

## **The Effects of Academic Self-concept and Value System on the Academic Achievement of Malaysian Form Four Students in a Junior Science College**

**CYNTHIA JOSEPH**

*School of Educational Studies,  
Universiti Sains Malaysia, Pulau Pinang*

### **ABSTRAK**

*Kajian ini meneliti perkaitan serta sumbangan faset-faset konsep diri akademik dan sistem nilai kepada pencapaian akademik pelajar-pelajar Tingkatan Empat di sebuah Maktab Rendah Sains MARA. Faset-faset konsep diri akademik, iaitu konsep diri sekolah, konsep diri Matematik Tambahan dan konsep diri Berbahasa diukur dengan 'Self-Description Questionnaire-II' (SDQ-II) (Marsh, 1990). Empat aspek sistem nilai iaitu nilai terminal personal, nilai terminal sosial, nilai instrumental kecekpaan dan nilai instrumental moral diukur dengan alat pengukuran 'Rokeach Value Survey' (RVS) (Rokeach, 1973). Pencapaian akademik keseluruhan pelajar-pelajar ini adalah berdasarkan GPA mereka. Pencapaian dalam mata pelajaran Matematik Tambahan dan Bahasa Malaysia berdasarkan gred dalam mata pelajaran tersebut juga diteliti. Ujian kebolehan intelek 'The Advanced Progressive Matrices' (Raven dan rakan-rakan, 1977) digunakan untuk mengawal faktor-faktor kognitif. Keputusan kajian menunjukkan pada umumnya faset-faset konsep diri akademik lebih berkait dengan signifikan dengan ukuran-ukuran pencapaian tersebut dengan signifikan berbanding dengan aspek-aspek sistem nilai.*

### **Introduction**

The total belief system represents the total universe of a person's beliefs about the physical world, the social world and the self (Rokeach, 1973). A belief is a statement about reality that is accepted by an individual as true (Theodorson & Theodorson, 1969). A belief may be based upon empirical observation, logic, tradition, acceptance by others or faith. Beliefs form the central structure of the individual's conception of the world and the framework within which his perception occurs.

All beliefs have cognitive, affective and behavioural components (Rokeach, 1973). A belief has a cognitive component, because it represents an individual's knowledge about what is true or false, good or bad, desirable or undesirable. A belief is affective because it is capable of arousing affect of varying intensity. A belief has a behavioural component as it is an intervening variable that leads to action when activated.

The total belief-attitude-value-behaviour system consists of various subsystems as theorized by Rokeach (1968, 1973). The construct self-concept forms the inner most core of the total belief system and all remaining beliefs, attitudes and values can be conceived of as functionally organized around this innermost core (Rokeach, 1973).

Rokeach accorded the construct, self-concept a more central status within the total belief system than attitudes or values for two reasons. First, the construct self-concept has a self-reflexive quality which attitudes and values do not possess. Secondly, and even more important, an individual's self-concept is activated in almost every situation. Attitudes and values are activated only by certain relevant objects and situations. The purpose of one's belief system is to maintain and enhance one's self-concept.



In the belief system, two or more values may be organised together to form an instrumental or a terminal value system. Two or more attitudes may be organised together to form a larger attitudinal system. Several beliefs may be organised to form a single attitude on a specific object or situation. The cognition a person may have about his own behaviour is next represented in the belief system, followed by the cognitions he may have about the attitudes, values, motives and behaviour of significant others. And lastly, represented in the belief system is an individual's cognitions about the behaviour of nonsocial objects.

There is both theoretical and empirical support (Gustafson, 1991; Marsh, 1990, 1992; Mayton & Sangster, 1992; Rokeach, 1973) as to the relationship between the subsystems of the individual's belief system and behaviour. This study focuses on an important behavioural outcome in education that is academic achievement. The independent variable in this study are the two subsystems of the belief system that is self-concept and value system. The purpose of this study was to investigate the pattern and strength of relationship between the two subsystems of the belief system, namely self-concept and value system and academic achievement of students.

### **Self-concept**

In broad terms, self-concept is a person's perception of himself (Shavelson, Hubner & Stanton, 1976). An individual's self-concept is formed through one's interpretations of his experiences with his environment and is influenced by reinforcements, evaluations of significant others and one's attributions for one's own behaviour.

Shavelson, Hubner and Stanton also identified seven features of self-concept. Self-concept is viewed as organised, multifaceted, hierarchical, stable, developmental, evaluative, differentiable. They proposed a model of hierarchical, multifaceted self-concept with general self-concept at the apex of the hierarchy. General self-concept is divided into academic self-concept and nonacademic self-concept. Nonacademic self-concept is further divided into social, emotional and physical self-concept while academic self-concept is further divided into specific subjects such as Mathematics, English, Science. Self-concept depends increasingly on specific situations and become less stable as one descends this hierarchy.

Previous empirical research which emphasized self-concept as a single, global entity has produced inconsistent results in the relationship between self-concept and other constructs. Based on their review of the theoretical and empirical literature, Shavelson, Hubner and Stanton (1976) proposed a multifaceted, hierarchical model of self-concept to overcome these problems. The 'Self-Description Questionnaire' (Marsh, 1990) which is based on this model is widely used in current self-concept research and has been rigorously tested for validity and reliability with both Western and non-Western samples.

There has been increasing empirical support (Fleming & Courtney, 198; Marsh, 1992; Marsh, Byrne & Shavelson, 1988) for the Shavelson model of self-concept. Most of these studies used American or Australian students as the research samples. There have



also been researches which have used non-Western samples such as Watkins & Guitierrez (1989) with Filipino students; Watkins & Akande (1992) with Nigerian students; Maznah & Yoong (1994), Maznah, Ng & Yoong (1998) with Malaysian students.

Empirical research shows that self-concept correlates with various aspects of behaviour (Marsh, 1996) such as academic achievement (Byrne, 1996; House, 1997; Marsh, 1990), sex roles (Marsh, 1987), participation in sports programme (Marsh and Peart, 1988).

### *Value system*

Rokeach (1973) places strong emphasis on the importance of the concept of values in the study of human behaviour. This construct is the main dependent variable in the study of culture, society and personality and the main independent variable in the study of social attitudes and behaviour.

Rokeach (1973) developed a theoretical perspective on the nature of values in a cognitive framework. Rokeach's conception of values is very direct and more accurate than those of earlier workers. The model proposed by Rokeach (1973) provides an adequate and comprehensive representation of the human value domain.

Rokeach divides values into those concerned with ends, 'terminal values' and those concerned with means, 'instrumental values'. Values can be classified as instrumental values, which are desirable modes of conduct and terminal values, which are desirable end-states of existence (Rokeach, 1973). Instrumental values can be further classified as moral instrumental values and competence instrumental values. Moral values (examples: behaving honestly, behaving responsibly) refer to values that have an interpersonal focus whereas competence values (examples: behaving logically, intelligently or imaginatively) have personal focus. Terminal values can be classified as personal terminal values and social terminal values. Personal terminal values (examples: salvation, peace of mind) have an intrapersonal focus or are self-centred values. Social terminal values (examples: world peace, brotherhood) have an interpersonal focus or are society centered values.

These conceptions are operationalized in the Rokeach Value Survey (RVS). RVS is one of the few instruments based on a well-articulated conceptualization of values (Braithwaite and Law, 1985). Rokeach (1973) maintained that the final 36 items listed in the RVS provide a reasonably comprehensive coverage of the most important human values. The RVS is a value-measurement instrument which is widely used and accepted by psychologists and other social scientists (Johnston, 1995)

There are a number of current studies which use Rokeach's conceptualization of values (Mayton and Sangster, 1992; Mohammad, 1990; Rodiah, 1990). Literature review indicates that values correlates significantly with variables such as attitudes (Feather, 1992; Mayton and Sangster, 1992), sex role orientation (Feather, 1984) and academic achievement (Coyne, 1988; Gustafson, 1991)

### ***Self-concept and Values***

The constructs, self-concept and values are two important subsystems of the total belief system (Rokeach, 1973). However, there seems to be a lack of empirical studies investigating the relationship between the two constructs and academic achievement. The present study aims to provide a better understanding regarding the role of these two constructs within the individual's belief system by investigating the pattern and strength of the relationship between the various facets of the constructs and academic achievement.

### ***Aims of the study***

The specific aims of this research were

- (i) to examine the relationship between the facets of academic self-concept, the dimensions of the value system and academic achievement of Malaysian Form Four students
- (ii) to determine the contribution of the facets of academic self-concept and the dimensions of the value system to the prediction of academic achievement of Malaysian Form Four students

### ***Method***

#### ***Sample***

The sample consisted of 250 Malaysian secondary four Malay students (aged 16 years) from a junior science college, a residential school in the country. There were 144 male students and 106 female students. These students were from the Science stream programme. Selection to enter the college was based on their academic performance in the national examination, the Lower Certificate of Education examination. Students must obtain an aggregate of 15 points or less in this examination as well as distinctions in Mathematics and Science. The Advanced Progressive Matrices (Raven et al, 1977) was used to partial out cognitive factors. However, the intelligence quotient scores of these students was not used as a covariance as 202 out of 250 students had an average score. This indicated that this sample was a homogenous sample.

#### ***Instruments***

##### ***Self-Description Questionnaire-II (SDQ-II)***

Academic self-concept, which is the independent variable in this study was measured using the Self-Description Questionnaire-II (SDQ-II) (Marsh, 1990). This instrument was designed by Marsh based on Shavelson's hierarchical model of self-esteem and general self-concept derived from Rosenberg (1965, 1979) self-esteem scale. It measures three areas of academic self-concept (General School, Verbal and



Mathematics), seven areas of nonacademic self-concept (Physical Abilities, Physical Appearance, Opposite-Sex Relations, Same-Sex Relations, Parents Relations, Honesty-Trustworthiness, Emotional Stability). These 11 scales sum up to yield a Total Self-concept score.

Students are required to respond to the 102 items on a six-point scale ranging from False to True. Half of the items are positively worded while the rest negatively worded in order to minimise a response bias.

The facets of self-concept examined in this study were general self-concept, Additional Mathematics self-concept and Verbal self-concept. The academic self-concept is the total score of these subscores.

The Malaysian version (Maznah and Yoong, 1990) of the SDQ-II was used in this study. All students are conversant in the Malaysian language which is the official language of the country as well as the medium of instruction in Malaysian schools. The word 'Mathematics' in the 10-item Mathematics scale was substituted with 'Additional Mathematics'. Additional Mathematics is one of the core subjects in the Science stream. 'English' in the 10-item Verbal scale was substituted with 'Malay'.

### **Value System - Rokeach Value Survey**

The Rokeach Value Survey (RVS) (Rokeach, 1973) was used to measure 18 terminal values and 18 instrumental values. The terminal values were further classified into personal terminal values and social terminal values. Instrumental values were classified into competence instrumental values and moral instrumental values. Students are required to respond to the 36 items on a five-point scale ranging from Not Very Important to Very Important. The Malaysian version of the RVS was used in the study.

### **Academic Achievement**

The dependent variable in this study is academic achievement. This study investigated three aspects of academic achievement; overall academic achievement and achievement in Additional Mathematics and Malaysian language. GPA was used as an indicator of overall academic achievement. Grades in Additional Mathematics and Malaysian Language were used as indicators of achievement in these subjects.

### **Analysis**

Data were analysed using SPSS Windows version 6 programme. Reliability analyses were carried out to determine the psychometric properties of SDQ-II. Descriptive statistics analyses were done to obtain the means and standard deviations of the variables involved in the study. Inferential statistics involving correlation between the independent and dependent variables were carried out for the whole sample. Stepwise multiple regression analyses were also performed to determine the contribution of the facets of academic self-concept and the four aspects of the value system on the three different indicators of academic achievement for the whole sample.

## Results

### *Reliabilities of SDQ-II and RVS*

The internal consistency reliabilities are shown in Table 1. The Cronbach Alpha coefficients range from 0.76 to 0.92. This indicates that the SDQ-II and the academic facets of the instrument have high reliability. Table I also shows that the four aspects of the value system as measured with the Rokeach Value Survey have moderate to high reliability.

TABLE 1

Reliabilities of the Academic Facets of SDQ-II and Facets of RVS

Self-concept Facets	N of Items	Cronbach Alpha
SDQ-II:	102	0.92
Academic Self-concept	30	0.85
General School Self-concept	10	0.85
Additional Mathematics Self-concept	10	0.81
Verbal Self-concept	10	0.76
Rokeach Value Survey:	36	0.85
Personal Terminal Values	11	0.69
Social Terminal Values	7	0.58
Competence Instrumental Values	8	0.80
Moral Instrumental Values	8	0.79

Correlational analysis between the facets of academic self-concept indicate that the various facets of academic self-concept correlate significantly with each other with the correlation coefficient ranging from 0.27 to 0.88. Additional Mathematics self-concept and Verbal self-concept did not correlate significantly with each other. This lack of correlation indicates that Additional Mathematics self-concept and Verbal self-concept are quite independent of each other. Analysis of the correlation between the dimensions of value system show that the four dimensions of the value system also correlate significantly with each other with the correlation coefficient ranging from 0.43 to 0.61.

### Academic Achievement

From table 2, it can be seen that there is significant and positive correlation between GPA and specific subject achievement. This indicates that students with high GPA tend to have good grades in Additional Mathematics and Malaysian Language.

The Lower Certificate of Education(LCE) aggregate was used as an external criterium to determine the validity of GPA as an indicator of academic achievement in this study. Table 2 shows that there is significant correlation though low between GPA and LCE aggregate.



TABLE 2

Correlations between Measures of Academic Achievement

Variables	GPA	Additional Mathematics Grades	Malaysian Language Grades
Additional Mathematics Grades	0.75**	1.00	-
Malaysian Language Grades	0.32**	0.16*	1.00
Lower Certificate of Education aggregate	-0.23*	-0.22*	-0.06

\*  $p < 0.05$  , \*\*  $p < 0.01$

*Means and Standard Deviations of Academic Self-concept and Academic Achievement*

Table 3 shows that the students' self-concept are moderately low. The students also place quite high importance to the values listed in the Rokeach Value Survey. These students have average GPAs and Malaysian Language grades. Their Additional Mathematics grades are low.

TABLE 3

Means and Standard Deviations of Variables

	Mean	SD	Min	Max
Self-concept:				
Academic Self-concept	4.05	0.62	1.00	6.00
General School Self-concept	4.25	0.82	1.00	6.00
Additional Mathematics Self-concept	3.58	0.94	1.00	6.00
Verbal Self-concept	4.32	0.79	1.00	6.00
Value System :				
Personal Terminal Values	4.20	0.40	1.00	5.00
Social Terminal Values	4.45	0.39	1.00	5.00
Competence Instrumental Values	4.33	0.49	1.00	5.00
Moral Instrumental Values	4.30	0.45	1.00	5.00
Academic Achievement:				
GPA	2.33	0.55	0.00	4.00
Addiitonal Mathematics Grades	2.69	1.64	1.00	7.00
Malaysian Language Grades	4.71	0.81	1.00	7.00

### ***Correlation Between Academic Self-concept, Value System and Academic Achievement***

It can be seen from Table 4 that GPA correlates significantly and positively with Academic self-concept, General School self-concept and Additional Mathematics self-concept. However, the correlation with Verbal self-concept is negative.

Table 4 shows that Additional Mathematics grades is significantly and positively correlated with all academic facets of SDQ-II except Verbal self-concept. The correlation coefficient between Additional Mathematics and Verbal self-concept is significant but negative indicating that students with good Additional Mathematics grades may have low Verbal self-concept. Generally there is no significant correlation between the various facets of Academic self-concept and Malaysian Language grades.

The correlation between the four aspects of value system and academic achievement are shown in Table 4. It can be seen that GPA correlates significantly with one aspect of the value system, social terminal values. There is no significant correlation between Additional Mathematics grades and the four aspects of value system. It can also be seen that Malaysian Language grades does not correlate significantly with the value system.

TABLE 4

Correlations between the Dependent Variables and Academic Achievement

Independent Variables	GPA	Additional Mathematics Grades	Malaysian Language Grades
Academic Self-concept	0.35 **	0.29 **	0.33
General School Self-concept	0.43 **	0.30 **	0.01
Additional Mathematics Self-concept	0.48 **	0.52 **	- 0.05
Verbal Self-concept	- 0.20 *	- 0.25 **	0.11
Personal Terminal Values	- 0.07	- 0.02	- 0.01
Social Terminal Values	- 0.14 *	- 0.01	0.02
Moral Instrumental Values	0.01	0.07	0.03
Competence Instrumental Values	- 0.11	- 0.06	0.02

\*  $p < 0.05$  , \*\*  $p < 0.01$

### ***Multiple Regression with Academic Achievement as the Dependent Variable***

Table 5 shows that a combination of Additional Mathematics Self-concept, General School self-concept , Academic self-concept, Competence Instrumental Values and Moral Instrumental Values accounted for 37.7 % of the GPA variation. This indicates that the five variables are reasonably good predictors of GPA. Additional Mathematics self-concept is the best predictor of GPA, contributing 23.2 % to the variance.



TABLE 5

Stepwise Regression with GPA as the Dependent Variable

Step	Independent Variables	R	R <sup>2</sup>	Increment in R <sup>2</sup>
1	Additional Mathematics Self-concept	0.481	0.232	0.232
2	General School Self-concept	0.524	0.274	0.042
3	Verbal Self-concept	0.577	0.333	0.059
4	Competence Instrumental Values	0.591	0.349	0.016
5	Moral Instrumental Values	0.604	0.365	0.016
	Last Remaining Variables	0.614	0.377	0.012

From Table 6, it can be seen that a combination of Additional Mathematics self-concept and Verbal self-concept accounted for 34.5 % of the variance in the Additional Mathematics grades. The best predictor is Additional Mathematics self-concept with a contribution of 26.9%. However, 63.5% of the variance remains unexplained.

TABLE 6

Stepwise Regression with Additional Mathematics Grades as the Dependent Variable

	Independent Variables	R	R <sup>2</sup>	Increment in R <sup>2</sup>
1	Additional Mathematics Self-concept	0.519	0.269	0.269
2	Verbal Self-concept	0.564	0.318	0.049
	Last Remaining Variables	0.588	0.345	0.027

As for the Malaysian language grades, Verbal self-concept accounted for 2.0% of the variance for the whole sample. 98% of the variance remains unexplained.

## Discussion

The reliabilities of the academic facets of the SDQ-II ranged between 0.76 and 0.92 for this sample of Malaysian Malay students. These values are quite comparable to those reported by Maznah & Yoong (1994) and Maznah et al (1998) for the Malaysian school sample and Marsh (1990) for the Australian school sample. It can be concluded that the instrument SDQ-II has quite satisfactory reliability for Malaysian students sample.

The Cronbach Alpha coefficients for the terminal value subsystem of the RVS is 0.78 and for the instrumental value subsystem of the RVS is 0.87. This indicates that the instrument RVS has satisfactory reliability for this sample. This finding also supports the findings of other local research (Mohammed & Lee, 1989; Rodiah, 1990).

Inferential statistics indicated that the measures of academic achievement correlated more significantly with facets of academic self-concept than the dimensions of value system.

GPA correlates significantly with various facets of Academic self-concept. This finding reflects the present findings regarding significant correlation between academic self-concept and academic achievement (Byrne, 1996; Marsh, 1990; Watkins & Guiterrez, 1989).

The results show that GPA is most highly correlated with Additional Mathematics self-concept, indicating that students with high GPA tend to have high Additional Mathematics self-concept whereas weak students tend to have low Additional Mathematics self-concept. A possible explanation for this observation could be that this sample consists of Science stream students. Therefore, high achievers are probably skillful in areas such as analysis, synthesis and problem-solving which is very much stressed upon in the teaching of Additional Mathematics. This probably resulted in high Additional Mathematics self-concept among the students with high GPA.

GPA however, correlates negatively with Verbal self-concept. Maznah & Yoong (1994) and Maznah et al. (1998) had a similar finding. This indicates that students with high GPA tend to have low Verbal self-concept even though their Malay Language grades are better than their Additional Mathematics grades. The Malaysian system of Education places much importance on the Malay Language and at least a credit is needed in the National examination to proceed to higher secondary levels. As suggested by Maznah & Yoong (1994), this probably causes much anxiety for these students. They might have low self-confidence regarding their performance in the Malay Language, which in turn might cause students with high GPA to have a low Verbal self-concept.

Additional Mathematics grades is most highly correlated with Additional Mathematics self-concept for the whole sample as well as for male students and female students. This result reflects current finding on greater correlation between academic self-concept and matching content area (Byrne, 1996; Marsh et al. 1988; Marsh, 1990; Midkiff et al. 1989).

An unexpected result of this study was that there was no significant correlation between academic self-concept and Malay Language grades for the total sample. This result is inconsistent with Marsh's theory regarding self-concept and grade correlation within the particular subject area.



The above unexpected result could be due to the sample which was homogeneous. This sample was homogenous in two aspects; the students were all Malay students and all of them were in the Science stream in a residential school. Another explanation could be that the emphasis of the Malaysian education system on the Malay Language might cause the students' Verbal self-concept to be unstable. This in turn resulted in an uncertain pattern in the relationship between Malay Language grades and Verbal self-concept. Further investigation regarding this issue is required.

Stepwise multiple regression analysis shows that Additional Mathematics self-concept is the best predictor of GPA and Additional Mathematics grades for the whole sample.

Generally, the three measures of academic achievement do not correlate significantly with the value system. This could be due to the influence of the social desirability factor. The students in this sample generally rate the items very highly. The Malaysian education system and the Malaysian society places much importance on moral values. These students most likely have internalised the values in the RVS which they have been exposed to both formally and informally within the family, the school and society. Whatmore, these students from the Junior Science College have been selected based on their potential to succeed both academically and personality-wise. However, as to whether they put into practice these values in their daily living is an issue that needs further investigation.

Even though there is no significant correlation between value system and academic achievement, detailed analysis shows that GPA correlates with one of the aspects of value system, social terminal values. However, the correlation coefficient is small and negative. This indicates that students with low achievement tend to place importance on social values such as a peaceful and beautiful world, equality, freedom, peaceful nation whereas students with high achievement do not place much importance on such values. The Additional Mathematics grades and Malaysian Language grades do not correlate significantly with the aspects of value system.

Stepwise multiple regression analysis show that the four dimensions of the value system does not contribute significantly to the variance in the three measures of academic achievement. Competence instrumental values and moral instrumental values contribute only 1.6% respectively to the variance in GPA. These results indicate that the RVS is not a good predictor of these students achievement. In other words, the Rokeach Value Survey is unable to differentiate this sample of Malaysian Form Four Science students with different academic achievement levels. Coyne (1988) also found that the RVS is unable to predict significantly the GPA of American college students.

The findings of this study regarding the relationship between the facets of academic self-concept and academic achievement, namely GPA and Additional Mathematics grades supports findings of other studies which have used Western and nonwestern samples. However, the relationship between Malay Language grades and Verbal self-concept needs to be investigated further. The findings of this study also indicate that



in general, the three measures of academic achievement namely, GPA, Additional Mathematics grades and Malay Language grades do not correlate significantly to the dimensions of value system. The value system does not contribute significantly to the prediction of the three measures of academic achievement.

### **Implications and Conclusion**

The results of this study have implications for psychologists, counselors and educators. Firstly, the findings support current theorizing regarding the relationship between non-cognitive variables and academic achievement. The findings indicate that the academic facets of self-concept correlate significantly with GPA and Additional Mathematics grades. Results of this study show that the academic facets of self-concept to be the best predictor of GPA and Additional Mathematics grades with this sample.

Educators and counselors would be able to predict the achievement of students based on scores on the academic facets of the Self-Description Questionnaire-II. Remedial steps can further be taken based on these scores by parents, teachers and counselors to ensure good academic performance of the student. Various interventions and steps such as remedial academic modules and counseling can be employed to improve the achievement of the students. Programs through the informal curriculum can be planned so as to help students improve their perception of themselves in terms of academic ability. Theory and empirical studies strongly indicate that the improvement of academic self-concept will facilitate improvement in academic achievement.

This study also supports the importance of academic facets of self-concept when examining the relationship between academic achievement and self-concept. The findings of this study have contributed to the growing knowledge of the nature of self-concept. The study further supports the important role of the construct of self-concept in human behavior and performance.

The results of this study also have implications for future studies in terms of research methodology. The value system does not correlate or contribute significantly to academic achievement. This finding could most likely be due to the influence of the social desirability factor which is seen in the high scores of importance given by these students on the 36 values listed in the Rokeach Value Survey. There is a need to improve on the psychometric properties of the Rokeach Value Survey so as to control this factor.

This study supports Rokeach's theorizing on the central status of self-concept within the individual's total belief system. The results of this study show that the facets of academic self-concept correlate and contribute more significantly to the measures of academic achievement as compared to the dimensions of value system. This is in accordance with theorizing that the self-concept is the core subsystem within the subsystems of the individual's total belief system.

*(The study reported here forms part of the thesis submitted to Universiti Sains Malaysia for the degree of Masters in Education)*



## REFERENCES

- Braithwaite, V.A. & Law, H.G (1985). Structure of human values : Testing the adequacy of the Rokeach value survey. *Journal of Personality & Social Psychology*, 49, 250-263.
- Burns, R. B. (1979). *The Self-concept : theory, measurement, development and behavior*. London: Longman.
- Byrne, B.M. (1984). Self-concept/academic achievement relations: An investigation of dimensionality, stability and causality. *Canadian Journal of Behavioral Science*, 18, 173-186.
- Byrne, B.M. (1996). Academic self-concept : Its structure, measurement and relation to academic achievement . In B.A.Braken (Ed) *Handbook of self-concept : developmental, social and clinical considerations*. New York : John Wiley & Sons
- Coyne, B.J. (1988). The predictive validity of the Rokeach Value Survey for college academic achievement. *Educational & Psychological Measurement*, 48, 165- 174
- Feather, N.T (1984). Masculinity, femininity, psychological androgyny and the structure of values. *Journal of Personality and Social Psychology*, 47, 604-620
- Feather, N.T.; Volkmer, R.E. & McKee, I.R. (1992). A comparative study of the value priorities of Australians, Australian Baha'is & expatriate Iranian Baha'is. *Journal of Cross-Cultural Psychology*, 23, 95-106
- Fleming, J.S. & Courtney, B.E. (1984). The dimensionality of self-esteem : Hierarchical facet model for revised measurement scales. *Journal of Personality and Social Psychology*, 46, 404-421
- Gustafson, J.P. (1991). Relationship of values to academic achievement for low SES students. *Dissertation Abstracts International*, 52, 2496-A
- House J.D. (1996). Student expectancies and academic self-concept as predictors of science achievement. *Journal of Psychology Interdisciplinary and Applied*, 130 (6)
- Johnston , C.S. (1995). The Rokeach Value Survey : Underlying structure and multidimensional scales *Journal of Psychology Interdisciplinary and Applied*, 129 (5)
- Marsh, H.W. (1987). Masculinity, femininity and androgyny: Their relations to multiple dimensions of self-concept. *Multivariate Behavioral Research*, 22, 91-118.

- Marsh, H.W (1990). *Self-description questionnaire-II : manual and research monograph*. San Antonio, TX : The Psychological Corporation.
- Marsh, H.W. (1992). Content specificity of relations between academic achievement and academic self-concept. *Journal of Educational Psychology*, 84, 35-42
- Marsh, H.W & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure, *Educational Psychologist*, 20, 107-125.
- Marsh, H.W., Byrne, B.M. & Shavelson, R. (1988). A multifaceted academic self-concept: Its hierarchical structure and its relation to academic achievement. *Journal of Educational Psychology*, 80, 366-380.
- Marsh, H.W. & Peart, N.D. (1988). Competitive and cooperative physical fitness training programs for girls: Effects on physical fitness and on multidimensional self-concepts. *Journal of Sports Psychology*, 10, 390-407.
- Marsh, H.W, & Byrne, B.M (1991). The differentiated additive androgyny model : relations between masculinity, femininity and multiple dimensions of self-concept. *Journal of Personality and Social Psychology*, 61, 811-828
- Mayton, D.M. & Sangster, R.L. (1992). Cross-cultural comparison of values and nuclear war attitudes. *Journal of Cross-cultural Psychology*, 23, 340 -352
- Maznah, I. & Yoong, S. (1994). *Self-concepts, scholastic achievements and students' learning process*. Paper presented at 23rd International Congress of Applied Psychology, Madrid, Spain, July 17-22, 1994.
- Maznah, I; Ng W.K. & Yoong S. (1998). *Psychological measures of Malaysian school children* Penang, Malaysia: Universiti Sains Malaysia, School of Educational Studies, Basic Education Research Unit
- Mboya, M.M. (1989). The relative importance of global self-concept and self-concept of academic ability in predicting academic achievement. *Adolescence*, 24, 39-46.
- Midkiff, R.M., Burke, J.P. & Helmstadter, G.C. (1989). A causal model of Mathematics performance in early adolescent: The role of sex. *Psychological Reports*, 64, 167-176.
- Mohammad Haji-Yusuf (1990). Sistem nilai dan sikap terhadap penggunaan statistik sosial: antara kesan warisan dengan kesan perolehan. *Majalah Psikologi*, 11, 23-44
- Mohammad Haji-Yusuf dan Lee Tuan New (1989). Kesan sekitaran ke atas pemangkatan nilai para pelajar : satu kajian perbandingan. *Jurnal Pendidikan*, 13 & 14. 37 -50



- Rodiah Mohd Yunus (1990). *Sistem nilai remaja : Satu kajian perbandingan di tiga buah sekolah dan hubungannya dengan orientasi budaya dan personaliti*. Latihan ilmiah untuk memenuhi sebahagian daripada syarat memperolehi Ijazah Sarjana Muda Sastera dengan kepujian, Universiti Sains Malaysia
- Rokeach, M. (1968). Attitudes. In D.L.Sills (Ed) *International Encyclopedia of the Social Sciences, Vol 1* (pp 449-457) New York : Macmillan & Free Press
- Rokeach, M. (1973) *The nature of human values*. New York : Free Press.
- Rosenberg, M. (1979) *Conceiving the Self*. New York : Basic Books
- Shavelson, R.J., Hubner, J.J. & Stanton, G.C. (1976). Self-concept: validation of construct interpretations. *Review of Educational Research*, 46, 407-441.
- Theodorson, G.A. & Theodorson, A.G. (1969). *A modern dictionary of sociology*. New York : Thomas Crowell and Company
- Watkins, D. & Guitierrez, M. (1989). The structure of self-concept: Some Filipino evidence. *Australian Psychologist*, 24, 401-410.
- Watkins, D. & Akande, A. (1992). The internal structure of the self-description questionnaire : A Nigerian investigation. *British Journal of Educational Psychology*, 62, 120-125