgements about their competence or adequacy across a variety of content areas. However, Harter's (1985) studies contain several aspects previously investigated in other self studies such as Coopersmith's (1967) unidimensional model and the multidimensional perspective of Mullener

and Laird (1971), L'Ecuyer (1981), Shavelson, Hutner and Stanton (1976). The models proposed by Harter (1988, p. 140) are stated "to have heuristic value as an aid in organising our thinking about possible dimensions of the self-system". In her work, she translated James' (1892) conceptual model in which global self worth reflects the ratio of one's successes to one's pretension, into an empirical model that can be tested.

In Harter's model is seen the integration of two approaches in which the need to consider the multi-dimensional nature of self-evaluative judgements as well as the individual's overall sense of self worth is met. Her work proceeded on two fronts, empirical and theoretical. She conceptualized the self concept as a collection of domain-specific judgements about competence or adequacy and a global judgement of one's worth.

At the time Shavelson et al. proposed a model of the hierarchical organisation of the self there was little empirical support for it. Although factor analysis identified factors these were difficult to interpret, unreplicable or unrelated to the scales the instrument was intended to measure. Recent research, however, has found clear support for the multi-dimensionality of self concept. Marsh and Gouvernet's (1989) recent investigation to test the construct validity of children's responses to two multi-dimensional self concept measures demonstrates their convergent and discriminant validity. Two newly developed self concept instruments were used in the investigation, The Self Description Questionnaire based on the Shavelson model and The Perceived Competence Scale for Children

(Harter, 1983).

Several thousand studies of the self concept have been carried out over the years, and those involving school indicate that there is a persistent relationship between self-perceptions and a variety of school-related variables (Purkey, 1970; Rosenberg, 1979; Wylie, 1961, 1979). Among these variables are academic achievement, participation in class, pro-social behaviour, perceptions of peers and teachers of the individual, and self-direction in learning. The same body of research suggests that the school can and does contribute to the self-perception of learners.

The importance of the self as a legitimate psychological construct has varied greatly over the years. The 1960s ushered in a resurgence of interest in the self concept and there was a proliferation of affective education programmes. When the idealistic goals of "these Camelot-like ventures were never fully realised" (Harter, 1986, p. 137), the self concept fell from grace. With the advent of the 1980s the self again became a focus of interest and investigation. The self has found advocates among developmentalists, social learning theorists, cognitive-attributive theorists, educational psychologists, as well as those supporting cognitive-behavioural models in clinical situations. The self has therefore now assumed an important place in psychological investigation.

3.2 Self-concept and Self-esteem

The terms self-concept and self-esteem have been used interchangeably for many years (Shavelson, Hubrier and Stanton, 1976), causing considerable confusion in the study of self perception. One definition which helps differentiate self-concept from self-esteem has been provided by Beane and Lipka (1986, pp. 5-6), who state:

> "Self-concept is defined here as the description an individual attaches to himself or herself. The self-concept is based on the roles one plays and the attributes one believes he or she possesses."

Although it is not clear what 'based on' means in this context, self-concept is defined as the description of the self in terms of roles and attributes. It is not referred to as positive or negative, since it is only a description of the perceived self and does not involve the individual in making a value judgement. The authors see self-concept and self-esteem as distinct dimensions of the broader area of self perceptions. Self-concept is the descriptive dimension, self-esteem the evaluative.

Gabriel (1964) stated that self-concept is the individual's evaluation of himself as a total. Purkey (1970, p. 7) defined the self as a "complex and dynamic system of beliefs which an individual holds true about himself, each belief with corresponding value". The notion of the self is seen first as a process and then as a structure. On the former level it is viewed as a descriptive process by which the person perceives his behaviour, both his external and internal feelings. On the level of structure it is described as the system of concepts that are available to the person in trying to define himself.

Self-concept is frequently described as being multidimensional and specific to particular domains such as the physical, social and academic. In a study of the literature relating to self-concept the term self-esteem is used to explain a broad variety of behavioural phenomena. As Crandall (1973, p. 45) suggests, self-esteem "has been related to almost everything at one time or another".

Self-esteem has been described by Rosenberg (1979, p. 31) as implying "self-acceptance, self-respect, feelings of self-worth". A person with high self-esteem is said to be fundamentally satisfied with the type of person he or she is, yet one may acknowledge his or her faults while at the same time hoping to overcome them. At present much theoretical and empirical research is proceeding on the dimensions of the self and its component, self-esteem. Self-esteem has been differentiated by Franks and Marolla (1976) into the inner and outer self-esteem. Here the inner self-esteem is presumably based on reflected appraisals.

Other terms that have at one time or another been used interchangeably with self-esteem are 'self-respect', 'self-love', 'sense of competence' and 'self-satisfaction'. These terms denote some basic process of psychological functioning which can be described as either self-evaluation or self-affection or some combination of the two. Wylie (1974) in her review of self-concept measures uses the term self-regard as a label which incorporates many of the terms previously listed. She maintains that the concept of self-esteem may be used to describe the conceptual rationale - it provides a point of commonality between diverse perspectives. It is seen to provide a common thread running through a variety

of approaches and styles of measuring self-concept.

Hamachek (1985, p. 235) further describes the overlapping components of the total self, stating that the "self-concept is the cognitive part of the self, self-esteem is the affective portion of the self". He distinguishes between ideas and feelings, writing that "self-esteem, then, refers quite literally to the extent to which we admire or value the self". He maintains that out of all this emerges what we commonly refer to as personality.

Self-esteem has generally been defined in terms of reflexive attitudes or sets of attitudes other than in the psychoanalytic perspectives. Wells and Marwell (1976, p. 64) state that "the term self-esteem refers to a more or less phenomenal process in which the person perceives characteristics of herself and reacts to those characteristics emotionally or behaviourally". Rosenberg (1965, p. 5) in a simple approach to self-esteem describes it as a particular kind of attitude, stating "by self-esteem we refer to the evaluation which the individual makes and customarily maintains with regard to himself; it expresses an attitude of approval or disapproval". Self-esteem is seen as an aspect of all self attitudes entering, as Allport (1937, p. 171) suggests, into "all sentiments and traits".

Quite obviously, self-concept and self-esteem are learned and develop throughout the lifespan. Harter (1987) demonstrated that children over eight years of age were capable of making global judgements about their worth as people. Her research involved the integration of two approaches: the view of the self-concept as a global entity and the domain-specific approach. Unlike other investigators (for example, Coopersmith, 1967; Piers and Harris, 1969) who defined general self-esteem as an

aggregate, she sought to assess global self-worth directly and independently of self-evaluations in specific domains, as shown in Table 2. This approach was very similar to Rosenberg's (1979) and based on the theories of James (1892) and Cooley (1902), who were explicit on the point that one possesses a global concept of self, over and above more specific evaluations in the different domains of one's life.

James (1890, p. 310) conceptualised self esteem as a "ratio of our actualities to our supposed potentialities". It is thus defined as a psychological relationship between different sets of attitudes. Cohen (1959) also considered self esteem a result of an individual's experience of success and failure, defining it as "the degree of correspondence between an individual's ideal and actual concepts of himself". It is this discrepancy between the real and ideal self conceptions that has attracted such terms as personal adjustment, self-satisfaction and self-acceptance.

It is this discrepancy approach to self esteem that is seen in the practice of clinical psychology especially in the client-centred therapy and phenomenological approaches. In contrast to the simpler definitions of self esteem as a particular kind of attitude, the discrepancy definition includes a standard for evaluation.

Many researchers have suggested that the dynamic element of the self is the person's affective response, his feelings and behaviour towards himself. Rosenberg (1979, p. 260) has stated that "few activities engage our lives so profoundly as the defense

and enhancement of the self". The self esteem motive is seen as a constant force in daily life as Allport (1961, p. 155) said: "Every day we experience grave threats to our self esteem ... The ego events. We suffer discomfort, perhaps anxiety, and we hasten to repair the narcissistic wound".

This view would be in agreement with that of Kaplan (1975, p. 10) who contended that "the self-esteem motive is universally and characteristically ... a dominant motive in the individual's motivational system". There exists considerable disagreement as to the reasons for the self esteem motive being one of the most powerful in man's repertoire. Gergen (1971) viewed the desire for high self esteem as the outcome of the process of secondary reinforcement. However Rosenberg in the face of much ambivalence over this issue has stated (1979, p. 260) that "the single most powerful mechanism for self-protection and self-enhancement is selectivity - the motivated choice from among available options". In his study, 'Beyond Self Esteem', he attempted to show the varied manifestations of selectivity with reference to reflected appraisals, psychological centrality, self attribution and social comparison processes.

The reflected appraisal principle maintains that although we tend to see ourselves as we are seen by others it is still possible to hold self attitudes that are more favourable than those held by other people. This is achieved by selectivity - we tend to value the views of those who hold positive attitudes to us, attaching little significance to the views of those who dislike

us. We also infer that others regard us more highly than they actually do and because we tend to associate with people who respect and like us we internalise a favourable picture.

The principle of psychological centrality is described by Rosenberg (1979, p. 269) as holding "that those traits, physical characteristics, social identity elements or ego-extensions which have the greatest importance for us will have a stronger impact on our global self esteem than those to which we are indifferent." Selectivity again ensures that what is valued becomes an integral part of the self - the self esteem is protected.

Again the selective processes work to protect the self esteem in the processes by which the individual's self concept is formed by observing his behaviour or other visible facts about the self. This process of attribution involves not only observation but interpretation as well and has been described by Kelley (1967) as concerning causes, dispositions or inherent properties.

Finally, it has been pointed out that the individual views himself with reference to at least two criteria: in relation to others and in relation to certain defined standards (Pettigrew, 1967). Standards are selected by individuals for themselves and as Allport (1943, p. 470) has summarised:

> "Unless I am mistaken, every investigation has directly or indirectly confirmed Hoppe's initial claim that the subject behaves in such a manner as to maintain his self esteem at the highest possible level."

During the course of this review it has been suggested that there are difficulties in conceptualising self esteem as a distinct

part of the self concept. Various theories have also been propounded about how self esteem is processually implicated in self conception. The present researcher believes, like Harter, that self esteem is determined by the extent to which one is competent in domains deemed important. Our global sense of self-worth, like Cooley's contention, represents the incorporation of the attitudes that significant others hold toward the self. In agreement with the views of Harter, self-esteem is not seen as epiphenomenal but as playing an important mediational role in its influence on one's general affective stage, which in turn affects motivation and interest. Weiner (1979) has shown the central importance for self-esteem in the motivation of behaviour and of the differential effects of success and failure on academic self-concept.

Table 2: **Domains of the Self-Concept at each period of the life span**

Early Childhood	**Middle/Late Childhood**	**Adolescence**	**College**	**Adult**
Cognitive Competence	Scholastic Competence	Scholastic Competence	Scholastic Competence	
			Intellectual Ability	Intelligence
			Creativity	
		Job Competence	Job Competence	Job Competence
Physical Competence	Athletic Competence	Athletic Competence	Athletic Competence	Athletic Competence
	Physical Appearance	Physical Appearance	Physical Appearance	Physical Appearance
Peer Acceptance	Peer Acceptance	Peer Acceptance	Peer Acceptance	Sociability
		Close Friendship	Close Friendship	Close Friendship
		Romantic Relationships	Romantic Relationships	Intimate Relationships
			Relationships with Parents	
Behavioural Conduct	Behavioural Conduct	Conduct/Morality	Morality	Morality
			Sense of Humour	Sense of Humour
				Nurturance
				Household Management
				Adequacy as a Provider
	Global Self-Worth	Global Self-Worth	Global Self-Worth	Global Self-Worth

3.3 Self-concept and Its Relation to Academic Achievement

3.3.1 British, American and European Studies

The purpose of this section is to examine some representative and best known studies of the relationship of self-concept to achievement. A notion that is central to many self-concept theories is that global self-concept is a critical factor in determining human behaviour (Coombs and Snygg, 1959; Rogers, 1951). Reviews of self-concept literature have recorded the fact that academic achievement constitutes one area of behaviour that has been assumed to be related to global self-concept (Purkey, 1970; Wylie, 1974). In a survey of the literature dealing with the relationship of self-concept to school achievement, many studies show that a positive correlation exists.

It has long been realised that personality factors may have a powerful influence on academic achievement. Lecky (1945, p. 107) stated:

> "what a person is able or unable to learn, in other words, depends to a large extent at least upon what he has already learned and especially how he has learned to define himself".

Factors identified by Harris (1940) in a list of over 300 studies relating to this topic as being important for academic success included ambition, emotional security, a sense of responsibility, co-operativeness and seriousness.

In a review of the research addressing the relationship between the self-concept and academic achievement it can be seen that many studies have investigated the self-concept of underachieving students, others reviewed predictions of academic achievement by college students, some looked at disadvantaged elementary school children and locus of control. It is not surprising that a topic

with such broad parameters as academic achievement and the self concept has given rise to such a proliferation of research.

The research of Brookover and associates at Michigan State University was directed not to general self concept but to "self concept of ability". It was stated that this was limited to "behaviour in which one indicates to himself (publicly or privately) his ability to achieve in academic tasks as compared with others engaged in the same task" (Brookover, Erikson and Joiner, 1967, p. 8). This research was confined to self concept of academic ability and later scales were devised to provide scores in four subject areas including English, Mathematics, Science and Social Studies. In a major study by Brookover, Pattinson and Thomas (1962) of the relationship between academic self concept and achievement a correlation of 0.57 between grade point average and general self concept of ability for both males and females was recorded.

Brookover's study was based on the assumption that specific academic self conceptions would be superior to general self perception items when attempting to predict academic achievement. The study and the analysis of data supported the following hypotheses which are very relevant to the present research:

A. Self concept of academic ability is associated with academic achievement at each grade level.

B. Change in self concept of academic ability is associated with parallel changes in academic achievement.

C. Self concept of academic ability is a necessary, but not a sufficient condition for the occurrence of academic achievement.

D. Students'perceptions of the evaluations of their academic ability by others (parents, friends and teachers) are associated with self concept of ability at each grade level.

E. Change in students' perceptions of the evaluations of their academic ability by others (parents, friends and teachers) are associated with parallel changes in self concepts of ability.

The findings of Brookover provide strong support for the hypotheses that a positive relationship exists between self concept of academic ability and achievement. This is of interest to the present discussion because the research separates the academic self concept from general self concept. It gives a more focused aspect of the self concept and its possible correlation with academic achievement.

In contrast, many other studies have used the global self concept as one of the variables in investigating a possible relationship with academic achievement. Williams and Cole (1968) studied the self concepts and achievement of 86 sixth grade students. They found significant positive correlations between self concept and reading achievement and self concept and mathematics achievement. Similarly the findings of Farquhar (1968) with eleventh grade high school students showed high achievement in those with high self concept scores.

A study by Nails (1970) investigated the self concept and academic grades of a black, inner city elementary-junior high school population in Michigan. He found both self concept and academic test scores increased after the students were involved in school

programmes designed to improve their self concept. He concluded that the development of positive self concept is responsible for improved academic performance.

Bachman and O'Malley (1977) showed that an index of ninth grade students' intellectual ability (IQ, reading comprehension and vocabulary) and academic performance as indicated by average school grades are important determinants of global self esteem throughout high school.

A study by Bauer (1981) of the self concept of two groups of gifted students showed a significant relationship between reading achievement and self concept. She postulated that "gifted third and fourth grade achievers would score higher on the self concept measures than gifted underachievers in reading ". This hypothesis was confirmed and gifted underachievers were found to have significant lower self concept scores.

Harris (1971) investigated the development of academic self concept in 110 seventh grade and 109 eleventh grade students. His findings indicated that three factors were involved in academic self concept:

1. How optimistic or pessimistic the individual is towards his ability.
2. How accurate the self ability is perceived to be.
3. How certain the individual is of his or her ability.

Kemp (1982) in a two year study of 204 students in four Wisconsin elementary schools examined the relationship of student self-concept to student use of time and academic achievement in reading and mathematics. The data, involving third and fourth grade students, included self-concept scores, reading and mathematics achievement test scores, and classroom observation of student time spent "off-task". The findings showed that:

1. The regression of students' change in self-concept scores against change in their reading achievement scores revealed a statistically positive relationship.
2. A statistically significant positive relationship is demonstrated between change in student self-concept and change in student mathematics achievement test scores.
3. No significant relationship exists between student self-concept and change in student "off-task" time.
4. Self-concept is a useful predictor of student achievement in reading and mathematics.

The "looking glass self" postulated by Cooley (1902) was investigated by Gecas and Schwalbe (1983) and compared with the "efficacy based self". They concluded that students perceive themselves as a result of passive "looking glass" interactions with others - that the self-concept is a combination of both factors.

Students' self-concepts were also influenced by their active, risk-taking interactions with the environment. It was found that students with high academic self esteem challenge themselves more, and take more academic risks. Their perception extends beyond mere success and failure. This results in further academic success and increasingly positive self concepts.

In a longitudinal analysis of children's achievements and self perception of ability in mathematics across grades 2, 5 and 10, Newman (1984) found that strength of the relationship diminishes with age. He concluded that self perception of ability is positively correlated with achievement scores but that age is a factor that influences the strength of the relationship.

Hoelter (1984) in a study involving a large sample of 1,367 high school seniors investigated the effect that significant others (parents, teachers and friends) have on self perception. His findings revealed that these have an important influence on the way the students see themselves. With high school girls friends had the greatest impact on self perception. Parents had the greatest impact on the self perceptions of high school boys. There is a difference between the sexes in that peers are a more important influence on girls than boys. The values and priorities of these significant others influence the way students achieve in school, interact socially, and relate to siblings and parents in the home environment.

Many other studies support the existence of a positive

relation between the two variables of academic achievement and self concept (Bledsoe, 1967; Fink, 1962; Coopersmith, 1959; Rosenberg, 1965). Fink (1962) examined the relationship between the adequacy of self concept and level of academic achievement. He defined the self concept, in this study, as the attitudes and feelings that a person has regarding himself. Academic achievement was measured by grade point average, based on all marks in the ninth grade. Self concept was measured by instruments generally used by school psychologists in clinical situations and included the California Psychological Inventory, Bender Visual Motor Gestalt Test and a Personal Data Sheet. The results confirmed the hypothesis that adequacy of self concept is related to level of academic achievement.

Another major study by Bledsoe (1964) using a random sample of 271 fourth and sixth grade boys and girls found significant differences between the respective self-concepts. The girls in both grades scored significantly higher (at the .01 level) than the boys in the corresponding grades. However the relationship between self concept and achievement in the girls was low to moderately positive while the correlation for the boys was significant and positive. Bledsoe (1964, p. 57) stated that:

> "this would seem to indicate that boys perceive the traits and abilities measured by intelligence and achievement tests as more important in their self esteem than do girls".

Performance on the Coopersmith Self-Esteem Inventory (SEI) was found to be related to various measures of academic achievement.

Coopersmith (1967) reported an r of 0.30 (significant at the 0.05 level) between his SEI score and grade point average in children aged 10 to 12. He stated (1974, p. 201) that "the child's concept of his ability is largely built up on the basis of the successes he experiences in the various tasks he undertakes". He further advocated that certain procedures be adopted in school to promote the development of a positive self concept.

Although many studies support the existence of a positive relation between academic achievement and the self concept, other studies do not (e.g. Borislow, 1962; Schwerz, 1967; Williams, 1973). Of particular interest in this area has been the work of Brookover, Erickson and Joiner (1967, p. 19) who state that:

> "Loose definitions of self concept and instruments which are multi-factor by definition have led some researchers to discard self concept as a relevant variable in understanding such behaviour as achievement."

It has been suggested by Jordan (1981) that the correlations that have sometimes been found between global self concept and academic achievement might be due to a confounding of global and academic self concepts, the result of a failure to simultaneously investigate the effects of each on a given behaviour. Spears and Deese (1973) have suggested that a possible explanation for the inconclusive findings of the relationship between the self concept and academic achievement is the tendency of researchers to presume that academic achievement is a socially desirable, relevant and integral aspect of all students' lives.

The accumulating evidence provided by the multidimensional

models of self concept (such as have been proposed by Shavelson, Hubner and Stanton (1976)) would allow us to question the idea of total congruence between global and academic self concepts. Subsequent research provides empirical evidence for the independent roles of task-specific and general self esteem in predicting task performance (Korman, 1976; Bhagat and Chassie, 1978).

This view is confirmed by Wylie (1974) who states:

> "Most of the hundreds of researches aimed at studying self regard are apparently based on the assumption that individual differences exist in an overall or global self-evaluation attitude."

Wylie's suggestion is to narrow the focus of the self concept to "children's estimates of their ability to do school work".

3.3.2 Arabic Studies

Two Arabic studies can be traced, carried out in Egypt and Saudi Arabia, investigating the relationship between self-concept and academic achievement. The first was by A. Bekeit Abdul Reheim (1980), covering a sample of 957 boys and girls drawn from primary, intermediate, secondary, university and postgraduate stages in Egypt. The Tennessee scale was used among other self-concept and personality scales. A significant relationship was found between some dimensions of self-concept and scholastic achievement (as measured by the end of the year examination marks) at the primary, intermediate and secondary stages for both boys and girls.

At the secondary stage a significant relationship was found between the total score of the boys' self-concept (self-esteem)

and academic achievement, as can be seen from Table 3. Moreover, boys' personal self, social self, self-satisfaction and behaviour at the secondary stage were found to be significantly related to academic achievement.

The second study, which was carried out in Saudi Arabia by S.M. Bamashmous and M. Mansy (1986), investigated the relationship between self-concept and academic achievement in a sample of university male students drawn from four Faculties - Science, Arts, Economics and Education - at King Abdulaziz University, Saudi Arabia. The Tennessee self-concept scale was used and academic achievement was measured by the first term marks achieved by each student. There are significant relationships between the total score of self-concept (self-esteem) and academic achievement in all the groups studied in the four Faculties (Table 4).

Both studies used the same self-concept scale (the Tennessee by W. Fitts, 1964) administered to both samples after it was translated into Arabic. Some variations could be found between the Arabic text of both translations.

Different results were established at the university level by the two studies. While the Egyptian study found no significant relationship between self-concept and academic achievement, the Saudi study found a highly significant relationship, although the Egyptian sample was much larger. Moreover, the Egyptian study carried out the analysis of the results with the specific dimensions of self-concept as well as the total score (self-esteem), whereas the Saudi study reported only the total score. It is not clear

Table 3: **The relationship between the self-concept (specific) and total score and academic achievement** (Reheim, 1980)

Self-concept / Stages			physical self	moral-ethical	personal self	family self	social self	self-criticism	identity	self-satisfaction	behaviour	Total
Primary	boys	110		.34*								
	girls	117			.28*	.39**						
Intermediate	boys	87	.37**	.36**	.28**	.37**	.38**		.34**	.40**	.48**	.47**
	girls	90										
Secondary	boys	102			.21*		.22*			.27**	.20*	.21*
	girls	104										
University	boys	178	-.16*						-.14*			
	girls	78				.30**						
Postgraduate	boys	48		-.29*					-.31*			
	girls	43										
Total		957										

* .05

** .01

Table 4: **The relationship between the self-concept (as total score) and academic achievement** (Bamashmous and Mansy, 1986)

Faculty	Number	Correlation	Level of Significance
1. Science	24	.76	.01
2. Arts	37	.68	.01
3. Economics Administration	47	.77	.01
4. Education	90	.71	.01

why the correlations among the Saudi sample were so much higher than among the Egyptians. Some difference may be due to the differences in the Arabic text. However, cross-cultural variation might be suggested by these results and part of the difference result from sampling different values for N. Nevertheless, the studies also share striking similarities so far as the significance of the correlations is concerned.

Taisir (1989) carried out a cross-cultural study of self-esteem and locus of control using a sample of three hundred and fifty Saudi university students (201 males, 149 females; mean age 22.2), and three hundred and twenty five English Open University students (154 males and 171 females; mean age 34.53). He found a relationship between self-esteem and achievement ($r = 0.18$; $p < .04$ and $r = 0.20$; $p < 0.02$) for the English and Arab samples respectively. Taisir's items were selected from the work of other researchers, after initially developing a number of questions using an open-ended

questionnaire about five conceptual themes, social relationships, future, health, academic career and self-regard. He added items from a number of existing questionnaires such as Wylie (1974, 1979), Wells and Marwell (1976), Burns (1979), Rosenberg (1965), Coopersmith (1967, 1981), and Crandall, (1973). He explained the differences between the two samples as being due to social and religious factors. He also added that "it may be explained by the fact that the English subjects in practice have more freedom than Arab subjects; they are free from family pressure and are able to choose whatever they like, e.g. to join the university and to study what they like. So English students have more trust and self-confidence than Arab students" (p. 115).

The above difference in self-esteem could be explained by the fact that the Saudi sample was treated as a total where both male and female scores were taken together. There is a possible difference in self-esteem between the male and female Saudi students and this difference might have affected the total score of the Arab sample.

3.4 Self concept, academic achievement and their relationships to achievement motivation and attitude

In many self concept theories (Combs and Snygg, 1959; Rogers, 1951; Hayawaka, 1963), the global self concept is seen as a critical factor in determining human behaviour. Here the global self concept is interpreted as an overall or general view of the self and consists in awareness of the totality of one's self knowledge emanating from a history of interactions with others and self evaluations (McCandless and Trotter, 1977).

Many theorists have attributed the role of initiating and guiding behaviour to the global self-concept and so equated it with motivation (Combs and Snygg, 1959; Gordon, 1968; Rogers, 1951; Sears and Sherman, 1964). These differences in human behaviour over a wide range of performances have been linked to individual differences in global self concept.

In many of the reviews of self concept literature (Purkey, 1970; Wylie, 1974) and of strategies designed to intervene in learning (Smiley, 1967) academic achievement is assumed to be related to global self concept. Failure in academic achievement has been related to inadequacies in global self concept. This causal factor has been stated to be implicated in the problems of inner-city minority children (Ausubel and Ausubel, 1963; Witty, 1967) and led to the development and implementation of intervention programmes designed to enhance the global self concept and so improve academic achievement.

However, research studies have failed to yield conclusive support

for the assumption that a substantial and significant relationship exists between global self concept and academic achievement. A diversity of findings has been reported with some studies supporting the existence of a positive relation between the two variables (Bledsoe, 1967; Campbell, 1967; Rosenberg, 1979) and others refuting this (Borislow, 1962; Schwarz, 1967; Williams, 1973). Other studies on minority students revealed particularly equivocal findings with Circurelli (1977), Soares and Soares (1969) showing that low-achieving, inner-city students exhibited a more positive global self concept than their successful, higher achieving middle class counterparts. In a study of low ability pupils receiving remedial education in a single sex comprehensive school Rees (1984) reported findings that indicated that they had higher self concepts than their more academically competent peers in main stream classes.

The notion that total congruence should exist between self concept and achievement is not supported. The inconclusive nature of the findings has been attributed by Spears and Deese (1973) to the tendency of researchers to presume that academic achievement constitutes a socially desirable, equally relevant and integral aspect of all students' life. Students are all presumed to be motivated to seek academic excellence.

The idea that there should be balance between global and academic self concept is contrary to the proposals of the multi-dimensional models of Shavelson, Hubner and Stanton (1976) and Harter (1987). Support has been found for the independent roles of task-specific and general self esteem in predicting job

performance (Korman, 1976; Bhagat and Chassie, 1978) and for the multi-faceted nature of self cognitions that reflect the complexity of the social environment (Lewis and Brooks-Gunn, 1979, Weinraub, Brooks and Lewis, 1977).

The ambiguity of results from investigations into the relation between global self concept and academic achievement has been attributed to the confounding of the variables, global and academic self concept. In an investigation of a possible causal relation between self concept and academic achievement, Potterbaum, Keith and Ehly (1986) stated that "it does seem plausible that there is not a causal relation between self concept and academic achievement but that one or more 'third variables' are causally predominant over both self concept and academic achievement". It is postulated by the present researcher that these intervening variables are possibly achievement motivation and attitude.

Motivation, a hypothetical construct, is usually defined by psychologists as the processes involved in arousing, directing and sustaining behaviour (Ball, 1977).

In a major study of personality and motivation in relation to school achievement, Cattell, Sealy and Sweney (1966) found that of the total variance in school achievement 21 to 25 per cent was accounted for by a culture fair intelligence test, 27 to 36 per cent by personality traits and 23 to 27 per cent by motivational traits. Burns (1982) has suggested that the findings imply "that the level of prediction of school achievement could be doubled

by adding measures of personal traits to measures of ability and trebled by the addition of motivational measures".

Hamachek (1985, p. 196) has stated that "motivation is more related to students' desire than to students' ability". Success is seen as enhancing motivation for learning while failure impairs it. However the distinction is made of high self concept, high need achieving students who are sometimes motivated to work harder following failure. Motivation to learn is further described as "a complex blend of different environment, attitudes, aspiration and self concepts" (ibid.).

Unlike other motivational constructs the basic definition and the central concepts of achievement motivation are not disputed. It is stated to be "a pattern of planning, of actions, and of feelings connected with striving to achieve some internalized standard of excellence, as contrast, for example, with the power of friendship" (Ball, 1977, p. 67). In an attempt to measure achievement motives, McClelland, Atkinson, Clark and Lowell (1953) and Atkinson (1958) adapted the Thematic Apperception Test (T.A.T.). McClelland and his associates found that subjects with a high need for achievement (nAch) perform better on arithmetic problems, obtain better grades in school and have higher aspirational levels (McClelland, Clark and Lowell, 1953).

Since McClelland's original work several studies have been conducted to determine the relationship between achievement motivation and other variables. Recent research has focused on identifying different types of goal orientations among students, the motivational

processes that are associated with these different goals, and the conditions that elicit them. In the studies of goal orientations contrasts have been drawn between task versus the ego involved (Maehr, 1983; Nicholls, 1979, 1984; de Charms, 1968, 1976). Learning oriented behaviour has been compared with performance oriented (Dweck, 1986, 1988; Dweck and Elliott, 1984) and mastery focused versus ability focused (Ames, 1984a; Ames and Ames, 1984).

Achievement goal orientations are presumed to vary with situational demands. They also vary from one individual to another (Maehr, 1983, 1984). It has been demonstrated that situational demands can affect the salience of specific goals which result in differential patterns of cognition, affect and performance (Ames, 1984b; Covington, 1984; Covington and Omelich, 1984).

Much of the evidence that has linked different goal orientations with specific motivational processes has been gathered from laboratory studies and not active classroom settings. In the real life situation cues given to students that enable them to focus and so emphasize one goal or another may vary, becoming mixed and inconsistent. Modern studies on attribution theory show that students vary greatly in their ability to focus on cues and in the interpretation of these cues (Ryan and Golnick, 1986). These differences in individuals' ability have been stated to result from home influence (Ames and Archer, 1987), differential treatment by teachers (Marshall and Weinstein, 1986), or from prior experience (Stipek and Hoffman, 1980). Thus as Rosenholtz and Simpson described the extent to which any student adopts a mastery or performance

goal orientation depends on how each student constructs his personal social reality of the classroom.

Many current studies of motivation investigate the effect of attitudes on student motivation and achievement (Ames and Ames, 1984; Wittrock, 1986) in terms of cognitive processing. Other research has attempted to show how attitudes can be explained in terms of motivational variables. Attribution theory of motivation (Weiner, 1979, 1984) is an attempt to explain on the basis of a student's reactions to academic success and failure the extent to which the student will be motivated to attempt academic tasks (Weiner, 1979, 1984; Wittrock, 1986). Reasons for academic success and failure are categorised according to the dimensions of locus, stability and controllability (Weiner, 1979, 1985).

According to attribution theory, locus refers to whether an attribution is to a cause within the individual or to a different individual or source, as in help from others. Stability deals with whether an attribution is stable over time as attributions to stable causes are postulated to have a greater influence on students' motivation. Controllability also has considerable implications for motivation, effort being generally controllable and ability and task difficulty not so. In this context blaming failure on lack of ability is often stated to result in poor motivation.

Harter (1987) in an investigation of the degree to which self-worth influences other behaviours within the larger self-system proposed two constructs. These represented two general systems,

affect and motivation. The selection of these models was partially guided by recent sequential models that have demonstrated that self-judgements elicit an affective reaction, which in turn motivates the individual to engage in a particular behaviour (Bandura, 1978; Harter and Connell, 1984). In these models, self-worth is placed in the middle as a potential mediator of affect, primarily, and motivation secondarily. Harter (1987, p. 222) hypothesised "that the effect of self-worth or motivation should largely be mediated by the affective component". It was predicted that there would be a strong path from affect to motivation. Harter (1987, p. 223) suggested that "although self worth has a small direct effect on motivation, its influence is primarily mediated through affect, which is represented by a strong path from affect to motivation".

In the study of academic achievement the constructs of motivation and attitude are often used interchangeably. No single definition of attitude can be found that is all subsuming. Due to the breadth of the concept various definitions have been proposed that reflect the theoretical viewpoint of the researcher. However a certain commonality exists as shown in the definition of Secord and Blackman (1964, p. 97) who stated that it "refers to certain regularities of an individual's feelings, thoughts and predispositions to act towards some aspect of the environment".

Motivation to achieve is proposed to be an additional important influence on attitudes to school (Bassett, 1978). It has been defined by Heckhausen (1967) as "the striving to increase, or keep as high as possible, one's own capability in all activities in which a standard of excellence is thought to apply ...".

Many investigations have thus reviewed the relationships between children's school-related attitudes and their academic achievement. The findings are often inconsistent and inconclusive. For example, Williams (1970), Keeves (1972, 1974) found significant relationships between school attitude scores and measures of academic performance whereas Goldfried and D'Zurilla (1973) found no significant relationships between attitude scores and achievement.

Jackson (1968) suggested that no apparent relationship exists between attitudes and achievement and this is the same for boys and girls. Similarly, Good, Biddle and Brophy (1975, p. 198) state that "simple one-to-one relationships between global attitudes that students hold towards school and achievement on standardized achievement tests do not appear to exist". These equivocal findings have been attributed to the use of restricted statistical techniques such as product-moment correlations which reveal only bivariate relations (Goldfried and D'Zurilla, 1973).

The inconsistencies in the findings have also been related to the failure of most studies to include in their analyses an examination of the cognitive abilities of children. Aitken (1970, p. 562) in a review of attitude studies suggested that it may be

discovered that the correlation between attitudes and achievement varies with the level of ability and that in the middle range of attitude scores "ability scores rather than attitude scores will be more accurate predictors or determiners of achievement".

A study by Marjoribanks (1976) using complex multiple regression models found that at each level of ability increases in attitude scores, in general, are related to increases in achievement. However, for each academic subject, the nature and strength of the relations between achievement, ability and attitude differ for boys and girls and depend on the cognitive ability being investigated. For each academic subject and within each sex group the ability measures were more powerful predictors of achievement than were the attitude scores.

Because of the broad conceptual framework within which attitudes can be studied several of the variables, previously mentioned in the review of literature, may be considered in the light of attitude research. For example, need for achievement "may be restated and examined as attitude toward achievement or success" (Green, 1977). It has been firmly demonstrated that need achievement is strongly rooted in parents' attitudes toward achievement and their behaviour towards their offspring in achievement situations (Roser and D'Andrale, 1959). Children's attitudes toward achievement may be said to develop from positive outcomes and warm parental approval and encouragement. Some positive relationships have been demonstrated between need for achievement and academic achievement (Robinson, 1965).

Similarly locus of control is another personality variable that may be viewed as a general attitudinal orientation. This orientation develops through the outcomes an individual experiences during interactions with the environment.

Other studies have linked high self-regard and school success. Blackman and Secord (1968) have reviewed a number of studies that deal with pupils' attitude toward themselves and its possible relationship with attitude and school success. They cite the 3-year longitudinal study by Brookover et al. (1965) which indicates that changes in self concept in students from seventh through the tenth grades have been related to changes in their academic performance.

Hamachek (1987) has shown how parental behaviour can affect children's self concept with presumed consequences for achievement. He describes how children learn to perceive the attitudes of others toward them, their achievements and potential and come to accept these evaluations as true.

However, in this brief survey of the domain of attitudes it is important to consider that it may be impossible to determine cause-and-effect relationships between attitudes and school achievement. It would seem that attitudes, especially attitudes to one's self, are related to school performance and that these attitudes can be affected by important others - parents, teachers and peers.

3.5 Predictions of Academic Achievement

Numerous studies on academic achievement have been summarised by Kahn (1969, p. 216), who stated that "one half to three quarters of the variability in academic achievements remains unexplained". Kahn attempted to determine how well students were able to predict the criteria of achievement. He used a research instrument consisting of 122 items measuring attitudes, study habits, need achievement and achievement anxiety and scores were obtained from a sample of 509 male and 529 female students. The intellective predictors were scores on the verbal and mathematical parts of the School and College Ability Test (SCAT). The achievement criteria were scores on six subtests of the Metropolitan Achievement Test Series (MAT). The findings of the study indicated that the multiple correlations of the predictors with each achievement criterion were higher for females than males. These results are in agreement with those of Lavin (1965) who found higher correlations between aptitude and achievement in females. The findings of Khan suggest that females' academic achievement tends to be more predictable than males', at least using the kinds of predictors conventionally entered into a regression equation.

Burns (1982, p. 215) has stated that "the self-concept can become a predictor of academic performance when the child internalises a positive view of himself and is motivated to approach academic tasks with confidence and persistence". A study in 1966 by Keefer investigated the self predictions of academic achievement by college students. He found that the students' self predictions were better predictors of their college scholastic achievement than their school

grades and their American College Test scores.

Most studies however have concentrated on the measures of self concept as a predictor of achievement. Self concept has been found to be closely associated with the prediction of achievement in reading (Black, 1974).

In a study of the relationship of student self-concept to academic achievement, Butcher (1968) proposed that the measurements of self concept were more closely correlated with academic achievement than with standardised intelligence tests. The self concept of the students was measured using the Coopersmith Self Esteem Inventory. Pupil achievement was assessed by standardised achievement tests and pupil intelligence quotients. In the investigation of four grade levels (3 - 6) in six elementary schools Butcher found that there was a closer relationship between the intelligence tests and self concept scores than between the achievement test and composite self concept scores. The relationship was attributed to the similarity of origin of both the intelligence and self concept tests. Butcher advocated further studies with longitudinal dimensions to determine the relationships between the students' self concept and tests of mental abilities.

The self concepts of fourth and sixth grade boys and girls in relation to their intelligence, academic achievement, interests and manifest anxiety was investigated by Bledsoe (1964). Low to moderately positive relationships with intelligence were found but whereas the correlations for boys were significant and positive, ranging from .278 to .421 for total IQ, for girls they were not

significant. Bledsoe (p. 57) stated that:

> "the consistently significant positive correlations of self concept with intelligence and achievement for boys, but not for girls, would seem to indicate that boys perceive the traits and abilities measured by the intelligence and achievement tests as more important in their self esteem than do girls".

The research of Brookover et al. (1965) correlated grade point average with intelligence and the combination of intelligence and general academic success self concept. They found that the combination accounted for approximately 10 per cent more variance in grade point average than did intelligence alone. Gose, Woden and Muller (1980) attempted to determine whether such a combination of intelligence and self concept measures can account for substantially more variance in achievement than intelligence alone. Achievement was found to be related to academic self-concept but not to physical maturity, peer relations or school adaptiveness self concepts. It was suggested that subject area specific self concept measures might facilitate the prediction of academic success.

Numerous other studies have indicated that academic self concept is a significant predictor of academic achievement (Deese, 1971; Epps, 1969; Stillwell, 1966). However, it is important to remember that as with Kifer's (1973) research with students from grades 5 and 7 who varied across the full achievement range and Weikart's (1971) longitudinal research following preschool graduates into the elementary years, both found evidence to suggest that a positive self concept was the result of successful academic experience.

3.6 A Model for the Study of the Relationship between Self-Concept and Academic Achievement

Since the fifties, a vast body of research has investigated the relationship between the self-concept and academic achievement, as part of the general trend to ascertain the effect of psychological and environmental factors on achievement in school.

Research findings have shown a persistent and positive relationship between the self and achievement, and positive self-concept is related to success while negative self-concept is related to failure (Coopersmith, 1959; Piers and Harris, 1964; Brookover, 1967; Purkey, 1970).

Several studies have also reported that achievers are motivated and have positive attitudes to school, while under-achievers lack motivation and have negative attitudes to school (Thomas, 1980; Bassett, 1978; Keeves, 1974).

Though research evidence has related the self to achievement, this relationship cannot be seen as one-way. It is more of a reciprocal nature and a continuous interaction between the self and academic achievement where each of the two directly influences the other. The basic argument is that a student's opinion of himself plays a major role in how he performs in school, and that his scholastic performance has a heavy impact on his conception of himself (Burns, 1982; Verma, 1988; Weikart, 1971). To satisfy the general aim of this study which has set out to investigate the relationship between the self-concept and academic achievement in the Saudi society, a model is needed to clarify the predicted

nature of the relationship between the different variables covered by the study, to guide selection of variables for testing and to check their relevance, to verify the empirical results achieved, and to answer the questions raised.

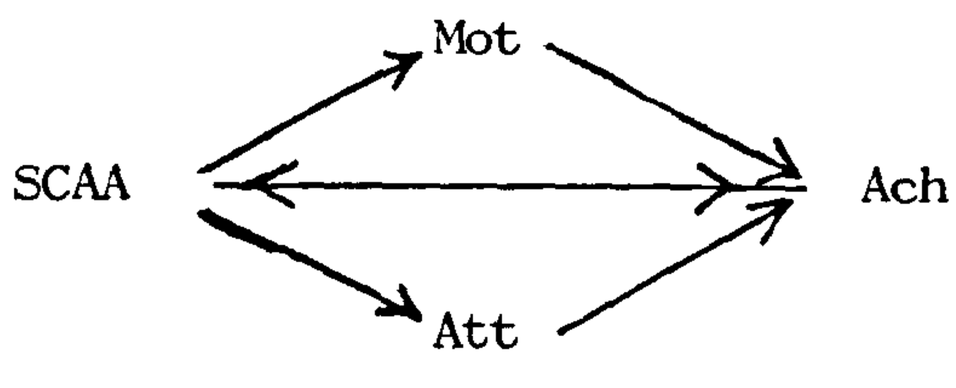
More specifically, the proposed model, within the framework of the empirical results, will try to seek an answer to the basic question raised by the study: what is the relationship between achievement, self-concept and other variables such as achievement motivation and attitude to school?

The framework of the proposed model is based on the assumption that there is a positive relationship between the student's high opinion of his academic ability and his achievement in school, and that this relationship is mediated by his motivation to do well in school and by his positive attitude to school activities.

It is assumed that high opinion of academic ability generates the right type of motivation to do well in school and thus leads to academic achievement and success. It is also assumed that high opinion of academic ability encourages a positive attitude to school activities and thus leads to academic achievement and success. Therefore, high opinion of academic ability is positively related to academic achievement, mediated by motivation to do well and by a positive attitude to school.

The relationship between the different variables, self-concept, motivation, attitude and achievement, assumed in the above model, is best seen in the following figure:

Figure 3.



Key

⟶ direction of effect

⟷ reciprocal influence

SCAA: academic self-concept

Mot: achievement motivation

Att: attitude to school

Ach: academic achievement

The basic assumption implied within the framework of this model will be used to verify the relationships established by the empirical results. Furthermore, the empirical results themselves will be used to test the structure of the model and the relationship between its variables.

The process of comparison, verification and testing will lead to the support or modification of the proposed model.

3.7 Aim of the Study

The present study aims at answering the question as to whether there is a relationship between self-concept and academic achievement, and how far this relationship may be affected by other variables such as achievement motivation and attitude to school.

The aim of this study is to seek answers for the following empirical questions:

1. What is the relationship between the self-concept variables and academic achievement?
2. What is the relationship between the self-esteem variables and academic achievement?
3. What is the relationship between the self-concept of ability in specific subjects and academic achievement (pre - at the end of intermediate school and post - after the first term in the secondary school) in specific school subjects?
4. What is the relationship between self-concept variables and self-esteem variables?
5. What is the relationship between self-concept variables and attitude to school, attitude to school subjects (interest, perceived usefulness) and achievement motivation?
6. What is the relationship between self-esteem variables and attitude to school; attitude to school subjects (interest, perceived usefulness) and achievement motivation?
7. What is the relationship between academic achievement and attitude to school, attitude to school subjects (interest, perceived usefulness) and achievement motivation?

8. What psychological variables are the best independent predictors of achievement and have a significant relationship with achievement? In other words, what set of variables maximises the prediction of the achievement variance?

CHAPTER FOUR

DESIGN OF THE STUDY

CHAPTER FOUR

DESIGN OF THE STUDY

This chapter describes the methodology of the study, and provides information which includes the target population, the sample and the sampling procedure, the instruments used for collecting data, their reliability and the validity of the measures used. The analysis procedures which will be used in this research are given in the next chapter.

4.1 Target population

The target population of the study consists of secondary school boys in both urban and rural areas of Riyadh City in Saudi Arabia (Riyadh is the Saudi capital and is located in the central part of the country).

There are people in Riyadh from all over the world, but Saudians constitute the majority of the population, and it is they with whom we are concerned in this study.

The population of Riyadh is more than one million (no exact statistical information available). With regard to the social, educational, economic and any other aspect, Riyadh represents all sections of the Saudian community and society. Accordingly, the sample of this study has been selected from this population. There are 44 secondary schools with a population of over 15,000 students.

4.2 The Variables of the Study

The dependent variable is academic achievement and the independent variables are self-concept, self-esteem, attitude and motivation.

1) The dependent variable

This will be measured by exam results (marks). There are two kinds: pre- and post-achievement. The pre-achievement is the marks and average of grades of students in intermediate school. The post-achievement is the students' marks in the first term exam in secondary school and the average of these marks. There is a wide range of school subjects included in these exams, such as Islamic Education, Arabic Language, Maths, Science, English Language and Social Studies. Any lack of reliability in the measures of achievement is assumed to be outweighed by their ecological validity (see Section 4.4).

2) The independent variables

The measures used in this study to represent the non-cognitive independent variables expected to be related to achievement are as follows: (texts of all measures are included in Chapter 5, and the original text of measures of Harter and Brookover are attached in Appendix 1 because they have been modified)

a) Self-concept of ability - specific subjects

This scale, developed by Brookover et al. (1965) was selected in the present study to measure self-evaluation of general academic ability and specific academic ability.

b) Self perception subscales

This scale, developed by Harter (1985), was selected in the present study to measure self concept dimensions and self worth.

c) Rosenberg's self esteem scale

This scale, developed by Rosenberg (1965), was used in this study as a measurement of self esteem.

d) Attitude towards school

This scale, developed by Morton-Williams and Finch (1968) and Barker Lunn (1970), was used in the present study as a measure of attitude to school.

e) School work subscales

This scale, devised by Robinson and Tayler (1986), was used in the present study as a measure of achievement motivation and attitudes to learning.

f) Attitude towards school subjects

This scale, devised by Morton-Williams and Finch (1968), was used in the present study as a measure of motivation.

These scales are divided into two types. The first set are well documented scales including those of Brookover (1966), Harter (1985), Rosenberg (1965), Morton-Williams and Finch (1968) and Barker Lunn (1970). The second set are experimental questionnaires including those of Robinson and Tayler (1986) and Morton-Williams and Finch (1968). We shall refer to these scales in more detail in the next chapter.

4.3 The Translation of the Instruments

The instruments were translated into Arabic by the researcher and then back translated by a Saudi who is fluent in both languages. The procedure was repeated several times until a satisfactory similarity between the two versions was achieved. The English and Arabic versions were also checked by a bilingual member of staff in King Saud University in Saudi Arabia in the Department of Psychology in the School of Education, to ensure that the Arabic version generated meanings that are as similar as possible to the English version (see Appendix 2). Changes introduced into the instruments are discussed in detail in the next chapter.

4.4 The Validity and Reliability of the Instruments

The instruments were translated into Arabic in order to eliminate cross-cultural problems and to make it easier for respondents to answer, thereby making it possible for the researcher to obtain all the necessary information. Alpha, factor analysis and correlation matrices (as shown in the next chapter) were used as measures for testing the internal reliability and validity of the instruments.

A small sample of Arab students (n = 20) were also consulted about the construction of items of the questionnaires with regard to simplicity, bias, interest, their knowledge of the items, the meaning, sensitive areas, cross-cultural problems, religion, morality, etc., before the questionnaire was administered.

4.5 The Sample and Sampling Procedure

A stratified random sample was chosen (as shown in Figure 4) from a population of secondary school boys from Riyadh City and the surrounding rural areas (Table 5).

First, Riyadh City itself was divided into five sectors: north, south, east, west and central, following the official administrative division of the city by the Directorate of Education. One secondary school was chosen randomly from each sector. Thus five schools were chosen from a total of 38 secondary schools to represent the urban secondary school population. The rural population was represented by two secondary schools which were also randomly chosen out of six secondary schools.

Using the class within the school as the sampling unit, from 4 to 6 classes (one or more from each grade - 1st, 2nd and 3rd) were randomly chosen from each of the seven schools included in the sample, depending on the size of the class. In all, the sample consisted of 536 pupils, as shown in Figure 4.

The questionnaires were administered to all the pupils in each class chosen, explained and supervised personally with each class teacher helping in the process.

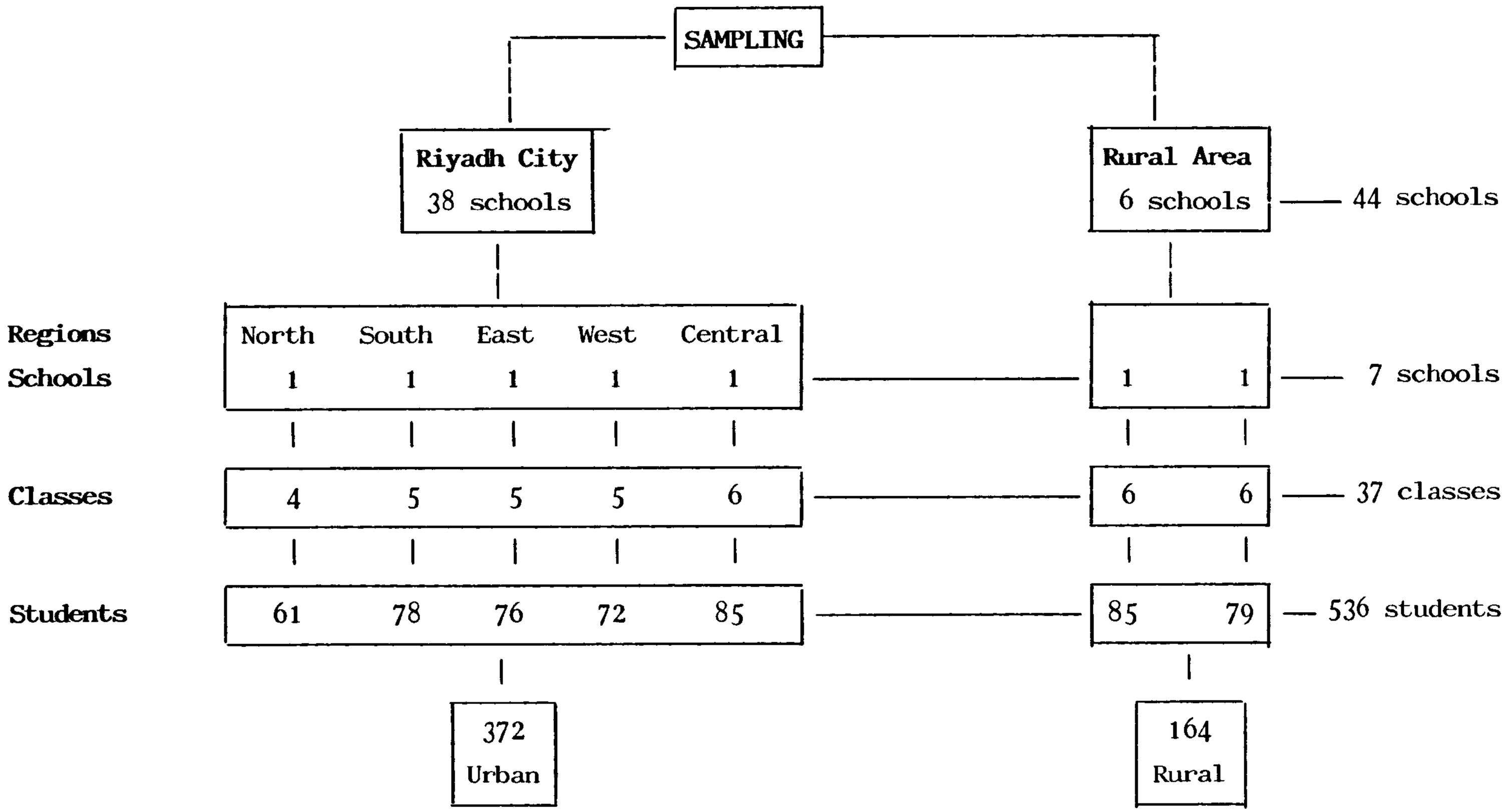
Exam marks for each pupil from the previous intermediate stage and for the first term of the secondary stage were collected and added to each questionnaire. Pupils included in the sample who were absent from the exam in the first term were excluded from the remainder of the study. Moreover, when the total sample was

Table 5: **Population of secondary schools, classes and pupils in urban and rural areas of Riyadh**

City Sector	Population			
	Number of Schools	Number of Classes	Number of Pupils	
Centre	9	124	3091	URBAN
South	8	112	3131	
East	8	109	3270	
West	6	97	2841	
North	7	79	2086	
	6	32	672	RURAL
TOTAL	**44**	**553**	**15091**	

Source: Educational Development Data Centre, Statistics Section 1987.
Ministry of Education, Saudi Arabia

Figure 4: **The structure of the sample**



collected, each questionnaire was checked and those incomplete or wrongly answered were also excluded.

The sample consists of 536 students, drawn randomly from seven secondary schools. These are mainly first, second and third year students from the urban and rural areas of Riyadh. Schools chosen represent the middle, south, north, west and east of Riyadh. The number of students selected from rural and urban schools is shown in Table 6. All respondents are male Saudi students, as there is no co-education in Saudi Arabia. Also, the researcher of this study has tried to administer the research in a girls' school, but he was not allowed to carry out this kind of study in female schools. All students are from government schools. Their ages range between 15 and 23 (Table 7); mean age 17.8, S.D. = 1.39. However, if the students succeeded every year (i.e. there were no repeaters), their ages should range between 15 and 18. Hence the small number of older students are chiefly those who have been referred for extra study before promotion.

All students in Riyadh schools come from different socio-economic backgrounds, and so they represent all parts of the Riyadh area. The researcher has experience as a headteacher of intermediate and secondary schools in the higher socio-economic areas in Riyadh (Alya) from 1976-1982, and knows that they represent all parts of the Riyadh area, rural and urban regions. They also represent a cross-section of the Saudi Arabian community and society. The

Table 6 : **Sample**

Region	School	Number distributed	Number returned	Academic Year First	Second	Third
rural	1	100	85	30	31	24
	2	100	78	23	25	30
	3	100	76	26	23	37
	4	100	72	27	24	21
	5	100	61	31	30	-
			Total = 372	Response rate 74.4%		
urban	6	100	85	35	28	22
	7	100	79	26	20	23
			Total = 164	Response rate 82%		
			Total = 536	Response rate 76.6%		

Table 7: **Distribution of ages of students**

Age	Number of students	Percentage	Cumulative percentage
15	15	2.8	2.8
16	79	14.7	17.5
17	129	24.1	41.6
18	160	29.9	71.5
19	98	18.3	89.7
20	37	6.9	96.6
21	10	1.9	98.5
22	7	1.3	99.8
23	1	0.2	100.0
Total	536	100.0	

researcher was very keen to concentrate his studies on Saudian students as the focus of this research, and to exclude all students with one or both parents non-Saudian. Students are usually arranged into classes according to their first name, so no differences between classes were expected.

4.6 Administration and Collection of the Questionnaires

The project was started on 10th February 1987 and was completed after about three weeks of continuous work. The questionnaires were administered to the students in their classrooms. The classroom teachers supervised the work and the researcher was present in the school to tackle any questions raised, with the help of the school staff.

The first step:

The researcher contacted the general administration of boys' education in the Riyadh area, which sent letters stating the aims of the study to all the secondary schools. The letters stated the time of arrival of the researcher and expressed his appreciation of any help that was expected to be offered to him on arrival.

The second step:

The administration took place before the beginning of the first term examination, which began on the 15th March 1987. The class tutor of each class was present, as was the psychology teacher and social worker. The questions were read aloud to the students

and questions from the students were answered. The students' attention was drawn to observing all the instructions of the questionnaire. Before answering, some of the students asked to be excused from participating, and were asked to remain in the class until everybody had finished. All responding was completed in 90 minutes or less. A copy of the questionnaire (in Arabic) is shown in Appendix II.

The third step:

The marks of students (in intermediate school; pre-achievement) were reported by the students themselves using their official files under the supervision of the teacher. The marks of students (first term exam; post-achievement) were obtained from the official files of the school administrators.

The fourth step:

The scoring of the questionnaires was done manually, following the key answers provided in the next chapter.

The fifth step:

All answers from every item and marks of every school subject were fed into the computer for the statistical analysis using programs available in SPSSX (regression, partial correlation, factor, correlations).

CHAPTER FIVE

DERIVATION AND VALIDATION OF MEASURES

CHAPTER 5

DERIVATION AND VALIDATION OF MEASURES

5.1 Measures used in this study

Many British and American publications on the topics of self-perception, self-esteem, academic self-concept, attitudes and motivation were examined in order to select measures suitable for use in this study. Bearing in mind that these measures were going to be translated into a different language and applied to a different culture, checks had to be made in the cultural appropriateness of the scales for use with Saudi Arabian students. Two types of measures were therefore selected and administered to the research sample.

The first set were well documented test scales including those of Harter (1985), Brookover (1965), Rosenberg (1965), Morton-Williams and Finch (1968) and Barker Lunn (1970). The other set were experimental questionnaires including those of Robinson and Tayler (1986) and Morton-Williams and Finch (1968).

Set I was as follows:

1.	Self-perception subscales	Harter (1985)
2.	Self-concept of ability - specific subjects	Brookover (1965)
3.	Self-esteem	Rosenberg (1965)
4.	Attitude towards school	Morton-Williams & Finch (1968) and Barker Lunn (1970)

The experimental questionnaires in Set 2 were as follows:

5.	School work subscales	Robinson & Tayler (1986)
6.	Attitude towards subjects - Interesting - useful	Morton-Williams & Finch (1968)

5.2 Criteria Used for Selection

Three types of criterion were used in selecting the most appropriate measures to test the theoretical model proposed in this study and to ascertain the relationship between academic achievement and self-concept.

The three criteria used were:

a) Reliability

To test the reliability of each measure Cronbach's Alpha was used. Items in each measure were retained or deleted according to their effect on the reliability score of that particular measure or subscale. Any item that would increase the reliability coefficient, when deleted, was not retained in the measure.

b) Factor analysis

Measures composed of subscales were subjected to the process of factor analysis to see if the subscale items emerged as a factor. Those which had the highest loadings on each clearly defined factor were accepted and used in the study.

c) Correlation matrix

Correlation matrices were constructed for all measures to check the inter-item correlations. The minimum level of significance necessary for each item to be accepted was $P < .05$. Thus, in selecting items with significant relationships with all other items, some degree of homogeneity of a scale or subscale was obtained.

5.3 The Relationship between the Three Criteria

Two types of tests, one with subscales and one without, were selected. Tests with subscales (Harter, Brookover, Robinson and Tayler) were subjected to factor analysis, and correlation matrices on the individual variables were calculated. The subscale items that were selected as appropriate depended on the measures. If the factor analysis loading values were > .30, items were selected and retained only if their correlation with every other item within the subscale was > 0.15. Subscale items which emerged on more than one factor with high loading values were selected if the inter-item correlation between each measure item was > .15. In the case of the published tests (e.g. Harter, Brookover), subscale items were selected as a group if any item when deleted would decrease the reliability score, if the inter-item correlation between each measure item was positive and the level of significance was $P < .05$.

The other published measures, Rosenberg, Morton-Williams & Finch, and Barker Lunn, were not factor analysed because they are assumed to be unidimensional. Correlation matrices were constructed for these measures and items which were positively correlated with each other were selected, except those items which would increase the reliability score when deleted.

From the measure of attitude towards different school subjects, the variables of 'useful' and 'interesting' were chosen. The Morton-Williams and Finch measure was not subjected to any of the three criteria because this measure consists of just one item and was considered an appropriate measure for this study.

5.4 Application of criteria to measuring instruments

Measures used for the Saudi Arabian sample are presented individually in this section and the aforementioned criteria were applied to each measure to decide whether it would be selected for use in the final analysis of the results.

Well-documented tests:

5.4.1 Harter scale: 'Self-perception subscales'

The Harter scale for adolescents is an upward extension of the self-perception profile for children (Harter, 1985). It consists of nine subscales with a total of 45 items, divided equally into groups of five items for each subscale.

Items are scored 4, 3, 2 or 1 where 4 represents the highest positive self-judgement and 1 represents the lowest negative self-judgement (see Table 8).

The romantic subscale was dropped for cultural reasons. The Islamic Saudi society simply does not allow any sort of free pre-marital relationship between the sexes and would not even tolerate the posing of the contents of the items in this subscale to pupils. It was, therefore, pointless to attempt to include it.

The structure of the scale and the items which constitute each of the eight subscales are as follows:

1. Scholastic competence : items no. 1, 9, 17, 25 and 33.
2. Social acceptance : items no. 2, 10, 18, 26 and 34.
3. Athletic competence : items no. 3, 11, 19, 27 and 35.
4. Physical appearance : items no. 4, 12, 20, 28 and 36.
5. Job competence : items no. 5, 13, 21, 29 and 37.

Table (8)

What I am Like

Sample Sentence

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me
a)			*Some teenagers like to watch video in their part time*	**BUT**	*Other teenagers would rather go to sports events.*	
1. Sch	4	3	*Some teenagers feel that they are just as smart as others their age*	**BUT**	*Other teenagers aren't so sure and wonder if they are as smart.*	2 1
2. social	1	2	*Some teenagers find it hard to make friends*	**BUT**	*for other teenagers it's pretty easy.*	3 4
3. Ath.	4	3	*Some teenagers do very well at all kinds of sports*	**BUT**	*other teenagers don't feel that they are very good when it comes to sports.*	2 1
4. App.	1	2	*Some teenagers are not happy with the way they look*	**BUT**	*other teenagers are happy with the way they look*	3 4
5. Job	4	3	*some teenagers feel that they are ready to do well at part-time job*	**BUT**	*other teenagers feel that they are not quiet ready to handle a part-time job.*	2 1
6. Com.	4	3	*Some teenagers usually do the right thing*	**BUT**	*Other teenagers often don't do what they know is right*	2 1
7. Fri.	4	3	*Somee teenagers are able to make really close friends*	**BUT**	*Other teenagers find it hard to make really close friends.*	2 1
8. Wor	1	2	*Some teenagers are often disappointed with themselves*	**BUT**	*Other teenagers are pretty pleased with themselves*	3 4
9.	1	2	*Some teenagers are pretty slow in finsh-ing their school work*	**BUT**	*Other teenagers can do their school work more quickly*	3 4
10.	4	3	*Some teenagers have a lot of friends*	**BUT**	*Other teenagers don't have very many friends.*	2 1
11.	4	3	*Some teenagers think they could do well at just about any new athletic activity*	**BUT**	*Other teenagers are afraid they might not do well at a new athletic activity*	2 1
12.	1	2	*Some teenagers wish their body was different*	**BUT**	*Other teenagers like their body the way it is.*	3 4

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
13.	1	2	*Some teenagers feel that they don't have enough skills to do well at a job*	**BUT**	*Other teenagers feel that they do have enough skills to do a job well.*	3	4
14.	1	2	*Some teenagers often feel guilty about certain things they do*	**BUT**	*Other teenagers hardly ever feel guilty about what they do.*	3	4
15.	4	3	*Some teenagers can be trusted to keep secrets that their friends tell them*	**BUT**	*Other teenagers have a hard time keeping secrets that their friends tell them.*	2	1
16.	1	2	*Some teenagers don't like the way they are leading their life*	**BUT**	*other teenagers do like the way they are leading their life.*	3	4
17.	4	3	*Some teenagers do very well at their classwork*	**BUT**	*other teenagers don't do very well at their classwork.*	2	1
18.	1	2	*some teenagers are very hard to to like*	**BUT**	*other teenagers are really easy to like.*	3	4
19.	4	3	*some teenagers feel that they are better than others their age at sports*	**BUT**	*other teenagers don't feel they can play as well.*	2	1
20.	1	2	*Some teenagers wish their physical appearance was different*	**BUT**	*Other teenagers like their physical appearance the way it is.*	3	4
21.	4	3	*Somee teenagers are proud of the work they do on jobs they get paid for*	**BUT**	*for Other teenagers getting paid is more important than feeling proud of what they do.*	2	1
22.	4	3	*Some teenagers are usually pleased with the way they act*	**BUT**	*Other teenagers are often ashamed of the way they act.*	2	1
23.	1	2	*Some teenagers don't really have a close friend to share things with*	**BUT**	*Other teenagers do have a close friend to share things with.*	3	4
24.	4	3	*Some teenagers are happy with themselves most of the time*	**BUT**	*Other teenagers are often not happy with themselves.*	2	1
25.	1	2	*Some teenagers have trouble figuring out the answers in school*	**BUT**	*Other teenagers almost always can figure out the answer.*	3	4
26.	4	3	*Some teenagers are popular with others their age*	**BUT**	*Other teenagers are not very popular.*	2	1

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
27.	1	2	*Some teenagers don't do well at new outdoor games*	**BUT**	*Other teenagers are good at new games right away.*	3	4
28.	4	3	*Some teenagers think that they are good looking*	**BUT**	*Other teenagers think that they are not very good looking.*	2	1
29.	1	2	*Some teenagers feel like they could do better at work they do for pay*	**BUT**	*Other teenagers feel that they are doing really well at work they do for pay.*	3	4
30	1	2	*Some teenagers do things they know they shouldn't do*	**BUT**	*other teenagers hardly ever do things they know they can really trust.*	3	4
31.	1	2	*Some teenagers find it hard to make friends they can really trust*	**BUT**	*other teenagers are able to make close friends they shouldn't do.*	3	4
32.	4	3	*some teenagers like the kind of person they are*	**BUT**	*other teenagers often wish they were someone else.*	2	1
33.	4	3	*some teenagers feel that they are pretty intelligent*	**BUT**	*other teenagers question whether they are intelligent.*	2	1
34.	4	3	*Some teenagers feel that they are socially accepted*	**BUT**	*Other teenagers wished that more people their age accepted them.*	2	1
35.	1	2	*Somee teenagers don't feel that they are very athletic*	**BUT**	*Other teenagers feel that they are very athletic.*	3	4
36.	4	3	*Some teenagers really like their looks*	**BUT**	*Other teenagers wish they looked different.*	2	1
37.	4	3	*Some teenagers feel that it's really important to do the best you can on paying jobs*	**BUT**	*Other teenagers feel that getting the job done is what really counts*	2	1
38.	4	3	*Some teenagers usually act the way know they are supposed to*	**BUT**	*Other teenagers often don't act the way they are supposed to.*	2	1
39.	1	2	*Some teenagers don't have a friend that is close enough to share really personal thoughts with*	**BUT**	*Other teenagers do have a close friend that they can share personal thoughts and feelings with.*	3	4
40.	4	3	*Some teenagers are very happy being the way they are*	**BUT**	*Other teenagers wish they were different.*	2	1

6. Conduct/Morality : items no. 6, 14, 22, 30 and 38.

7. Close friendship : items no. 7, 15, 23, 31 and 39.

8. Global self-worth : items no. 8, 16, 24, 32 and 40.

The responses from the total sample of 536 respondents from 1st, 2nd and 3rd year secondary schools were used to construct the correlation matrix and carry out a principal component analysis with a varimax rotation. Inspection of the factor loadings to derive the emerging subscales and comparison with those proposed by Harter produced the following results = A total of twelve factors was extracted, representing 57.6% of the total variance (Table 9).

1. Subscale No. 1

For the Scholastic Competence subscale (items 1, 9, 17, 25, 33) items 9, 17 and 25 load on factor 4 with values of .70, .67 and .56 respectively. Items 1 and 33 load with .20 and .14 on this factor. Items 1 and 33 also load on factor 7 (.67 and .75) with no other items having high loadings.

While it would be possible to argue for two factors (4 and 7) one emphasising activity (9, 17 and 25) and the other potential (1 and 33), it was considered simpler and better for statistical purposes to combine them and treat it as a five-item subscale as Harter proposed.

This decision was supported by the inter-item correlation; both items 1 and 33 correlate significantly with the other 3 items as the correlation matrix in Table 10 shows; the level of significance for all items is $P < .01$.

Cronbach's Alpha for the 5-item scale is .65 and if any item was deleted the reliability coefficient would decrease (see Table 10).

TABLE 9 : **Rotated factor matrix of items for Harter subscales (n = 536)**

Subscales	item	F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	F_9	F_{10}	F_{11}	F_{12}
	1	-.08	.18	.08	.20	.08	.04	.67	-.08	.09	.05	.07	.01
	9	.03	.05	.07	.70	.11	-.09	.09	.06	-.20	.10	-.07	.10
Scholastic Competence	17	-.02	.10	.10	.67	.12	.21	.18	-.04	.18	.01	-.02	-.01
	25	.12	.11	.02	.56	.04	.03	.33	.13	-.11	.09	.13	.08
	33	.11	.06	.11	.14	-.03	.07	.75	.01	-.10	-.10	-0.2	.04
	2	.52	.03	.22	.00	.08	-.02	.02	.06	-.40	.08	-.11	-.03
	10	.57	.24	.07	-.05	.06	.09	-.03	.07	-.30	-.01	-.09	.07
Social Acceptance	18	.11	.08	.06	.45	.01	.28	.01	-.20	-.21	-.22	-.38	-.10
	26	.24	.13	.01	.13	-.02	.65	-.09	-.06	-.07	.06	-.02	-.04
	34	.21	.12	.17	-.03	.09	.57	.23	.10	-.06	-.01	.12	-.02
	3	.12	.79	.08	.08	.09	-.04	.10	-.01	.00	.05	.03	-.04
	11	.08	.74	.08	.06	.02	.02	.09	-.14	.02	-.08	.07	.06
Athletic Competence	19	.04	.64	.06	-.20	.06	.21	.23	.02	.04	.17	.07	-.04
	27	.03	.66	.08	.13	.08	.05	.02	.09	-.14	-.02	-.03	.14
	35	.09	.72	.01	.10	.10	.20	-.04	.06	.06	.03	-.05	-.05
	4	.20	.01	.64	.12	.11	-.01	-.03	.24	-.25	-.02	-.032	.08
	12	.10	.10	.10	.12	.90	-.02	.08	.07	-.04	.02	.05	-.02
Physical Appearance	20	.11	.12	.11	.13	.89	.06	.05	.02	-.01	.03	-.20	.01
	28	.04	.10	.09	-.04	.14	.53	.31	.01	-.11	-.05	-.34	.01
	36	-.01	.22	.35	-.00	.61	.23	-.07	-.20	-.01	-.07	-.14	.01

significant loadings > .30

TABLE 9 continued

Subscales	item	F 1	F 2	F 3	F 4	F 5	F 6	F 7	F 8	F 9	F 10	F 11	F 12
	5	.05	.12	.00	.02	-.01	.06	.15	-.09	.04	.06	-.20	.68
	13	.09	.08	.17	.19	.18	.15	.37	.32	-.04	.23	.08	.18
Job Competence	21	.02	.10	-.04	.02	-.03	.10	.11	-.12	-.12	-.15	.72	-.15
	29	.07	-.01	.03	.03	-.02	-.12	-.05	.13	.71	-.07	-.09	.02
	37	-.03	-.04	.02	-.04	.04	-.03	.04	.05	.08	-.82	.12	.01
	6	.00	.02	.36	.41	-.40	.05	-.08	-.15	.00	.24	.24	.37
	14	.00	.03	.06	.03	-.01	.04	-.02	.75	.14	-.04	-.08	-.04
Conduct/Morality	22	.04	.10	.30	.24	.00	.43	.13	.23	-.02	.22	.20	.14
	30	.02	-.02	.25	.36	.10	.28	-.04	.11	.17	.22	.18	-.30
	38	.01	-.02	.26	.34	.08	.42	-.13	-.04	.06	-.04	.26	.11
	7	.62	.09	.24	.13	-.12	.03	-.08	-.06	-.11	.20	.09	.04
	15	.29	.11	.06	.03	.06	.19	.05	-.31	.26	.23	.06	.16
Close Friendship	23	.74	.02	.03	-.03	.07	.03	.10	-.06	.13	-.10	.07	.09
	31	.70	.07	.02	.14	.07	.19	-.03	.11	.07	.10	-.05	-.20
	39	.71	.04	.07	.00	.11	.13	.10	-.07	.22	-.11	.00	-.01
	8	.10	.04	.54	.28	.16	.04	.15	.24	-.18	.03	.07	.05
	16	.28	.07	.55	.00	-.01	.08	.14	.05	.14	.16	-.03	-.23
Global Self-Worth	24	.08	.15	.31	.16	.01	.09	.09	-.22	-.04	.17	-.17	-.50
	32	.02	.20	.55	-.06	.16	.31	.31	-.10	.07	-.01	-.01	.05
	40	.12	.15	.68	.10	.22	.14	.14	-.14	.16	-.13	-.06	-.10

TABLE 10: **Correlation matrix of items for Scholastic Competence subscale and Alpha coefficient if item deleted (n = 536)**

item	1	9	17	25	α
1					.61
9	.13				.62
17	.26	.45			.56
25	.25	.31	.34		.57
33	.37	.12	.18	.31	.62

2. Subscale No. 2

For the Social Acceptance subscale (items 2, 10, 18, 26, 34), items 2 and 10 load on factor 1 (.52 and .57), while items 18, 26 and 34 show lower values of loading on the same factor (.11, .24 and .21 respectively). Items 26 and 34 also load on factor 6 (.65 and .57). All items except item 18 correlated highly with each other as seen from Table 11 and the level of significance for the four items was $P < .001$. If item 18 was deleted, the Alpha coefficient did not change.

Cronbach's Alpha for the 4 item scale is .56, and if any item were deleted the reliability coefficient would decrease (see Table 11).

In this case, it was considered reasonable to combine the four items (2, 10, 26 and 34) into one subscale and treat them as a measure of Social Acceptance, as Harter proposed, even if social acceptance seems to share variance with two factors. Thus, though social acceptance reaches a satisfactory level of reliability, it cannot be thought of as unidimensional.

TABLE 11: **Correlation matrix of items for Social Acceptance subscale and Alpha coefficient if item deleted (n = 536)**

item	2	10	18	26	α
2					.48
10	.40				.46
18	.12	.16			.56
26	.15	.18	.19		.51
34	.20	.21	.14	.33	.50

3. Subscale No. 3

For the Athletic Competence subscale (items 3, 11, 19, 27, 35), all five items load on factor 2, and no other item has a high loading on this factor. The loadings were .79, .74, .64, .66 and .72 respectively. All items correlated highly with each other as can be seen from Table 5 and the level of significance for all items was $P < .001$.

Cronbach's Alpha for the 5-item scale was .79 and if any item were deleted the Reliability coefficient would decrease (see Table 12).

This subscale is very clear and corresponds to that proposed by Harter.

TABLE 12: **Correlation matrix of items for Athletic Competence subscale and Alpha coefficient if item deleted (n = 536)**

item	3	11	19	27	α
3					.72
11	.55				.74
19	.50	.40			.76
27	.43	.40	.40		.77
35	.50	.40	.40	.40	.75

4. Subscale No. 4

For the Physical Appearance subscale (items 4, 12, 20, 28, 36), items 12, 20 and 36 load on factor 5 and show high values, .90, .89 and .61 respectively, whereas items 4 and 28 show lower values of loading on this factor, .11 and .14, while item 4 loads on factor 3 (.64) and item 28 loads on factor 6 (.53).

In fact there were no other items which had high loadings on factor 5 beside the three items 12, 20 and 36, which correlated highly with each other, as the correlation matrix shows in Table 13. The level of significance for the three items was $P < .001$.

If items 4 and 28 were deleted, the Alpha coefficient would increase from .72 to .82, while the deletion of any one of the remaining three items would result in the Alpha value dropping, as shown in Table 13.

Therefore it was considered reasonable to combine the three items (12, 20, 36) and to treat them as a subscale representing Physical Appearance, as Harter proposed.

TABLE 13: **Correlation matrix of items for Physical Appearance subscale and Alpha coefficient if item deleted (n = 536)**

item	4	12	20	28	α
4					.75
12	.23				.58
20	.20	.84			.56
28	.11	.14	.20		.75
36	.24	.50	.52	.30	.65

5. Subscale No. 5

For the Job Competence subscale (items 5, 13, 21, 29, 37), every item in this subscale loads on a different factor, as follows:

Item 5 loads on factor 12 (.68),

item 13 " " " 7 (.37),

item 21 " " " 11 (.72),

item 29 " " " 9 (.71),

item 37 " " " 10 (-.82).

Items only correlated to a low extent with each other (see Table 14) and Cronbach's Alpha was .04. With this diversity, there were no grounds for treating these items as a subscale as Harter proposed, and the subscale was not used in the results.

TABLE 14: **Correlation matrix of items for Job Competence subscale (n = 536)**

item	5	13	21	29
5				
13	.10			
21	-.04	-.05		
29	-.02	.02	-.06	
37	-.03	-.10	.08	.05

6. Subscale No. 6

For the Conduct/Morality subscale (items 6, 14, 22, 30, 38), items 6, 22, 30 and 38 load on factor 4 and show values of .41, .24, .36 and .34 respectively. Item 14 does not load on this factor except with .03. Items 22 and 38 also load on factor 6 and show values of .43 and .42, while items 6, 14 and 30 have values of .05, .04 and .28 on this same factor.

All items except item 14 correlate highly with each other as shown in Table 8. The level of significance for the four items was $P < .001$ and when item 14 was deleted the Alpha coefficient increased from .52 to .58. If any other item was deleted the Alpha coefficient would decrease, as shown in Table 15.

In this case, it was considered reasonable to combine the four items (6, 22, 30, 38) into one subscale to represent the Conduct/Morality measure as Harter proposed.

TABLE 15: **Correlation matrix of items for Conduct/Morality subscale and Alpha coefficient if item deleted (n = 536)**

item	6	14	22	30	α
6					.46
14	-.10				.58
22	.30	.10			.38
30	.21	.10	.31		.41
38	.27	.03	.24	.24	.44

7. Subscale No. 7

For the Close Friendship subscale (items 7, 15, 23, 31 and 39), all five items load on factor 1; the loadings were .62, .29, .74 .70 and .71 respectively. All items correlated highly with each other as can be seen from Table 16. The level of significance for all items was $P < .001$. But the loading of item 15 on factor 1 was less than the value set in the criteria of selection. When this item was deleted, the Alpha coefficient increased from .72 to .74, while the deletion of any other item had a negative effect, as seen from Table 16.

In this case, it was considered reasonable to combine the four items (7, 23, 31 and 39) into one subscale and accept them to represent the Close Friendship subscale as proposed by Harter.

TABLE 16: **Correlation matrix of items for Close Friendship subscale and Alpha coefficient if item deleted (n = 536)**

item	7	15	23	31	α
7					.68
15	.20				.74
23	.33	.20			.64
31	.41	.20	.41		.65
39	.34	.20	.60	.50	.63

8. Subscale No. 8

For the Global Self-worth subscale (items 8, 16, 24, 32, 40), all five items load on factor 3, the loadings were .54, .55, .31, .55 and .68 respectively. All five items correlated highly with

each other as shown in Table 10 and the level of significance for all items was $P < .001$.

Cronbach's Alpha for the 5-item scale was .67, and if any item was deleted the Alpha coefficient decreased, as shown in Table 17. This subscale is clear and corresponds to that proposed by Harter.

TABLE 17: **Correlation matrix of items for Global Self-worth subscale and Alpha coefficient if item deleted (n = 536)**

item	8	16	24	32	α
8					.63
16	.30				.62
24	.20	.22			.66
32	.30	.30	.20		.60
40	.40	.35	.30	.46	.56

Conclusion

The application of the three criteria of selection (Reliability, factor analysis and inter-item correlation) on Harter subscales and its 40 items as presented in the previous section has resulted in the following changes:

(a) Three subscales, Scholastic Competence, Athletic Competence and Global Self-worth, were supported by the three types of criterion and were accepted as Harter proposed.

(b) Three subscales, Social Acceptance, Conduct/Morality and Close Friendship, were reduced to four items each and were accepted

to represent what Harter proposed.

The Physical Appearance subscale was reduced to three items and was treated as Harter proposed.

(c) One subscale, Job Competence, was rejected because it did not stand the test of the selection criteria.

The final structure of Harter subscales and the items included in these and accepted as appropriate measures are as follows:

1.	Scholastic Competence	subscale	consists	of	items (1,9,17,25,33)
2.	Social Acceptance	"	"	"	" (2,10,26,34)
3.	Athletic Competence	"	"	"	" (3,11,19,27,35)
4.	Physical Appearance	"	"	"	" (12,20,36)
5.	Conduct/Morality	"	"	"	" (6,22,30,38)
6.	Close Friendship	"	"	"	" (7,23,31,39)
7.	Global Self-worth	"	"	"	" (8,16,24,32,40)

5.4.2 Self-concept of ability-specific subjects

Brookover's questionnaire asks people to rate themselves against eight different criteria of comparison in each of four subject areas. For example, respondents are asked to compare their performance with that of "close friends" and to rank themselves in their school class.

Their rating is on a 5-point scale ranging from "among the best" to "among the poorest"; for example 4 in the subject areas of mathematics, English, social studies and science. In total, each person gives 32 responses.

Several questions arise in any attempt to use this instrument in another culture. Are the criteria of comparison appropriate? Is the rating scale sensible? Are the subject areas appropriate? When these questions have been addressed, it will be necessary to examine the patterning of answers and the reliabilities of the scales.

For Saudi Arabians, there were no worries regarding the criteria of comparison or the rating scales. These were simply translated.

Since the Junior Secondary Curriculum in Saudi Arabia has at least six compulsory subjects, Islamic Education and Arabic were added to Brookover's four, see Table 18.

The important question about patterning relates to whether responses differ by subject areas, by criterion of comparison or by both. An analysis answering this question will enable us to decide which responses can be meaningfully added to each other to yield summary scores.

TABLE 18 : **Self-concept of ability-specific subjects** (Brookover amended)

Put an "x" in the box under the heading which best answers the question. Answer for all six subjects (you will have one "x" on each line).

A. How do you rate your ability in the following school subjects compared with your close friends?

		among the poorest	below average	average	above average	among the best
A.1	Islamic Education	☐	☐	☐	☐	☐
A.2	Arabic language	☐	☐	☐	☐	☐
A.3	Maths	☐	☐	☐	☐	☐
A.4	Science	☐	☐	☐	☐	☐
A.5	English langauge	☐	☐	☐	☐	☐
A.6	Social studies	☐	☐	☐	☐	☐

B. How do you rate your ability in the following school subjects compared with those in your class at school?

B.7	Islamic Education	☐	☐	☐	☐	☐
B.8	Arabic language	☐	☐	☐	☐	☐
B.9	Maths	☐	☐	☐	☐	☐
B.10	Science	☐	☐	☐	☐	☐
B.11	English langauge	☐	☐	☐	☐	☐
B.12	Social studies	☐	☐	☐	☐	☐

C. Where do you think you would rank in your high school graduating class in the following subjects?

C.13	Islamic Education	☐	☐	☐	☐	☐
C.14	Arabic language	☐	☐	☐	☐	☐
C.15	Maths	☐	☐	☐	☐	☐
C.16	Science	☐	☐	☐	☐	☐
C.17	English langauge	☐	☐	☐	☐	☐
C.18	Social studies	☐	☐	☐	☐	☐

D. Do you think you have the ability to do college work in the following subjects?

		no	prob. not	not sure either way	yes prob.	yes definitely
D.19	Islamic Education	☐	☐	☐	☐	☐
D.20	Arabic language					
D.21	Maths					
D.22	Science					
D.23	English langauge					
D.24	Social studies					

E. Where do you think you would rank in your college class in the following subjects?

		among the poorest	below average	average	above average	among the best
E.25	Islamic Education	☐	☐	☐	☐	☐
E.26	Arabic language					
E.27	Maths					
E.28	Science					
E.29	English langauge					
E.30	Social studies					

F. How likely do you think it is that you could complete advanced work beyond college in the following subjects?

		most likely	unlikely	not sure either way	somewhat likely	very likely
F.31	Islamic Education	☐	☐	☐	☐	☐
F.32	Arabic language					
F.33	Maths					
F.34	Science					
F.35	English langauge					
F.36	Social studies					

G. Forget for a moment how others grade your work. In your own opinion, how good do you think your work is in the following subjects?

		my work is much below average	my work is below average	my work is average	my work is good	my work is excellent
G.37	Islamic Education	☐	☐	☐	☐	☐
G.38	Arabic language					
G.39	Maths					
G.40	Science					
G.41	English langauge					
G.42	Social studies					

H. What kind of grades do you think you are capable of getting in the following subjects?

		weak	pass	good	very good	excellent
H.43	Islamic Education	☐	☐	☐	☐	☐
H.44	Arabic language					
H.45	Maths					
H.46	Science					
H.47	English langauge					
H.48	Social studies					

The whole sample, comprising a total of 536 respondents from the 1st, 2nd and 3rd years of secondary school students, was used in constructing a correlation matrix, and carrying out a principal component analysis with varimax rotation.

The factor loadings are shown in Table 19. Nine factors were extracted, accounting for 78.8% of the total factor variance. It was found that:

1) <u>The items associated with Islamic Education</u>

Eight items associated with Islamic Education (items A.1, B.7, C.13, D.19, E.25, F.31, G.37 and H.43) were loaded on factor 4. The loadings were .80, .80, .73, .33, .70, .41, .80 and .80 respectively. No other item had loadings on this factor above .34. Items D.19 and F.31 also loaded on factor 7 (.80 and .75). All items had a high correlation with each other as shown in Table 20, and the level of significance of all was $P < .001$.

Cronbach's Alpha for the 8-item scale was .89, and if any item was deleted the Reliability coefficient did not increase (see Table 20).

In this case, it may be considered reasonable to combine the eight items into one subscale to represent the Islamic academic self-concept.

TABLE 19: **The loading values of items for Brookover**

	Item	Factor 1	2	3	4	5	6	7	8	9
The eight items associated	1	.12	.13	.13	.80	.20	.12	.10	-.12	-.20
with Islamic Education	7	.20	.15	.14	.80	.23	.12	.10	-.20	-.10
	13	.12	.15	.20	.73	.21	.14	.14	-.12	.26
Factor 4	19	-.02	.05	.00	.33	-.02	.00	.80	-.14	.10
	25	.11	.10	.18	.70	.15	.05	.36	.03	.36
	31	.01	.02	.04	.41	.10	-.02	.75	.13	-.02
	37	.10	.07	.15	.80	.25	.11	.14	.22	.04
	43	.10	.10	.20	.80	.25	.15	.12	.15	.02
The eight items associated	2	.20	.20	.20	.30	.80	.12	.13	-.13	-.20
with Arabic	8	.21	.22	.20	.27	.80	.10	.11	-.15	-.10
	14	.16	.21	.22	.25	.65	.17	.13	-.11	.33
Factor 5	20	.01	.11	.10	.03	.40	.04	.80	-.10	.10
	26	.20	.20	.23	.20	.60	.11	.34	.10	.40
	32	.10	.10	.20	.16	.40	.00	.72	.15	-.01
	38	.20	.23	.20	.34	.72	.13	.10	.25	.04
	44	.20	.20	.20	.26	.74	.20	.10	.10	.00

TABLE 19 continued

	Item	Factor 1	2	3	4	5	6	7	8	9
The eight items associated	3	.82	.10	.04	.15	.20	.20	-.10	-.24	-.10
with mathematics	9	.80	.11	.10	.16	.22	.21	-.03	-.28	-.03
	15	.75	.20	.10	.14	.20	.24	-.05	-.20	.28
Factor 1	21	.80	.22	-.10	-.01	-.02	.20	.30	.10	-.02
	27	.81	.21	.06	.07	.10	.22	.00	.05	.27
	33	.74	.23	-.04	-.02	.10	.16	.26	.24	.14
	39	.81	.12	.10	.20	.15	.20	-.10	.20	-.01
	45	.83	.15	.02	.11	.12	.21	-.15	.05	-.04
The eight items associated	4	.33	.22	.15	.20	.20	.71	-.04	-.21	-.13
with science	10	.30	.20	.16	.25	.22	.72	.00	-.24	-.10
	16	.40	.25	.15	.20	.20	.70	-.04	.14	.20
Factor 6	22	.41	.33	-.06	-.05	-.02	.55	.32	.22	.00
	28	.43	.33	.12	.10	.07	.64	.06	.10	.28
	34	.42	.35	-.02	-.01	.07	.51	.31	.32	-.10
	40	.42	.23	.12	.24	.20	.62	-.10	.24	.03
	46	.40	.30	.10	.20	.12	.70	-.03	.20	.04

TABLE 19 continued

	Item	Factor 1	2	3	4	5	6	7	8	9
The eight items associated	5	.20	.83	.12	.11	.15	.20	-.03	-.20	-.12
with English	11	.14	.81	.14	.20	.20	.20	-.02	.21	-.10
	17	.20	.80	.20	.15	.20	.20	-.01	-.15	.20
Factor 2.	23	.12	.80	.00	-.02	.02	.11	.26	.05	.05
	29	.20	.83	.13	.10	.10	.20	.01	.05	.24
	35	.14	.80	.05	-.02	.10	.10	.26	.20	-.10
	41	.20	.83	.11	.2	.15	.20	-.05	.12	-.01
	47	.20	.85	.10	.11	.14	.16	-.10	.10	-.01
The eight items associated	6	.05	.13	.80	.10	.12	.10	.02	.15	-.13
with social studies	12	.10	.13	.80	.20	.20	.13	.05	-.20	-.10
	18	.10	.12	.80	.20	.20	.10	.10	-.14	.20
Factor 3	24	-.12	-.01	.52	-.10	.11	.02	.63	-.10	-.01
	30	.00	.10	.74	.14	.05	.05	.26	.04	.26
	36	-.10	.03	.60	-.10	-.10	-.01	.57	.20	-.06
	42	.02	.10	.80	.22	.20	.06	.05	.22	.02
	48	.03	.10	.84	.15	.15	.10	.00	.12	-.01

TABLE 20: **Correlation matrix of items for Islamic Education and Alpha coefficient if item deleted (n = 536)**

item	1	7	13	19	25	31	37	α
1								.87
7	.76							.87
13	.64	.72						.87
19	.27	.28	.35					.84
25	.52	.58	.64	.51				.86
31	.31	.35	.34	.70	.54			.88
37	.63	.65	.65	.34	.63	.47		.86
43	.67	.68	.68	.35	.63	.44	.74	.86

2) <u>The eight items associated with Arabic</u>

Eight items associated with Arabic (items A.2, B.8, C.14, D.20, E.26, F.32, G.38 and H.44) were loaded on factor 5; the loadings being .80, .80, .65, .40, .60, .40, .72 and .74 respectively. No other item loaded on this factor more than .25. Items D.20 and F.32 loaded on factor 7 (.80 and .72 respectively). All items correlated highly with each other as seen from Table 21, and the level of significance for all was $P < .001$.

Cronbach's Alpha was .90, and if any item was deleted the Alpha coefficient did not increase as seen from Table 21.

In this case, it was considered reasonable to combine the eight items into one subscale to represent the Arabic academic self-concept.

TABLE 21: **Correlation matrix of items for Arabic and Alpha coefficient if item deleted (n = 536)**

item	2	8	14	20	26	32	38	α
2								.88
8	.82							.88
14	.67	.69						.88
20	.37	.36	.37					.90
26	.59	.60	.62	.54				.88
32	.41	.40	.40	.70	.57			.90
38	.68	.72	.64	.39	.63	.45		.88
44	.70	.72	.65	.40	.60	.43	.71	.88

3) <u>The eight items associated with mathematics</u>

Eight items associated with mathematics (items A.3, B.9, C.15, D.21, E.27, F.33, G.39 and H.45) loaded on factor 1; the loadings being .82, .80, .75, .80, .81, .74, .81 and .83 respectively. However all science items were also loaded on this factor between .30 and .43.

All items correlated highly with each other as Table 22 shows, and the level of significance for all was $P < .001$..

Cronbach's Alpha for the 8-item scale was .94, and if any item was deleted, the Alpha coefficient did not increase, see Table 22.

In this case, it was considered reasonable to combine the eight items into one subscale to represent the mathematics academic self-concept.

TABLE 22: **Correlation matrix of items for mathematics and Alpha coefficient if item deleted (n = 536)**

item	3	9	15	21	27	33	39	α
3								.92
9	.84							.92
15	.72	.75						.93
21	.55	.54	.57					.94
27	.68	.68	.74	.70				.92
33	.54	.53	.53	.75	.67			.94
39	.72	.71	.68	.61	.72	.60		.92
45	.75	.71	.71	.62	.75	.60	.78	.92

4) <u>The eight items associated with science</u>

Eight items associated with science (items A.4, B.10, C.16, D.22, E.28, F.34, G.40 and H.46) were loaded on factor 6. All items' loadings were greater than .50. No other item loaded more than .24 on this factor.

All items correlated highly with each other as seen from Table 23, and the level of significance for all items was $P < .001$.

Cronbach's Alpha for the 8-item scale was .93, and if any item was deleted, the Alpha coefficient did not increase (see Table 23).

In this case, it was reasonable to combine the eight items into one subscale to represent the science academic self-concept.

TABLE 23: **Correlation matrix of items for science and Alpha coefficient if item deleted (n = 536)**

item	4	10	16	22	28	34	40	α
4								.92
10	.81							.92
16	.73	.75						.91
22	.46	.44	.51					.93
28	.63	.66	.73	.65				.91
34	.48	.47	.52	.75	.65			.93
40	.66	.67	.71	.56	.71	.59		.92
46	.67	.67	.72	.61	.72	.61	.76	.92

5) <u>The eight items associated with English</u>

Eight items associated with English (items A.5, B.11, C.17, D.23, E.29, F.35, G.41 and H.47) were loaded on factor 2; the loadings being .83, .82, .80, .80, .83, .80, .80 and .85 respectively. No other item had loadings above .35 on this factor.

All items correlated highly with each other, as seen from Table 24, and the level of significance for all was $P < .001$.

Cronbach's Alpha for the 8-item scale was .95, and if any item was deleted, the Alpha coefficient did not increase (see Table 24).

In this case, it was reasonable to combine the eight items into one subscale to represent the English academic self-concept.

TABLE 24: **Correlation matrix of items for English and Alpha coefficient if item deleted (n = 536)**

item	5	11	17	23	35	39	41	α
5								.94
11	.87							.94
17	.79	.82						.94
23	.59	.57	.61					.95
29	.71	.72	.79	.72				.94
35	.59	.59	.61	.74	.69			.95
41	.77	.77	.77	.64	.76	.67		.94
47	.79	.77	.78	.64	.77	.65	.83	.94

6) <u>The eight items associated with social studies</u>

Eight items were associated with social studies (items A.6, B.12, C.18, D.24, E.30, F.36, G.42 and H.48). They were loaded on factor 3, the loadings being .80, .80, .80, .52, .74, .60, .80 and .84 respectively. No other item had a loading of more than .22 on this factor. Items D.24 and F.36 also loaded on factor 7 (.63 and .57 respectively). All items correlated highly with each other, as seen from Table 25, and the level of significance for all was $P < .001$.

Cronbach's Alpha for the 8-item scale was .90, and if any item was deleted, the Alpha coefficient did not increase (see Table 25).

Table 25: **Correlation matrix of items for social studies and Alpha coefficient if item deleted (n = 536)**

item	6	12	18	24	30	36	42	α
6								.89
12	.80							.88
18	.70	.74						.88
24	.33	.32	.37					.90
30	.54	.60	.63	.54				.88
36	.36	.39	.40	.72	.56			.90
42	.59	.62	.65	.39	.60	.48		.88
48	.66	.70	.70	.39	.59	.46	.74	.80

Factors 7, 8, 9

From Table 19, we can see that there are few significant loadings on factors 7,8 and 9. For example, on factor 7, there are 14 significant loadings but we cannot find a group of items for which satisfactory interpretation for this factor can be given. In other words, items come from many subscales and we did not find any clear homogeneous group. Also, these loadings represent only three questions (D, E and G) for six school subjects (subscales). Similarly for factor 8, we found only two significant loadings representing two subscales. Also factor 9 has four significant loadings representing two subscales. Child (1970, pp. 43-45) describes two popular methods used as criteria for the number of factors to be extracted. The first technique is known as Kaiser's criterion. Here the researcher retains for interpretation only

those factors which have latent roots greater than one. The second criterion is Cattell's scree test and it is very important in the determination of the number of factors to be retained after extraction. For this scree test, a graph is plotted of latent roots against the factor number (i.e. in order of extraction) and the shape of the resulting curve is employed to judge the cut-off point. Figure 5 gives a plot of the 9 factors extracted in our study. Starting at the highest latent root, the plot is curved at first and then develops into a linear relationship about point A. The point at which the curve straightens out is taken to indicate the maximum number to be extracted. As we can see the first 6 factors would qualify. So, according to these criteria and what was mentioned above about the minor factors, it was decided not to include factors 7, 8 and 9 in the analysis.

Conclusion

The results of the factor analysis and the loading values presented in this section clearly show that this strong pattern relates to the subject-area and not the different criteria of comparison. This conclusion is supported by the selection criteria (loading values, correlations and reliability coefficients).

Hence summary scores will be based on subject area; each person's self-assessed judgement being based on the summed ratings across the eight bases of comparison.

Therefore each of the six subject areas, as well as the total score of the six subjects, will be used as appropriate measures

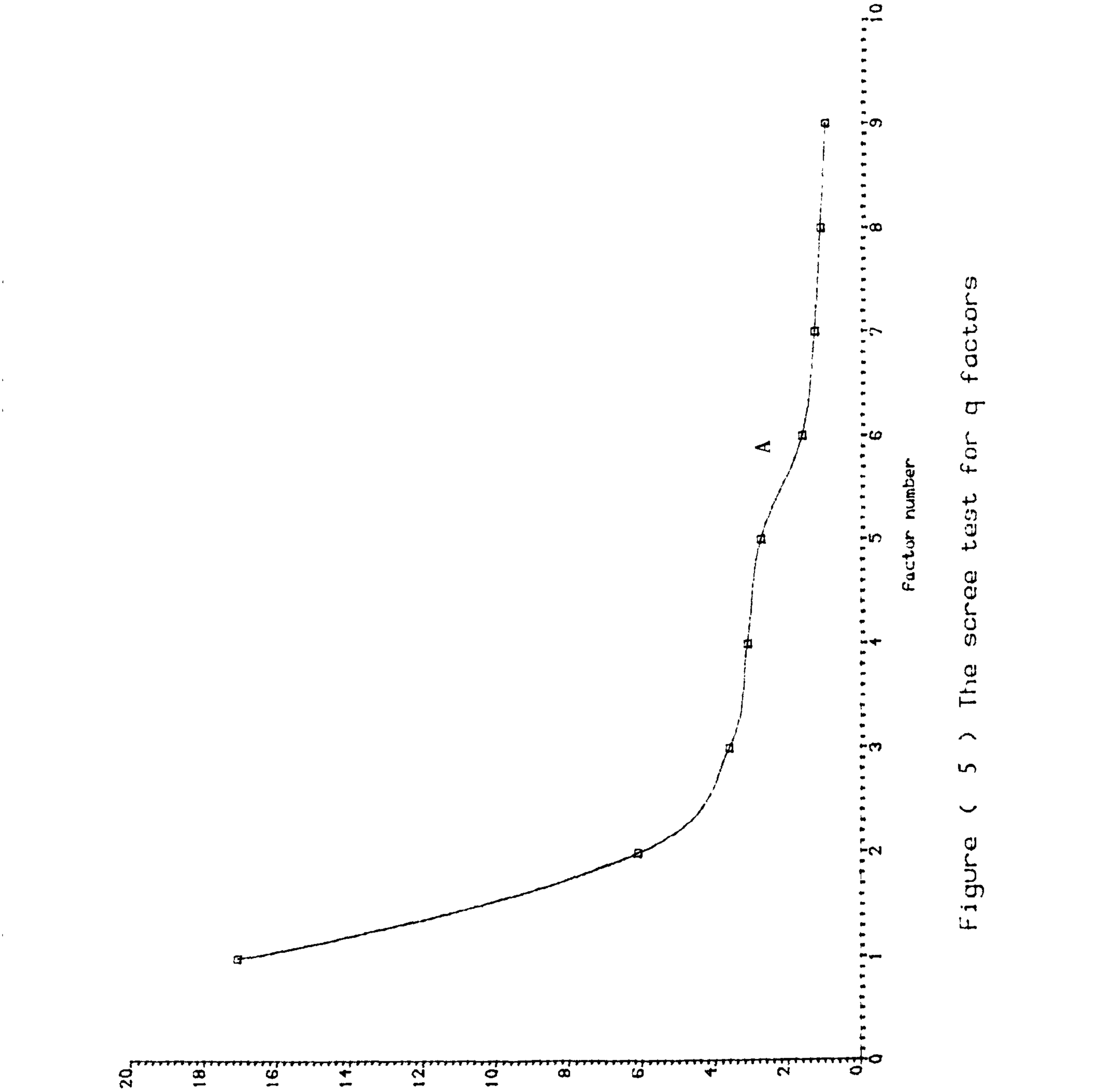


Figure (5) The scree test for q factors

to represent the academic self-assessment at both levels: the specific subject area (Islamic, Arabic, maths, science, English and social studies), and the general, using the total score of these six subjects.

The Alpha coefficient for the total score was .96.

5.4.3 The New York State self-esteem scale

The "Rosenberg self-esteem" scale consists of 10 items. Respondents are asked to answer on a four-point scale ranging from strongly agree to strongly disagree, where 'strongly agree' is scored as 4 and 'strongly disagree' is scored as 1 when in the positive; and the scores are reversed when the item is in the negative, as shown in Table 26.

By constructing a correlation matrix between each of the 10 items, it can be seen that all the items correlate positively with each other, except items 7 and 8, see Table 27. When items 7 and 8 were deleted because they showed negative correlation with the other items on the scale, the Alpha coefficient increased from .61 to .66. Therefore only items 1, 2, 3, 4, 5, 6, 9 and 10 were used to constitute the self-esteem scale for the Saudi Arabian sample, and were included and treated as one score in the analysis.

Table 26: **New York State Self-Esteem Scale (Rosenberg Self-esteem)**

(1)	On the whole, I am satisfied with myself	SA	A	D*	SD*
(2)	At times I think I am no good at all	SA*	A*	D	SD
(3)	I feel that I have a number of good qualities	SA	A	D*	SD*
(4)	I am able to do things as well as most other people	SA	A	D*	SD*
(5)	I feel I do not have much to be proud of	SA*	A*	D	SD
(6)	I certainly feel useless at times	SA*	A*	D	SD
(7)	I feel that I'm a person of worth, at least on an equal plane with others	SA	A	D*	SD*
(8)	I wish I could have more respect for myself	SA*	A*	D	SD
(9)	All in all, I am inclined to feel that I am a failure	SA*	A*	D	SD
(10)	I take a positive attitude toward myself	SA	A	D*	SD*

* asterisks represent low self-esteem responses

TABLE 27: **Correlation matrix of items for self-esteem and Alpha coefficient if item deleted (n = 536)**

item	1	2	3	4	5	6	7	8	9	α
1										.55
2	.17									.58
3	.15	.09								.58
4	.18	.09	.34							.58
5	.10	.10	.10	.10						.59
6	.36	.29	.16	.19	.26					.51
7	.11	.10	.06	.11	-.08	.08				.62
8	.01	.04	-.01	.04	.06	.11	-.17			.64
9	.29	.20	.20	.19	.22	.43	.08	.02		.53
10	.29	.09	.14	.17	.10	.20	.16	-.10	.21	.58

5.4.4 Attitude toward school

This scale, "attitude towards school", was derived from Morton-Williams and Finch (1968) and from Barker Lunn (1970). The scale consists of nine items. Respondents are asked to answer on a three-point scale, yes, no, or don't know. Table 28 shows the contents of the items in this scale and the scores given to each response.

TABLE 28: **Attitude towards school**

Items	Yes	No	Don't know Can't say
1. Do you look forward to going to school most days?	2	0	1
2. Do you get fed up with teachers telling you what you can and can't do?	0	2	1
3. Do your teachers take an interest in teaching you?	2	0	1
4. Are there many interesting things to do in school?	2	0	1
5. Do some of your teachers take an interest in you as a person?	2	0	1
6. Do you think most of what you are learning will be useful to you?	2	0	1
7. Do your teachers forget you are growing up and treat you like children?	0	2	1
8. Are you bored much of the time at school?	0	2	1
9. Do you think work will be more enjoyable than school?	0	2	1

A correlation matrix of the nine items indicates that all items correlate positively with each other, except item 9 as shown in Table 29.

When item 9 was deleted, because it showed a negative correlation with the other items in the scale, the Alpha coefficient increased from .62 to .64.

Therefore item 9 was deleted and only items 1 to 8 were retained to represent the attitude towards school, and the total score of the scale was used in the analysis.

TABLE 29: **Correlation matrix of items for attitude towards school and Alpha coefficient if item deleted (n = 536)**

item	1	2	3	4	5	6	7	8	α
1									.57
2	.19								.58
3	.20	.22							.56
4	.24	.20	.29						.57
5	.09	.10	.26	.16					.60
6	.25	.12	.18	.15	.14				.59
7	.09	.18	.19	.15	.12	.10			.60
8	.32	.29	.21	.18	.13	.18	.18		.56
9	.10	.003	-.002	.10	-.02	.05	-.001	.01	.64

5.4.5 School work scale

The school work scale consisted of 25 items divided into five subscales, each subscale containing five items. This measure was devised by Robinson and Tayler (1986).

Respondents are asked to answer using a 5-point scale, ranging from "strongly agree" to "strongly disagree" where strongly agree is scored as 5 and strongly disagree is scored as 1, see Table 30.

All items are positive)except items 7 and 8.

The structure of the scale and the items which constitute each of the subscales are as follows:

1.	Achievement motivation	Items no. 1,6,11,16,21
2.	Beliefs about control over learning	2,7,12,17,22
3.	Study habits	3,8,13,18,23
4.	Beliefs about consequence of studying	4,8,14,19,24
5.	Constraints to learning	5,10,15,,20,25

When the schoolwork measure, which is basically composed of 25 items divided into five subscales (as mentioned above), was subjected to a factor analysis, nine factors emerged accounting for 55.2% of the total variance. The loading of the items on these factors did not support the initial classification of this measure into the proposed 5 subscales. Items in each subscale loaded on more than one factor and items from different subscales loaded on the same factor (see Table 31).

TABLE 30: **School work**

	Items	Please tick what is true for you				
		Strongly agree	Agree	Neither	Disagree	Strongly disagree
1.	I get a lot of satisfaction when I get good marks	5	4	3	2	1
2.	It is possible to learn how to learn	5				
3.	Sometimes I have to read things several times before I understand them	5				
4.	If I did more homework I would do better at school	5				
5.	I could learn more if we had better books and materials	5				
6.	I try to get good marks, even in work that does not interest me	5				
7.	Learning is just something that happens or not	1	2	3	4	5
8.	I only do the work that is set by the teachers	1	2	3	4	5
9.	One way to aid learning is to do the work several times over	5				
10.	I am just not clever enough to learn more than I do now	5				
11.	I try my hardest in all my school work	5				
12.	It is possible to attend, even in boring lessons	5				
13.	I do extra work at home and do better at school as a result of this	5				
14.	How much you learn generally depends on how much time and effort you put into learning	5				
15.	I could learn more if I received more support from my friends	5				
16.	I set myself high standards in all my school work	5				
17.	Boring subjects can become interesting once you begin to know something about them	5				

TABLE 30 continued

Items	Please tick what is true for you Strongly agree	Agree	Neither	Disagree	Strongly disagree
18. I find that the more time I put in, the easier learning becomes	5	4	3	2	1
19. You need to test yourself to find out how much you are learning	5				
20. I could learn more if I had better teachers	5				
21. I really want to do my best in all my school work	5				
22. Pupils could learn ways of improving their remembering	5				
23. When I test myself I find I learn faster	5				
24. Pupils would do better at school if they studied extra things not set by their teacher	5				
25. Pupils who are helped by their parents get better marks	5				

TABLE 31: **Rotated factor matrix of school work items: loading values for school work subscale**

	Item	Factor 1	2	3	4	5	6	7	8	9
Achievement motivation	1	.06	-.04	.72	.01	.01	.12	.05	-.10	-.10
	6	.22	.03	.57	.11	-.04	-.10	.38	-.01	.02
	11	.76	.10	.20	.11	-.001	-.07	.08	-.04	.10
	16	.60	-.17	.22	.21	.01	.31	.00	-.02	-.05
	21	.44	.28	.13	.08	.20	-.31	.13	.26	-.06
Beliefs about control over learning	2	.41	.16	.16	.02	-.06	.53	.16	.04	-.04
	7	.03	.00	-.07	-.05	-.02	.13	.02	-.05	.78
	12	.28	.58	.14	-.06	-.04	-.22	.23	-.01	.25
	17	.05	.58	.25	-.01	.24	-.07	-.28	.13	-.07
	22	.18	.00	.07	.69	.00	-.01	.03	.02	-.12

TABLE 31 continued

	Item	Factor 1	2	3	4	5	6	7	8	9
	3	.60	.08	-.11	-.05	.20	-.11	.00	.00	-.14
	8	-.30	-.03	-.25	.06	.02	.37	.27	-.41	.23
Study habits	13	.67	.16	.00	.14	.03	.10	.09	.07	.04
	18	.06	.61	-.07	.26	.02	.12	.08	-.03	-.14
	23	.27	.37	-.13	.47	-.15	.15	.04	.22	-.17
	4	.11	.16	.00	-.08	.10	.12	.50	-.14	-.44
	9	.23	.35	.07	.02	.40	-.10	.30	-.16	.10
Beliefs about consequences of studying	14	.03	.2	.56	.14	.10	.10	-.09	.21	.06
	19	-.07	.10	.22	.66	.17	-.15	.09	.08	.13
	24	.18	.12	-.08	.42	.31	.11	-.01	-.16	.13
	5	.10	-.01	.12	.14	.06	.04	.74	.28	.06
	10	.05	.00	-.08	.05	.04	-.77	.04	-.02	-.10
Constraints to learning	15	.10	.09	-.05	.12	.66	-.16	.05	-.01	-.05
	20	.01	.03	-.29	.06	.11	.05	.15	.85	.00
	25	.01	-.03	.09	.02	.69	.09	.00	.19	-.03

1. Achievement motivation

Of the items representing achievement motivation (namely 1, 6, 11, 16, 21), items 11, 16 and 21 loaded on factor 1, their values being .76, .60 and .44 respectively. Items 1 and 6 had low loadings on this factor (.06 and .22), while they also loaded on factor 2 (.72 and .57) more substantially.

The inter-item correlations for the five items were significant including those for item 1 as indicated by the correlation matrix (see Table 32).

However, when item 1 was deleted, the Alpha coefficient changed from .60 to .61 (see Table 32). To be cautious, item 1 was dropped and it was considered reasonable to combine items 6, 11, 16 and 21 into one subscale, as Robinson and Tayler proposed. The level of the significance of the correlations for these items was $P < .001$.

Table 32: **The correlation matrix of items for achievement motivation and Alpha coefficient if item deleted (n = 536)**

item	1	6	11	16	α
1					.61
6	.23				.55
11	.12	.30			.47
16	.18	.21	.37		.54
21	.07	.22	.37	.21	.55

2. Beliefs about control over learning subscale

Items 2, 7, 12, 17 and 22 loaded on factors 6, 9, 2 and 4, the loading being .53, .78, .58, .58 and .69 respectively, as shown in Table 33.

However, the inter-item correlation between each item measure was less than .15 (see Table 32) and Cronbach's Alpha for the 5-item scale was only 0.37.

In this case, there were no grounds for treating these items as a group, and it was not used in the results.

Table 33: **The correlation matrix of items for beliefs about control over learning and Alpha coefficient if item deleted (n = 536)**

item	2	7	12	17	α
2					.81
7	-.01				.37
12	.16	.06			.05
17	.08	-.04	.22		.16
22	.09	-.04	.10	.08	.21

3. Study habits subscale

Items 3, 8, 13, 18 and 23 loaded on factors 1, 8, 2 and 4, the loadings being .60, .41, .67, .61 and .47 respectively, as shown in Table 34.

However, the inter-item correlation between each item measure was less than .15, see Table 33, and Cronbach's Alpha for the 5-item scale was low at .33.

In this case, there were no grounds for treating these items as a group, and it was not used in the results.

Table 34: **The correlation matrix of items for study habits and Alpha coefficient if item deleted (n = 536)**

item	3	8	13	18	α
3					.26
8	-.15				.51
13	.27	-.10			.17
18	.16	-.02	.17		.18
23	.13	-.07	.29	.25	.20

4. Beliefs about consequences of studying subscale

Items 4, 9, 14, 19 and 24 loaded on factors 7, 5, 3 and 4, the loadings being .50, .40, .56, .66 and .42 respectively, as shown in Table 35.

The inter-item correlation between each item measure was less than .15, see Table 35, and Cronbach's Alpha for the 5-item scale was 0.37.

In this case, too, there were no grounds for treating these items as a homogeneous group, and the subscale was not considered further.

Table 35: **The correlation matrix of items for beliefs about consequences of study and Alpha coefficient if item deleted (n = 536)**

item	4	9	14	19	α
4					.39
9	.11				.28
14	.05	.11			.32
19	.02	.16	.21		.29
24	.08	.14	.09	.16	.30

5. Constraints to learning

Items 5, 10, 15, 20 and 25 loaded on factors 7, 6, 5 and 8, the loading being .74, .77, .66, .85 and .69 respectively, see Table 36.

The inter-item correlation between each item measure was, however, less than .15, see Table 36, and Cronbach's Alpha for the 5-item scale was 0.34.

In this case, as for 2 to 4 above, there were no grounds for treating these items as a group and the subscale was eliminated from further consideration.

Table 36: **The correlation matrix of items for constraints to learning and Alpha coefficient if item deleted (n = 536)**

item	5	10	15	20	
5					.28
10	.01				.37
15	.10	.16			.23
20	.21	.01	.09		.27
25	.09	.00	.17	.12	.29

Conclusion

As a result of the application of the criteria for selection (reliability, factor analysis and inter-item correlation) on the Robinson and Tayler subscales and its 25 items as presented in the previous section, it was found that:

(a) One subscale (Achievement motivation) of the initial five subscales in the measure emerged in this analysis with four items: 6, 11, 16 and 21.

(b) Other subscales were rejected because they did not stand the tests of the selection criteria. Quite clearly, the validity of the subscales is called into question by results such as these.

5.4.6 Attitude to school subjects

This scale was devised by Morton-Williams and Finch (1968), to measure students' attitudes towards school subjects by asking the respondents to state which subjects they found interesting and useful.

Islamic Education, Arabic language, mathematics, science, English language and social studies were chosen for this scale because they represented the compulsory school subjects in Saudi Arabia.

A three-point scale was used for both questions - interesting and useful. Respondents were asked to state whether each subject is interesting, boring or neither, and whether it is useful, useless or neither.

Responses were scored 3 for interesting and useful, 2 for neither, and 1 for boring and useless, as shown in Table 37.

Table 37: **Attitude to school subjects**

	Intrinsic			**Extrinsic**		
	Interesting			Useful		
	Interesting	Neither	Boring	Useful	Neither	Useless
Islamic Education	☐	☐	☐	☐	☐	☐
Arabic						
Maths						
Science						
English						
Social studies						

Despite the fact that these two measures had not been verified by any of the criteria of selection, they were included as appropriate measures for this study having face validity.

Each is composed of one item and therefore it was impossible for technical reasons to calculate their reliability coefficient or subject them to the criteria of selection.

5.4.7 Summary

By studying the results of the application of the selection criteria to all the measures used in this study and presented in this chapter, the following measures have been chosen to test the theoretical model and answer the research questions. They are:

1. Scholastic competence subscale from Harter (1985)
2. Social acceptance subscale from Harter (1985)
3. Athletic competence subscale from Harter (1985)
4. Physical appearance subscale from Harter (1985)
5. Conduct/Morality subscale from Harter (1985)
6. Close friendship subscale from Harter (1985)
7. Global self-worth subscale from Harter (1985)
8. Self-concept of ability in specific subjects as a total and as individual subject scores (Brookover, 1965).
9. Self-esteem scale (Rosenberg, 1965).
10. Achievement motivation subscale (Robinson and Tayler, 1986).
11. Attitude towards school scale (Morton-Williams and Finch, 1968, and Barker Lunn, 1970).
12. Interesting scale (Morton-Williams and Finch, 1968).
13. Usefulness scale (Morton-Williams and Finch, 1968).

The independent variables which were chosen include measures of self-concept, self-esteem, attitude and motivation. 'Global self-concept' can be sub-divided into the following: self-concept of ability in all subjects, self-concept of ability in specific subjects (Brookover), scholastic competence, athletic competence,

physical appearance, conduct/morality, close friendship and social acceptance (Harter).

In a similar way self-esteem can be sub-divided into the following: self-esteem (Rosenberg) and self-worth (Harter).

Finally, attitude and motivation can be sub-divided into the following: attitude towards school, degree of interest, perceived usefulness of school subjects and achievement motivation. These have been selected to represent the independent variables of self-concept, self-esteem, motivation and attitude, and will be used to ascertain empirically their relationship to the dependent variable 'academic achievement' investigated in the theoretical model proposed by the present study. Table 38 shows the measures which have been chosen, Alpha reliability, mean, standard deviation and abbreviations to be used throughout the remainder of the study.

5.5 Statistical Analyses

The following are the statistical methods which will be employed to examine the relationships:

1. Pearson product moment correlation: to find the relationship between the variables.
2. Regression (stepwise) analysis: to find the best set of independent predictors of achievement.
3. Partial correlation analysis: to examine the relationship between the variables when the effect of one or more variables on the relationship between the two variables is controlled to test the proposed model. This will be supported by elementary path analysis where appropriate.

Given that the methods of analyses to be employed in the study were essentially based on correlations, it was first necessary to examine the distributions of the variables to identify any serious departures from normality which might require the choice of a suitable transformation.

Initial data analysis of those variables which eventually took part in the full analyses (Table 38) was by inspection of the histogram for each variable together with an examination of its mean, standard deviation and range, followed by the construction of scatter diagrams in which each variable was plotted against each other. Results, briefly, were as follows:

1) The histograms failed to reveal peculiarities in the distributions of the key variables; there were few outliers and little evidence of multi-modal distributions. In all cases means were substantially greater than standard deviations all of which, in turn, were between one-third and one-fifth of the range. These results were taken to indicate little evidence of serious departure from normality and no obvious transformation procedure was suggested (for example, to cope with seriously skewed distributions). Although some distributions could, perhaps, have been marginally improved by transformation (for example, motivation, conduct/morality), a set of variables only some of which had been transformed, but by varying methods, would have made comparison of the results with those of the studies reported in Chapter 3 rather difficult since raw score distributions appear to have been used by all previous authors.

The decision was made, therefore, to retain the original raw distributions at least for the principal analyses.

2) Bivariate scatter diagrams suggested the presence of low correlations between many of the pairs of variables used. However, there was a marked absence of other (e.g. quadratic or cubic) relationships. The general conclusion reached, therefore, was that correlational methods were appropriate for the major analyses with the main expectation of low but significant values for many of the pairs of variables.

Table 38: **Self-concept, self-esteem, attitude and motivation variables**

	The Variables	Author	Alpha	Mean	S.D.	Abbr.
Self-concept	1 Scholastic competence	Harter	.65	14.8	2.9	Sch
	2 Social acceptance	Harter	.56	11.8	2.4	Soc
	3 Athletic competence	Harter	.79	14.0	3.5	Ath
	4 Physical appearance	Harter	.82	8.6	2.9	Phy
	5 Conduct/morality	Harter	.58	11.8	2.5	Con
	6 Close friendship	Harter	.74	11.8	3.2	Frn
	7 Self-concept of ability in specific subjects as total	Brookover	.46	17.7	3.5	SCAA
	8 Islamic academic self-concept	Brookover	.89	20.5	3.4	ISCAA
	9 Arabic academic self-concept	Brookover	.90	18.9	4.1	ASCAA
	10 Maths academic self-concept	Brookover	.94	26.7	7.8	MSCAA
	11 Science academic self-concept	Brookover	.93	27.7	7.3	ScSCAA
	12 English academic self-concept	Brookover	.95	26.6	8.5	ESCAA
	13 Social studies academic self-concept	Brookover	.90	29.9	6.5	SSCAA
Self-esteem	14 Global self-worth	Harter	.67	14.3	3.2	Wor
	15 Self-esteem	Rosenberg	.65	15.1	3.6	Est
Attitude & Motivation	16 Attitude towards school	Morton-Williams	.64	8.9	3.3	Att
	17 Interesting	Morton-Williams				In
	18 Usefulness	Morton-Williams				Us
	19 Achievement motivation	Robinson	.61	15.7	2.6	Mot

CHAPTER SIX

RESULTS OF THE STUDY

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RESULTS OF THE STUDY

Introduction

In this chapter the researcher will introduce the results of the study in the order in which the empirical questions were raised. The results are presented in three sections as follows:

Section One: the relationship between the dependent and independent (explanatory) variables. These appear in questions 1 - 7 of the empirical questions.

Section Two: an analysis of the psychological variables that could be the 'best' predictors for academic achievement, by using the stepwise regression analysis.

Section Three: an analysis of the relationship between the variables when the effect of others is controlled in order to test the model.

The empirical questions are as follows:

(1) what is the relationship between the self-concept variables and academic achievement?

(2) what is the relationship between the self-esteem variables and academic achievement?

(3) what is the relationship between the self-concept of ability in specific subjects and academic achievement (pre- and post-) in specific school subjects?

(4) what is the relationship between self-concept variables and self-esteem variables?

(5) what is the relationship between self-concept variables and attitude to school, attitude to school subjects (interesting, usefulness) and achievement motivation?

(6) what is the relationship between self-esteem variables and attitude to school, attitude to school subjects (interesting, usefulness) and achievement motivation?

(7) what is the relationship between academic achievement and attitude to school, attitude to school subjects (interesting, usefulness) and achievement motivation?

(8) what psychological variables are the best independent predictors of achievement and have significant correlation with achievement? In other words, what set of variables maximises the prediction of the achievement variance?

6.1 Section One (Correlations)

This section begins with the analysis of the responses to questions 1-7. The following results have been obtained. Firstly, the responses to question 1 are considered in Table 39 which shows the correlation coefficients between the self-concept variables and academic achievement.

From Table 39 we can see the following results:

1. There is a significant relationship between self-concept of ability in specific subjects (Brookover) and academic achievement ($r = .40$, $p = .000$).
2. There is a significant relationship between scholastic competence (Harter) and academic achievement ($r = .35$, $p = .000$).
3. There is no significant relationship between social acceptance and academic achievement but the correlation coefficient is negative.

4. There is no significant relationship between athletic competence and academic achievement but the correlation coefficient is negative.
5. There is no significant relationship between physical appearance and academic achievement.
6. There is a significant relationship between conduct/morality and academic achievement ($r = .14$, $p = .001$).
7. There is no significant relationship between close friendship variable and academic achievement and the correlation coefficient is negative.

Table 39: **Pearson correlations between scores on the self-concept variables and academic achievement (n = 536)**

Self-concept variables	r	level of significance p	% variance "explained"
1. Self-concept of ability - specific subjects as total (Brookover)	.40	.000	16.00
2. Scholastic competence (Harter)	.35	.000	12.25
3. Social acceptance (Harter)	-.02	.62	0.04
4. Athletic competence (Harter)	-.01	.87	0.01
5. Physical appearance (Harter)	.04	.36	0.16
6. Conduct/morality (Harter)	.14	.001	1.96
7. Close friendship (Harter)	-.04	.36	0.16

In general, some variables of self-concept, for example self-concept of ability in specific subjects, scholastic competence and conduct/morality have significant correlation with academic achievement. However, variables such as social acceptance, athletic competence, physical appearance and close friendship have no significant relationship with academic achievement. Only two of the variables singly "explain" more than 10% of the criterion variance. Even the best predictor (Brookover) leaves over 80% of the variance "unexplained".

Concerning the second empirical question of the study about the relationship between self-esteem variables and academic achievement, the following results (Table 40) are obtained. It shows the correlation coefficients for the relationships between the variables under consideration. From this table it is clear that both global self-worth and self-esteem measures significantly correlate with academic achievement.

Global self-worth (Harter) correlates significantly with achievement ($r = .11$, $p = .01$), also self-esteem (Rosenberg) correlates significantly with academic achievement ($r = .16$, $p = .000$).

Therefore the responses for the second question of the study indicate that there is a significant relationship between self-esteem variables and academic achievement. Once again, however, the variance interpretation of the correlation shows even significant predictors to be weak. Self-esteem (Rosenberg), for example, fails to explain over 90% of criterion variance assuming a linear relationship with achievement.

Table 40: **Pearson correlation between scores on the self-esteem variables and academic achievement (n = 536)**

Self-esteem variables	r	level of significance p	% variance "explained"
Global self-worth (Harter)	.11	.01	1.21
Self-esteem (Rosenberg)	.16	.000	2.56

The third question of the study is concerned with the relationship between self-concept variables of ability in specific subjects and academic achievement in those subjects. The following table (Table 41) shows the correlation coefficients between self-concept of ability in specific subjects and academic achievement (pre- and post-) in those subjects.

From Table 41 we can see that there is a significant correlation coefficient between self-concept of ability in specific subjects and the achievement in that subject in both pre- and post-achievement. For example, there is a significant correlation between self-concept in Arabic subjects and the pre-achievement ($r = .39$, $p = .000$), and also with post-achievement ($r = .50$, $p = .000$). The same results apply to all the other subjects under study. The most important thing which appears worthy of comment from the table is the highest correlation coefficient between self-concept in a specific subject and academic achievement in this subject (pre- and post-). For example, the correlation coefficient between self-concept in Islamic and achievement (pre- and post-) in this subject was .40 and .54

Table 41: **The relationship between self-concept of ability in specific subjects and academic achievement (present, previous) in specific subjects (n = 536)**

Self-concept of ability in specific subjects	Adademic achievement in specific subjects											
	previous						present					
	Islamic	Arabic	Maths	Science	English	Soc.St.	Islamic	Arabic	Maths n=427	Science n=427	English	Soc.St. n=307
Islamic	.40 p=.000	.31 p=.000	.21 p=.000	.29 p=.000	.22 p=.000	.32 p=.000	.54 p=.000	.43 p=.000	.31 p=.000	.41 p=.000	.37 p=.000	.43 p=.000
Arabic	.36 p=.000	.39 p=.000	.24 p=.000	.31 p=.000	.27 p=.000	.31 p=.000	.41 p=.000	.50 p=.000	.34 p=.000	.42 p=.000	.41 p=.000	.43 p=.000
Maths	.29 p=.000	.29 p=.000	.45 p=.000	.34 p=.000	.32 p=.000	.29 p=.000	.18 p=.000	.22 p=.000	.47 p=.000	.35 p=.000	.25 p=.000	.16 p=.004
Science	.31 p=.000	.32 p=.000	.35 p=.000	.40 p=.000	.36 p=.000	.28 p=.000	.21 p=.000	.25 p=.000	.32 p=.000	.42 p=.000	.22 p=.000	.24 p=.000
English	.29 p=.000	.31 p=.000	.18 p=.000	.28 p=.000	.38 p=.000	.21 p=.000	.13 p=.002	.23 p=.000	.14 p=.002	.25 p=.000	.48 p=.000	.22 p=.000
Social Studies	.09 p=.036	.08 p=.059	.02 p=.65	.02 p=.64	.02 p=.61	.13 p=.002	.12 p=.004	.18 p=.000	-.04 p=.45	.10 p=.035	.14 p=.001	.36 p=.000

respectively, which represents the highest correlation coefficient in both cases of achievement. These correlations are, of course, not surprising since previous knowledge of subject matter is known to be a strong influence on the capacity to acquire greater knowledge and pre-/post- correlations are invariably high (Ausubel et al., 1978).

The results relevant to the fourth question which is concerned with the relationship between self-esteem variables and self-concept variables are presented in Table 42. They indicate the following:

1. There is a significant correlation coefficient between self-esteem as measured by Rosenberg and each of the self-concept variables (all the correlation coefficients are significant (.33, .39, .20, .16, .22, .48 and .25; p = .000) - self-concepts of ability, scholastic competence, social appearance, athletic competence, physical appearance, conduct/morality and close friendship respectively).
2. There is also a significant correlation coefficient between self-esteem as measured by global self-worth (Harter) and each of the self-concept variables. Consequently, all of the correlation coefficients were positive and statistically significant and the highest correlation coefficient is between conduct/morality and self-esteem variables.

In general, the overall results show that the responses to the question about the relationship between self-concept variables and self-esteem variables indicate a positive and significant relationship between the two variables. The greater importance of Com, Sch and SCAA to self-esteem is also of interest.

Table 42: **The relationship between self-concept variables and self-esteem variables**

Self-esteem variables	SCAA	Sch	Soc	Ath	Phy	Com	Frn
Esteem	.33 p=000	.39 p=000	.20 p=000	.16 p=000	.22 p=000	.48 p=000	.25 p=000
Wor	.28 p=000	.37 p=000	.38 p=000	.31 p=000	.40 p=000	.44 p=000	.34 p=000

Table 43 shows the results pertaining to the fifth question about the relation between self-concept variables and attitude to school (perceived usefulness, interest and achievement motivation). From this table, which shows the correlation coefficient between attitude, motivation variables and self-concept variables, the results can be summarised as follows:

1. There is a significant correlation coefficient between the attitude to school variable and each of the self-concept variables (ability in specific subjects, scholastic competence, conduct/ morality, physical appearance, close friendship, athletic competence and social acceptance) with the following coefficients respectively: .38, .32, .24, .16, .18, .11 and .10, all $p < 0.02$.
2. There is a significant correlation coefficient between the perceived usefulness of school subjects variable and the self-concept variable (for SCAA, Sch, Com, Ath and Phy, the coefficients were respectively .47, .32, .25, .12 and .09, all $p < .05$). But there is no significant correlation coefficient with close friendship; the correlation was .06.

Table 43: **The relationship between self-concept variables and attitude and motivation variables**

	SCAA	Sch	Com	Phy	Frn	Ath	Soc
1. Attitude to school	.38 p=.000	.32 p=.000	.29 p=.000	.16 p=.000	.18 p=.000	.11 p=.009	.10 p=.02
2. Perceived usefulness	.47 p=.000	.32 p=.000	.25 p=.000	.09 p=.045	.06 p=.19	.12 p=.007	.10 p=.02
3. Interest	.50 p=.000	.33 p=.000	.26 p=.000	.14 p=.001	.08 p=.06	.16 p=.000	.10 p=.02
4. Achievement motivation	.41 p=.000	.30 p=.000	.29 p=.000	.12 p=.004	.08 p=.06	.08 p=.05	.05 p=.27

3. There is a significant correlation coefficient between the interest variable and all the self-concept variables, except the close friendship variable (see Table 43), for which the correlation coefficient is not significant.
4. Concerning achievement motivation, there is a significant correlation coefficient with SCAA, Sch, Com and Phy (the correlation coefficients being .41, .30, .29 and .12, all $p < .05$). On the other hand, there is a non-significant correlation coefficient between achievement motivation and Frn, Ath and Soc variables.

In general, the overall results suggest that there is a positive relationship between attitude and motivation variables with the self-concept variables. Therefore the responses for the fifth question about the relationship among these variables are positive and significant, as has been indicated by the results.

The results relevant to the sixth question, which is concerned with the relationship between self-esteem variables and attitude and motivation variables, are presented in Table 44. They indicate the following:

1. There is a significant correlation coefficient between self-esteem as measured by Rosenberg and each of the attitude and motivation variables. All the correlation coefficients are significant (.29, .24, .25 and .33, p = .000, attitude to school, interest, perceived usefulness and achievement motivation respectively).
2. There is also a significant correlation coefficient between self-esteem as measured by global self-worth (Harter) and each of the attitude and motivation variables. All the correlation coefficients are significant (.32,.21, .14 and .23, p < .001, attitude to school, interest, perceived usefulness and achievement motivation respectively).

In general, the overall results suggest that there is a positive relationship between self-esteem variables and attitude and motivation variables at the level of significance < .001. Thus positive evaluations of self are accompanied by positive attitudes and enhanced motivation in school. Together they constitute a general level of activation to school stimuli and thus a general disposition to learning.

Table 44: **The relationship between self-esteem variables and attitude and motivation variables**

Variables	Attitude to school	Interest	Perceived usefulness	Achievement motivation
Self-esteem (Rosenberg)	.29 p=.000	.24 p=.000	.25 p=.000	.33 p=.000
Global self-worth (Harter)	.32 p=.000	.21 p=.000	.14 p=.001	.23 p=.000

The seventh question is about the relationship between academic achievement and attitude and motivational variables. Table 45 introduces the results for this relationship. It shows the correlation coefficient between academic achievement and attitude to school and motivation variables. There is a significant correlation coefficient between attitude to school and academic achievement ($r = .18$, $p = .000$), interest ($r = .17$, $p = .000$) and achievement motivation ($r = .17$, $p = .000$). Therefore from the above results, we can say that there is a significant and positive relationship between attitude and motivation variables on the one hand and academic achievement on the other.

Table 45: **The relationship between academic achievement, attitude and motivation**

	Attitude to school	Perceived usefulness	Interest	Motivation
Academic achievement	.21 p=.000	.18 p=.000	.17 p=.000	.18 p=.000

6.2 Section Two (Prediction)

In this section the researcher will explain the results that are concerned with the eighth question, 'What psychological variables are the best independent predictors of achievement and have significant correlation with achievement? In other words, what set of variables maximises the predictors of the achievement variance?'

To analyse the responses to this question the researcher used multiple regression analysis because it is used mainly to:

> "summarise the relationship between a dependent variable and a number of independent variables and identify the most useful variable for predicting the dependent variable".
> (Norusis, 1985, pp. 92-93)

The selection of the predictor variables

Before running all possible regressions, we need to determine what criterion should be used to select the independent variables. Two criteria were used in the selection of independent variables. One criterion has already been stated above (that in which the variable has significant correlation with achievement). The other criterion is as follows:

The variables must be theoretically relevant to the prediction of academic achievement and should so far as possible be selected for their low intercorrelations: this is to avoid large amounts of colinearity among the predictors.

The independent variables selected

Nine independent psychological variables were selected from thirteen, following the two criteria mentioned earlier. These have significant correlation with achievement as mentioned earlier, and are of theoretical relevance to achievement as mentioned in Chapter 3.

The independent variables which were selected were:

self-concept of:

- ability
- scholastic competence
- conduct/morality
- self-esteem
- self-worth
- attitude to school
- interest
- usefulness and
- achievement motivation.

These include self-concept, self-esteem, attitude and motivation.

Table 46 shows the coefficient of determination for the independent variables according to the steps of the analysis by using the stepwise regression method. We can see the two best predictors are self-concept of ability in a specific subject (Brookover) and the second one scholastic competence (Harter).

For the self-concept of ability, R^2 is .164 and this means that 16.4% of the variance of achievement is predictable from the self-concept of ability. The addition of the variable of scholastic competence, however, adds only .018 to R^2. This is not a significant addition. From the same table, Table 46, it can be seen that for the self-concept of ability, the beta coefficient is .306 and the

the level of significance is p =.000, while for scholastic competence the beta coefficient is .168 and the level of significance is p = .0005. Another procedure for finding the best fitting regression equation from a set of candidate variables is the stepwise regression method. This method starts with the equation $y = \beta_o + \epsilon$ and adds one variable at a time until a stopping criterion is satisfied. From Table 46 the variable self-concept of ability was entered in Step 1 of the stepwise procedures and finally scholastic competence was added in the second step. According to the stepwise method, the self-concept of ability was the best predictor variable because it was entered at the first step, having the highest correlation with the criterion.

The regression equation that represents the relationship between the independent variables and the dependent variable is as follows: achiev y = 7.127 + .306(SCAA) + .168(Sch).

In general the results indicated that of all the nine selected predictors, which include self-concept, self-esteem, attitude and motivation, only two - self-concept of ability in specific subjects and scholastic competence (in that order) - are found to be the best predictors for academic achievement. These two variables represent academic self-concept. On the other hand, when the backward method is used, the results are as indicated in Table 47.

A comparison of the methods of multiple regression shows that once the two most promising variables are entered or remain in the equation the remaining seven predictors add little or nothing to the prediction of achievement. In retrospect, and somewhat unfortunately, no measures of intellectual ability (e.g. verbal

Table 46: **Summary of stepwise regression analysis with academic achievement as the criterion (n = 536)**

Predictors	step	beta	multiple R	R square	increment to R^2	F	significance of F	T	T.sig p
Self-concept of ability	1	.3064	.4047	.1638	.1638	104.626	.0000	6.360	.0000
Scholastic competence	2	.1688	.4274	.1826	.0188	59.56	.0000	3.505	.0005

Note: adding the second variable increases prediction of % criterion variance by less than 2%

reasoning, 'intelligence') were included in the battery. Conceivably, they would have 'mopped up' some of the residual variance and together with variables 9 and 4 accounted for more than the 20% of variance "explained" in the criterion.

Table 47: **Summary of backward method of regression analysis with academic achievement as the criterion**

	Independent Variables	Beta	T	Sig T p	
First Step	1. Interest (In)	-.081	-1.459	.145	
	2. Self-worth (Wor)	-.049	-1.039	.299	
	3. Achievement motivation (Mot)	.084	.097	.923	
	4. Scholastic competence (Sch)	.104	3.607	.003	Multiple R
	5. Attitude to school (At)	.084	1.800	.072	.439
	6. Conduct/morality (Com)	-.053	-1.105	.269	R^2 .193
	7. Self-esteem (Self)	.024	.508	.611	
	8. Usefulness (Us)	6.281	.012	.990	
	9. Self-concept of ability (SCAA)	.329	5.955	.0000	
	Constant		5.254	.0000	
	4. Scholastic competence	.168	3.505	.0005	Multiple R
	9. Self-concept of ability (SCAA)	.306	6.360	.0000	.430 R^2 .185
Final Analysis	Constant		7.127	.0000	

6.3 Section Three (The Model)

The final area of investigation in the present research concerned the model that postulated a positive relation between self-concept of ability and academic achievement. This relationship is assumed to be mediated by motivation on the one hand and by attitude to school on the other.

The model was tested using partial correlation analyses. This tests the relationship between academic achievement and the other variables when one or more variable is controlled. The application of the method to the data of the present study can best be illustrated by reference to a 3-variable example.

In this technique (first order partial correlations), if academic achievement, self-concept of academic ability and motivation are the three variables, with achievement as the criterion, a part of the correlation between self-concept of academic ability and academic achievement may result because of their mutual correlation with motivation. Thus, part of the score on academic achievement may be predicted from motivation, as may be part of the score by self-concept of academic ability. The first order partial correlation between academic achievement and self-concept of academic ability, therefore, is between the two sets of residuals; that is, the part of the correlation which remains when the effect of motivation is controlled or removed. Another way of interpreting the residual is that it is the correlation between the criterion and self-concept of academic ability which would result if all students had the same motivation score.

The use of partial correlations in testing 'causal hypotheses' may be illustrated below:

a) A comparison of the relationship between the self-concept of academic ability (ScAA) and academic achievement **before** and **after** motivation (Mot, Att, In and Us) is controlled will indicate the 'independent effect' of self-concept.

b) A comparison of the relationship between motivation variables and academic achievement (Ach) before and after the self-concept of academic ability is controlled will indicate the 'independent effect' of motivation.

c) A third possibility is that the self-concept of academic ability and motivation variables are independent contributors to academic achievement. A regression analysis has been used to examine the contribution of the self-concept of academic ability and motivation variables to academic achievement. Norusis (1985) stated that:

> "stepwise selection of independent variables is probably the most commonly used procedure in regression. It is really a combination of backward and forward selection. If the variable fails to meet entry requirements, the procedure terminates with no independent variables in the equation. If it passes the criterion, the second variable is selected based on the highest partial correlation. If it passes entry criteria, it also enters the equation". (p. 163)

If self-concept of academic ability, motivation and attitude are (relatively) independent in their effect on achievement then this will be demonstrated by the results of a multiple regression analysis. The method adopted here, therefore, is to compare the

results of statistical control over the 'mediating variables' (motivation and attitude) on the correlation with the criterion. In general, a correlation which does not shrink significantly after control is held to show a direct effect of the uncontrolled variable (self-concept of academic ability) on achievement; one in which substantial shrinkage occurs will indicate that self-concept owes its relationship with achievement to its relation with motivation and attitude.

The following sections report the results of the application of this procedure.

The relationship between self-concept of ability and academic achievement before achievement motivation is controlled is 0.40. After this variable is controlled the relationship falls, but only slightly, to 0.37, still positive and significant. Similarly, the relationship between the two variables when **perceived** interest is controlled falls a little to 0.38, again positive and significant. When perceived usefulness is controlled partially, the correlation falls to 0.38, and when attitude to school is controlled, to 0.36 which means that the values are still positive and significant. Also, when the relationship between the self-concept of academic ability and academic achievement after motivation and attitude (achievement motivation, interest, perceived usefulness and attitude to school) are controlled, the correlation is 0.34, again positive and significant ($p = 0.000$); see Figures 6, 7, 8, 9 and 10 respectively. All differences in the correlation between achievement and self-concept of academic ability before and after control for mediating

variables are very small.

By contrast, the relationship between achievement motivation and academic achievement before academic self-concept is controlled is 0.18 which is positive and significant, and after it drops to 0.02 (low and non-significant). Similarly, the relationship between interest and academic achievement before self-concept (SCAA) is controlled is 0.17 which again is positive and significant. After this variable is controlled, the relationship is now only -0.05 which is not significantly different from zero. The relationship between perceived usefulness and academic achievement is 0.18, positive and significant, before control; and after control the correlation drops to -0.01 which is non-significant. The relationship between attitude to school and academic achievement before self-concept of academic ability (SCAA) is controlled is 0.21 which is positive and significant. After this variable is controlled, the relationship drops to 0.06 which means that it is non-significant (figures 11, 12, 13 and 14 respectively).

In the light of these results, we can see the relationship between self-concept of academic ability (SCAA) and academic achievement (Ach) before and after the motivation and attitude variables (Mot, In, Us, Att) are controlled separately and then together is still positive and significant ($p = 0.000$) (Figures 6, 7, 8, 9 and 10 respectively). But the relationship between the motivation variables (Mot, In, Us) and academic achievement when self-concept of academic ability is controlled drops and is non-significant. The same is true for the relationship between

The relationship between the self-concept of academic ability and achievement before and after the motivation and attitude variables are controlled. Straight lines indicate the correlation before, curved lines the correlation after control of the named variable.

Figure 6

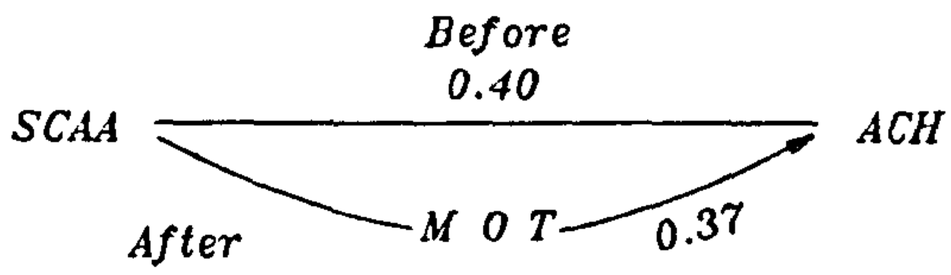


Figure 7

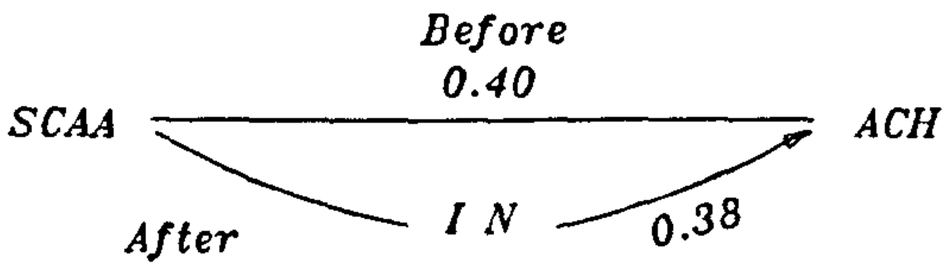


Figure 8

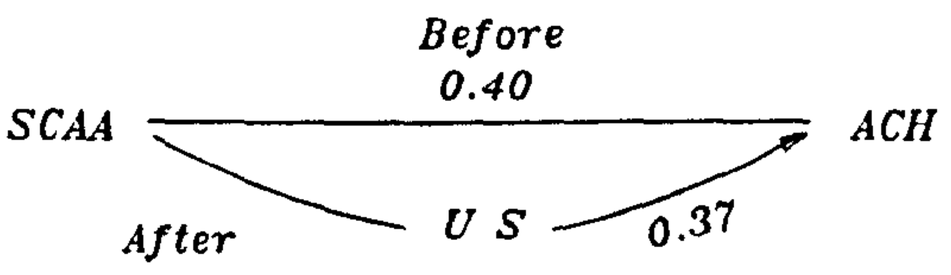


Figure 9

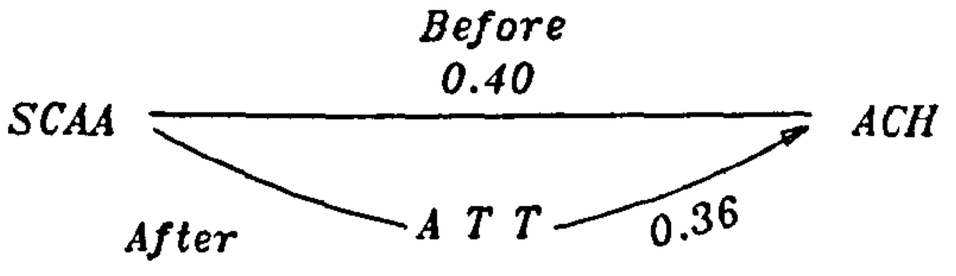


Figure 10

The relationship between the achievement motivation (MOT), Interest(IN), Perceived Usefulness (US), Attitude to school (ATT) and academic achievement (ACH) before and after the self-concept of academic ability variable (SCAA) is controlled.

Figure 11

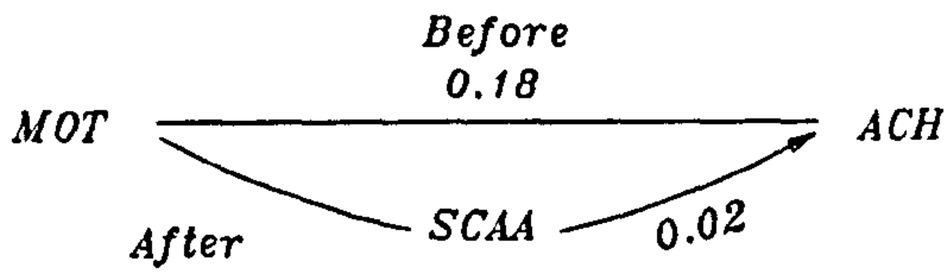


Figure 12

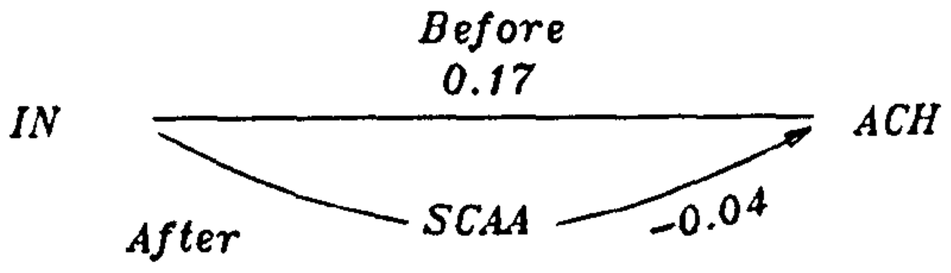


Figure 13

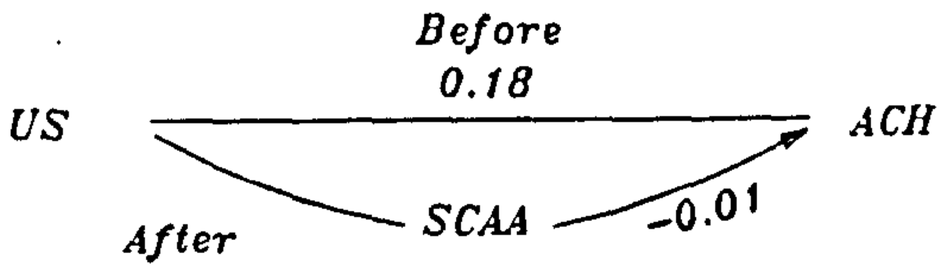
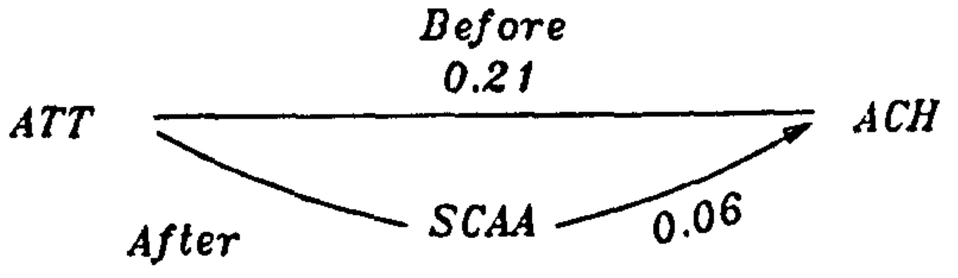


Figure 14



attitude to school and academic achievement.

To examine the contribution of the independent variables to academic achievement, a regression analysis (stepwise) was used. The self-concept of academic ability is the best predictor of achievement (R^2 = .164) and motivation variables (In, Us, Mot, Att) are not among the significant predictors of academic achievement (Table 48).

As discussed above, the nature of the relationship between self-concept of academic ability, motivation and academic achievement is as follows:

(a) The relationship between self-concept of academic ability and academic achievement before and after motivation variables are controlled is still positive and significant, that is, removing the effects of motivation did not substantially reduce the correlation between the self-concept of academic ability and achievement.

(b) The relationship between motivation variables (Mot, In, Us) and academic achievement before the academic self-concept is controlled is positive and significant at the level p = .000. But after the self-concept of academic ability is controlled, the relationship between them drops and is non-significant. This suggests the relationship of motivation is through the self-concept of academic ability. Also, the relationship between attitude to school and academic achievement before the academic self-concept is controlled is positive and highly significant (p = 0.000). But after the self-concept of academic

ability is controlled, the relationship between the two variables drops and is non-significant. This suggests the relationship of attitude to school is through the self-concept of academic ability.

(c) The self-concept of academic ability is the best predictor of academic achievement and the motivation variables (Mot, Att, In, Us) are not included in the equation on grounds of non-significant increment to R^2.

The model proposed in this study suggested that "there is a positive relationship between the student's high opinion of his academic ability and his achievement in school, and that this relationship is mediated by his motivation to do well in school and by his positive attitude to school activities"; refer to p. 70.

The empirical results shown above, and those of the path analysis reported later, suggest that modifications to this model are required. Results demonstrate that the relationship between the self-concept of academic ability is positive and significant and that the relationship between these two variables, when motivation and attitude are controlled, though slightly reduced, remains positive and significant. The results also indicate that the relationship between motivation, attitude to school and achievement is possible through the self-concept of academic ability because the relationship between the two variables and achievement, when the self-concept of academic ability is controlled, drops and is non-significant.

Pullenbaum, Keith and Ehly (1986) have written that:

> "There is not a causal relationship between self-concept and academic achievement but that one or more 'third variables' are causally predominant over both self-concept and academic achievement". (p. 143)

They report that motivation is more a predictor of achievement than self-concept.

However, the result obtained by Pullenbaum et al. (1986), indicating that motivation is a better predictor of achievement than self-concept, is not supported by the current study which shows that the self-concept of academic ability is the best predictor of achievement when it is included in a regression equation with motivation and attitude (Table 48). On the other hand, when attitude and motivation and self-esteem (general self-concept) were used in another regression equation (that is, omitting self-concept of academic ability), the result demonstrates that attitude and motivation are significant predictors of achievement (Table 49). This study and the Pullenbaum study may lead to the following conclusions.

Although motivation is a better predictor of achievement than general self-concept (self-esteem), self-concept of academic ability is a much better predictor of achievement than motivation and attitude. Such a result should be expected because the self-concept of academic ability is mainly concentrating on factors related to school achievement. Verma and Mallick (1988) indicated that:

> "judging by the results of dozens of studies, mostly American, there seems ample support for the position that pupils who have more positive and definite appraisals of their ability to perform in school, and have more positive

Table 48: Summary of stepwise regression analysis with post-academic achievement as the criterion

n = 536

Predictor	step	beta	multiple R	R square	Increment R^2	F	sig. of F	T	T. sig. P
Self-concept of ability (Brookover)	1	.404	.404	.164	.164	104.62	.0000	10.23	.0000

Table 49: Summary of stepwise regression analysis with post-academic achievement as the criterion

n = 536

Predictors	step	beta	multiple R	R square	Increment R^2	F	sig. of F	T	T. sig. p
Attitude to school	1	.132	.209	.043	.043	24.39	.0000	2.82	.004
Achievement motivation	2	.116	.241	.058	.015	16.45	.0000	2.63	.008
Perceived usefulness	3	.102	.258	.066	.012	12.71	.0000	2.23	.02

> views of themselves, do better in their academic work than those with more uncertain or negative views of themselves". (p. 156)

The relationship between self-esteem (SE), attitude to school, achievement motivation, interest and perceived usefulness is positive and significant ($p = 0.000$). But the relationship between the self-concept of academic ability, attitude to school, achievement motivation, interest and perceived usefulness is higher than the correlation between self-esteem and motivation variables (Figure 15). On the other hand, the relationship between self-concept variables, (self-concept of academic ability, scholastic competence, conduct/ morality, physical appearance, close friendship, athletic competence and social acceptance), and academic achievement are 0.40, 0.35, 0.14, 0.04, -0.04, -0.01 and -0.20 respectively; and the relationship between self-esteem variables (self-esteem and self-worth) are 0.16 and 0.11 respectively. The regression analyses (stepwise) results indicated the contribution of the motivation variables (Mot, Att, In and Us) to each of the self-concept and self-esteem variables (SCAA, Sch, Com, Phy, Frn, Ath, Soc, SE and Wor) are 0.36, 0.18, 0.14, 0.02, 0.03, 0.02, 0.009, 0.16 and 0.11 respectively (Tables 50, 51, 52, 53, 54, 55, 56, 57, 58); the comparison of the relationship between the self-concept and self-esteem variables and academic achievement, and the contribution of motivation variables for each of the self-concept and self-esteem variables indicates similar results. These results may demonstrate the relationship between self-concept, self-esteem variables and

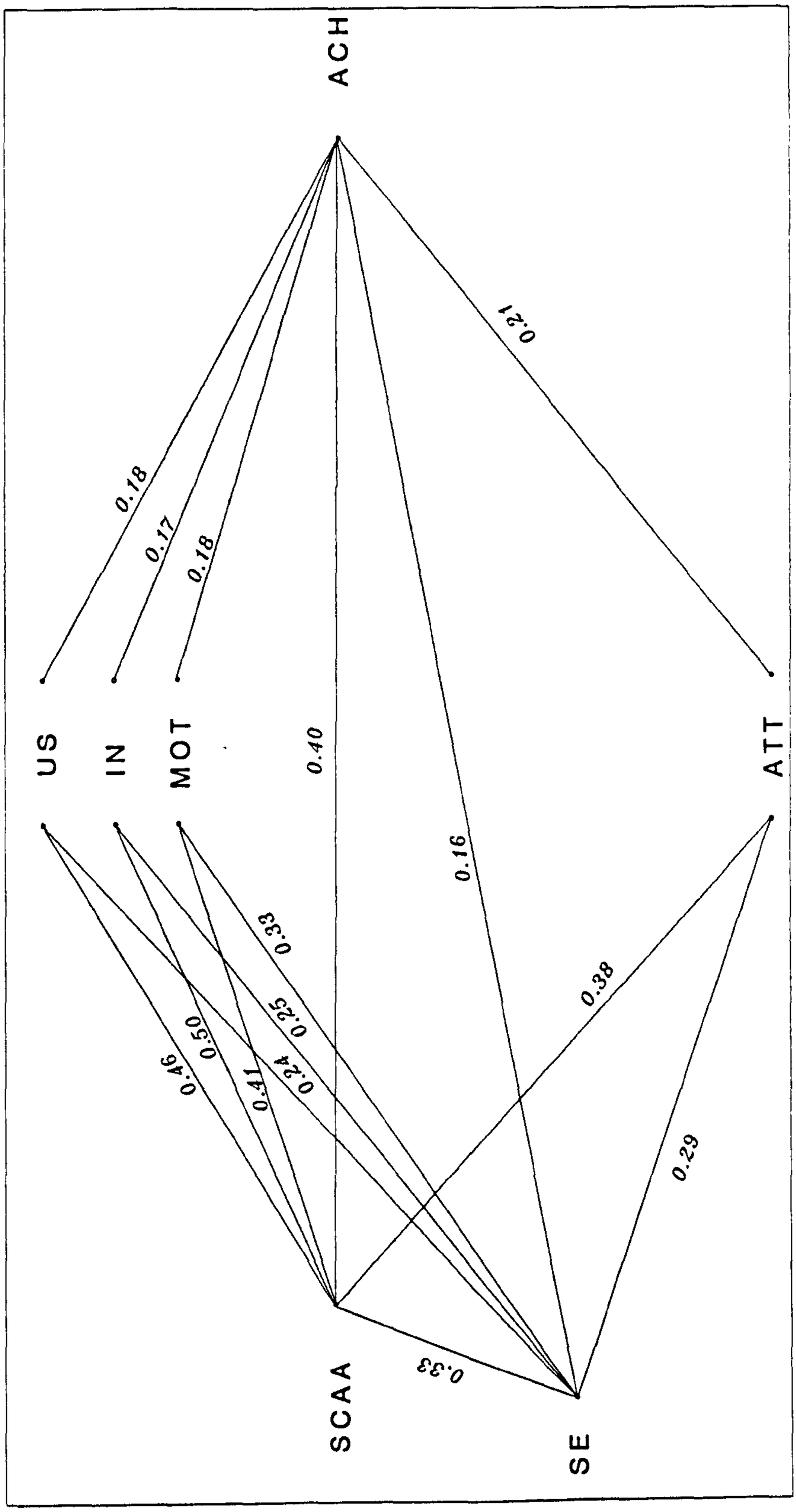


Figure 15 : The relationship between self-concept of academiç ability (SCAA), self-esteem (SE),attitude to school (ATT), achievement motivation (MOT),Interest (IN), perceived usefulness (US) and academic achievement (ACH)

Table 50: Summary of stepwise regression analysis with self-concept of academic ability

n = 536

Predictors	step	beta	multiple R	R square	Increment R^2	F	sig. of F	T	T. sig. p
Interest	1	.238	.50	.250	.250	178.69	.0000	4.99	.0000
Achievement motivation	2	.262	.57	.327	.077	129.69	.0000	7.12	.0000
Perceived usefulness	3	.212	.59	.357	.030	48.75	.0000	4.62	.0000
Attitude to school	4	.107	.605	.366	.011	76.74	.0000	2.69	.0073

Table 51: Summary of stepwise regression analysis with Scholastic Competence as the criterion n = 536

Predictors	step	multiple R	R square	F	sig. of F
Interest	1	.330	.109	65.376	.0000
Achievement motivation	2	.396	.157	49.703	.0000
Attitude to school	3	.422	.178	38.423	.0000
Perceived usefulness	4	.435	.184	31.03	.0000

Table 52: Summary of stepwise regression analysis with Conduct/ Morality as the criterion n = 536

Predictors	step	multiple R	R square	F	sig. of F
Attitude to school	1	.294	.086	50.584	.0000
Achievement motivation	2	.361	.130	40.122	.0000
Perceived usefulness	3	.384	.147	30.685	.0000

Table 53: Summary of stepwise regression analysis with Physical Appearance as the criterion n = 536

Predictor	step	multiple R	R square	F	sig. of F
Attitude to school	1	.162	.026	14.386	.0002

Table 54: Summary of stepwise regression analysis with Close Friendship as the criterion n = 536

Predictors	step	multiple R	R square	F	sig. of F
Attitude to school	1	.181	.033	18.280	.0000

Table 55: Summary of stepwise regression analysis with Athletic Competence as the criterion n = 536

Predictor	step	multiple R	R square	F	sig. of F
Interest	1	.157	.024	13.579	.0003

Table 56: Summary of stepwise regression analysis with Social Acceptance as the criterion n = 536

Predictor	step	multiple R	R square	F	sig. of F
Interest	1	.096	.009	5.05	.025

Table 57: Summary of stepwise regression analysis with Self-esteem as the criterion n = 536

Predictors	step	multiple R	R square	F	sig. of F
Achievement motivation	1	.328	.108	64.780	.0000
Attitude to school	2	.386	.144	46.665	.0000
Perceived usefulness	3	.403	.163	34.551	.0000

Table 58: Summary of stepwise regression analysis with self-worth as the criterion n = 536

Predictors	step	multiple R	R square	F	sig. of F
Attitude to school	1	.314	.099	58.814	.0000
Achievement motivation	2	.346	.119	36.315	.0000

academic achievement which can be interpreted through the mutual correlation with motivation variables, except academic self-concept which has a direct effect on achievement, while motivation variables contribute to an increase in the correlation.

The results, in general, appear to offer no support to the model of this study, one which integrated the approaches of both Brookover et al. (1966) and Rosenberg (1979), who attempted to consider the multi-dimensional nature of the self-concept, using self-evaluation and also the individual's sense of self-worth. In this model self-concept was proposed to affect achievement, with motivation and attitude acting as intervening variables, influenced and being influenced by both.

A considerable body of research exists that different levels of achievement motivation lead to differential responses or failure (Kleink, 1978), and attitudes have been seen to be "antecedent factors to pupil cognitive learning", comprising "significant outcomes of school learning" (McMillan, 1980, p. 215). Thus, the results of this research would appear to substantiate these findings, self-concept being directly and positively related to achievement while motivation and attitude owe their relationship to achievement through self-concept and so influence achievement. This once again reaffirms the findings of Purkey (1970, p. 15), who stated that "overall, the research evidence clearly shows a persistent and significant relationship between self-concept and academic achievement", but raises questions about studies which have used linear correlations thus masking the possibility of a non-linear

relationship. Although the significant statistical relationship between the pupils' academic self-concept and achievement has been repeatedly demonstrated, the causality, cause and effect, has still not been resolved. A possibility exists that the associational relationship is affected by other variables, namely attitude and motivation, as shown in this research. A second, and theoretically more satisfying, explanation is that the relationship between self-concept or self-esteem in school subjects and achievement is a reciprocal one at least during the formative years before university level is attained (Byrne, 1986).

CHAPTER SEVEN

DISCUSSION

AND SECONDARY ANALYSIS

CHAPTER SEVEN

DISCUSSION AND SECONDARY ANALYSIS

7.1 Discussion

Having presented the results achieved by the present study in the previous chapter, an attempt will be made in this chapter to discuss the main findings and compare them with those established by other studies in the field of self-concept and academic achievement.

A similar approach to that followed in the presentation of the results will be followed in this chapter, where the findings will be discussed on the basis of the empirical questions raised by the study.

An alternative regression analysis, where the raw marks are converted into *z* scores, will be introduced, dealing with the prediction of achievement as an extra method of analysis to compensate for the discrepancies in the scales of marks used in each school subject.

Moreover, path analysis will be presented in discussing the model to support the results achieved by the use of the partial correlations.

The initial questions raised by this study concerned the statistical relationships between the self-concept variables (the independent variables) and academic achievement (the dependent variable). Investigation was also made of the relationship between the self-esteem variables and academic achievement. Further questions were raised about the relationship between the self-concept of ability in specific subjects and academic achievement measured

on two occasions in individual school subjects. Correlation analysis was also carried out to investigate the relationship between the self-concept variables and the self-esteem variables. The last three questions in this section concerned the relationship between the self-concept variables and attitude to school, attitude to school subjects and achievement motivation, the relationship between the self-esteem variables and attitude to school, attitude to subjects and achievement motivation, and finally between the latter variables and academic achievement.

One of the major findings established by the present study, using the entire sample of 536, was a positive, strong and significant relationship between self-concept of ability in specific subjects and academic achievement. In a major study by Brookover, Patterson and Thomas (1966) of the relationship between academic self-concept and achievement a correlation of 0.57 between grade point average and general self-concept of ability for both males and females was recorded.

The correlation of 0.40 obtained in this study is considerably lower than the value of 0.57 achieved by the study of Brookover et al. (1966), and this difference is clearly of statistical significance ($p = .001$). However, the result in the predicted direction is both significant and positive although it leaves over 80% of the criterion variance "unexplained". This difference may possibly be explained by the fact that in the current study the total scores for achievement in the six subject areas were correlated with the total self-concept scores. However, this study incorporated two

subject areas in addition to those of Brookover, but the use of factor analysis and examination of the loadings revealed that each of the six subject areas, as well as the aggregated score of the six subjects, could be used as appropriate measures to represent academic self-assessment at both levels. The dependent variable in this study consisted of examination results (marks). There were two kinds: pre- and post-achievement. The pre-achievement comprised marks and average of marks obtained by students in intermediate school. The post-achievement comprised the students' marks in the first term examination in secondary school and the average of these marks. The initial study by Brookover (1966) used grade point average as the measure of academic achievement and this use of a restricting narrow scale of measurement may have affected the results and so help to explain the difference in the findings between the American and Saudi Arabian samples.

The Pearson correlation between the scores on the self-concept variables (Harter) and measure of academic achievement (post) as detailed in Table 39 revealed again a positive and significant relationship between Scholastic Competence and achievement. This result only explains 12.3% of the criterion variance. Of the remaining variables a small but significant relationship was shown between Conduct/Morality and achievement. This is not unexpected given the great attention paid to these constructs in the rigorous Islamic code with its emphasis on honesty, caring and upright living. Many psychologists have traced the effect of morality and religion on school achievement. Armand Nicoli (1974), for example, conducted

research among a group of Harvard and Radcliffe students. It was found that those students who had recently converted to Christianity showed an academic performance that was higher than before joining their new faith (Brown, 1985, p. 219). The reason for this improvement was stated to be increased self-esteem. It is suggested that the code of conduct associated with the Islamic faith would have a similar effect on attainment because of its effect on self-esteem. The correlation for the remaining variables of Social Acceptance, Athletic Competence, Physical Appearance and Close Friendship were not significant, indicating that they had little relationship with academic achievement.

In this statistical analysis of the correlation between self-concept variables and academic achievement, only two of the variables, self-concept of ability (Brookover) and Scholastic Competence (Harter) singly "explain" about 20% of the criterion variance. Even the best predictor (Brookover) leaves over 80% of the variance unexplained.

The above results would appear to support the findings of Coopersmith (1967), who reported an $r = .30$ significant at the 0.05 level between his self-esteem inventory and grade point average in children aged 10 to 12. He stated (1974, p. 201) that "The child's self-concept of his ability is largely built up on the basis of the successes he experiences in the various tasks he undertakes". The findings of Brookover (1966) also provided strong confirmation that a positive relationship exists between self-concept of academic ability and achievement, results that are also supported

by the present research.

In this study, where the academic self-concept has been separated from the general self-concept, significant correlations have been found between the academic self-concept variables and academic achievement and also Conduct/Morality (Harter), but not with the other self-concept variables in the Harter subscales. Many other studies have also supported the existence of a positive relation between academic achievement and self-concept (Bauer, 1981; Newman, 1984). Where no relationship has been demonstrated, it has been postulated that loose definitions of self-concept, the failure to be specific about the academic self-concept, and inappropriate instruments have been used. Also the positive correlation found between global self-concept and academic achievement have been attributed to the confounding of global and academic self-concepts (Jordan, 1981).

The second empirical question posited in this study concerned the relationship between the global self-worth and self-esteem variables and academic achievement (post). For the independent variable of global self-worth (Harter), a low significant correlation was obtained with academic achievement. A similar positive but low relationship was obtained between self-esteem (Rosenberg) and the dependent variable of achievement. Once again these predictors, though significant, are functionally weak. They fail to explain, separately, over 90% of the criterion variance assuming a linear relationship with academic achievement.

These findings would appear to reflect the considerable area

of controversy that exists among the diversity of the results reported between global self-concept and academic achievement. Some studies support the existence of a positive relationship between the two variables (Bledsoe, 1967; Rosenberg, 1979); others refute this (Borislow, 1962; Williams, 1973). As previously stated, the ambiguity of results from investigations into the relation between global self-concept has been attributed to the confounding of the variables, global and academic self-concept. This proposition would therefore appear to be supported by the findings achieved by the present study indicating clearly that global self-concept has a positive and significant but rather weak relationship with achievement, while academic self-concept has a much stronger relationship with achievement.

Hansford and Hattie (1982) reported that "... performance achievement measures correlated with general self-concept but had a higher correlation with academic self-concept" (pp. 126-127). Shavelson and Bolus (1982, p. 6) also found that academic self-concept was more predictive of academic achievement than general self-concept. They added that general self-concept can be interpreted as "distinct from but correlated with academic self-concept" (p. 16).

In this present study, the relationships between the self-esteem variables (Harter and Rosenberg) were significant, if low, when self-concept of academic ability (Brookover) is controlled in the relationship between the self-esteem variables and academic achievement, the correlation falling greatly down to -.004 and 0.03 respectively. Self-esteem is proposed to exert its influence

on academic achievement through the self-concept. This is supported in the findings of Brookover (1967) where the correlation falls heavily when self-concept of academic ability (Brookover) is controlled; on the other hand, when self-esteem (Rosenberg) is controlled in the relationship between self-concept of academic ability (Brookover) and academic achievement, only a small reduction in correlation was obtained. In the present study, a similar result was achieved in testing the relationship between self-concept of academic ability (Brookover) and achievement and controlling self-esteem, and a 0.03 drop was recorded.

Self-esteem has been described by Rosenberg (1979, p. 31) as implying "self-acceptance, self-respect, a feeling of self-worth". A person with high self-esteem is said to be fundamentally satisfied with the type of person he or she is, and may acknowledge his or her faults while at the same time hoping to overcome them. It is seen as a particular kind of attitude, "the evaluation which the individual makes and customarily maintains with regard to himself" (Rosenberg, 1965, p. 5). In the context of the present research, the correlation between the measure of self-esteem (Rosenberg) and academic achievement, although significant, was low, leaving much of the variance unexplained. This would suggest that the measure of self-esteem focuses on the more global achievement of the individual in a broader social context, and so the correlation with the restricted measures of achievement within school is not unexpectedly low.

The third empirical question raised in this study concerned the relationship between self-concept variables of ability in specific subjects and academic achievement in specific subjects. The self-concept instrument used was that of Brookover and the results obtained supported his early findings. Using a sample of 513 males and 537 females in the seventh year of school, Brookover (1964) found that the correlation between specific self-concept and grade was higher than between general self-concept and grade. The specific subject matter self-concept was found to be a better predictor of achievement in that subject than the general self-concept. Brookover reported correlations ranging between .61 and .43 in specific self-concept and grade in Mathematics, English, Social Studies and Science. In the present research, correlation between self-concept of ability in specific subjects and academic achievement ranged between 0.45 and 0.13 for the pre-exam marks and between 0.54 and 0.36 for the post-exam marks of the six school subjects included in the study. All correlations were significant at $p < .002$.

These findings of significant positive correlation between specific areas of academic performance also support the findings of Brookover and Thomas (1964), where highly significant correlations were established. It is also true of the present findings, like those of Brookover, that there are specific self-concepts of ability related to specific areas of academic role performance which differ from the general self-concept of ability.

These correlations are of course not surprising since previous knowledge of subject matter is known to be a strong influence on the capacity to acquire greater knowledge. Chi (1981) suggested that the more you know already, the easier it is to acquire new knowledge. She suggested that it is the interaction of a richer long-term store of memory with knowledge of processing strategies which leads to improved performance. This statement is relevant when considering the high correlation between self-concept in Islamic subjects and achievement. The constant practice and resultant building up of the language schema enhances performance and affects the self-concept. The pre- and post-correlations will therefore invariably be high (Ausubel et al., 1978). This is well illustrated by the continuing positive correlation revealed between marks (at the intermediate stage) and those obtained later at the secondary level, and academic self-concept scores. The correlations remain consistently strong and significant over time.

The fourth empirical question concerned the relationship between self-esteem and the self-concept variables. There was a significant correlation between self-esteem as measured by Rosenberg and Harter and the self-concept variables of the Brookover and Harter scales. Self-esteem correlated positively with self-concept of academic ability (Brookover). Two different sets of correlations were obtained in the domains of the Harter scale. Conduct/Morality and Scholastic Competence had high correlations of .48 and .39 while the remaining four domains, Friendship, Physical Appearance, Social Acceptance and Athletic Competence had low correlations

ranging between .25 and .18.

In Harter's studies (1987, p. 19),it is stated that "certain domains do systematically contribute more to self-worth than others". A major domain in Harter's study being revealed as a cultural contributor to self-worth was physical appearance. The second most critical domain was seen to be social acceptance. These findings are at variance with those of the researcher for adolescent males brought up in Islamic culture. Here Conduct/Morality has the most significant correlation with self-esteem, the moral values conveyed by religion undoubtedly having a major effect on the behaviour of an individual. Thus, to reiterate the findings of Combs (1964), safe social interactions and successful social relationships strengthen the healthy and positive attitude a person has about himself.

There was also a significant correlation between self-esteem as measured by global self-worth (Harter) and each of the self-concept variables. Here again there is a significant correlation between self-worth and self-concept variables and also the highest correlation coefficient was between Conduct/Morality and self-worth (0.44), again reflecting the effect of the learning practices and socialisation of young males in Arab culture and the teachings of Islam.

In the investigation of the relationship between the self-concept variables, attitude and motivation variables, positive significant correlations were obtained. There was a significant correlation coefficient between attitude towards school (Morton-

Williams and Finch, 1968) and each of the self-concept variables; self-concept of ability in specific school subject (Brookover, 1967), Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Conduct/Morality and Friendship (Harter).

A very strong and significant correlation was found between "perceived usefulness" and self-concept of ability (Brookover). This finding conforms with the statement of Jackson and Lahaderne (1967, p. 205) who wrote that "success and satisfaction are bound together by logic". Similar positive correlations were found between the self-concept variables and "perceived interest". The most significant correlation was found between the self-concept of academic ability scores (Brookover) and "perceived interest". The correlations with scores on the Harter subscales of Scholastic Comptence and that with Conduct/Morality were also significant. Harter's study (1987, p. 10) has demonstrated that "beginning in adolescence and continuing more strongly during the period at college and adulthood, items emphasise moral concerns and the adherence to one's internalized ethical standards". The positive correlation obtained in this study would seem to confirm these findings.

Correlations between achievement motivation as measured by Robinson and self-concept of academic ability (Brookover), Scholastic Competence and Conduct/Morality (Harter) were all positive. The highest significant correlation was obtained between achievement motivation and self-concept of academic ability. Unlike more motivational constructs, the basic definition and the central concepts of achievement motivation have not been in dispute,

consensus existing because Vidler (1977, p. 67) has stated that "the achievement motive is a pattern of planning, of actions, some internalized standard of excellence". It is therefore not surprising that the measure of achievement motivation correlated positively with scores on Brookover's (1966) self-concept of academic ability which requires students to rank themselves in terms of ability and future academic prospects. The relationship would appear to be close between statement such as Brookover's (1966) statement F, "how likely do you think it is that you could complete advanced work?", and measures of achievement motivation.

A positive correlation was also obtained between achievement motivation and Scholastic Competence as measured on the Harter (1985) subscale. This is defined by Harter (1982, p. 9) as "doing well at schoolwork, where the focus is more on academic outcome evaluated in comparison to other studies". It is thus evident that the two measures have a distinct relationship, both being concerned with achievement and competence domain.

The positive correlation between achievement motivation and Conduct/Morality would again appear to reflect the high importance placed on conformity to social norms in Saudi Arabia. In the formulation of the educational curriculum, Abdul-Wassie (1983) reported that a basic consideration was the society with its Islamic legacy, civilised values, norms, hopes, and its present and future goals. These objectives are an integral part of everyday life and consistently reinforced in the educational system.

Statistical analysis revealed that there was a significant correlation between self-esteem (Rosenberg, 1965) and each of the attitude and motivation variables. Rosenberg considered self-esteem to be a form of evaluative attitude. Thus attitude to the self is both unitary and unidimensional. He constructed a measure that tapped the degree to which one is satisfied with one's life, feels one has good qualities, has a positive attitude towards oneself, or, on the negative side, feels useless, desires more self-respect, or thinks one is a failure. This measure is stated by Harter (1986, p. 141) to assess "the phenomenological appraisal of global self-worth, although it finesses the complexities of the underlying hierarchy of discrete judgements that may be responsible for such an overall judgement about the self". It is therefore not surprising that a positive relationship exists between self-esteem and the other discrete judgements of attitude to school and school subjects.

A significant positive correlation was also found between self-esteem and achievement motivation. Hamachek (1985, p. 196) stated that "success experiences tend to enhance motivation for learning while failure experiences impair it". The results of this study would appear to support this view. Another study by Maracek and Mattee (1972) also explored this relationship and demonstrated that self-esteem is an important variable in the determination of how and why success and failure experiences motivate students.

A significant correlation was present between self-esteem as measured by global self-worth (Harter, 1985) and each of the

attitude and motivation variables. Harter in her research sought to operationalise the components of James' (1892) formulae, in which he was quite explicit about the possession of a global sense of self-worth or self-esteem in addition to the self judgements. She also postulated, in addition to the cognitive-analytical model derived from James (1892), a model based on the theories of Cooley (1920); the self as a social construction. Harter investigated the degree to which self-worth influences other systems within the individual. Previous findings (Harter and Connell, 1984) revealed that perceived competence mediated both affect about one's competence, as well as one's motivational orientation toward schoolwork. Her later findings (Harter, 1986) revealed that self-worth bears some relationship to one's general level of motivation and that the mediating role of affect was critical. The findings of the present study of positive correlation at the level of significance $p < .001$ between self-worth (self-esteem) and attitude and motivation variables would affirm Harter's findings of self-worth as a mediator on one's general affective and motivational states.

The final empirical question concerned the relationship between academic achievement and attitude and motivational variables. Positive correlations were found between attitude to school, "perceived usefulness", "perceived interest" and achievement motivation. Most self-theorists would agree that the self is dynamic rather than static, as Beane and Lipka (1986, p. 15) stated: "in seeking stability, consistency, and enhancement, is in constant interaction with the environment and is subject to change,

modification or refinement". Many researchers have detailed numerous processes by which the self-perception changed (Gergen, 1971; Hamachek, 1987; Rosenberg, 1979), that include organising, scanning, screening, altering, choosing, reflecting, motivating and judging. The self is seen as actively reflecting on new information or experiments to determine why and how they might enhance its quality and also be motivated in the search for new experiences. The above correlations, although low, are consistent with the dynamic relationship between achievement on the one hand and the activities of the self, in interaction, on the other. Attitude and motivation are correlated with achievement, confirming the finding of Haetel, Walberg and Weinsten (1983, p. 85), who stated that the "presage conditions considered by the various theorists most often include cognitive and attitudinal attributes of individual learning".

The question to be considered here concerns the best independent predictions of achievement, those that have a significant correlation with achievement. A set of variables was sought that would maximise the prediction of achievement variance. Nine independent variables were selected from the initial thirteen. These had significant correlation with achievement, are of theoretical relevance to achievement, as mentioned in Chapter Three, and have relatively low values for their intercorrelations.

The independent variables which were selected were: self-concept of ability (Brookover), Scholastic Competence (Harter), Conduct/Morality, self-esteem, self-worth, attitude to school, perceived usefulness, perceived interest, and achievement motivation. The variables include self-concept, self-esteem, attitude and motivation.

The multiple regression analyses (stepwise and backward) revealed that the two best predictors of academic achievement are self-concept of ability in specific school subjects (Brookover) and Scholastic Competence (Harter). These two variables, representing academic self-concept, are the best predictors of the nine variables which included self-concept, self-esteem, attitude and motivation. These results were replicated when the backward method of regression analysis was used.

However, only 16.4% of the variance of achievement is predictable from the self-concept of ability (Brookover, 1965). The addition of the variable of Scholastic Competence (Harter, 1985) adds only 0.18 to R^2. Adding the second variable thus increases the prediction of percentage criterion variance by less than 2%.

Previous research in the area of pupils self-concept and academic achievement, largely American in origin, has found a positive correlation between general self-concept and some measures of academic achievement (Coopersmith, 1967; Rubin et al., 1977). In these studies it is assumed that "the value the student places on his own worth affects his academic achievement". In a review of the literature relating to these variables (Taylor, 1976), correlations ranged from 0.18 to 0.50.

However, this use of generalised traits such as self-concept and self-esteem has been criticised by researchers such as Brookover et al. (1967). They claim that better predictions are obtained by knowing the constraints of the situation rather than the traits of the individual. This would appear to be the conclusion of the

present study where the best predictor of achievement was academic self-concept in specific school subjects. Thus, it could be argued that the relationship between academic self-concept and achievement indicates that the pupils' views of academic self-concept are realistic.

Many studies which relate some measure of academic self-concept to measures of achievement have also shown higher correlation than those employing a general self-concept measure (Epps, 1969; Mintz and Muller, 1977).

In the six year longitudinal study of Brookover et al. (1967), it was concluded that the assumption that human ability was the most important factor in achievement was doubtful. Results indicated that students' attitude towards their ability served to limit the level of achievement as measured by grade point average. Brookover postulated that much of the variation in learning resulted from "differences in the interaction with others in the social, cultural environment" (1967, p. 3). Thus, academic self-concept was presented as a "functionally limiting threshold condition" (Brookover, 1967, pp. 11-12; Brookover and Erikson, 1969, 1975, p. 275). Academic self-concept was seen as functioning to set minimal limits on what decisions are made.

In the research of Brookover and Erikson (1964), academic self-concept was found to account for a significant portion of achievement independent of factors such as measured intelligence, socio-economic status, educational aspirations, and family, friends' and teachers' expectations. These findings of a significant

relationship between academic self-concept and achievement have received considerable support in the studies of Wattenberg and Clifford (1964), Scott (1975), Coombs and Davis (1967). In a study of high school and college levels, Jones and Grieneeks (1970, p. 203) state that "the self-concept of ability measure has been particularly effective in predicting scholarships ... having equal or better predictive ability than standard measures of intelligence and aptitude".

In the present research these findings have been supported by the results which indicate that academic self-concept in specific school subjects and Scholastic Competence are the best predictors of achievement, although some of Brookover's variables (e.g. IQ, SES) were not included. The findings also support the argument by Burns (1982, p. 215) who stated that "the self-concept can become a predictor of academic performance when the child internalises a positive view of himself and is motivated to approach academic tasks with confidence and persistence".

A comparison of the two methods of multiple regression used in this study show that once the two most promising variables are entered or remain in the equation, the remaining seven predictors add little to the prediction of achievement. Although Brookover et al. (1967) concluded that the assumption that human ability is the most important factor in achievement is questionable, it is evident that intellectual factors do set limits. In a study of the relative potential of self-concept and intelligence as predictors of academic achievement, Gose, Wooden and Muller (1980)

found that the combination of intelligence and the related academic self-concept measure accounted for more achievement variance than did intelligence alone. However, in this study no measure of intellectual ability such as verbal reasoning or 'general intelligence' was included. Conceivably they would have taken up some of the residual variance and together with the variables of Scholastic Competence and self-concept of ability accounted for more than the 20% of variance "explained" in the criterion.

Moreover, self-concept of ability and Scholastic Competence only explain about 20% of the variance. The remaining 80% could be explained by multiple factors such as school, home, environmental and cognitive factors. These include internal school factors, socio-economic status, environment, cognitive ability, etc. As long as this study is concerned mainly with psychological factors, all the other factors which could be of importance are therefore not the concern of this study, except for cognitive ability which could not be obtained because no test was used. Previous achievement scores correlated with the self-concept measures could be used instead of cognitive ability as a basis for measuring and predicting change in achievement. Therefore, the inclusion of pre-achievement (aggregate marks at the intermediate stage) with the independent variables in the regression equation to predict post-achievement has elevated the value of R^2 from .19 to .35 and occupied the first place in the rank order of the predictive variables and affected the order in which these variables have appeared as predictors of achievement (Table 59). Scholastic Competence was placed in

second position after pre-achievement, and self-concept of ability in school subjects (Brookover) was pushed to the end because pre-achievement represented a better measure of prediction of post-achievement. This in fact has the same weight in the prediction of post-achievement as self-concept of ability (Brookover).

Table 59: **Summary of stepwise regression analysis with post-academic achievement as the criterion**
$n = 536$

Predictors	Step	beta	Multiple R	R square	Increment to R^2	F	Significance of F	T	T. sig P
Pre-achievement	1	.449	.535	.287	.287	215.1	.0000	11.6	.0000
Scholastic Competence (Harter)	2	.127	.572	.327	.037	129.03	.0000	2.9	.0036
Attitude to school (Morton-Williams/Lunn)	3	.123	.582	.339	.012	91.2	.0000	3.04	.0025
Self-concept of ability (Brookover)	4	.144	.588	.346	.007	70.3	.0000	2.9	.0037
Interest (Morton-Williams)	5	-.10	.594	.352	.006	57.8	.0000	-2.4	.0189

7.2 Secondary Analysis

7.2.1 An alternative regression analysis

The differences in the means and sds of the specific subject marks suggested the need for the use of Z-scores to compensate for the discrepancies in the scales of marks used in each specific school subject (Table 60).

It is common knowledge in Saudi Arabia that marks in Islamic Education and Arabic Language are usually higher than those marks achieved in Maths, English Language, Science and Social Studies. Moreover, the percentage of failure in the latter subjects is much higher than that in Islamic Education and Arabic Language.

Pre- and post-test raw marks for each subject separately were converted into Z-scores and the aggregate Z-score was calculated for the two sets of marks. The correlation coefficients and the regression results (stepwise) achieved by the study using the Z-scores have established the following:

(a) The aggregate or global pre-test raw marks (the intermediate stage marks) correlate highly and significantly with the aggregated Z-scores ($r = .99$).

(b) The same result applies to the post-test marks (first term marks of the secondary stage), yielding a correlation of $r = .88$ between the global raw marks and Z-scores.

(c) The results of the regression analysis (stepwise) using the aggregate Z-scores for both the pre- and post-test have increased the value of R^2 in comparison with the use of raw marks, but did not affect the prediction rank order of the independent variables, as shown in Table 61.

Table 60: Mean and standard deviation of total achievement (pre- and post) and specific subject in intermediate school and secondary school. n = 536

Stage	School Subject		Mean	Std. Dev.
Intermediate	Islamic	(Ach 1)	76.22	9.11
	Arabic	(Ach 2)	74.09	8.83
	Maths	(Ach 3)	60.92	15.04
	Science	(Ach 4)	63.60	13.87
	English	(Ach 5)	57.73	13.94
	Social Studies	(Ach 6)	69.47	11.64
Average (pre)			67.10	9.99
Secondary	Islamic	(Ach 7)	70.53	16.59
	Arabic	(Ach 8)	67.99	15.41
	Maths	(Ach 9)	58.39	19.9
	Science	(Ach 10)	61.82	18.07
	English	(Ach 11)	58.26	18.53
	Social Studies	(Ach 12)	65.19	13.91
Average (post)			64.33	15.36

Table 61 : Summary of stepwise regression analysis with post-academic achievement as the criterion (Z score). n = 536

Predictors	step	beta	Multiple R	R square	Increment to R^2	F	Significance of F	T	T.sig P
Self-concept of ability (Brookover)	1	.34	.44	.194	.194	128.4	.0000	7.2	.0000
Scholastic Competence (Harter)	2	.17	.46	.21	.019	104.6	.0000	.36	.0003

It is very clear from the correlations and the regression results that the use of raw scores, despite the differences in their mean and standard deviation values, had little effect on the relationship between the independent variables and the criterion of achievement. In fact, it has boosted the values of the correlations (Table 62). Meanwhile, the process of prediction has not been affected either. This conclusion is supported by the use of the Z scores which have compensated for the differences in the raw mark scales of each specific subject included in calculating the global mark.

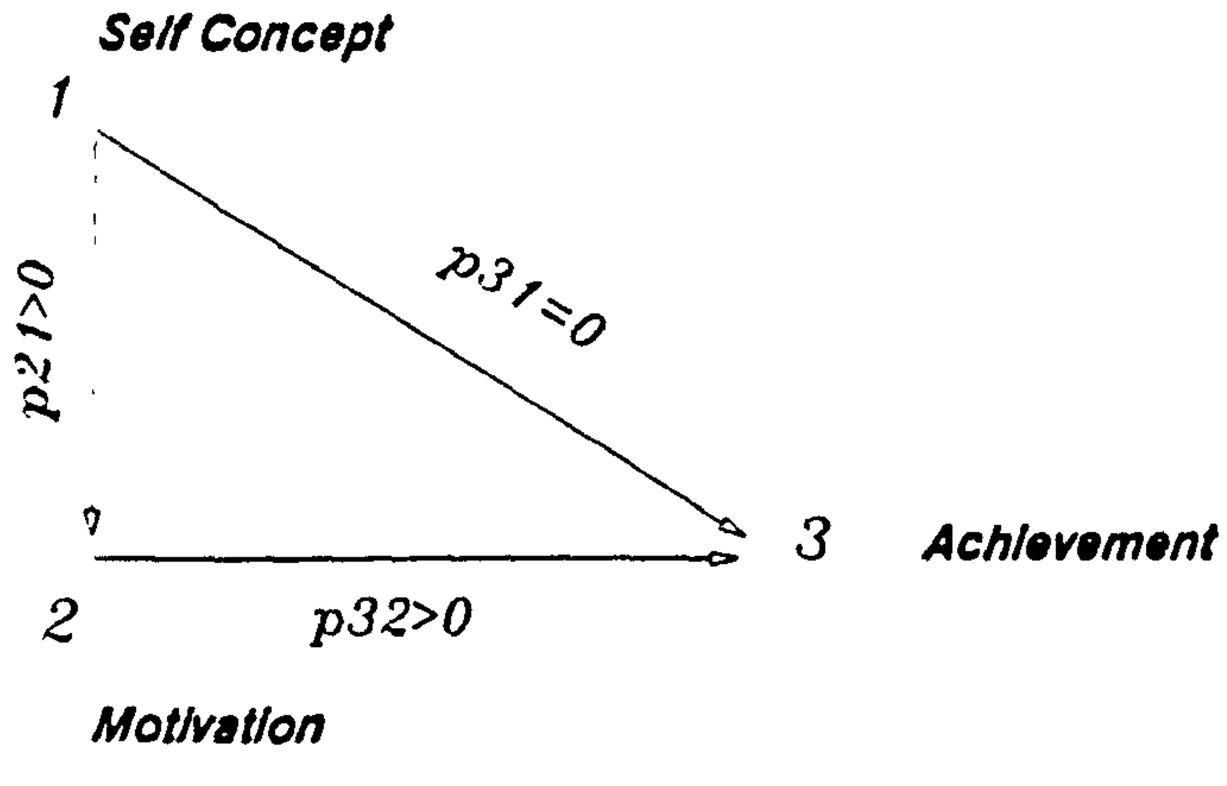
Table 62: The relationship between psychological variables (self-concept, self-esteem, attitude and motivation) and the raw and Z-scores of post academic achievement (n = 536)

	SCAA	Sch	Com	Est	Wor	At	Us	In	Mot	Soc	Ath	Phy	Frn
Raw	.40	.35	.14	.16	.11	.21	.18	.17	.18	-.02	-0.1	.04	-.04
	p=.000	p=.000	p=.001	p=.000	p=.01	p=.000	p=.000	p=.000	p=.000	p=.62	p=.87	p=.37	p=.35
Z	.44	.37	.17	.18	.13	.21	.21	.14	.22	-.01	.03	.11	-.06
	p=.001	p=.000	p=.000	p=.000	p=.004	p=.000	p=.000	p=.001	p=.000	p=.87	p=.36	p=.008	p=.20

7.2.2 Path analysis

The final hypothesis concerned the model that postulated a positive relationship between self-concept of ability and academic achievement. This relationship was assumed to be mediated by motivation on the one hand and by attitude to school on the other. Here the phrase "mediated by" means that its relationship with achievement is attributable to the correlation of motivation and attitude with achievement, but that in itself it has no "direct effect". Path analysis is suited to investigate this hypothesis.

In a three-variable arrangement, the model leads to the prediction of a zero path coefficient between self-concept of academic ability (1) and achievement (3), but a positive significant coefficient between self-concept and motivation (2), and between (2) and (3). This hypothesis is illustrated below:



In this model, self-concept affects motivation and motivation affects achievement, but the effect of self-concept on achievement is indirect. The relevant correlations are as follows:

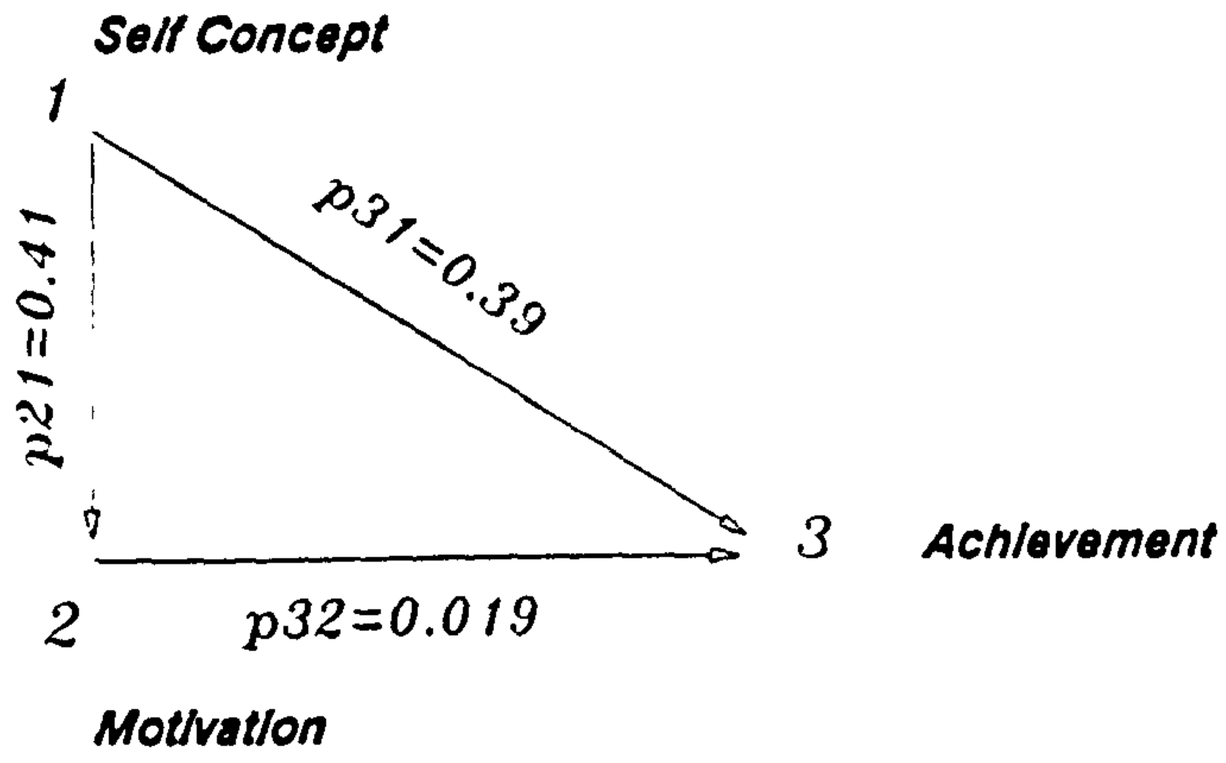
$$r_{12} = p_{21} = 0.41$$

$$r_{23} = 0.18$$

$$r_{13} = 0.40$$

Calculation of p_{31} and p_{32} is realized through $\beta_{31.2}$ and $\beta_{32.1}$ respectively (where $\beta_{31.2} = \frac{r_{31} - r_{32}r_{12}}{1 - r_{12}^2}$).

This yields a path coefficient for the "direct effect" of self-concept on achievement of 0.39 which is clearly greater than the zero value predicted by the model. Similarly, the path coefficient for the effect of motivation on achievement is only 0.019, not significantly different from zero. Substitution in the path diagram gives:



Quite clearly the self-concept variable has a significant "direct effect" on achievement whereas the effect of motivation is very small.

A similar analysis which replaces the achievement motivation by attitude to school proceeds as follows:

$$r_{12} = p_{21} = 0.38$$

$$r_{23} = 0.21$$

$$r_{13} = 0.40$$

These values yield $p_{31} = 0.37$ and $p_{32} = 0.068$. Once again, there is substantial "direct effect" of self-concept on achievement whilst the effect of attitude to school is small; taken together, these two simple path models lead us to reject the original hypothesis. It is clear that self-concept of academic ability has "direct effect" on achievement with little or no contribution being mediated by motivation or attitude.

Use of partial correlations leads us to similar conclusions. Thus the findings indicate that the relationship between self-concept of ability and achievement falls from 0.40 to 0.37 when achievement motivation is controlled. Similarly, the relationship between the two variables, when interest is controlled, falls a little to 0.38, again positive and significant. Again, when perceived usefulness is controlled, the correlation falls to 0.38 and when attitude to school is controlled, to 0.36. Finally, when the relationship between self-concept and achievement is considered, after motivation and attitude are controlled, the correlation is again positive and significant, $p = 0.000$.

The findings indicate that the relationship between achievement and attitude to school, achievement motivation, interest and perceived usefulness are 0.21, 0.18, 0.17 and 0.18, $p < 0.000$,

respectively. After the self-concept of ability (Brookover) is controlled, the relationship between achievement and attitude to school, achievement motivation, interest and perceived usefulness are 0.06, 0.01, -0.04 and -0.01. It is clear that the affective (attitude) and conative (motivational) variables used in the present study appear to owe their relationship with achievement to their dependence on those variables like self-concept of academic ability more directly related to achievement than vice versa. This is consistent with the path analysis in which motivational and attitudinal variables have near zero path coefficients with achievement, whilst self-concept variables have substantial coefficients which are not attenuated by any hypothetical mediational function of affect. The results in general appear to offer no support to the model postulated in this study. The assumption which could be made in any future revised model is that there is no simple causal relationship between self-concept and academic achievement. Self-concept is directly and positively related to achievement while motivation and attitude owe their relationship to achievement through self-concept and so influence achievement. However, a future revised model seems to rule out a mediating function of motivation and attitude. There is a number of possible explanations for the relationship of self-concept with academic achievement other than the ones which are already suggested by research in this field.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND FUTURE RESEARCH

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8.1 Summary

This chapter will attempt to summarize the main findings from this research and relate them to the initial hypothesis and discussion of the results. The wider implications of the work will also be considered together with suggestions for further research.

Section 1: (Correlation)

1. The first question posed in this research concerned the statistical relationship between the self-concept variables, the independent variables, and academic achievement, the dependent variable. The Harter scale (1985) for adolescents was used to investigate the relationship between the variables. This scale was reduced to seven subscales by the application of three criteria of selection: reliability, inter-item correlation and factor analysis. Scholastic Competence, Athletic Competence and Global Self-worth were retained while those of Social Acceptance, Conduct/Morality, Physical Appearance and Close Friendship were reduced in item size, and Job Competence was rejected. Only in the case of one of the subscales, Scholastic Competence, was a significant correlation of 0.35, $p = .000$, obtained. Even this only explains 12.3% of the criterion variance. A small but significant correlation of 0.14, $p = .001$, was shown between Conduct/Morality and achievement. For the remaining subscales, small correlations were obtained, ranging from 0.01 to 0.04. These results, not surprisingly, show

that the relationship between self-concept variables and academic achievement is stronger when the independent variable is related to the academic perspective of the individual, in this case Scholastic Competence. Of the other variables, only that of Conduct/Morality showed a positive small correlation and this may be attributed to the emphasis placed within Islamic culture and education of honesty, caring, and upright living.

The Brookover et al. (1966) academic self-concept scale was also used in the investigation of this first empirical question. A significant relationship of 0.40, $p < 0.000$, was found between self-concept and academic achievement. This scale was based on the assumption that specific academic self-conceptions would be more effective than general self-perception items when attempting to predict academic achievement. The total scores obtained from six subject areas: Mathematics, Science, English, Social Studies, Arabic Language and Islamic Education, correlated positively with examination scores. This again replicates the result obtained using the Harter scale where measures directly related to the academic dimension of the general self correlate more positively with academic achievement.

2. The second empirical question concerned the relationship between self-esteem variables and academic achievement. The self-esteem variables were those of global self-worth (Harter) and self-esteem (Rosenberg). The relationship revealed between these independent

variables and academic achievement were functionally weak and would appear to mirror the great diversity of results that are reported in this area of research. Whilst some studies have supported the existence of a positive relationship others have refuted this. Thus ambiguity has been attributed to the confounding of the variables, global and academic self-concept, in other studies. This would indeed appear to be the case in the present study where a higher significant correlation between academic self-concept (Brookover r = 0.40, Harter r = 0.35) was obtained. Relationships between global self-worth, self-esteem and academic achievement (Harter r = 0.11, Rosenberg r = 0.16), those measures relating directly to the academic self, correlate more highly and positively than those that measure a general sense of self-worth or self-esteem.

However, in the present study, when self-concept of ability (Brookover) is controlled in the relationship between the self-esteem variables (Harter and Rosenberg) and academic achievement, the correlation falls greatly to 0.004 and 0.03 respectively (both non-significant). The influence of self-esteem on academic achievement is therefore seen as acting through or mediated by academic self-concept. This proposition is supported by the findings of Brookover (1967) where the correlation falls from 0.20 to 0.06 when self-concept of academic ability is controlled. In the investigation of the relationship between academic self-concept and academic achievement, when self-esteem (Rosenberg) is controlled, Brookover (1967) discovered only a small reduction in the correlation

(0.49 to 0.46). In the present study when self-esteem (Rosenberg) was controlled, a small reduction was obtained (0.40 to 0.37). A review of 40 correlation and experimental studies (Byrne, 1984) leads to the conclusion that academic achievement has revealed a high correlation with subject-specific academic self-concept, moderate correlation with overall academic self-concept, and no or weak correlations with non-academic facets of self-concept. The relationship between academic self-concept and academic achievement was stronger than the relationship between general self-concept and academic achievement.

3. The third empirical question concerned the relationship between self-concept of ability in specific subjects and academic achievement. Self-concept was measured using the Brookover et al. (1965) scale and modified to include two subject areas, Islamic Education and Arabic Language which are afforded great academic importance in the Saudian educational system. In the investigation of the relationships significantly higher correlations ranging from 0.36 to 0.54 for results of present achievement and 0.13 to 0.45 ($p < .002$) for results of past achievement, were obtained. These results would appear to confirm further the rationale behind Brookover's original study (1966); this emphasised the strong relationship between a specific part of the self-concept (the academic) and achievement in subjects. An examination of the correlations for present and previous results showed that the most significant relationships were between self-concept of ability in Islamic

subjects and Islamic Education, a correlation of 0.54 (present) to 0.40 (past). This again draws attention to the value placed on this subject within the culture, one which is incorporated into the sense of self constructed by the individual.

The findings would appear to support the picture of the self presented in the present research. The self is seen to be multi-dimensional, constructed by the interaction of the individual in society. In an environment where high emphasis is placed on competence in specific subjects, a high correlation is therefore to be expected between self-concept of ability in specific subjects and achievement in those subjects, and this is confirmed.

4. In the investigation of the relationship between self-esteem and the self-concept variables, significant correlations were obtained. Self-esteem (Rosenberg) correlated positively with self-concept of academic ability (Brookover) at 0.33. In the domains of the Harter scale, correlations of 0.39 were obtained for Scholastic Competence, 0.20 for Social Acceptance, 0.16 for Athletic Competence, 0.22 for Physical Appearance, 0.48 for Conduct/Morality, and 0.25 for Friendship. These findings would appear to support Harter's previous findings that "Certain domains do systematically contribute more to self-worth than others" (1987, p. 19).

5. In the investigation of the relationship between the self-concept variables, attitude and motivation variables, positive significant correlations were obtained. The highest correlation was found between the self-concept of academic ability (Brookover) and

interest variable. The correlations between the self-concept of academic ability and attitude to school, perceived usefulness, interest, and achievement motivation are 0.30, 0.47, 0.50 and 0.41, $p = 0.000$ respectively. Similar positive correlations were found between the Scholastic Competence and attitude to school, perceived usefulness, interest and achievement motivation: 0.32, 0.32, 0.33 and 0.30 respectively. In this study, the positive correlation of 0.29, $p < 0.000$, between Conduct/Morality, achievement motivation and attitude to school would appear to reflect the importance attached to social norms within the Saudian educational system.

6. In the investigation of the relationship between the self-esteem variables, attitude and motivation variables, positive significant correlations were obtained. The correlations between self-esteem (Rosenberg) and attitude to school, interest, perceived usefulness and achievement motivation are 0.29, 0.24, 0.25 and 0.33 ($p = 0.000$). Self-esteem was described by Rosenberg as an evaluative attitude and so the possible relationship established between self-esteem and discrete judgement of attitude to school and school subjects was not unexpected. A significant, positive correlation was also found between self-worth (Harter) and attitude to school, interest, perceived usefulness and achievement motivation: 0.32, 0.21, 0.14 and 0.23, $p < 0.001$, respectively. The findings would appear to reaffirm Harter's findings of self-worth as a mediator of one's general affective and motivational states.

7. The final investigation of the seventh empirical question concerned the relationship between academic achievement and attitude and motivational variables. Significant correlations were found between attitude to school, 0.21, perceived usefulness, 0.18, interest 0.17 and achievement motivation, 0.18. These findings are consistent with the view of the dynamic relationship between achievement on the one hand and the activities of the self, in interaction, on the other (Beane and Lipka, 1986).

Section 2: (Prediction)

The empirical question to be considered in this section concerns the best independent predictors of achievement. The use of multiple regression analyses, stepwise and backward, revealed that the two best predictors of academic achievement are self-concept in specific school subjects (Brookover) and Scholastic Competence (Harter). However, only 16.4% of the variance of achievement is predictable from the self-concept of ability and the addition of the variable of Scholastic Competence raises R^2 to 0.18. Adding the second variable served to increase the prediction of percentage criterion variance by less than 2%. However, in the sixth year longitudinal study of Brookover et al. (1967), results indicate that the academic self-concept was seen as functioning to set minimum limits on what decisions are made, "a functionally limiting threshold condition" (Brookover et al., 1967, pp. 11-12).

It is evident from the present study that the absence of intellectual factors from the variables must create limits in the prediction of achievement. This is not consistent with Brookover's (1967) assumption that factors other than ability are the most important variables in achievement. In other studies of the relative potential of self-concept and intelligence as predictors of academic achievement (Gose et al., 1980), it was found that the contribution of intelligence and the related academic self-concept measure accounted for more achievement variance than did intelligence alone. However, in the present study, no measure of intellectual ability was included which could, however, have taken up some of the residual variance.

Self-concept of ability and Scholastic Competence only explain about 20% of the variance. It is possible that the remaining 80% can be explained using multiple factors such as school, home, environmental and cognitive factors, etc. When pre-achievement scores were included with the independent variables in the regression equation to predict post-achievement, the value of R^2 was elevated from 19% to 35% and occupied the first place in the rank order of the predictive variables. Scholastic Competence was placed in second position after pre-achievement; and self-concept of ability in school subjects (Brookover) was pushed to the end because pre-achievement represented a better measure of prediction of post-achievement. This had the same weight in the prediction of post-achievement as self-concept of ability (Brookover).

Section 3: (The Model)

The final hypothesis concerned the model which was proposed by the present study and postulated a positive relationship between self-concept of ability and academic achievement. This relationship was assumed to be mediated by motivation on the one hand and by attitude to school on the other. Path analysis and partial correlations were used to test the above hypothesis.

Path analysis had shown that motivational and attitudinal variables have near zero path coefficients with achievement, whilst self-concept variables have substantial coefficients which are not attenuated by any hypothetical mediational function of affect. It was very clear from the path analysis that self-concept of academic ability had a "direct effect" on achievement with little or no contribution being mediated by motivation or attitude.

Moreover, the use of partial correlations leads us to similar conclusions. The findings indicate that the relationship between self-concept of ability and achievement falls from 0.40 to 0.37 and 0.36 when motivation and attitude are controlled, and in the case when the relationship between self-concept and achievement is considered, the correlation is again positive and highly significant after motivation and attitude are controlled.

However, when the self-concept of ability (Brookover) is controlled, the positive and significant relationship between academic achievement and motivation falls from 0.18 to 0.01 and between achievement and attitude from 0.21 to 0.06, both being non-significant.

It is clear that the affective and conative variables used in the present study appear to owe their relationship with achievement to their dependence on those variables like self-concept of academic ability more directly related to achievement than vice versa.

This result is consistent with that achieved by the path analysis. The results in general appear to offer no support to the model postulated in this study and lead to the rejection of the original hypothesis. The assumption which could be made in any future model is that self-concept is directly and positively related to achievement while motivation and attitude owe their relationship to achievement through self-concept, and so influence achievement.

8.2 Conclusions

Educational achievement is not, and cannot be, a product of a single factor (Walberg et al., 1986). It is instead an outcome of a series of numerous and different interacting factors, the individual's abilities, intelligence, motivation, attitude and sense of self. It should be noted that positive self-perceptions of learners appear to be generally necessary, but not sufficient for school achievement (Brookover, 1967; Purkey, 1970; Beane and Lipka, 1986). Self-perception variables are likely to operate as a whole entity and not as separate factors working independently of each other.

In the present study a model was postulated where self-concept was proposed to affect achievement but with motivation and attitude acting as intervening variables. Causality was not implied and the proposed direct effect of motivation and attitude was not found or demonstrated; thus the findings would appear to reaffirm those of Purkey (1970, p. 15), who stated that "overall the research evidence clearly shows a persistent and significant relationship between self-concept and academic achievement".

Looking at the results of this study, we can conclude several things from the main findings.

First, general self-concept has a positive, significant but rather weak relationship with academic achievement. **Second,** academic self-concept has a much stronger relationship with academic achievement; whether measured by the Harter or Brookover instrument,

it is the strongest single predictor in this study. Third, motivation, attitude to school and interest appear to relate to achievement but only indirectly through academic self-concept.

Taken together, these findings suggest that efforts by teachers, parents and administrators to improve students' general self-concept may not result in improved achievement, at least by the stage of adolescence. However, improved academic self-concept, raised motivation and more positive attitude might be followed by improvements in achievement.

Some writers (e.g. Lawrence, 1987) have recommended counselling to raise self-esteem as the key to educational success, but to do so is to imply a direction of effect. To support the hypothesis, one would need experimental studies in which self-concept is changed and systematic gains in achievement are shown to follow. Nevertheless, in the context of this present study, an attempt to raise students' responses to the items on the Brookover and Harter questionnaires, or even to change the beliefs and appraisal on which they are based, would not be expected to transform the current competences of students into the intellectual skills and understanding on which increases in academic achievement depend. However, raising academic performance by changing the students' understanding of the causes and reasons for their successes and failures might, conceivably, enhance motivation, increase personal involvement and thereby raise self-esteem which some writers believe is necessary for later academic achievement.

Efforts such as these, however, would confound many variables when part of an experimental treatment since they

would also be accompanied by extra tutorial interest, a change of students' focus from the result of their attempts to learn to the processes on which learning depends and unwittingly contribute to extra attention, interest and teaching compared with that received by the control group. Any improvements in academic achievement, therefore, would be difficult to attribute unequivocally to the increments in self-concept. Such theorising and methodology are based on the assumption that changing a student's concept of himself is likely to be followed by improved achievement rather than vice versa and would be an implicit attempt to interpret and draw implications from what might be little more than the highest correlation in a matrix of relationships between a variety of variables, as in the present study; it would be justified only if other explanations for the relationship between self-concept of academic ability and achievement had been eliminated. Examination of the content of the Brookover and Harter instruments suggests a much simpler explanation for the relationships, however, and reveals a problem at the heart of self-concept research.

Items A to C (inclusive) on the Brookover questionnaire require students to assess their academic performance when compared with that of other pupils: thus what they know and believe to be true about their abilities (their "academic self-concept") reflects their actual standing and the correlation is little more than an indication of the accuracy of their response. Unsurprisingly, the student's report, based as it is on feedback he receives from teachers and peers, correlates quite substantially with his

achievement scores. Equally unsurprisingly, perceived present performance constitutes the basis on which students predict future performance and it is this type of question which forms most of the remaining items in Brookover (D to H). Viewed in this way, the correlation between Brookover and academic achievement results from the fit between student report and the reality and not as the consequence of a causal relationship between a psychological variable and scholastic achievement. Thus, by adolescence, self-concept of ability, in effect and as measured, is an aggregation of the knowledge a student has about his school achievement to date and on which he bases his predictions for the future.

Support for this hypothesis would be gained if those items on the Harter scale relating to academic self-concept are susceptible to a similar analysis. It is clear that all of the items which make up the academic self-concept subscale do indeed require self-report on achievement to date. (Examples include: "Some teenagers do very well at their classwork; other teenagers do not do very well at their classwork"; "Some teenagers are pretty slow in finishing their school work; other teenagers can do their schoolwork more quickly"; "Some teenagers have trouble figuring out the answers in school; other teenagers can almost always figure out the answer" - Items 17, 9 and 25 respectively.) Correlations between self-concept of academic ability, then, can be explained as an indicating overlap between the contents and objects of self-report. To this extent, the relationship is a product of the way self-concept of academic achievement is assessed. Whereas general self-concept may tap

the degree to which an adolescent likes himself as a person, academic self-concept invariably incorporates a degree of domain-specific but accurate report of one's progress in school. However, these reports are not completely 'accurate' as is shown by the fact that the correlation does not approach +1.0. One possible reason for this is that students are asked to report on their abilities in school whereas the criterion in this study is their achievement. It is conceivable that respondents of this age group distinguish between the two and do not necessarily see the latter as an accurate reflection of the former, but further research would be required to test this hypothesis.

By the time adolescence (the age of the sample) is reached, subjects have formed their ideas of "how they are" as academics. These largely reflect the appraisals of others especially teachers and peers, are taken by students as reliable indicators of their ability, and form the basis for their predictions about future achievement. Students of low academic self-concept do not necessarily view themselves as having little worth in other areas of their lives. According to Harter (1985), many students will by now have learnt to discount the importance of success in academic domains so that rather than maintain self-esteem by increased effort in school subjects they endorse the importance of other domains. Thus the academic self-concept, in the case of these students, will remain a good predictor of future success yet correlate to only a small extent with other domains of self-concept tapped by the scale. These findings are supported by the results of the factor analysis of Harter's scale reported in Chapter Five.

8.3 Future Research

Having examined the relationship between self-concept variables and achievement, the current study among Arab students has produced results which are generally consistent with those repeatedly found in Western samples. This finding, of a positive and significant relationship between self-concept of academic ability and, to a lesser extent, between general self-concept and achievement, may now be considered as firmly established in the literature and merits little or no further research in itself. However, as current results have suggested, explanations of the relationship are less clear and further investigation within a developmental context informed by testable hypotheses seems necessary.

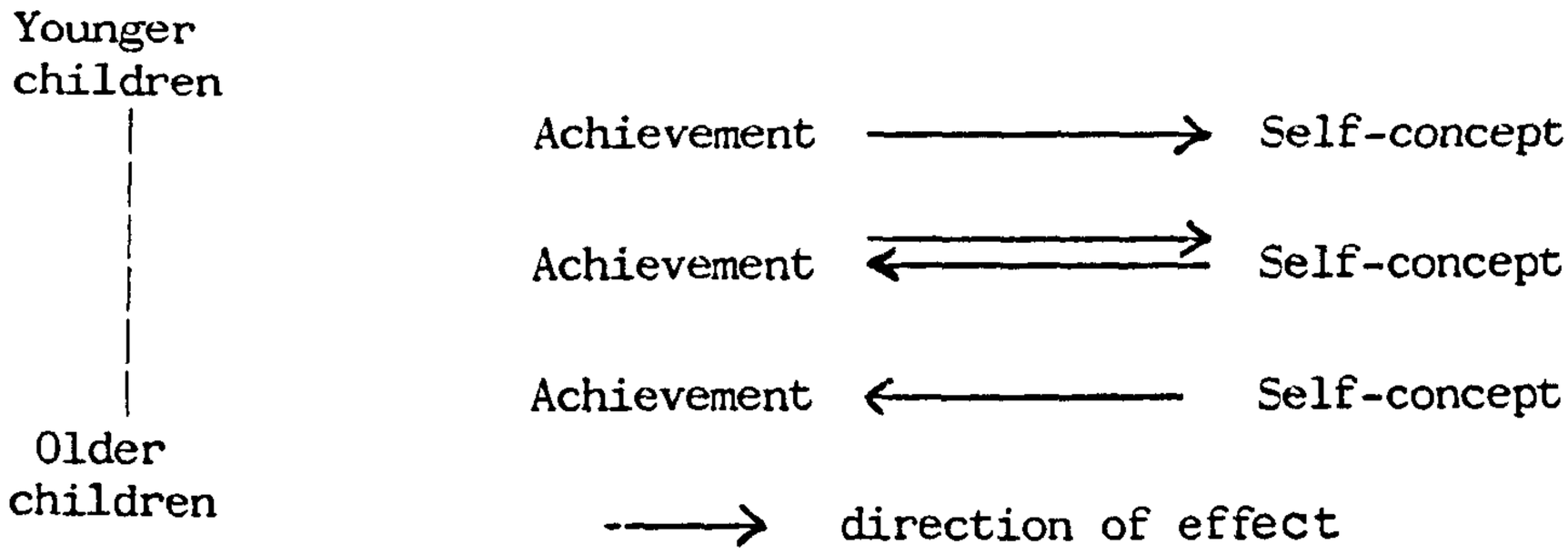
Although a positive relationship between self-concept and achievement seems dependable at most ages studied, a single explanation is not necessarily entailed. Young children, say up to the end of the primary stage of education, are slowly building their academic and general self-concepts in the light of information provided by the effects of success and failure in achievement-related contexts according to the principles of social learning theory. At about the age where metacognition (monitoring, controlling and explaining one's own attempts to learn) develops, the information about achievement supplied by significant others is supplemented by self-appraisal such that there may be a perceived discrepancy between 'outer' and 'inner' driven concepts of self as an achiever. It is hypothesised that 'early' self-concept are, therefore, comparatively labile and sensitive to each success and failure

and how they are explained by the teacher or understood by the learner himself. Moreover, the comparatively 'unstable' nature of the self-concept at this stage may prevent the child from insulating global self-esteem from the effects of academic failure such that there is an immediacy or direct effect of academic outcome on self-concept.

The hypothetical structure of the relationship between self-concept and achievement of older pupils is somewhat different, however. By the age of students in the current research, self-concepts of academic ability are relatively stable and less affected by each academic outcome than among younger children. 'Self' will be relatively well differentiated in the greater number of domains important to the secondary than the primary school student such that students are able to discount the relevance of academic failure whilst at the same time endorsing other areas (e.g. the athletic, social or moral) of self-efficacy in the interests of maintaining general self-esteem. Thus in the absence of major changes in the academic fortunes of the late secondary pupil (for example, a change of educational environment or influence of a teacher who enables the student to learn more effectively than previously), the student's concept of self-as-learner is a stable aspect of his psychological makeup and directly influences the probability of future academic success.

To sum up the different explanations of the correlation between self-concept and achievement between the two populations of students ('younger' and 'older') it may be stated that whereas the achievement

outcome serves to modify or prompts reconstruction of the self-concepts of younger pupils, levels of achievement attained by older pupils act to reinforce their relatively stable self-concept. Thus for the latter group unexpected success or failure can be dismissed as atypical, attributable to unstable factors beyond the learner's control or discounted whereas for the former group there is a greater likelihood of its being followed by modifications to self-concept. At the risk of oversimplification it could be argued that the explanation of the relationship between self-concept and academic achievement is subject to the following progression when viewed in a developmental context:



Quite clearly, if the hypotheses which could be formulated on the above basis were set up, longitudinal research using cross-panel correlation methods would be required for their investigation and such studies, though expensive and time-consuming, urgently need to be undertaken. The findings of the present study are consistent with the direction of effect for older children in the diagram above but the inability of the static design used prevents the dynamic of the relationship from being investigated.

However, some concern must be expressed at the inbuilt weakness of all currently available methods for the measurement of self-concept as has already been pointed out. All questionnaires assess academic self-concept by seeking students' self report on current abilities, comparison with others and predictions of future academic success. If current theories of the process and structure of self-concept are correct, some degree of correlation between knowledge and belief about one's own capabilities ('self-concept') and actual performance ('achievement') is inevitable and may even be tautological. It is conceivable that greater insight into the dynamics of the relationship would be obtained by the clinical study of a smaller number of individuals over a longer period with particular attention to subsamples for whom the relationship is not true (i.e. those who despite low levels of achievement have high self-concepts of ability and vice versa) than through the use of still more large-scale studies subject to the automatic and mechanical use of methods of multiple regression analysis.

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APPENDICES

Subscales for the ADOLESCENT SELF-PERCEPTION PROFILE

Susan Harter, University of Denver

A. Scholastic competence

Item #	Keyed	
1	+	Some teenagers feel that they are just as smart as others their age BUT Other teenagers aren't so sure and wonder if they are as smart.
10	-	Some teenagers are pretty slow in finishing their school work BUT Other teenagers can do their school work more quickly.
19	+	Some teenagers do very well at their classwork BUT Other teenagers don't do very well at their classwork.
28	-	Some teenagers have trouble figuring out the answers in school BUT Other teenagers almost always can figure out the answers.
37	+	Some teenagers feel that they are pretty intelligent BUT Other teenagers question whether they are intelligent.

B. Social Acceptance

Item #	Keyed	
2	-	Some teenagers find it hard to make friends BUT for other teenagers it's pretty easy.
11	+	Some teenagers have a lot of friends BUT Other teenagers don't have many friends.
20	-	Some teenagers are kind of hard to like BUT Other teenagers are really easy to like.
29	+	Some teenagers are popular with others their age BUT Other teenagers are not very popular.
38	-	Some teenagers feel that they are socially accepted BUT Other teenagers wished that more people their age accepted them.

C. Athletic Competence

Item #	Keyed	
3	+	Some teenagers do very well at all kinds of sports BUT Other teenagers don't feel that they are very good when it comes to sports.
12	+	Some teenagers think they could do well at just about any new athletic activity BUT Other teenagers are afraid they might not do well at a new athletic activity.
21	+	Some teenagers feel that they are better than others their age at sports BUT Other teenagers don't feel they can play as well.
30	-	Some teenagers don't do well at new outdoor games BUT Other teenagers are good at new games right away.
39	-	Some teenagers do not feel that they are very athletic BUT Other teenagers feel that they <u>are</u> very athletic.

D. Physical Appearance

Item #	Keyed	
4	-	Some teenagers are <u>not</u> happy with the way they look BUT Other teenagers <u>are</u> happy with the way they look.
13	-	Some teenagers wish their body was different BUT Other teenagers like their body the way it is.
22	-	Some teenagers wish their physical appearance was different BUT Other teenagers like their physical appearance the way it is.
31	+	Some teenagers think that they are good-looking BUT Other teenagers think that they are not very good-looking.
40	+	Some teenagers really like their looks BUT Other teenagers wish they looked different.

E. Job Competence

Item #	Keyed	
5	+	Some teenagers feel that they are ready to do well at a part-time job BUT Other teenagers feel that they are not quite ready to handle a part-time job.

14	-	Some teenagers feel that they don't have enough skills to do well at a job BUT Other teenagers feel that they do have enough skills to do a job well.
23	+	Some teenagers are proud of the work they do on jobs they get paid for BUT For other teenagers, getting paid is more important than feeling proud of what they do.
32	-	Some teenagers feel like they could do better at work they do for pay BUT Other teenagers feel that they are doing really well at work they do for pay.
41	+	Some teenagers feel that it's really important to do the best you can do on paying jobs BUT Other teenagers feel that getting the job done is what really counts.

F. Romance

Item #	Keyed	
6	+	Some teenagers feel that if they are romantically interested in someone, that person will like them back BUT Other teenagers worry that when they like someone romantically, that person won't like them back.
15	-	Some teenagers are not dating the people they are really attracted to BUT Other teenagers are dating those people they are attracted to.
24	+	Some teenagers feel that people their age will be romantically attracted to them BUT Other teenagers worry about whether people their age will be attracted to them.
33	+	Some teenagers feel that they are fun and interesting on a date BUT Other teenagers worry about how fun and interesting they are on a date.
42	-	Some teenagers usually don't get asked out by people they would like to date BUT Other teenagers do get asked out by people they really want to date.

G. Conduct/Morality

Item #	Keyed	
7	+	Some teenagers usually do the right thing BUT Other teenagers often don't do what they know is right.
16	-	Some teenagers often feel guilty about certain things they do BUT Other teenagers hardly ever feel guilty about what they do.

25	+	Some teenagers are usually pretty pleased with the way they act BUT Other teenagers are often ashamed of the way they act.
34	-	Some teenagers do things they know they shouldn't do BUT Other teenagers hardly ever do things they know they shouldn't do.
43	+	Some teenagers usually act the way they know they are supposed to BUT Other teenagers often don't act the way they are supposed to.

H. Close Friendship

Item #	Keyed	
8	+	Some teenagers are able to make really close friends BUT Other teenagers find it hard to make really close friends.
17	+	Some teenagers can be trusted to keep secrets that their friends tell them BUT Other teenagers have a hard time keeping secrets that their friends tell them.
26	-	Some teenagers don't really have a close friend to share things with BUT Other teenagers do have a close friend to share things with.
35	-	Some teenagers find it hard to make friends they can really trust BUT Other teenagers are able to make close friends they can really trust.
44	-	Some teenagers don't have a friend that is close enough to share really personal thoughts with BUT Other teenagers do have a close friend that they can share personal thoughts and feelings with.

I. Self-Worth

Item #	Keyed	
9	-	Some teenagers are often disappointed with themselves BUT Other teenagers are pretty pleased with themselves.
18	-	Some teenagers don't like the way they are leading their life BUT Other teenagers do like the way they are leading their life.
27	+	Some teenagers are happy with themselves most of the time BUT Other teenagers are often not happy with themselves.
36	+	Some teenagers like the kind of person they are BUT Other teenagers often wish they were someone else.
45	+	Some teenagers are happy being the way they are BUT Other teenagers wish they were different.

SELF_CONCEPT OF ABILITY - SPECIEFIC SUBJECTS
(FORM B)
Michigan State University
Bureau of Educational Research

Put an "X" in the box under the heading which best answers the question. Answer for all four subjects. (You will have one "X" on each line).

1. How do you rate your ability in the following school subjects compared with your close friends?

	among the poorest	below average	average	above average	among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

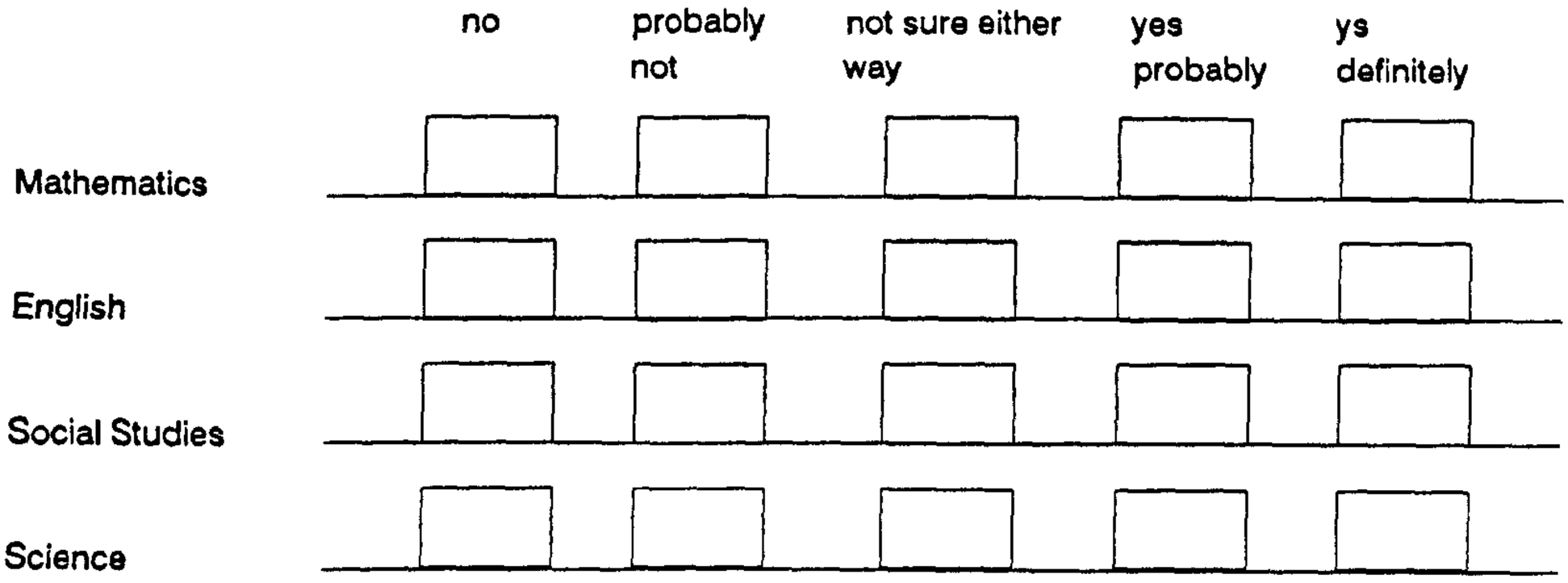
2. How do you rate your ability in the following school subjects compared with those in your class at school?

	among the poorest	below average	average	above average	among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

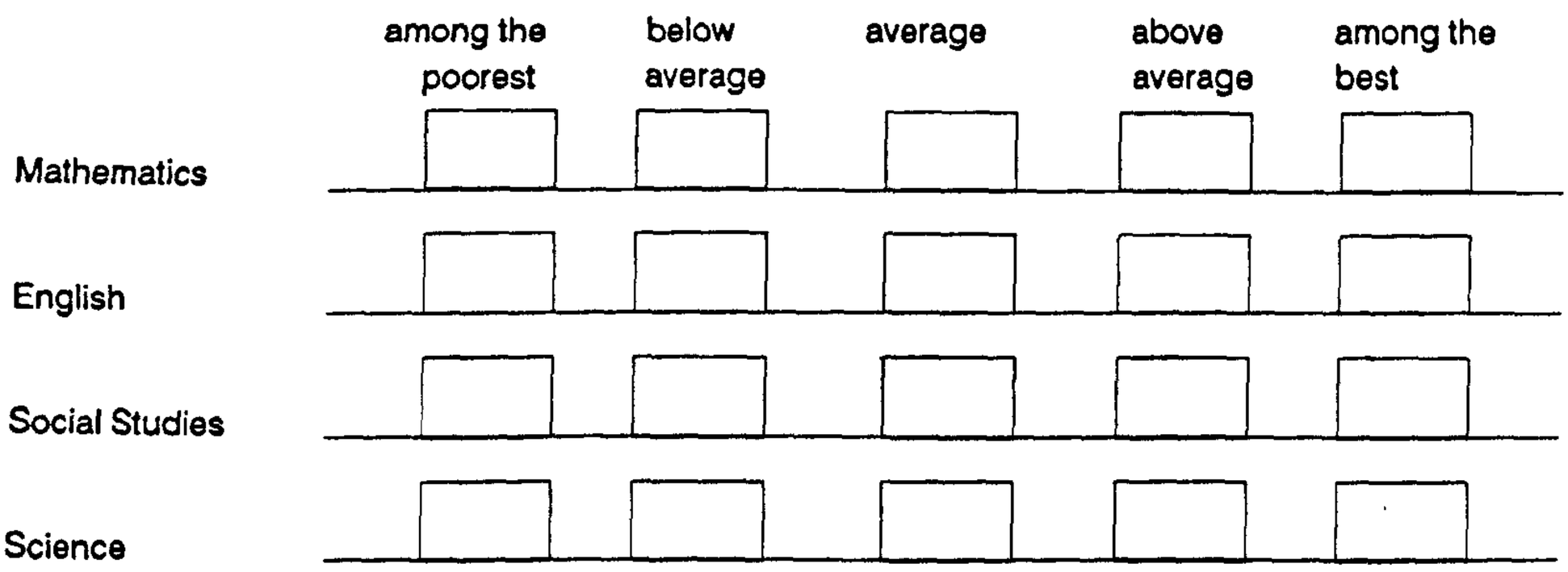
3. Where do you think you would rank in your high school graduating class in the following subjects?

	among the poorest	below average	average	above average	among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

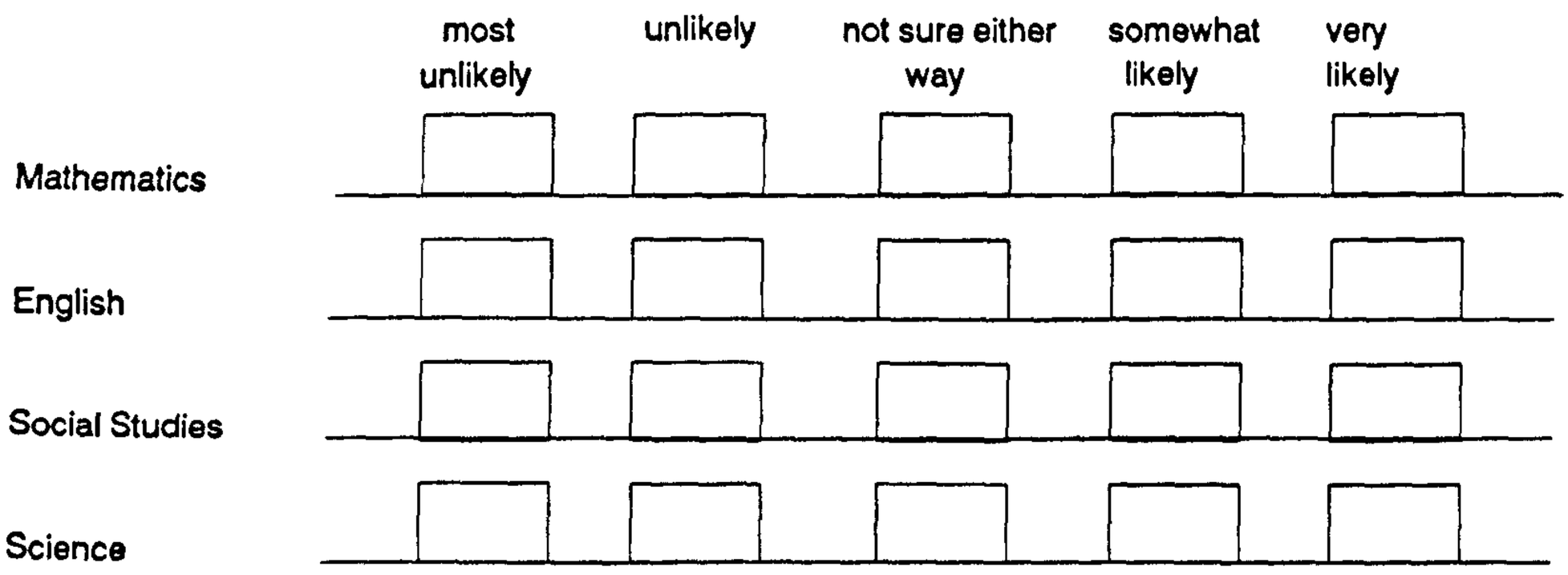
4. Do you think you have the ability to do college work in the following subjects?



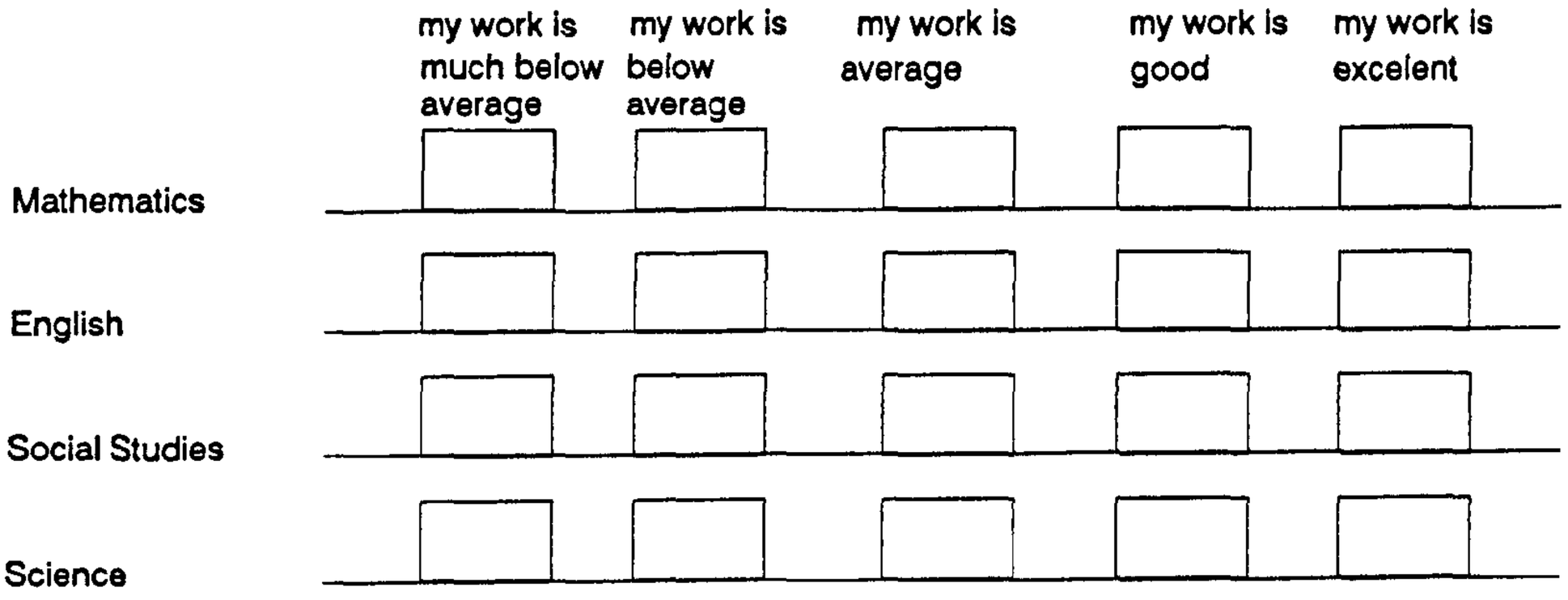
5. Where do you think you would rank in your college class in the following subjects?



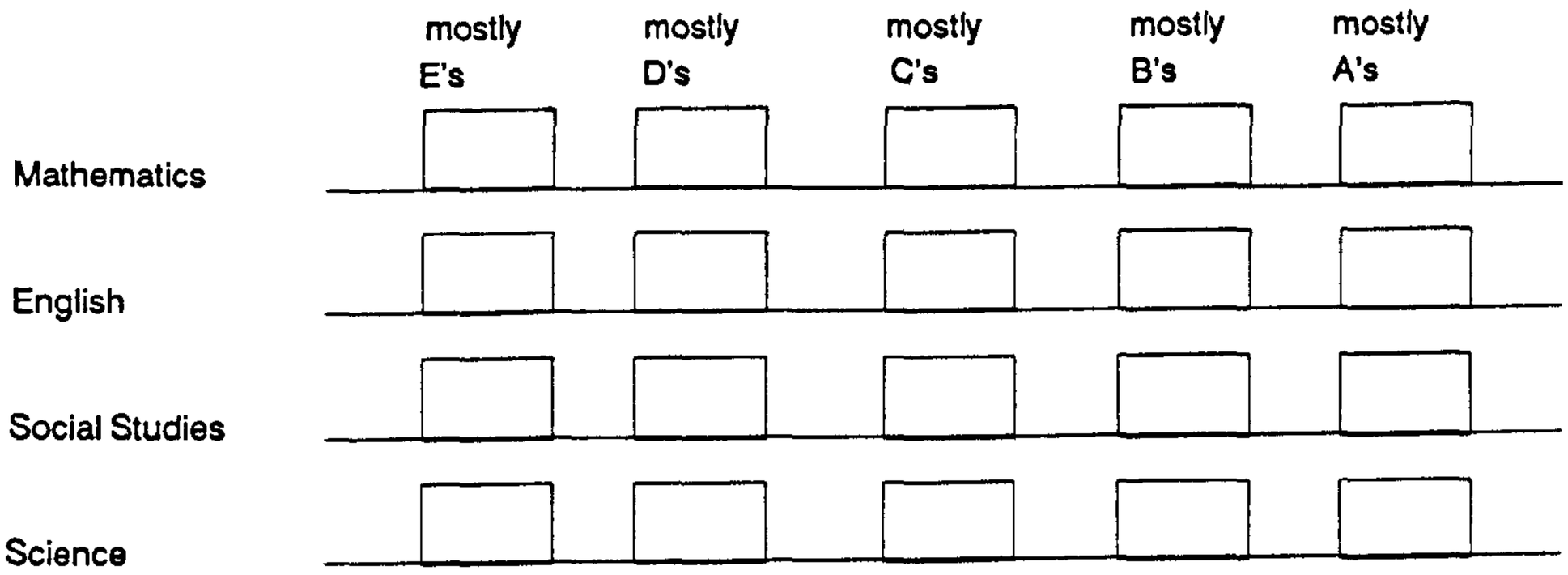
6. How likely do you think it is that you could complete advanced work beyond college in the following subjects?



7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is in the following school subjects?



8. What kind of grades do you think you are capable of getting in the following subjects?



" بسم الله الرحمن الرحيم "

أخى الطالب : تهدف الاسئله الـواردة في هذه الدراسه الى المساهمه في المزيد من تاوير نهضتنا التعليميه وذلك من طريق دراسة بعض الجوانب التى تتعلق بك (للتعرف على مدى معرفه الطالب بنفسه فى علاقتها بتحصيله الدراسى) لذا فالمرجو ان تكون اجابتك صادقه وصريحه على كـــل سؤال علما أن جميع المعلومات التى تكتبها سوف تكون موضوع السريه التامه ولن يطلع عليهـــا سوى الباحث فقط ومن أجل البحث العلمى وعليه فلا داعي ان تكتب اسمك اذا رغبت ذلك وشكـــرا لك على حسن تعاونك وتجاوبـــــك .

الباحـــــث

الاسم : (اختيارى)

السنه الدراسيه

اولى ☐ ثانيه ☐ ثالثه ☐

التخصص

عام ☐ علمى ☐ ادبى ☐

عدد سنوات الرســـوب

أولى متوسط ☐ ثانيه متوسط ☐ ثالث متوسط ☐

أولى ثانوى ☐ ثاني ثانوى ☐ ثالث ثانوى ☐

السـن : يوم ☐ شهر ☐ سنه ☐

الحاله الاجتماعية : متزوج ☐ أعـزب ☐

	غيرمتعلم	متعلم	الابتدائيه	المتوسطه	الثانويه	الجامعه	فوق الجامعة
مستوى تعليم الأب :	☐	☐	☐	☐	☐	☐	☐
" " الام :	☐	☐	☐	☐	☐	☐	☐

درجات امتحان الفصل الاول		درجات امتحان الكفاءه	
المـــاده	الدرجـــه	المـاده	الدرجـــــة

اخى الطالب يرجى وضع علامة (×) في أحد المربعات حيث توجد عبارتان من البعض والبعض الآخر تفصل بينهما كلمة (لكن) عليك أن تقرأ العبارتين وتحدد ايهما ينطبق عليك أكثر من غيره ضع علامة (×) في المربع بجانب العبارة التي تنطبق عليك وبالدرجة التي تراها مناسبة .

مثال :

مثلي تماما	مثلي الى حد ما			مثلي الى حد ما	مثلي تماما
☐	☐	بعض الشباب يقفون وتتهم في لعب الكرة	لكن	شبابا آخرين يقفون أوقات فراغهم في الرحلات	☐	☐

	مثلي تماما	مثلي الى حد ما			مثلي تماما	مثلي الى حد ما
١ -	☐	☐	يشعر بعض الشباب أنهم على درجة من الشطارة (النباهة) لكن كأمثالهم من نفس العمر		شبابا آخرين لبسوا متأكدين من أنهم على مثل هذه الدرجة	☐	☐
٢ -	☐	☐	يجد بعض الشباب صعوبة في تكوين صداقات جديدة	لكن	شبابا آخرين يجدونها عملية سهلة جدا	☐	☐
٣ -	☐	☐	يحقق بعض الشباب نتائج جيدة جدا في جميع انواع الالعاب الرياضية	لكن	شبابا آخرين لايشعرون بأنهم قادرون على تحقيق نتائج جيدة في الالعاب الرياضية	☐	☐
٤ -	☐	☐	بعض الشباب لبسوا سعداء بالشكل الذى هم عليه	لكن	شبابا آخرين سعداء بشكلهم الذى هم عليه	☐	☐
٥ -	☐	☐	يشعر بعض الشباب أنهم مهيأون للقيام بعمل (غير دائم) بصورة جيدة	لكن	شبابا آخرين يشعرون أنهم لبسوا مهيأين لتقبل عمل غير دائم	☐	☐
٦ -	☐	☐	يقوم بعض الشباب عادة بعمل الشيء الذى يعرفون أنه الصواب	لكن	شبابا آخرين غالبا لايعملون ما يعرفون انه الصواب	☐	☐
٧ -	☐	☐	يستطيع بعض الشباب تكوين اصدقاء مقربين لهم فعلا	لكن	شبابا آخرين يجدون صعوبة في تكوين أصدقاء مقربين لهم فعلا	☐	☐
٨ -	☐	☐	غالبا ما يشعر بعض الشباب بخيبة الامل في أنفسهم	لكن	بعض الشباب يشعرون برضاء كامل عن أنفسهم	☐	☐
٩ -	☐	☐	بعض الشباب يطيشون جدا في انجاز واجباتهم المدرسية	لكن	شبابا آخرين يستطيعون انجاز واجباتهم المدرسية بسرعة أكبر .	☐	☐
١٠-	☐	☐	لدى بعض الشباب أصدقاء كثيرون	لكن	شبابا آخرين ليس لديهم كثير من الاصدقاء	☐	☐
١١-	☐	☐	يعتقد بعض الشباب أنهم قادرون على تحقيق نتائج طيبة في أى نشاط رياضي جديد	لكن	شبابا آخرين يتحولون من أنهم قد لايحققون نتائج طيبة في النشاط الرياضي الجديد	☐	☐
١٢ -	☐	☐	يتمنى بعض الشباب لو أن اجسامهم كانت بشكل آخر	لكن	شبابا آخرين يفضلون اجسامهم كما هي	☐	☐
١٣-	☐	☐	يشعر بعض الشباب أنه ليس لديهم المهارات الكافية للقيام بالعمل بصورة جيدة	لكن	شبابا آخرين يشعرون بأن لديهم ما يكفي من المهارات للقيام بالعمل بصورة جيدة	☐	☐

		مثلى تماما	مثلى الى حد ما			مثلى الى حد ما	مثلى تماما
١٤ -	فالبا مايشعربعض الشباب بالذنب حول بعض أشياء يقومون بها	☐	☐	لكن	شبابا آخرين قد لايشعرون مطلقا بأى ذنب لما قد يقومون به	☐	☐
١٥ -	يمكن الثقه ببعض الشباب لحفظ الاسرار التى يخبرهم بها أصدقاؤهم	☐	☐	لكن	شبابا آخرين يجدون صعوبه في الحفاظ على الاسرار التى يخبرهم بها أصدقاؤهم .	☐	☐
١٦-	لايحب بعض الشباب الطريقه التى يمارسون بها حياتهم	☐	☐	لكن	شبابا آخرين يحبون الطريقه التى يعيشون بها	☐	☐
١٧ -	يحقق بعض الشباب نتائج طيبه فى واجباتهم في الفصل الدراسى	☐	☐	لكن	شبابا آخرين لايحققون مثل هذه النتائج الطيبه في أعمالهم داخل الفصل	☐	☐
١٨ -	بعض الشباب من النوع الذى تجدصعوبة في أن تعجب بهم	☐	☐	لكن	شبابا آخرين يحب المرء بهم حقا وبسهوله	☐	☐
١٩ -	يشعر البعض انهم أفضل من اقرانهم في ممارسة الالعاب الرياضيه	☐	☐	لكن	شبابا آخرين لايشعرون بانهم يستطيعون ان يتقنوا الالعاب الرياضه مثل الاخرين بطريقه طيبه	☐	☐
٢٠-	يتمنى بعض الشباب لو كان مظهرهم الجسمي بشكل آخر	☐	☐	لكن	شبابا آخرين يفضلون مظهرهم الجسمى كما هو عليه	☐	☐
٢١ -	يفخربعض الشباب بما يقومون به من اعمال يتعلمون منها أجرا .	☐	☐	لكن	شبابا آخرين يرون ماتدفع لهم من آجر أكثر أهمية من الاحساس بالفخر بما يقومون به من عمل	☐	☐
٢٢ -	يشعر بعض الشباب عادة بالرضا الكامل عن تصرفاتهم	☐	☐	لكن	بعض الشباب فالبا ما يخجلون من تصرفاتهم	☐	☐
٢٣ -	بعض الشباب ليس لديهم صديق مقرب فعلا يشاركهم خصوصياتهم .	☐	☐	لكن	شبابا آخرين لديهم صديق مقرب يشاركهم خصوصياتهم .	☐	☐
٢٤ -	يشعر بعض الشباب بالسعاده مع أنفسهم أغلب الاوقات	☐	☐	لكن	شبابا آخرين فالبا لايشعرون بهذه السعادة .	☐	☐
٢٥ -	يواجه بعض الشباب صعوبه في الاجابه على ما يوجه لهم من الاسئلة الدراسيه .	☐	☐	لكن	شبابا آخرين يستطيعون معرفة الاجابة في معظم الاوقات	☐	☐
٢٦ -	بعض الشباب محبوبون من قبل من هم في نفس عمرهم	☐	☐	لكن	شبابا آخرين غير محبوبين لدرجة كبيرة ممن هم في نفس عمرهم	☐	☐
٢٧-	لايحقق بعض الشباب نتائج في الالعاب الرياضية الجديدة التى تمارس في الملاعب المكشوفه في الهواء الطلق .	☐	☐	لكن	بعض الشباب بمكنهم تحقيق نتائج طيبة في ممارسة الالعاب الرياضه الجديدة عليهم التى تمارس في الملاعب المكشوفة في الهواء الطلق .	☐	☐
٢٨ -	يعتقد بعض الشباب بانهم حسنوا الوجه (الطلعه)	☐	☐	لكن	شبابا آخرين يعتقدون انهم ليسو حسنى الوجه الى درجة كبيره	☐	☐
٢٩ -	يشعر بعض الشباب أنهم قادرون على العمل بصوره أفضل فيما يقومون به من عمل مقابل اجر	☐	☐	لكن	شبابا آخرين يشعرون انهم يبذلون حقا وسعهم ويعملون جدا فى العمل الذى يقومون به مقابل أجر .	☐	☐
٣٠ -	يقوم بعض الشباب بأعمال يعرفون أنه يجب أن يبتعدوا لكن منها .	☐	☐		شبابا آخرين لايقومون ابدا (اطلاقا) بمثل هذه الاعمال	☐	☐
٣١ -	يجد بعض الشباب صعوبة فى تكوين أصدقاء يثقون بهم فعلا	☐	☐	لكن	شبابا آخرين يستطيعون تكوين اصدقاء مقربين يثقون بهم فعلا	☐	☐

		مثلى تماما	مثلى الى حد ما			مثلى الى حد ما	مثلى تماما	
٣٢ -	☐	☐	يحب بعض الشباب نوعيه الشخص الذى هم عليه الان	لكن	شابا آخرين يتمنون فالما لوكانوا شخصا آخر	☐	☐	
٣٣ -	☐	☐	يشعر بعض الشباب كأنهم فعلا أذكيا للغايه	لكن	شابا آخرين يتشككون فيما اذا كانوا اذكياء	☐	☐	
٣٤ -	☐	☐	يشعر بعض الشباب أنهم مقبولون اجتماعيا	لكن	شابا آخرين يتمنون لو تقبلهم من هم في مثل عمرهم	☐	☐	
٣٥ -	☐	☐	لاشعر بعض الشباب بأنهم رياضيون حقا	لكن	شابا آخرين يشعرون بأنهم حقا رياضيون .	☐	☐	
٣٦ -	☐	☐	يفضل بعض الشباب شكلهم الحالى كما هو عليه	لكن	شابا آخرين يتمنون لو أن شكلهم كان مختلفا عما هم عليه	☐	☐	
٣٧ -	☐	☐	يشعر بعض الشباب بالاهمية القصوى لبذل أفضل ما يستطيعو من جهد فى الاعمال التى يقومون بها مقابل أجر	لكن	شابا آخرين يشعرون بان اختيار العمل هو المهم .	☐	☐	
٣٨ -	☐	☐	يتصرف بعض الشباب عادة بالطريقة التى يعرفون أنه يفترض منهم اتباعها	لكن	شابا آخرين فالما مالا يتصرفون بالطريقة التى يفترض فيهم سلوكها .	☐	☐	
٣٩ -	☐	☐	بعض الشباب ليس لديهم صديق مقرب لدرجة يستطعون اشراكه في افكارهم الخاصه .	لكن	شابا آخرين لديهم صديق مقرب يستطيعون اشراكه بافكارهم الخاصه .	☐	☐	
٤٠ -	☐	☐	بعض الشباب سعداء جدا بما هم عليه الان	لكن	شابا آخرين يتمنون لو كانوا مختلفين عما هم عليه الان	☐	☐	

المرجو وضع علامة (×) في الربع الذى يمثل وجه نظرك بجانب كل ماده من المواد الدراسه التاليه وتحت الدرجه التى تراها مناسبه لك ؟

س١ : كيف تقيم قدرتك في المواد الدراسه التاليه مقارنه بامدقائك المقربين ؟

	بين الضعفاء	اقل من المتوسط	متوسط	فوق المتوسط	من المتفوقين
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٢ : كيف تقيم قدرتك فى تلك المواد الدراسيه مقارنه بزملائك فى الفصل الدراسي؟

	بين الضعفاء	اقل من المتوسط	متوسط	فوق المتوسط	بين المتفوقين
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٣ : اين تعتقد سيكون ترتيبك فى السنه النهائيه (سنة التخرج) في المواد التالية :

	بين الضعفاء	اقل من المتوسط	متوسط	فوق المتوسط	من المتفوقين
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٤ : هل تعتقد ان لك القدره على متابعة الدراسه الجامعيه في المواد الدراسيه التاليه :

	لا	من المحتمل لا	لست متأكدا	من المحتمل نعم	بالتأكيد نعم
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٥ : اين تعتقد أنه سيكون ترتيبك فى السنه الجامعيه الاولى فى المواد الدراسيه التاليه ؟

	بين الضعفاء	أقل من المتوسط	متوسط	فوق المتوسط	بين المتفوقين
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٦ : هل ترى من المحتمل بانك ستستطيع اكمال الدراسه العليا فى المواد الدراسيه التاليه :-

	غير محتمل اطلاقا	غير محتمل	غير متأكد	محتمل الى حد ما	محتمل جدا
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيات	☐	☐	☐	☐	☐
العلوم	☐	☐	☐	☐	☐
الانجليزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٧: تنـــاس للحظه تقدير الاخرين لعملك واذكر وجهة نظرك في تقييم معلمكما تراه انت في المواد الدراسيه التاليـــه :

	اقل بكثير من المتوسط	اقل من المتوسط	متوسط	جيد	ممتـــاز
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيـــات	☐	☐	☐	☐	☐
العلـــوم	☐	☐	☐	☐	☐
الانجلـــيزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

س٨ : ما مستوى الدرجات التى تعتقد بأنك قادر على الحصول عليها فى المواد الدراسيه التاليـــه :

	ضعيـف	مقبـول	جيـد	جيد جدا	ممتـــاز
المواد الدينيه	☐	☐	☐	☐	☐
اللغه العربيه	☐	☐	☐	☐	☐
الرياضيـــات	☐	☐	☐	☐	☐
العلـــوم	☐	☐	☐	☐	☐
الانجلـــيزى	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐

المرجو وضع علامة (×) فى المربع الذى يمثل وجهة نظرك (أو ينطبق عليك) بجانب كل عبارة من العبارات التالية :-

م	البيـــــان	موافق بشدة	موافق	غير موافق	غير موافق بشدة
١	على وجه العموم أنا راضى عن نفســـى				
٢	احيانا أشعر بانني لست على ما يرام على الاطلاق				
٣	اشعر بأن لى عددا من الصفات الحميـــــده				
٤	استطيع عمل الأشياء بصورة لاتقل جودة عن باقي الناس				
٥	لا اشعر بانى لدى الكثير مما أفتخر بـــــه				
٦	بالتاكيد اشعر بانى عديم القيمة في بعض الاحيان				
٧	أشعر بقيمتى على الأقل على قدم المساواة مع الآخرين				
٨	أتمنى لو استطيع أن أكنّ احتراما أكثر لنفســـى				
٩	باختصار أجدني ميالا للاعتراف بأني فاشـــــل				
١٠	لدى اتجـاه ايجابي نحو نفســـــى				

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من فضلك ضع علامة (x) في المربع الذى يوافق وجهة نظرك :-

	نعـم	لا أدرى	لا
١ - هل تتلهف على الذهاب الى المدرسة معظم الايـام .	☐	☐	☐
٢ - هل تضجر من المدرسين الذين يحددون لك ما تستطيع عمله وما لاتستطيع عملـــه .	☐	☐	☐
٣ - هل يبدى المدرسون اهتماما بتعليمك والتدريس لك .	☐	☐	☐
٤ - هل تتوفر في المدرسة أشياء كثيرة ممنوعة يمكن عملها .	☐	☐	☐
٥ - هل يبدى بعض المدرسين اهتماما بك كفـــرد .	☐	☐	☐
٦ - هل تعتقد أن معظم ما تتعلمه سيكون مفيدا لك .	☐	☐	☐
٧ - هل يتناسى مدرسوك بأنك تنمو (تكبر) ويعاملونك كما لو كنت طفـــلا .	☐	☐	☐
٨ - هل تشعر بالضجر معظم الاوقات في المدرســة .	☐	☐	☐
٩ - هل تعتقد أن العمل بعد التخرج سيكون أكثر متعة من المدرسة نفسهـــا .	☐	☐	☐

المرجو وضع علامة (×) في المربع الذى يمثل وجهة نظرك بجانب كل عبارة من العبارات التالية :ـ

م	البيـــــــــــــان	اوافق بشدة	اوافق	بين وبين	لا اوافق	لا اوافق بشدة
١	استطيع ان اعرف كيف استجيب في المواقف التعليميـــــــــة					
٢	اشعر بكثير من الرضا عندما احصل على درجات طيبة في المدرســـــة					
٣	التعليم شيء يحدث او لا يحدث					
٤	لو اديت واجبات منزلية لاستطعت ان احقق نتيجة افضل في المدرســـــة					
٥	يمكن ان اتعلم اكثر لوكان لدينا كتب ووسائل تعليمية افضل					
٦	احاول الحصول على درجات طيبة حتى في المواد التي لا اميل اليها					
٧	اضطر احيانا لقراءة الدروس عدة مرات قبل فهمها					
٨	ابذل قصارى (كل) جهدى في جميع اعمالي المدرسية (واجباتي المدرسية)					
٩	احدى الطرق المساعدة لعملية التعلم هي ان تعيد العمل المطلوب عدة مرات حتى تتقنه					
١٠	من الممكن ان تتعلم الانتظام حتى في الدروس المملة					
١١	انا لست ذكيا للغاية ولا يمكن ان اتعلم اكثر مما احققه الآن					
١٢	انجز فقط ما يحدده المدرسون لنا من واجبات					
١٣	اضع لنفسي مستويات عاليه في ادائي لاعمالي المدرسية المختلفة					
١٤	يمكن ان تصبح المواد المملة ممتعة عندما تبدأ بمعرفة بعض الشيء عنها كبداية					
١٥	يعتمد ما تتعلمه عموما على ما تبذله من وقت وجهد في عمليـــة التعلم					

م	البيـــــــــــان	اوافق بشدة	اوافق	بين وبين	لا اوافق	لا اوافق بشدة
١٦	استطيع ان اتعلم اكثر لو حصلت على دعم اكثر من اصدقائـــي					
١٧	حقا اريد ان ابذل كل ما استطيع في جميع اعمالي المدرسية					
١٨	يمكن ان اتعلم اكثر لوكان لي مدرسون اكثر كفاءة					
١٩	يستطيع التلاميذ تعلم طرق خاصة بهم لتحسين ذاكرتهم					
٢٠	تحتاج الى اختبار نفسك لكي تعرف مقدار ما تتعلمه					
٢١	يحصل التلاميذ الذين يساعدهم والديهم على درجات افضل					
٢٢	ابذل جهدا اضافيا في دراستي في البيت واحقق بذلك نجاحا افضل في المدرسة					
٢٣	يستطيع التلاميذ تحقيق نتيجة افضل في المدرسة اذا ما درسوا اشياء اضافية لم يحددهـــا لهم مدرسوهم					
٢٤	اجد اني كلما بذلت وقتا اطول في الدراسة اصبح التعلم اســـهل					
٢٥	عندما اختبر نفسي اجد اني اتعلم بصورة اســـرع					

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نريد أن نعرف أى من المواد الدراسيه التالية تجدها ممتعه وأيها نافعة ، يرجي وضع علامـــــة (x) في المربع الذى يمثل وجهة نظـــرك :-

المواد الدراسيـة	هل تراها مفيـــدة			اذا كنت تدرسها فهل هـي		
	نعـــم	بين وبين	لا	ممتعه	بين وبين	مملة
المواد الدينية	☐	☐	☐	☐	☐	☐
اللغة العربيـة	☐	☐	☐	☐	☐	☐
الرياضيـــات	☐	☐	☐	☐	☐	☐
العلـــوم	☐	☐	☐	☐	☐	☐
الانجلـــيزى	☐	☐	☐	☐	☐	☐
المواد الاجتماعية	☐	☐	☐	☐	☐	☐

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