RELATIONSHIP OF SELF-REGULATED LEARNING AND ACADEMIC ACHIEVEMENT AMONG UNIVERSITI SULTAN ZAINAL ABIDIN (UniSZA) UNDERGRADUATE STUDENTS

Auwalu Shuaibu Muhammad¹ & Norsuhaily Abu Bakar²

¹ Faculty of Islamic Contemporary Studies, University Sultan Zainal Abidin, Malaysia.
² Faculty of Applied Social Sciences, University Sultan Zainal Abidin, Malaysia.

ashmuhd79@gmail.com
norsuhaily@unisza.edu.my

Abstract

The study aims to examine the relationship between self-regulated learning and academic achievement among UniSZA undergraduate students. The objective of the study is to determine the extent to which self-efficacy belief, motivation, and use of learning strategies affect UniSZA undergraduate academic achievement. A pilot study was conducted via the use of exploratory factor analysis using 144 volunteering respondents. This is to determine the reliability and validity of the instrument. A closed-ended questionnaire on student self-regulation in learning was administered to 364 randomly selected students 202 of which are female, 162 male across the nine faculties of the University. Obtained data was analyzed using correlation and regression analysis. Results obtained indicated that a strong relationship exist between self-regulated learning and academic achievement. The findings revealed a high positive correlation between students’ self-efficacy belief, motivation, use of learning strategies and students’ academic achievement. Similarly, results of the regression analysis indicated that self-efficacy, motivation and learning strategies serves as good predictors of higher academic performance (GPA). However, among the three study variables, self-efficacy was the strongest predictor of academic achievement. The study recommends nurturing and development of autonomous learners and a shift to students centered instruction.

Keywords: Self-regulation, Self-efficacy, Motivation, Learning strategies, Academic Performance

1. INTRODUCTION

There are different techniques to approach the nature of self-regulated learning. Self-regulated learning is an active process in which students establish the objectives leading their learning, try to monitor, regulate and control their thoughts, motivation and behavior in order to accomplish them. Therefore, studies on learning strategies, metacognition, learning objectives, and obviously the motivation of students are in the self-regulation learning concept (Heikkill & Lonka 2006; Nicol & Macfarlane-Dick 2006).

To understand the differences in levels of performance among students that cannot always be explained by inbuilt ability, researchers have considered a wide range of social-behavioral factors. One such aspect is the use of self-regulation in learning. Under this system, learners evaluate tasks, review the strategies available to them for achieving the tasks, apply themselves to completing the tasks. Similarly, they monitor the effectiveness of their strategies and depending on the outcome, revise their model for approaching similar tasks in the future (Jean 2010).
The concept of self-regulated learning though developed in the 1980s, it began receiving widespread attention in the 1990s (Dinsmore, Alexander, & Loughlin 2008). According to Zimmerman (1986), self-regulated learning is an activity that students do for themselves in an active way, rather than as a hidden event that happens to them reactively due to teaching experience. He believed that learners could set their objectives and monitor their performance against set standard. Pintrinch (1995) stressed that self-regulated learning should not be perceived as a measure of mental intelligence that is unchangeable after a particular period in life, nor a personal characteristic biologically originated. To him, students learn self-regulation through experience and self-reflection.

A study conducted by Zimmerman (2001) revealed that students were traditionally assume not to initiate or substantially supplement experienced design to educate themselves. Instead, emphasis was on the role of teachers and other educators to adapt instruction to each learner based on his or her mental ability, sociocultural background, or achievement of educational standards. Contrary to this beliefs, self-regulation learning theories assume the students can personally improve their capacity to learn. This is achieved by a careful use of metacognitive and motivational strategies, thereby making learners proactively select, structure and even create a helpful learning environment. They equally play a significant role in choosing the form and extent of instruction they need. He pointed out that self-regulation learning theories seek to explain and describe how a particular learner will learn and achieve despite apparent limitations in mental ability (as traditionally assessed), social-environmental background or in the quality of schooling. Similarly, self-regulated learning theories also seek to explain and describe why a learner might fail to learn despite apparent advantages in mental ability, social-environmental background, or quality of education. Due to these factors, self-regulated learning has become the current focus for research and one of the essential areas of educational practice (Pintrinch 2000; Reynolds and Miller 2003).

2. RESEARCH PROBLEM

For university students to be successful and become higher achievers, they must put in an extra effort toward their learning. One of such effort is becoming an independent learner. However, a major challenge for the university in the coming years is providing students with the necessary skills and competence to have autonomous learning. Educationally, autonomous learning implies the capability of the learners to control their own learning process (Schunk & Zimmerman 2003; Zimmerman 2002). This self-regulation skill plays a crucial role in the success of University students (Heikkila & Lonka 2006; Nicol & Macfarlane-Dick 2006; Notasoresi & Zimmerman 2004). Conversely, Allgood, Risko, Alvarerez, and Fairbank (2000) indicated that the majority of students who reach higher studies are not well prepared to face the academic challenges in the university system. Correspondingly, Tuckman (2003) pointed out that this lack of self-regulation processes as the primary factor leading to university failure.

Despite the power of self-regulation to motivate the learner and increases their overall success, Zimmerman (2002) observed that few teachers well prepare students to learn on their own. For instance, a study conducted by Corsi (2010) revealed that teachers are sometimes reluctant to create student-centered classrooms for the belief that teacher-directed learning allows the instructor to
maintain better control and positive learning outcomes. The findings of the study support the idea that shifting from lecturing, and worksheets to self-regulated, project-based learning can lead to improving student achievement, increased motivation, and made the classroom environment more conducive to learning. For these reasons, teachers should consider how to help students develop self-regulated learning strategies as a part of classroom instruction. This stresses the need to move from teaching to self-reflective practice (Schunk & Zimmerman 1998). This study examines the relationship between self-regulated learning and academic achievement among UniSZA undergraduate students with particular reference to students’ self-efficacy, motivation, and use of learning strategies.

3. RESEARCH OBJECTIVES
   i. To determine the extent to which self-efficacy belief in self-regulation affects UniSZA undergraduate students academic achievement.
   ii. To examine the role of motivation in self-regulation and it impacts on the academic achievement of UniSZA undergraduate students
   iii. To find out the extent to which UniSZA undergraduate students make use of self-regulated learning strategies.

4. RESEARCH QUESTIONS
   i. To what extent do self-efficacy belief in self-regulation affects UniSZA undergraduate students’ academic achievement?
   ii. To what extent do motivation in self-regulation affects UniSZA undergraduate students’ academic achievement?
   iii. Do UniSZA undergraduate students make use of self-regulated learning strategies?

5. RESEARCH HYPOTHESIS
   i. There is no significant relationship between self-efficacy belief in self-regulation and academic achievement among UniSZA undergraduates students.
   ii. There is no significant relationship between motivation in self-regulation and academic achievement among UniSZA undergraduate students.
   iii. There is no significant relationship between self-regulated learning strategies and academic achievement among UniSZA undergraduate students.

6. CONCEPT OF SELF-REGULATED LEARNING
   Self-regulation has been defined in a number of ways by various scholars in the field of educational psychology. However, all centered on the same theme that is an emphasis on student’s autonomy in learning. For example, Corsi (2010) viewed self-regulated learning as a system that foster higher thinking skills in students, based on their innate strengths. He maintains that under this system, students are exposed to problems in the form of projects and must find solutions using their natural qualities and abilities. This method allows students to learn and manipulate their environment by applying their unique learning modes to interact with it.
   Zimmerman (2000) believed that Self-regulation is not a mental ability or an academic performance skill. To him, Self-regulation is a self-directive process by which students transform their mental abilities into academic skill. He views learning
as an activity that the learners do for themselves in a proactive way than as a covert event that occur in reaction to teaching. Winnie and Perry (2006) states that students who are self-regulated learners are aware of their academic strengths and weaknesses. They maintain that due to this, they have a collection of strategies they apply to tackle the daily challenges of their academic tasks. Therefore, self-regulation should not be regards as a conventional method of learning but instead viewed as a way in which individuals utilized to achieve their learning goals independently.

Gray (2011) believed that learning is more effective when the student is actively engaged in the learning process rather than receiving the knowledge in a passive way. To him, teachers perform a supervisory role of guiding students to answer leading questions. Learners actively construct and build their knowledge for themselves based on prior experiences from the known to unknown. Lenderman and Lenderman (2005) students build on what they already know and add to their knowledge or schema. This indicates that the sole role of teachers to self-regulated learners is that of supervision and guidance to ensure that the students do not deviate from the set goals. They have a great deal of handling the non-self-regulated students by providing a detailed conventional teaching to ensure that they both reach the stated objectives.

6.1 Self-efficacy Belief

Self-efficacy refers to personal conclusions of one’s capabilities to consolidate and execute courses of action to attain designated goals (Bandura 1997). It is a belief about what one can do rather than personal judgments about one’s physical or personal attributes. It is also content specific and varies across several dimensions, such as level, generality, and strength. The levels of self-efficacy refers to dependence on the difficulty level of a particular task, generality of self-efficacy denotes to the transferability of one’s efficacy judgments across different tasks or activities, while the strength of self-efficacy judgments pertain to the certainty to whom can perform a given task (Zimmerman 1995). This indicates that the self-efficacy is not a personality or physical attributes. It is only measured on the level of work that can be only performed, the ability to use a similar strategy to solve a different task and lastly the rate of precision in accomplishing a given task.

Bandura (2006) maintained that a belief in one’s ability is an essential personal resource in self-development, successful adoption, and change. He stressed that efficacy belief operates through its impact on cognitive, motivational, affective, and decisional processes. Efficacy beliefs affect whether person think optimistically or pessimistically in self-enhancing or self-debilitating ways. To him, such beliefs influence people’s goals and aspirations, how they motivate themselves and their perseverance in the face of difficulties and diversity. He argued that efficacy beliefs tend to shape people’s outcome expectations, whether they expect their efforts to produce favorable results or adverse ones, it also determines how environmental opportunities and impediments are viewed. He pointed out that people of low self-efficacy beliefs are easily persuaded of the futility of effort in the face of difficulties. They quickly give up trying while those of high self-efficacy beliefs view impediments as surmountable by self-development and perseverant effort. Unlike the low self-efficacious people, high self-efficacy people stay the course in the face of difficulties and remain resilient to diversity. From the above, it is clear that students who have a firm belief in themselves will likely become successful in their academic pursuits and
will be having the ability to adapt to changes. This is because people of high self-efficacy face their life challenges with some degree of courage and perseverance and do not give up until they achieve their desired outcomes.

Zimmerman and Cleary (2006) believed that the construct of self-efficacy has a variety of distinctive features. They maintain that the characteristics are essential because they provide a point of comparison with other constructs and have consequences for how self-efficacy perceptions should be measured. They stated that the self-efficacy addressed the issue of “how well can I do something?” rather than “what am I like?”. Secondly, self-efficacy percepts are distinctive because they are not only domain specific but are also context and task specific. In terms of content specificity, a student may express a lower sense of efficacy to learn mathematics in competitive classroom structure than in a cooperative one. A third feature of self-efficacy is its dependence on a mastery standard of performance rather than on normative criteria. Finally, self-efficacy beliefs are normally assessed prior to engaging in a particular task or activity. They maintained that this antecedent property provides a temporal ordering needed for assessing the role of efficacy percepts in causal structures. As a result, self-efficacy has been theorized as a forethought process within self-regulation models because of its proactive impact on performance and self-evaluation processes following performance (Zimmerman 2000). From the above, it is clear that students’ self-efficacy belief is a prime condition necessary to attain self-regulation. This is because self-efficacy beliefs enable an individual to have trust and confidence in his or her ability to handle different task be it academic or personal. This ability permit individual become active and independent personality in solving his or her day-to-day academic tasks and challenges that can be best describe as self-regulation.

6.2 Motivation

Zimmerman and Schunk (2008) postulated that although self-regulated learning interventions produced a successful outcome in school settings, they often failed to sustain students’ use of these practices in less-structured environment. This limitation compels researchers to focus on students’ sources of motivation to self-regulate their learning. A primary concern is why motivation is important during students’ effort to self-regulate their learning, and which aspects of academic learning are influenced by motivational constructs. However, they pointed out that historically, both teachers and learners have attributed differences in academic motivation to the role of interest. They opined that students who have an interest in a given task or skill were motivated to learn with enthusiasm, but students who lack such interest will always remain disengaged. This indicated that students’ interest plays a pivotal role in their learning of new academic skills and task. Therefore, the school system should devise a means of developing and sustaining students’ interest to enable a wider attainment of teaching and learning goals. By so doing the students who are the primary target of the teaching process will become self-motivators towards their academic pursuit thereby reducing the much-required burden of raising students’ interest towards every lesson.

According to Ryan and Deci (2000), a person is regarded motivated when he/she is moved to do something. Individuals that has no will or stimulated toward an action are classified as unmotivated. Conversely, someone who is characterized by a zeal for an action or behavior is considered motivated. Ryan and Deci (2000) pointed out
that individuals’ shares different amount and kinds of motivation. They maintained that people varies in how much motivation as well as the type of motivation towards their actions. They revealed that the orientation of motivation is concern with the underlying activities and goal resulting in an action. For instance, a learner can be extremely motivated to do his assignment due to interest or, perhaps to have a praise from parent or teacher.

Motivation is seen as the person’s effort to accomplish his/her duties, dedicating the needed effort and continuing it (Celikoz 2009). Motivation plays a significant role in individual’s educational life and their achievement. Motivation reflects in learners’ choices of academic tasks, the time and effort they allocate to each task, their perseverance in academic tasks. Motivation also enables them correctly handle obstacles they come across in the learning process (Peklaj & Levpuscek 2006). Wiegfield and Eccles (2001) believed that motivation is a multidimensional construct. To them, researchers in the field of motivation in learning agree that a learners engaging in any learning condition has to answer three central questions: ‘Can I do this activity?’, ‘Do I want to do this activity and why?’, and ‘What do I need to do to succeed?’

6.3 Learning Strategies

Weinstein and Mayer (1986) views learning strategies as behaviors and thoughts that a learner engages in throughout learning that are intended to influence the learner’s encoding process. Dweck and Master (2008) believed that in self-regulated learning, students use their repertoire of strategies to guide and enhance their learning processes. Without these strategies, they cannot effectively harness their cognitive skills or their motivation for skills acquisition. They maintained that students use of learning strategies, and their continued use of them in the face of difficulty is based on the belief that they are effective means of overcoming obstacles. However, many students do not hold such views. Instead, they believe that if you have high ability you should not need an effort or any deliberate learning strategies to master new learning tasks. They also believe that if you do not have high ability, efforts and strategies will not be effective. They highlighted that all these ideas grew out of students’ theories about their intelligence.

Dweck and Master (2008) identified two types of intelligence: fixed and malleable intelligence. To them, fixed intelligent students have a belief that everyone has a deep-seated and unchangeable amount of intelligence. This entity agrees with the statement “you have a degree of intelligence, and you cannot do much to change it”. In contrast, other students believed that the intelligence is malleable and can be modified. These incremental agree with the statement “you can always considerably change how intelligent you are”. In this way, they can shape their goals and values, amend the meaning of failure and guide responses to difficulty. From the above, it is clear that a fixed view of intelligence discourages students from taking an active charge of their learning. Whereas, a malleable view of intelligence encourages students to undertake, regulate, and motivate their own learning processes. Robins and Pals (2002) believed that students’ endorsement of a particular theory is relatively stable over time. They stressed that the school system should try to nurture and develop students who have a malleable intelligence thought because these theories can be induced or taught with striking effects.

Bandura (1986) ascribed much importance to learners’ use of self-regulation strategy. In his view, strategy application provides a student with valuable self-
efficacy knowledge. This knowledge in turn is assumed to decide subsequent strategy selections and enactments; “such representation information is put to heavy use in forming judgments, constructing, and choosing courses of actions” (Bandura 1986). This shows that individuals with knowledge of self-regulation strategies will have more exposure in selecting and applying various self-regulation strategies that best suit a given problem area of study than their counterparts with no such knowledge.

From a search in the various literatures, the study discovers many aspects of students' self-regulation. However, almost all of the reviewed articles from the conceptual to empirical studies focus more on students' self-efficacy, motivation and learning strategies. For this reason, therefore, students' self-efficacy, motivation and learning strategies constitute the independent variables while students' academic achievement is the dependent variable of the study. The study was devoted to finding the existing interrelationship among these three independent variables that made up self-regulation and how they influence students' academic achievement.

7. METHOD

7.1 Participant
The population of the study consist of 364 Universiti Sultan Zainal Abidin students. The population consist of 202 male and 162 female respondents. The participants were randomly selected across all faculties of the University.

7.2 Instrument for Data Collection
To obtain the required information from respondents on self-regulation, the researcher used a questionnaire as a data collection tool. The questionnaire was developed by the researcher to ensure it covers the problem under study. A closed-ended questionnaire on a seven points rating scale ranging from 1 strongly disagrees to 7 strongly agree was developed. A closed-ended questionnaire is appropriate because it allows the participants to choose from given alternatives thereby avoiding the problem of unwanted responses. It is also very easy to score and time-saving. The questionnaire consist of four sections namely; demographic section with seven items, students’ self-efficacy section with nine items, motivation section with nine...
items and learning strategies section with twelve items. In all, the questionnaire consists of thirty-seven items that solicit information from the students on self-regulation.

### 7.3 Procedure

In order to recruit the participants for the study, the researcher obtained a verification letter from the Faculty of Islamic contemporary studies, Universiti Sultan Zainal Abidin. The letter was usually presented upon request from the respondents. Data for the study was collected at the beginning of second semester 2014/2015 academic session. This is because the researcher intends using the most recent students grade average point (GPA) of preceding semester. The questionnaire were distributed to students at lecture venue with the cooperation of class representatives and lecturers concern.

### 7.4 Statistical Analysis

Obtained data was analyzed using correlation analysis and a simple linear regression. The analysis was performed using Statistical Package for Social Sciences (SPSS).

#### Table 1 Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students Self-efficacy</td>
<td>5.5180</td>
<td>.65174</td>
<td>364</td>
</tr>
<tr>
<td>Motivation</td>
<td>5.8327</td>
<td>.64412</td>
<td>364</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td>5.2668</td>
<td>.71970</td>
<td>364</td>
</tr>
<tr>
<td>Students' GPA</td>
<td>3.1892</td>
<td>.51014</td>
<td>364</td>
</tr>
</tbody>
</table>

The above table gives a descriptive statistic of the study variables. From the table, students’ self-efficacy belief, motivation, and learning strategies are the independent variables while students GPA is the only dependent variable. Students’ self-efficacy belief, motivation, and learning strategies are having mean values of 5.5180, 5.8327, and 5.2668 respectively. Students GPA which is the dependent variable of the study have 3.1892 as the mean score. The mean scores are the average points obtainable by each member of the sample that is 364 respondents.

#### 7.4.1 Testing of Hypothesis One

There is no significant relationship between self-efficacy belief in self-regulation and academic achievement among UniSZA undergraduates students.

#### Table 2: Correlation between Self-efficacy and GPA

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>GPA</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>.761**</td>
<td>0.000</td>
<td>364</td>
</tr>
</tbody>
</table>
The above table shows the correlation between students’ self-efficacy and academic achievement. Academic achievement is defined as students GPA. The correlation value of 0.761 indicated that a strong correlation exist between students’ self-efficacy belief and their academic achievement. This is because the correlation value 0.761 is fairly close to 1. The closer the value is to 1, the stronger the relationship. Similarly, the two variables are statistically significant at $p = 0.000$, $p < 0.05$, while the N represent the study sample that is 364. This indicates that the higher the level of student self-efficacy belief the higher will be his/her GPA grade and the lower the level of students’ self-efficacy belief the lower will be the GPA grade.

Therefore, based on the correlation value of 0.761 which indicates a strong positive correlation between the two variables, the null hypothesis there is no significant relationship between self-efficacy belief in self-regulation and academic achievement among UniSZA undergraduates students is rejected. The finding revealed that a strong correlation exist between students’ self-efficacy belief and their academic achievement.

Table 3: Regression Coefficient of self-efficacy as a predictor of GPA

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.761</td>
<td>.580</td>
<td>.578</td>
<td>.33123</td>
</tr>
</tbody>
</table>

Predictors: (constant), students’ self-efficacy

From the above table, R-value 0.76 represents the correlation between the study variables. The R-square value of .580 represents the total variability of the dependent variable as explained by the independent variables. This shows that students' self-efficacy explains 58% of the total variability in Students' GPA.

Table 4: ANOVA Summary of Regression Analysis for Self-efficacy Predictor of GPA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>54.751</td>
<td>1</td>
<td>54.751</td>
<td>499.036</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>39.716</td>
<td>362</td>
<td>.110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94.468</td>
<td>363</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$. ** $p < .01$.

The analysis of variance (ANOVA) table is used in measuring the fitness fit of the model regression. From the above table, the F-statistic value is 499.036 while the P value is 0.000, which indicates that the regression model fit the data at hand because the P value (sig.) is less than 0.05.
Table 5: Regression Coefficient for Self-efficacy as a predictor of GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.099</td>
<td>0.148</td>
<td>-0.668</td>
<td>0.505</td>
<td></td>
</tr>
<tr>
<td>Students Self-efficacy</td>
<td>0.596</td>
<td>0.027</td>
<td>0.761</td>
<td>22.339</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Dependent variable: students GPA. * p < .05. ** p < .01.

The regression coefficients table shows the effect of an independent variable over the dependent variable. Analysis of the coefficient table shows that when the independent variable is constant, we have a negative t-statistic value of \( t = -0.6537 \) with a value of \( P = 0.505 \), this is statistically insignificant because \( P > 0.05 \). However, students’ self-efficacy has a t-statistic value \( t = 22.339 \) with \( P = 0.000 \), showing a statistically significant coefficient because the \( P = 0.000 \), \( P < 0.05 \). This shows that the study variables were statistically significant because their \( P \) values were less than 0.05. On the other hand, the unstandardized coefficient measures the extent to which the independent variable can predict the dependent variable. From the table, when the independent variable is constant, students’ GPA was predicted to decrease by -9.9%. However, students’ self-efficacy is predicted to increase academic GPA by 0.59%. That is for any additional unit of students’ self-efficacy in learning, students’ GPA is predicted to increase by 0.59%. Based on the obtained results, it can be deduced that UniSZA undergraduate students are self-efficacious in their learning and their self-efficacy beliefs serve as a good predictor of their academic GPA.

7.4.2 Testing of Hypothesis Two

There is no significant relationship between motivation in self-regulation and academic achievement among UniSZA undergraduate students.

Table 6: Correlation between motivation and GPA

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>GPA</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>.668**</td>
<td>0.000</td>
<td>364</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

The above table shows the correlation between students’ motivation and academic achievement. Academic achievement is defined as students GPA. The correlation value of 0.668 indicated that a high correlation exist between students’ motivation and their academic achievement. This is because the correlation value 0.668 is fairly close to 1. The closer the value is to 1, the stronger the relationship. Similarly, the two variables are statistically significant because the significance level is at 0.000 which is lesser than \( p = 0.05 \) while the \( N \) represent the study sample that is 364. This indicates that the higher the level of students’ motivation the higher will be their GPA grade and the lower the level of students’ motivation, the lower will be their GPA grade.

Therefore, based on the correlation value of 0.668 which indicates a strong positive correlation between the two variables, the null hypothesis, there is no significant relationship between motivation in self-regulation and academic achievement among UniSZA undergraduates is rejected. The result revealed that a
strong correlation exist between students’ motivation and their academic achievement.

Table 7: Regression Coefficient – Model Summary for motivation as a predictor of GPA

<table>
<thead>
<tr>
<th>Model Estimate</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.668</td>
<td>.447</td>
<td>.445</td>
<td>.37997</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Motivation

From the above table, R-value 0.668 represents the correlation between motivation and academic GPA. The R-square value of 0.447 represents the total variability of the dependent variable as explained by the independent variables. This shows that 44.7% of the total variability in Students’ GPA is explained by students’ motivation.

Table 8. ANOVA Summary of Regression Analysis for Motivation as a Predictor of GPA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>42.203</td>
<td>1</td>
<td>42.203</td>
<td>292.309</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>52.265</td>
<td>362</td>
<td>.114</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94.468</td>
<td>363</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01

The analysis of variance (ANOVA) table is used in measuring the fitness fit of the model regression. From the above table, the F-statistic value is 292.309 while the P value is 0.000, which indicates that the regression model fit the data at hand because the P value (sig.) is less than 0.05.

Table 9 Regression Coefficient for Motivation as a predictor of GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.102</td>
<td>.182</td>
<td>.559</td>
<td>.577</td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td>.529</td>
<td>.031</td>
<td>.668</td>
<td>17.097</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent variable: students GPA. * p < .05. ** p < .01

The regression coefficients table shows the effect of an independent variable over the dependent variable. Analysis of the coefficient table shows that when the independent variable is constant, the t-statistic value of t= 0.559 with a value of P= 0.577, this is statistically insignificant because P > 0.05. However, student's motivation is having a t-statistic value of t= 22.339 with P= 0.000, showing a statistically significant coefficient because the P= 0.000, P< 0.05. This shows that the study variables were statistically significant because their P values were less than
0.05. On the other hand, the unstandardized coefficient measures the extent to which the independent variable can predict the dependent variable. From the table, when the independent variable is constant, students' GPA was predicted to decrease by 10.2%. However, students' motivation is predicted to increase academic GPA by 0.53%. That is for any additional unit of students' motivation in learning; students' GPA is predicted to rise by 0.53%. Based on the obtained results, it can be concluded that motivation plays a significant role in improving the academic achievement of UniSZA undergraduate students. Similarly, the findings revealed that motivation serve as a good predictor of academic GPA.

7.4.3 Testing of hypothesis three
There is no significant relationship between self-regulated learning strategies and academic achievement among UniSZA undergraduate students.

Table 10 Correlation between learning strategies and GPA

<table>
<thead>
<tr>
<th>Pearson Correlation</th>
<th>GPA</th>
<th>P</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning strategies</td>
<td>.632**</td>
<td>0.000</td>
<td>364</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

The above table shows the correlation between students' use of learning strategies and their academic achievement. Academic achievement is defined as students GPA. The correlation value of 0.632 indicated that a high correlation exist between the use of self-regulated learning strategies and academic achievement. This is because the correlation value 0.632 is fairly close to 1. The closer the value is to 1, the stronger the relationship. Similarly, the two variables are statistically significant because the significance level is at 0.000 which is lesser than p= 0.05 while the N represent the study sample that is 364. This indicates that the higher the level of students’ use of learning strategies the higher will be their GPA grade and the lower the level of students’ use of learning strategies the lower will be the GPA grade.

Therefore, based on the correlation value of 0.632 which indicates a strong positive correlation between the two variables, the null hypothesis there is no significant relationship between self-regulated learning strategies and academic achievement among UniSZA undergraduates is rejected. The result revealed that a strong correlation exist between self-regulated learning strategies and students’ academic achievement.

Table 11: Regression Model Summary for Learning Strategies as predictor of GPA

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Error of Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.632</td>
<td>.400</td>
<td>.398</td>
<td>.39586</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Learning Strategies

From the above table, R-value 0.632 represents the correlation between learning strategies and academic GPA. The R-square value of .400 represents the total variability of the dependent variable as explained by the independent variables. This
shows that 40% of the total variability in Students’ GPA is explained by students’ use of learning strategies.

Table 12: ANOVA Summary of Regression Analysis for Learning Strategies as a Predictor of GPA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>37.742</td>
<td>1</td>
<td>37.742</td>
<td>240.850</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>56.762</td>
<td>362</td>
<td>.157</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>94.468</td>
<td>363</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.

The analysis of variance (ANOVA) table is used in measuring the fitness fit of the model regression. From the above table, the F-statistic value is 240.850 while the P value is 0.000, which indicates that the regression model fit the data at hand because the P value (sig.) is less than 0.05.

Table 13: Regression Coefficient for students’ use of Learning Strategies as predictor of GPA

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.829</td>
<td>.153</td>
<td></td>
<td>5.405</td>
<td>.000</td>
</tr>
<tr>
<td>Learning Strategies</td>
<td>.448</td>
<td>.029</td>
<td>.632</td>
<td>15.519</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent variable: students GPA. * p < .05. ** p < .01

The regression coefficients table shows the effect of an independent variable over the dependent variable. Analysis of the coefficient table shows that when the independent variable is constant, the t-statistic = 5.405 with a value of P= 0.000, this shows that the two variables are statistically significant because P < 0.05. Similarly, students’ use of learning strategies is having a t-statistic value of 15.519 with P= 0.000, showing a statistically significant coefficient because the P= 0.000, P< 0.05. This shows that the study variables were statistically significant because their P values were less than 0.05. On the other hand, the unstandardized coefficient measures the extent to which the independent variable can predict the dependent variable. From the table, when the independent variable is constant, students’ GPA was predicted to be 0.829%. However, learning strategies is predicted to increase academic GPA by 0.448%. That is for any additional unit of students’ use of learning strategies; academic GPA is predicted to rise by 0.448%. Based on the obtained results, it can be concluded that motivation plays a significant role in improving the academic achievement of UniSZA undergraduate students. Similarly, the findings revealed that motivation serve as a good predictor of academic GPA.

8. DISCUSSION OF FINDINGS

The aim of this study was to examine the relationship between self-regulated learning and academic achievement among UniSZA undergraduate students. The primary objectives of the study are to determine the extent to which UniSZA
undergraduate students are self-efficacious in their learning and how it affect their academic achievement, secondly to assesses the impact of motivation in self-regulation and it impact in improving UniSZA undergraduate students’ academic achievement and lastly to find out the extent to which UniSZA undergraduate students make use of self-regulated learning strategies and how it affects their academic achievement. In the light of the stated objectives, three null hypothesis were raised to pilot the study. Findings from the study revealed that a strong positive correlation exist between self-regulated learning and academic achievement among UniSZA undergraduate students. This is because all the variables under study revealed a positive correlation.

The result relating to hypothesis one revealed that a strong relationship exist between students’ self-efficacy beliefs and academic achievement. The computed r =0.761 at p= 0.000, p < 0.05 level of significance. Based on these values the result revealed a strong positive relationship between the two variables. For this reason, the null hypothesis that says there is no significant relationship between self-efficacy in self-regulation and academic achievement among UniSZA undergraduate students was rejected. Similarly, the study revealed that self-efficacy has a positive effect on academic achievement, and it serve as a good predictor of students’ academic GPA. The R-square on the model summary table shows that 58% of the total variability in students GPA is explained by the independent variable (self-efficacy). Additionally, based on the coefficient result, self-efficacy predicts 0.596% of students’ GPA. That is for any additional unit of self-efficacy, students’ GPA is predicted to increase by 0.596% holding all other factors constant. This shows that self-efficacy serves a good predictor of students’ GPA. These findings are in line with the work of Bouffard et al. (2005) Students from the high efficacy condition performed better than students from the low efficacy group when trying to achieve learning goals. The finding also correspondent with the work of Al-Khatib (2010) self-efficacy is a strong predictor of academic achievement. Similarly, Yusuf (2011) observed that efficacy beliefs are positively correlated with academic achievement.

The second research objective is to find out the role of motivation on students’ academic achievement. To address this, a null hypothesis that says there is no significant relationship between motivation in self-regulation and academic achievement among UniSZA undergraduate students was raised. Result related to the stated hypothesis revealed that a strong relationship exist between motivation and academic achievement. The computed r =0.668 at p= 0.000, p < 0.05 level of significance. Based on these values the result revealed a strong positive relationship between the two variables. For this reason, the null hypothesis was rejected. Regression analysis was used in determining the role of motivation on students’ academic achievement. The result revealed that motivation has a positive effect on academic achievement, and it serve as a good predictor of students’ academic GPA. This is evident by the R-square value in the model summary table that indicated that 44.7% of the total variability in students GPA is explained by the independent variable (motivation). Additionally, based on the coefficient result, motivation predicts 0.529% of students’ GPA. That is for any additional unit of motivation, students’ GPA is predicted to increase by 0.529% holding all other factors constant. Based on the obtained results, a positive relationship exists between motivation and academic achievement and motivation serves as a good predictor of students’ GPA. These findings are in line with the work of Ikhwan et al. (2009) that successful learners
maintain high levels of motivation in learning. The findings also correspond to the works of (Tuysuz et al. 2010; & Remali et al. 2013).

The third research objective is to find out the extent to which UniSZA undergraduate students make use of self-regulated learning strategies. To achieve this, a null hypothesis was raised that there is no significant relationship between self-regulated learning strategies and academic achievement among UniSZA undergraduate students. Findings from the study revealed that UniSZA undergraduate students make use of self-regulated learning strategies. The findings also indicated that a strong positive relationship exist between the use of learning strategies and students’ academic achievement based on the correlation value of \( r=0.668 \) at \( P=0.000 \) level of significance \( P < 0.01 \). This means that the more a student makes use of learning strategies the better will be his/her academic achievement (GPA). Similarly, results from the regression summary table, shows that 40% of the total variability of dependent variable (GPA) is explained by the independent variable (Learning Strategies). Additionally, learning strategies served as a good predictor of student academic achievement as it predicts 0.448% of academic GPA. Based on this value, for any increase in students use of learning strategies, students GPA is predicted to increase by 0.448%. For this reason, the null hypothesis that says there is no significant relationship between self-regulated learning strategies and academic achievement among UniSZA undergraduate students is hereby rejected. Conclusively, UniSZA undergraduate students make use of self-regulated learning strategies, and a positive relationship exist between self-regulated learning strategies and their academic achievement. These findings are in line with the work of Kosnin (2007) that higher achievers make use of self-regulated learning strategies more successfully than the lower achievers. The findings also are in line with the work of Ikhwan et al. (2009) successful learners have a better self-regulatory learning skills, maintaining high levels of motivation in learning and make use of learning strategies. The result also corresponds to the work of Yusuf (2011) that a significant correlation exist between self-regulated learning strategies and academic achievement.

CONCLUSION
Conclusively, based on the findings of the study, a strong relationship exists between self-regulated learning and academic achievement of UniSZA undergraduate students. Additionally, students’ self-efficacy belief, motivation and use of self-regulated learning strategies served as a good predictor of students' academic achievement. Similarly, result from the regression coefficient tables shows that of all the three independent variables, students’ self-efficacy belief was having the highest predicting power accounting for 0.596% on students GPA, followed by motivation which accounts for 0.529% of students GPA. While the use of learning strategies was recorded to have the least predicting power on students’ GPA accounting for 0.448%.

RECOMMENDATIONS
The following suggestions were raised based on the findings of the study. For the fact that self-regulated learning was having a tremendous impact on students’ academic outcome, the study suggests that:
i. Curriculum planners should design a curriculum that will encourage students’ autonomy in learning. This move will curtail the beliefs of most lecturers/teachers that they are the sole givers of information to learners.

ii. Lecturers/teachers should try to adopt a student-centered classroom environment by encouraging students to participate actively in classroom activities. This will reduce learners anxiety in classroom activities because their participation has become a daily routine exercise.

iii. Students should try to improve their self-efficacy beliefs by regularly engaging in highly demanding academic tasks. They should equally consider failure as a challenge and seek help from peers or teachers in the face of unresolved academic difficulties.

iv. Students should try to develop an intrinsic motivation as they approach a new learning task. Similarly, teacher/parents should find a means of motivating their children’s as they accomplished a given learning task.

v. Students should try to utilize the various types of learning strategies available to them. They should equally be flexible in their use of the strategies by using the one that is best suitable for a given learning task.

vi. Lecturers/teachers should try to encourage students to be self-regulative in their learning processes by revealing to the students new trends in self-regulated learning.

REFERENCES


