SELF-REGULATED LEARNING: MOTIVATION AND LEARNING STRATEGIES IN THE ISLAMIC EDUCATION COURSE AMONG PREMIER POLYTECHNIC STUDENTS IN MALAYSIA BASED ON DEMOGRAPHIC INFORMATION

Khairunnisa A Shukor
Kamarul Azmi Jasmi
Ahmad Firdaus Mohd Noor

Faculty of Islamic Civilization, Universiti Teknologi Malaysia

Abstract

This study aims to identify the differences of the level of academic self-regulation (or self-regulated learning strategies) in the Islamic Education course based on students' academic information. On the basis of a self-reported questionnaire, the data were obtained from 341 students, who have taken the Islamic Education course at three premier polytechnics in Malaysia. Statistical Software for Social Sciences (SPSS) Version 19.0 was used to analyze the data. The study found that male students and students who have actively involved in the co-curricular activities have shown to have higher level of motivation. Regardless of the demographic background, the utilization of learning strategies is equal, except the control of test anxiety and the time study environmental management. Both learning strategies are found to be highly utilized by the students who obtained grade-A in the Islamic Education subject (in SPM) than students who obtained grade-B and grade-C.

SELF-REGULATED LEARNING: MOTIVATION AND LEARNING STRATEGIES IN THE ISLAMIC EDUCATION COURSE AMONG PREMIER POLYTECHNIC STUDENTS IN MALAYSIA BASED ON DEMOGRAPHIC INFORMATION

Khairunnisa A Shukor
Kamarul Azmi Jasmi
Ahmad Firdaus Mohd Noor

ABSTRACT

This study aims to identify the differences of the level of academic self-regulation (or self-regulated learning strategies) in the Islamic Education course based on students' academic information. On the basis of a self-reported questionnaire, the data were obtained from 341 students, who have taken the Islamic Education course at three premier polytechnics in Malaysia. Statistical Software for Social Sciences (SPSS) Version 19.0 was used to analyse the data. The study found that male students and students who have actively involved in the co-curricular activities have shown to have higher level of motivation. Regardless of the demographic background, the utilization of learning strategies is equal, except the control of test anxiety and the time/ study environmental management. Both learning strategies are found to be highly utilized by the students who obtained grade-A in the Islamic Education subject (in SPM) than students who obtained grade-B and grade-C.

INTRODUCTION

Students of higher education should actively self-regulate their learning because the role of the instructors at the collegiate level are assumed to be more of to facilitate rather than transferring knowledge (Kitsantas and Zimmerman, 2009; Eekelen *et al.*, 2005). A proactive student should be able to self-regulate their own learning process which involved cognition, motivation, emotion and behaviour to improve learning (Fritz and Peklaj, 2011; Anthony, 2008). Students who successfully self-regulate their learning process will clearly define the topic they need to write, self-monitor the effectiveness of learning strategies they use and self-evaluate their progress (Greene *et al.*, 2011). However, the quality and the quantity of students' self-regulatory behaviour vary greatly from a person to another (Anthony, 2008). Mastering self-regulated learning techniques needs effort and time, and it can be seen through academic performance. High-performing students' academic performance reflected the strategy they use, usually associated with high-ability strategy (Throndsen, 2011). An excellent performance shows that the students are

able to self-regulate learning environment on their own. The process includes planning, monitoring and learning strategy (Johnson et al, 2011; Mason et al, 2011; Schmitz & Perels, 2011; Greene et al, 2009; Schunk & Zimmerman, 2003).

Self-regulation in education can be defined as metacognitive processes; a situation where students explore their own thinking processes, evaluate their performance and then create alternative pathways to achievement (Usher and Pajares, 2009). It refers to a systematic-orientation of self-regulated thoughts and behaviour, towards achieving learning goals (Chong, 2007; Schunk and Zimmerman, 2003). Zimmerman (2008) has discussed the outcomes of the American Educational Research Association symposium in 1986, particularly about the definition and the methods of measuring self-regulated learning strategies. He has summarized the whole idea of what self-regulated learning is and he beliefs that it refers to the students who are actively involved in their learning process; involving metacognition, motivation and behaviour, to improve academic achievement. While, Pintrich and Zusho (2002) have defined self-regulated learning as:

> *"An active constructive process whereby learners set goals for their learning, and monitor, regulate and control their cognition, motivation and behaviour, guided and constrained by the goals and the contextual features of the environment."*

A successful student needs both motivational beliefs and self-regulated learning strategies (Throndsen, 2011; Mehran Farajollahi & Mahdi Moenikia, 2010; Kesici & Erdrogan, 2009). The potential to excel will increase when a student consider motivational beliefs in self-regulated learning strategies. Students possess "more adaptive attributional patterns, higher levels of self-efficacy and perceived competence, goal orientation, intrinsic interest, and task value beliefs" (Kesici & Erdrogan, 2009). Motivation drives a person towards the achievement of his goal because motivational beliefs allow the students to learn at their own rate. An e-learning student demonstrates a high level self-regulation because they have a total control of their own learning process (Mehran Farajollahi & Mahdi Moenikia, 2010) as they have the quality self-efficacy and task value. Students' motivational belief in terms of self-efficacy and task value is very important (Anthony, 2008). It is vital to plan, manage time, concentrate on instruction, use cognitive learning strategy, build a productive learning environment and make use of social sources (Kesici & Erdogan, 2009).

Researches have confirmed the importance of self-regulation in different fields of study such as music, hypermedia, mathematics and writing (Fritz and Peklaj, 2011; Johnson *et al.*, 2011; Lane *et al.*, 2010; Kesici and Erdogan, 2009), either in

traditional classrooms or independent classes such as e-learning (Song, 2011; Mehran Farajollahi and Mahdi Moenikia, 2010), used by teachers or students (Eekelen et al, 2005). Most of the previous studies were focusing on self-regulation among higher-learning students (Marianne van Den Hurk, 2006; Maclellan, 2005), however, nowadys researchers start to pay more attention towards self-regulation among students of elementary and middle schools (Stang *et al.*, 2008;. Schmitz and Perels, 2011). The discussions also are inclined towards self-regulation among students who have learning difficulties (Mason *et al.*, 2011; Lane *et al.*, 2010; Lee *et al.*, 2008).

In summary, it is important to understand the use of distinctive cognitive strategies in learning process. However, high-ability self-regulation can only be acquired through practices and involves lots of time and effort. Self-regulation is driven by motivational beliefs exerted in oneself. Students who are highly self-regulated show the result in academic performance and they are aware of their strength and limitation which will help them to excel in their study. These students are highly motivated, led by their intrinsic goals, assisted by required skills and cognitive strategy; strive to gradually improve their academic achievement. Students should possess these qualities because self-regulated learning strategies will help students, not only to excel in academic, however, to succeed in the future. The study of self-regulation in learning process has become a crucial topic to be discussed to help students actively involved in learning process and achieve greater success. Therefore, it is an urge for the academicians to further study this strategy in all disciplines, including in Islamic Education.

RESEARCH QUESTIONS

To achieve the above aims and objectives, this study was designed to answer the following research questions:

RQ1   What is the level of students' self-regulated learning strategies based on polytechnic enrolled?

RQ2   What is the level of students' self-regulated learning strategies based on gender?

RQ3   What is the level of students' self-regulated learning strategies based on types of secondary school attended?

RQ4   What is the level of students' self-regulated learning strategies based on parents' income?

RQ5   What is the level of students' self-regulated learning strategies based on the grade of Islamic education subject (in *SPM*)?

RQ6   What is the level of students' self-regulated learning strategies based on the involvement in co-curriculum activities organized by the Division of Islamic Studies in every premier polytechnic?

RESEARCH METHODOLOGY

A quantitative multiple-cases study methodology was used to measure the utilization of self-regulated learning strategies in learning the Islamic Education course. Self-completed survey was used to understand respondents' demographic information, achievement and co-curriculum activities related to Islamic Education, and *akhlaq* self-regulation.

The total sample of the study was drawn from the population 1368 second semester Muslim students enrolling Science, Technology and Engineering in Islam in the second semester. These students have completed the Islamic Education course (AA101) in the first semester, and passing the course is a pre-requisite condition to register the Science, Technology and Engineering in Islam course. Therefore, as referred to the Krejcie and Morgan statistical table of deriving the number of sample from the total population (Piaw, 2006), 302 students should have participated as respondents. Even though the required sample from the total population is 302, the researcher has distributed more than 500 questions. Distributing more than the required sample helps to encounter the problems of missing and invalid data. the screening process, 148 questionnaires were found invalid, and finally, only 341 questionnaires were available to be computed. The final amount of the sample was confirmed to be 341 respondents.

All data encoded were analysed using computer software *Statistical Package for Social Science 19.0 (SPSS 19.0)*. Mean ranking analysis was conducted, which serves to answer the research questions on how *akhlaq* self-regulation, academic self-regulation and academic performance in the Islamic Education course are related to the students' demographic information. The study has used the non-parametric test to analyses the ordinal data. According to Amran Rasli (2006), the Mann-Whitney U test determine the difference of variables between two groups, while the Kruskal-Wallis test determine the difference of variables among multiples independent samples in the same population. The Mann-Whitney U test was used to test *akhlaq* and academic self-regulation based demographic variables with two categories which are gender and the estimation of parents' income, while the Kruskal-Wallis test was used to test *akhlaq* and academic self-regulation based on demographic variables with more than two categories which are premier polytechnics, types of secondary schools attended, grade obtained in Islamic Education course (polytechnic) and grade obtained in Islamic Education subject (*SPM*). The null hypotheses would be rejected if the *p*-values are found to be lower than 0.05 ($p<0.05$) for both tests (Amran Rosli, 2006).

FINDINGS

RQ1   What is the level of students' self regulated learning strategies based on polytechnic enrolled?

The following hypothesis is tested to find the difference of mean in academic self-regulation based on the premier polytechnics the students currently enrolled.

Ho_1 Mean ranking for *academic self-regulation* is the same for all premier polytechnics

Table 1.0 Difference of Mean Analysis in Academic Self-regulation based on the Premier Polytechnics Enrolled

		Chi-square	df	Asymp. Sig.
Motivation	Intrinsic Goal Orientation	1.656	2	.437
	Extrinsic Goal Orientation	4.767	2	.092
	Task Value	.276	2	.871
	Control of Learning Beliefs	1.107	2	.575
	Self-efficacy for Learning and Performance	2.446	2	.294
	Test Anxiety	3.490	2	.175
Learning Strategies	Rehearsal	.331	2	.848
	Elaboration	1.543	2	.462
	Organization	4.314	2	.116
	Critical Thinking	3.641	2	.162
	Metacognitive Self-regulation	6.934	2	.031
	Time/ Study Environmental Management	2.356	2	.308
	Peer Learning	1.797	2	.407
	Help Seeking	6.386	2	.041

1) Kruskal Wallis Test
2) Grouping Variable: The Polytechnic of the Respondents

As demonstrated in Table 1.0, the subscales of motivation (Intrinsic Goal Orientation, p=.437; Extrinsic Goal Orientation, p=.092; Task Value, p =.871; Control of Learning Beliefs, p=.575; Self-efficacy for Learning and Performance, p=.294; Test Anxiety p=.175) are not significantly different in mean ranking based on the p-value being more than 0.05. However, two subscales of learning strategies are shown to have significant difference, which are; Metacognitive Self-regulation with p-value of .031 and Help Seeking with p-value of .041. Other subscales of learning strategies (Rehearsal, p=.848; Elaboration, p=.462; Organization, p=.116; Critical Thinking, p=.162; Time/ Study Environmental Management, p=.508; Peer Learning, p=.407) are not significantly different in mean ranking based on the p-value being higher as 0.05. Therefore, Ho_1 is rejected.

Table 2.0 Mean Ranks Analysis of Learning Strategies based on the Premier Polytechnics Enrolled

		N	Mean Ranks
Rehearsal	Premier Polytechnic A	143	167.46
	Premier Polytechnic B	99	174.23
	Premier Polytechnic C	99	172.89
Elaboration	Premier Polytechnic A	143	163.94
	Premier Polytechnic B	99	179.73
	Premier Polytechnic C	99	172.47
Organization	Premier Polytechnic A	143	171.76
	Premier Polytechnic B	99	156.03
	Premier Polytechnic C	99	184.88
Critical Thinking	Premier Polytechnic A	143	160.57
	Premier Polytechnic B	99	172.09
	Premier Polytechnic C	99	184.97
Metacognitive Self-regulation	Premier Polytechnic A	143	162.02
	Premier Polytechnic B	99	162.03
	Premier Polytechnic C	99	192.93
Time/ Study Environmental Management	Premier Polytechnic A	143	166.97
	Premier Polytechnic B	99	167.16
	Premier Polytechnic C	99	180.67
Peer Learning	Premier Polytechnic A	143	165.30
	Premier Polytechnic B	99	168.36
	Premier Polytechnic C	99	181.87
Help Seeking	Premier Polytechnic A	143	160.71
	Premier Polytechnic B	99	191.74
	Premier Polytechnic C	99	165.13

N=341

With reference to Table 2.0, the mean ranks for *Metacognitive Self-regulation* are 162.02 for the students of Premier Polytechnic A, 162.03 for the students of Premier Polytechnic B and 192.93 for the students of Premier Polytechnic C and the mean ranks for *Help Seeking* are 160.71 for the students of Premier Polytechnic A, 191.74 for Premier Polytechnic B and 165.13 for the students of Premier Polytechnic C. This implies that *Metacognitive Self-regulation* has more impact on the students of Premier Polytechnic C than Premier Polytechnic A and B, while *Help Seeking* has more impact on Premier Polytechnic B than Premier Polytechnic A and C.

RQ2   What is the level of students' self-regulated learning strategies based on gender?

The following hypothesis is tested to find the difference of mean in academic self-regulation based on genders.

Ho$_2$ Mean ranking for *academic self-regulation* is the same for all genders

Table 3.0 Difference of Mean Analysis in Academic Self-regulation based on Genders

		Mann-Whitney U	Z	Asymp. Sig.(2-tailed)
Motivation	Intrinsic Goal Orientation	11628.000	-.991	.322
	Extrinsic Goal Orientation	12400.000	-.066	.947
	Task Value	10783.000	-1.922	.046
	Control of Learning Beliefs	10722.000	-2.074	.038

1) Grouping Variable: Genders

Table 3.0 Difference of Mean Analysis in Academic Self-regulation based on Genders (Cont.)

		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
Motivation	Self-efficacy for Learning and Performance	10663.500	-2.132	.033
	Test Anxiety	11498.000	-1.141	.254
Learning Strategies	Rehearsal	11917.500	-.642	.521
	Elaboration	11377.000	-1.284	.199
	Organization	11682.000	-.924	.356
	Critical Thinking	9056.500	-4.055	.000
	Metacognitive Self-regulation	12270.000	-.220	.826
	Time/ Study Environmental Management	12007.000	-.534	.593
	Peer Learning	11878.000	-.693	.488
	Help Seeking	12271.000	-.220	.826

1) Grouping Variable: Genders

As demonstrated in Table 3.0, three subscales of motivation are shown to have significant difference in mean ranking based on the *p*-value being less than 0.05, and the subscales are; *Task Value* with *p*-value of .046, *Control of Learning Beliefs* with *p*-value of .038 and *Self-efficacy for Learning and Performance* with *p*-value of .033. Other subscales of motivation (*Intrinsic Goal Orientation*, *p*=.322; *Extrinsic Goal Orientation*, *p*=.947; *Test Anxiety*, *p*=.254) are not significantly different in mean ranking based on the *p*-value being more than 0.05. One subscale of learning strategies is shown to have significant difference, which is *Critical Thinking* with *p*-value of .000. Other subscales of learning strategies (*Rehearsal*, *p*=.521; *Elaboration*, *p*=.199; *Organization*, *p*=.356; *Metacognitive Self-regulation*, *p*=.826; *Time/ Study Environmental Management*, *p*=.593; *Peer Learning*, *p*=.488; *Help Seeking*, *p*=.826) are not significantly different in mean ranking based on the *p*-value being higher as 0.05. Therefore, Ho$_2$ is rejected.

Table 4.0 Mean Ranks Analysis of Academic Self-regulation based on the Genders

			N	Mean Ranks
Motivation	Intrinsic Goal Motivation	Male	235	174.52
		Female	106	163.20
	Extrinsic Goal Motivation	Male	235	171.23
		Female	106	170.48
	Task Value	Male	235	178.11
		Female	106	155.23
	Control of Learning Beliefs	Male	235	178.37
		Female	106	154.65
	Self-efficacy for Learning and Performance	Male	235	178.62
		Female	106	154.10
	Test Anxiety	Male	235	166.93
		Female	106	180.03
Learning Strategies	Rehearsal	Male	235	168.71
		Female	106	176.07
	Elaboration	Male	235	175.59
		Female	106	160.83
	Organization	Male	235	167.71
		Female	106	178.29
	Critical Thinking	Male	235	185.46
		Female	106	138.94
	Metacognitive Self-regulation	Male	235	171.79
		Female	106	169.25

N=341

Table 4.0 Mean Ranks Analysis of Academic Self-regulation based on the Genders (Cont.)

			N	Mean Ranks
Learning Strategies	Time/ Study Environmental Management	Male	235	172.91
		Female	106	166.77
	Peer Learning	Male	235	173.46
		Female	106	165.56
	Hel Seeking	Male	235	171.78
		Female	106	169.26

N=341

With reference to Table 4.0, for motivation subscales, the mean ranks for *Task Value* are 178.11 for male students and 155.23 for female students. The mean ranks for *Control of Learning Beliefs* are 178.37 for male students and 154.65 for female students, while mean ranks for *Self-efficacy for Learning and Performance* are 178.62 for male students and 154.10 for female students. However, for learning strategies subscales, the mean ranks for *Critical Thinking* are 185.46 for male students and 138.94 for female students. This implies that *Task Value, Control of Learning Beliefs, Self-efficacy for Learning and Performance* and *Critical Thinking* have more impact on the male students than the female students.

39

RQ3   What is the level of students' self-regulated learning strategies based on types of secondary school attended?

The following hypothesis is tested to find the difference of mean in academic self-regulation based on types of secondary schools attended by the students of premier polytechnics.

Ho$_3$ Mean ranking for *academic self-regulation* is the same for all types of secondary schools the students have attended

Table 5.0 Difference of Mean Analysis in Academic Self-regulation based on the Types of Secondary Schools Attended

		Chi-square	df	Asymp. Sig.
Motivation	Intrinsic Goal Orientation	4.960	3	.175
	Extrinsic Goal Orientation	1.397	3	.706
	Task Value	1.021	3	.796
	Control of Learning Beliefs	1.898	3	.594
	Self-efficacy for Learning and Performance	6.614	3	.085
	Test Anxiety	.728	3	.867
Learning Strategies	Rehearsal	1.502	3	.682
	Elaboration	3.686	3	.297
	Organization	.822	3	.844
	Critical Thinking	8.050	3	.045
	Metacognitive Self-regulation	.720	3	.868
	Time/ Study Environmental Management	4.058	3	.255
	Peer Learning	1.794	3	.616
	Help Seeking	1.278	3	.734

1) Kruskal Wallis Test
2) Grouping Variable: The Polytechnic of the Respondents

As demonstrated in Table 5.0, the subscales of motivation (Intrinsic Goal Orientation, p=.175; Extrinsic Goal Orientation, p=.706; Task Value, p =.796; Control of Learning Beliefs, p=.594; Self-efficacy for Learning and Performance, p=.085; Test Anxiety p=.867) are not significantly different in mean ranking based on the p-value being more than 0.05. However, one subscale of learning strategies is shown to have significant difference, which is; Critical Thinking with p-value of .045 and. Other subscales of learning strategies (Rehearsal, p=.682; Elaboration, p=.297; Organization, p=.844; Metacognitive Self-regulation, p=.868; Time/ Study Environmental Management, p=.255; Peer Learning, p=.616; Help Seeking, p=.734) are not significantly different in mean ranking based on the p-value being higher as 0.05. Therefore, Ho$_3$ is rejected.

Table 6.0 Mean Ranks Analysis of Learning Strategies based on Types of Secondary
Schools Attended

		N	Mean Ranks
Rehearsal	Secondary School/ National Secondary School	195	172.67
	Technical Secondary School	122	164.57
	Islamic Secondary School/ National Islamic Secondary School	7	188.14
	Boarding School/ MARA Junior Science College	17	190.97
Elaboration	Secondary School/ National Secondary School	195	163.02
	Technical Secondary School	122	178.84
	Islamic Secondary School/ National Islamic Secondary School	7	187.79
	Boarding School/ MARA Junior Science College	17	199.38
Organization	Secondary School/ National Secondary School	195	167.00
	Technical Secondary School	122	175.45
	Islamic Secondary School/ National Islamic Secondary School	7	181.43
	Boarding School/ MARA Junior Science College	17	180.65
Critical Thinking	Secondary School/ National Secondary School	195	158.31
	Technical Secondary School	122	185.61
	Islamic Secondary School/ National Islamic Secondary School	7	200.21
	Boarding School/ MARA Junior Science College	17	199.71
Metacognitive Self-regulation	Secondary School/ National Secondary School	195	169.57
	Technical Secondary School	122	170.19
	Islamic Secondary School/ National Islamic Secondary School	7	179.50
	Boarding School/ MARA Junior Science College	17	189.76
Time/ Study Environmental Management	Secondary School/ National Secondary School	195	173.26
	Technical Secondary School	122	164.83
	Islamic Secondary School/ National Islamic Secondary School	7	129.50
	Boarding School/ MARA Junior Science College	17	206.44
Peer Learning	Secondary School/ National Secondary School	195	173.68
	Technical Secondary School	122	170.57
	Islamic Secondary School/ National Islamic Secondary School	7	126.00
	Boarding School/ MARA Junior Science College	17	161.88
Hel Seeking	Secondary School/ National Secondary School	195	173.38
	Technical Secondary School	122	164.45
	Islamic Secondary School/ National Islamic Secondary School	7	173.79
	Boarding School/ MARA Junior Science College	17	189.53

N=341

With reference to Table 6.0, the mean ranks for *Critical Thinking* are 158.31 for the students of students who have attended Secondary School or National Secondary School, 185.61 for students who have attended Technical Secondary School, 200.21 for students who have attended Islamic Secondary School or National Islamic Secondary School and 199.71 for students who have attended Boarding School or MARA Junior Science College. This implies that *Critical Thinking* has more impact on the students who have attended Islamic Secondary School or National Islamic Secondary School than students who have attended other types of secondary schools.

RQ4   What is the level of students' self-regulated learning strategies based on parents' income?

The following hypothesis is tested to find the difference of mean in academic self-regulation based on the level of parents' income.

Ho_{04} Mean ranking for *academic self-regulation* is the same for all levels of parents' income

Table 7.0 Difference of Mean Analysis in Academic Self-regulation based on the Level of Parents' Income

		Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
Motivation	Intrinsic Goal Orientation	11441.500	-.905	.365
	Extrinsic Goal Orientation	11616.500	-.695	.487
	Task Value	11618.000	-.688	.492
	Control of Learning Beliefs	11925.000	-.319	.750
	Self-efficacy for Learning and Performance	11049.000	-1.371	.170
	Test Anxiety	11760.500	-.516	.606
Learning Strategies	Rehearsal	12179.000	-.012	.990
	Elaboration	11855.000	-.402	.688
	Organization	11455.000	-.887	.375
	Critical Thinking	12181.000	-.010	.992
	Metacognitive Self-regulation	11915.000	-.329	.742
	Time/ Study Environmental Management	11806.000	-.462	.644
	Peer Learning	11591.000	-.726	.468
	Help Seeking	11964.500	-.271	.786

1)   Grouping Variable: Parents' Income

As demonstrated in Table 7.0, all subscales of motivation (Intrinsic Goal Orientation, p=.365; Extrinsic Goal Orientation, p=.487; Task Value, p=.492; Control of Learning Beliefs, p=.750; Self-efficacy for Learning and Performance, p=.170; Test Anxiety, p=.606) and learning strategies (Rehearsal, p=.990; Elaboration, p=.688; Organization, p=.375; Critical Thinking, p=.992; Metacognitive Self-regulation, p=.742; Time/ Study Environmental Management, p=.644; Peer Learning, p=.468; Help Seeking, p=.786) are not significantly different in mean ranking based on the p-value being higher than 0.05. The result confirms that Ho_{04} is accepted.

RQ5   What is the level of students' self-regulated learning strategies based on the grade of Islamic education subject (in *SPM*)?

The following hypothesis is tested to find the difference of mean in based on the grade of the Islamic Education subject that the students have obtained in *SPM*.

Ho_{05} Mean ranking for academic self-regulation is the same for all grades of the Islamic Education subject obtained in *SPM*

Table 8.0 Difference of Mean Analysis in Academic Self-regulation based on Grades of the Islamic Education Subject Obtained in *SPM*

		Chi-square	df	Asymp. Sig.
Motivation	Intrinsic Goal Orientation	5.601	3	.133
	Extrinsic Goal Orientation	1.052	3	.789
	Task Value	1.187	3	.756
	Control of Learning Beliefs	2.856	3	.414
	Self-efficacy for Learning and Performance	4.576	3	.206
	Test Anxiety	11.218	3	.011
Learning Strategies	Rehearsal	6.379	3	.095
	Elaboration	4.501	3	.212
	Organization	3.824	3	.281
	Critical Thinking	2.348	3	.503
	Metacognitive Self-regulation	6.723	3	.081
	Time/ Study Environmental Management	9.227	3	.026
	Peer Learning	6.878	3	.076
	Help Seeking	7.115	3	.068

1) Kruskal Wallis Test
2) Grouping Variable: The Polytechnic of the Respondents

As demonstrated in Table 8.0, one subscale of motivation is shown to have significant difference in mean ranking based on the *p*-value being less than 0.05, and the subscale is;   *Test Anxiety* with *p*-value of .011. Other subscales of motivation (*Intrinsic Goal Orientation, p*=.133; *Extrinsic Goal Orientation, p*=.789; *Task Value, p*=.756; *Control of Learning Beliefs, p*=.414; *Self-efficacy for Learning and Performance, p*=.206) are not significantly different in mean ranking based on the *p*-value being more than 0.05. One subscale of learning strategies is shown to have significant difference, which is *Time/ Study Environmental Management* with *p*-value of .026. Other subscales of learning strategies (*Rehearsal, p*=.095; *Elaboration, p*=.212; *Organization, p*=.281; *Metacognitive Self-regulation, p*=.503; *Critical Thinking, p*=.081; *Peer Learning, p*=.076; *Help Seeking, p*=.068) are not significantly different in mean ranking based on the *p*-value being higher as 0.05. Therefore, Ho_{05} is rejected.

Table 9.0 Mean Ranks Analysis of Academic Self-regulation based on the Grades of the Islamic Education Subject Obtained in *SPM*

			N	Mean Ranks
Motivation	Intrinsic Goal Motivation	A-grade	231	179.06
		B-grade	100	154.07
		C-grade	8	167.25
		D-grade	2	101.75
	Extrinsic Goal Motivation	A-grade	231	173.01
		B-grade	100	166.98
		C-grade	8	151.44
		D-grade	2	217.75
	Task Value	A-grade	231	173.88
		B-grade	100	163.55
		C-grade	8	188.19
		D-grade	2	142.50
	Control of Learning Beliefs	A-grade	231	170.66
		B-grade	100	166.95
		C-grade	8	226.75
		D-grade	2	190.50
	Self-efficacy for Learning and Performance	A-grade	231	178.74
		B-grade	100	155.32
		C-grade	8	144.13
		D-grade	2	168.00
	Test Anxiety	A-grade	231	179.57
		B-grade	100	159.18
		C-grade	8	72.88
		D-grade	2	164.50

Table 9.0 Mean Ranks Analysis of Academic Self-regulation based on the Grades of the Islamic Education Subject Obtained in *SPM* (Cont.)

			N	Mean Ranks
Learning Strategies	Rehearsal	A-grade	231	179.43
		B-grade	100	151.22
		C-grade	8	186.06
		D-grade	2	126.75
	Elaboration	A-grade	231	175.82
		B-grade	100	161.56
		C-grade	8	179.69
		D-grade	2	51.50
	Organization	A-grade	231	177.19
		B-grade	100	160.70
		C-grade	8	125.50
		D-grade	2	153.50
	Critical Thinking	A-grade	231	172.19
		B-grade	100	168.19
		C-grade	8	194.81
		D-grade	2	79.00

Metacognitive Self-regulation	A-grade	231	177.44
	B-grade	100	159.11
	C-grade	8	169.50
	D-grade	2	22.75
Time/ Study Environmental Management	A-grade	231	180.85
	B-grade	100	153.95
	C-grade	8	124.75
	D-grade	2	70.50
Peer Learning	A-grade	231	176.94
	B-grade	100	159.71
	C-grade	8	177.75
	D-grade	2	22.75
Hel Seeking	A-grade	231	177.33
	B-grade	100	156.21
	C-grade	8	203.19
	D-grade	2	51.25

N=341

With reference to Table 9.0, for motivation subscale, the mean ranks for *Test Anxiety* are 179.57 for the A-grade students, 159.18 for the B-grade students, 72.88 for the C-grade students and 164.50 for the D-grade students. However, for learning strategies subscale, the mean ranks for *Time/ Study Environmental Management* are 180.85 for the A-grade students, 153.95 for the B-grade students, 124.75 for the C-grade students and 70.50 for the D-grade students. This implies that *Test Anxiety* and *Time/ Study Environmental Management* have more impact on the A-grade students than the non-A-grade students.

RQ6　What is the level of students' self-regulated learning strategies based on the involvement in co-curriculum activities organized by the Division of Islamic Studies in every premier polytechnic?

The following hypothesis is tested to find the difference of mean in academic self-regulation based on students' involvement in the co-curriculum activities organized by the Division of Islamic Studies in premier polytechnics.

Ho$_{06}$　Mean ranking for academic self-regulation is the same for all levels of students' involvement in the co-curriculum activities organized by the Division of Islamic Studies in premier polytechnics

Table 10.0 Difference of Mean Analysis in Academic Self-Regulation based on Students' Involvement in the Co-Curriculum Activities Organized by the Division of Islamic Studies in Premier Polytechnics

		Chi-square	df	Asymp. Sig.
Motivation	Intrinsic Goal Orientation	5.376	2	.068

	Extrinsic Goal Orientation	4.083	2	.130
	Task Value	7.806	2	.020
	Control of Learning Beliefs	7.182	2	.028
	Self-efficacy for Learning and Performance	8.153	2	.017
	Test Anxiety	2.397	2	.302
Learning Strategies	Rehearsal	5.429	2	.066
	Elaboration	3.232	2	.199
	Organization	2.040	2	.361
	Critical Thinking	3.280	2	.194
	Metacognitive Self-regulation	3.398	2	.183
	Time/ Study Environmental Management	2.215	2	.330
	Peer Learning	1.276	2	.528
	Help Seeking	3.378	2	.185

Kruskal Wallis Test, Grouping Variable: The Polytechnic of the Respondents

As demonstrated in Table 10.0, three subscales of motivation are shown to have significant difference in mean ranking based on the p-value being less than 0.05, and the subscales are; *Task Value* with p-value of .020, *Control of Learning Beliefs* with p-value of .028 and *Self-efficacy for Learning and Performance* with p-value of .017. Other subscales of motivation (*Intrinsic Goal Orientation*, p=.068; *Extrinsic Goal Orientation*, p=.130; *Test Anxiety*, p=.302) are not significantly different in mean ranking based on the p-value being more than 0.05. All subscales of learning strategies (*Rehearsal*, p=.066; *Elaboration*, p=.199; *Organization*, p=.361; *Critical Thinking*, p=.194; *Metacognitive Self-regulation*, p=.183; *Time/ Study Environmental Management*, p=.330; *Peer Learning*, p=.528; *Help Seeking*, p=.185) are not significantly different in mean ranking based on the p-value being higher as 0.05. Therefore, Ho_{06} is rejected.

Table 11.0 Mean Ranks Analysis of Motivation based on the Premier Polytechnics Enrolled

		N	Mean Ranks
Intrinsic Goal Orientation	Not Active (not participated at all)	286	165.69
	Active (participated in one activity)	36	201.99
	Very Active (participated in more than one activities)	19	192.29
Extrinsic Goal Orientation	Not Active (not participated at all)	286	169.10
	Active (participated in one activity)	36	198.49
	Very Active (participated in more than one activities)	19	147.45
Task Value	Not Active (not participated at all)	286	166.12
	Active (participated in one activity)	36	214.18
	Very Active (participated in more than one activities)	19	162.58
Control of Learning Beliefs	Not Active (not participated at all)	286	168.27
	Active (participated in one activity)	36	208.26
	Very Active (participated in more than one activities)	19	141.50

N=341

Table 11.0 Mean Ranks Analysis of Motivation based on the Premier Polytechnics Enrolled (Cont.)

		N	Mean Ranks
Self-efficacy for Learning and Performance	Not Active (not participated at all)	286	165.63
	Active (participated in one activity)	36	215.22
	Very Active (participated in more than one activities)	19	167.97
Test Anxiety	Not Active (not participated at all)	286	174.38
	Active (participated in one activity)	36	148.21
	Very Active (participated in more than one activities)	19	163.32

N=341

With reference to Table 11.0, the mean ranks for *Task Value* are 166.12 for the not active students, 214.18 for the active students and 162.58 for the very active students. The mean ranks for *Control of Learning Beliefs* are 168.27 for the not very active students, 208.26 for the active students and 141.50 for the very active students, while mean ranks for *Self-efficacy for Learning and Performance* are 165.63 for the not active students, 215.22 for the active students and 167.97 for the very active students. This implies that *Task Value, Control of Learning Beliefs* and *Self-efficacy for Learning and Performance* have more impact on the students who are actively involved in the co-curriculum activities than students who are not actively or very actively involved in the co-curriculum activities organized under the Division of Islamic Studies in every premier polytechnic.

FINDINGS

The study found that the students from Premier Polytechnic C possess higher level of metacognitive self-regulation than the students from Premier Polytechnic A and B, while the students from Premier Polytechnic B are shown to seek help more than the students from Premier Polytechnic A and C.

Even though, the study found that there is no difference in the level of intrinsic goal orientation based on the demographic background, male students and those who have actively involved in the co-curricular activities organised by the Division of Islamic Studies are shown to have high level of motivation in terms of task value, control of learning beliefs, and self-efficacy for learning and performance. The finding shows that male students and those active students believe in the utility of the course material of the Islamic Education course and found them interesting and important, have high control of their own effort to learn and perform, and possess high expectancy to perform and confidence to complete the task given by the lecturer (Zimmerman, 2008; Schunk and Zimmerman, 2003; Pintrich, 2003; Chen, 2002). Anthony (2008) perceives motivation as an important component of self-regulation. The control of learning beliefs reflect the degree to which your performance depends on something you do, such as effort rather than luck (Kail

47

and Cavanaugh, 2010). Having interest in the field of study, students spend more effort and take the course seriously yield higher result (Sorić and Palekčić, 2009; Moos and Azevedo, 2008).

Furthermore, male students and students who have attended the Islamic Secondary School/ National Islamic Secondary School have more ability to think critically than the female students and those students who have attended other types of secondary schools. The finding is inconsistent with the study of Maizam Alias and Busmina Balkis Abd Hadi (2010), who found that there is no difference of critical thinking between male and female.

The study also found that there is no difference of the utilization of learning strategies based on demographic background, however, students who obtained grade-A in the Islamic Education subject (in *SPM*) are found to have higher control of test anxiety and better time/ study environmental management than the students who obtained grade-B and grade-C. Dembo (2011) suggest that students have used the following strategies to efficiently manage their study time:

1) Set specific study goal every evening
2) Select a conducive spot in a room to study
3) Reduce visual contact with certain people
4) Limit socializing until breaks

CONCLUSIONS

The current finding confirms that the students have handsome knowledge about Islam and it is demonstrated in the grade of Islamic Education course (in *SPM*). Furthermore, students who achieved higher grade in the Islamic Education subject (in *SPM*) have lower level of test anxiety, better time and study environmental management and achieve higher grade in the Islamic Education course, than the B-grade and C-grade students. The finding supports solid foundation about Islam can be developed throughout the school years.

The development of knowledge and skill should not only occur in the classroom, the involvement in the co-curriculum activities also helps students to perform in academic. Therefore, students who have actively involved in the co-curricular activities organised by the Division of Islamic Education have higher level of motivation in terms of task value, control of learning beliefs, self-efficacy for learning and performance, and highly performed in the Islamic Education course, compared to students who are very actively involved in the co-curricular activities or those who have not participated at all. Therefore, the achievement in academic

and the involvement in co-curricular activities help students to successfully experience the learning process.

Male students have higher level of motivation, especially in terms of task value, control of learning beliefs, and self-efficacy for learning and performance. Male students also are more critical in thinking in learning the Islamic Education course.

REFERENCES

Amran Rosli. (2006). *Data Analysis and Interpretation: A Handbook for Postgraduate Social Scientists.*Johor Darul Takzim: Penerbit Universiti Teknologi Malaysia.

Anthony, Jr,A.R. (2008). Promoting Academic Motivation and Self-regulation: Practical Guidelines for Online Instruction. *TechTrends*, 52 (3).

Chen, C.S. (2002). Self-regulated Learning Strategies and Achievement in an Introduction to Information Systems Course. *Information Technology, Learning, and Performance Journal*, 20(1), 1-25.

Chong, W.H. (2007). The Role of Personal Agency Beliefs in Academic Self-Regulation: An Asian Perspective. *School Psychology International*, 28(63).

Dembo, M.H. & Seli, H. (2011). *Motivation and Learning Strategies for College Students: A Self-management Approach*. (Ed.3). New York: Routledge.

Eekelen, I.M.V., Boshuizen, H.P.A. & Vemunt, J.D. (2005). Self-regulation in Higher Education Teacher Learning. *Higher Education*, 50(3), 447-471.

Fritz, B.S. & Peklaj, C. (2011). Processes of self-regulated learning in music theory in elementary music schools in Slovenia. *International Journal of Music Education*, 29(15).

Green, J.A., Costa, L. & Dellinger, K. (2011). Analysis of Self-regulated Learning Processing Using Statistical Models for Count Data. *Metacognition Learning*, 6, 275-301.

Green, J.A., Costa, L., Robertson, J., Pan, Y. & Deekens, V. (2010). Exploring Relations Among College Students' Prior Knowledge, Implicit Theories of Intelligence and Self-regulated Learning in a Hypermedia Environment. *Computers in Education*, 55, 1027-1043.

Johnson, A.M., Azevedo, R. & D'Mello, S.K. (2011). The Temporal and Dynamic Nature of Self-Regulatory Processes During Independent and Externally Assisted Hypermedia Learning. *Cognition and Instruction*, 29(4), 471-504.

Kail, R.V. & Cavanaugh, J.C. (2010). *Human Development: A Lifespan View*. (Ed.5). USA: Wadsworth, Cengage Learning.

Kesici, Ş., & Erdogan, A. (2009). Predicting College Students' Mathematics Anxiety By Motivational Beliefs And Self-Regulated Learning Strategies. College Student Journal, 43(2), 631-642.

Kitsantas, A. & Zimmerman, B.J. (2009). College Students' Homework and Academic Achievement: The Mediating Role of Self-Regulatory Beliefs. *Metacognition Learning*, 4(2), 97-110.

Lane, K.L., Graham, S., Harris, K.R., Little, M.A., Sandmel, K. & Brindle, M. (2010). Story Writing : The Effects of Self-Regulated Strategy Development for Second-Grade Students With Writing and Behavioral Difficulties. The Journal of Special Education, 44(107).

Maclellan, E. (2005).Conceptual Learning: The Priority for Higher Education. British Journal of Educational Studies, 53(2), 129-147.

Maizam Alias and Busmina Balkis Abd Hadi (2010). The Relationship Between Creative And Critical Thinking Styles And Academics Achievements Among Post-Secondary Vocational Students. *Seminar Kebangsaan Jawatankuasa Penyelarasan Pendidikan Guru 2010*, 2-3 Ogos 2010, Hotel Concorde, Shah Alam.

Marianne van Den Hurk. (2006). The relation between self-regulated strategies and individual study time, prepared participation and achievement in a problem-based curriculum. *Active Learning in Higher Education*, 7(155).

Mason, L.H., Harris, K.R. & Graham, S. (2011). Self-Regulated Strategy Development for Sudents with Writing Difficulties. Theory into *Practice*, 50(1), 20-27.

Mehran Farajollahi & Mahdi Moenikia. (2010). The Compare of Self-regulated Learning Strategies Between Compare-based and Print-based Learning Students. *Procedia Social and Behavioral Sciences*, 2, 3687-3692.

Moos, D.C. & Azevedo, R. (2008). Exploring the Fluctuation of Motivation and Use of Self-regulatory Processes During Learning with Hypermedia. *Instr Sci*, 36, 203-231.

Piaw, C.Y. (2006). *Kaedah dan Statistik Penyelidikan: Buku*. Kuala Lumpur: Mc-Graw Hill (Malaysia) Sdn. Bhd.

Pintrich, P.R. (2003). Motivation and Learning. Reynolds, W.M. & Miller, G.E. Handbook of Psychology, p.104-122. New Jersey: John Wiley & Sons, Inc.

Pintrich, P. R., &Zusho, A. (2002). The development of academic self-regulation: The role of cognitive and motivational factors. In A. Wigfield & J.S. Eccles (Eds.), Development of achievement motivation (pp. 249–284). San Diego, CA: Academic.

Shmitz, B. & Perels, F. (2011). Self-monitoring of Self-regulation During Math Homework Behaviour Using Standardized Diaries. *Metacognition Learning*, 6, 255-273.

Schunk, D.H. & Zimmerman, B.J. (2003). *Self-Regulation and Learning*. Reynolds, W.M. & Miller, G.E. Handbook of Psychology, p.59-75. New Jersey: John Wiley & Sons, Inc.

Song, H.S., Kalet, A.L. & Plass, J.L. (2011). Assessing Medical Students' Self-regulation as Aptitude in Computer-based Learning. Adv. In Health Sci.Educ, 16, 97-107.

Sorić, I., & Palekčić, M. (2009). The role of students' interests in self-regulated learning: The relationship between students' interests, learning strategies and causal attributions. European Journal Of Psychology Of Education - EJPE (Instituto Superior De Psicologia Aplicada), 24(4), 545-565.

Stang, K.K., Carter, E.W., K.L. Lane & Pierson, M.R. (2008). Perspectives of General and Special Educators on Fostering Self-Determination in Elementary and Middle Schools. *The Journal of Special Education*, 43(94).

Throndsen, I. (2011). Self-regulated Learning of Basic Arithmetic Skills: A Longitudinal Study. *British Journal of educational Psychology*, 81, 559-578.

Usher, E.L. & Pajares, F. (2008). Self-Efficacy for Self-Regulated Learning : A Validation Study. Educational and Psychological Measurement, 68(443).

Zimmerman, B.J. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments and Future Prospects. *American Educational Research Journal Manth*, 45(1), 166-183.