ISSN 1798-4769
Journal of Language Teaching and Research, Vol. 2, No. 2, pp. 314-322, March 2011

doi:10.4304/jltr.2.2.314-322

The Development of Study Skill Tools in Evaluating Student's Study Orientation Skills and Its Relationship towards Academic Performance

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***Abstract*—The purpose of this study is to measure the study orientation skills and to provide remedial devices in correcting respondents' study orientation skills mistakes. The study reveals the relationship between study orientation skills and the grade point average. In addition, the classification of group achiever based on study orientation skills is identified into higher group achiever, normal group achiever and under-achiever. The remedial devices used comprise of the web-based adapted version of Study Habits and Attitudes (SSHA) questionnaires on http://survey.ump.edu.my/surveyor and http://survey.ump.edu.my/admin. Other remedial devices used are study orientation skills module, kit; Ghani's format of note-taking, DVD's and study orientation skills classes. 59 respondents were selected as the sample of study by group sampling from the Faculty of Computer System & Software Engineering and 59 respondents from the Faculty of Civil Engineering & Natural Resources. The research applies Quasi-experimental pre-test and post-test separated group design. The respondent's study orientation skills are analyzed and sorted into three groups of achievement; the higher achiever, normal achiever and under achiever. The significant difference test on study orientation skills was conducted based on pre-test and post-test mean score and the significant differences test on the academic performance was done based on grade point average scores in semester 1 and 2 of first year students. The significant difference test used paired t-test based on statistical package of social science computer program. r Pearson product-moment correlation of coefficient results will show the relationship between study orientation skills and grade point average for each group and between the groups. The internal consistency reliability of the remedial devices is measured by Cronbach's alpha score. Results obtained shows that there is a significant difference between pre-test and post test for study orientation skills for Civil Engineering & Natural Resources respondents ($t = 8.47$, $p = 0.000$) and Computer System & Software Engineering ($t = 2.74$, $p = 0.008$). Significant difference results are also shown by grade point average for both tested groups ($t = 3.054$, $p = 0.003$) and ($t = 3.187$, $p = 0.002$). A significant correlation was found on the relationship between study orientation skills and grade point average for each tested group, based on r value was 0.24 ($p = 0.05$) for Civil Engineering & Natural Resources and r was 0.33 ($p = 0.05$) for Computer System and Software Engineering. The correlation between both groups tested for study orientation skills and grade point average are $r = 0.16$ ($p = 0.05$), $r = 0.15$ ($p = 0.05$), $r = 0.13$ (0.05) and $r = 0.31$ ($p = 0.01$).**

***Index Terms*—study orientation skills, study habits, study attitudes, academic performance**

I. Introduction

Learning can be classified into five common domains known as cognitive, psychomotor, affective (Bloom Taxonomy), static and dynamic (Angus, 2000). Each domain is represented by theories, principles, concept, processes factors effecting learning and learning difficulties. The variety of learning approaches, learning skills and learning difficulties exist because of the individual differences (Judy et al, 2003). Obviously, there are so many factors that affect the learning process of an individual. Physical factors are among the most evident (Turiman Suandi, 2004). Physical aspects, learning atmosphere and study orientation skills (riding et al, 2003) have directly affected students learning and are directly related to their academic achievement (Abid, 2006; Alias, 1996).

Secondary school system of learning inculcate the students study orientation skills with a system where the students are dependent more on the teacher, revision workbooks, and are examination orientated. The study orientation skills they possess lie on the study habits and study attitudes that are formed during their school system and these habits are instilled in them until they pursue their studies at the tertiary level at the university. The teacher centered approach which thye encountered during their school days will create a culture of "Spoon-Feeding" students which depend so much on the teacher. (Zubir Mohamed, 1998; Wan Zahid, 1993; Rohana Zubir, 1988).

Due to the above reason in 1993 the Malaysian Ministry of Education had changed the school system into KBSR

(Integrated curriculum for primary schools) and KBSM (Integrated Curriculum for secondary schools). This system changed the teaching approach from teacher cantered to student cantered (Wan Zahid, 1993). Maznah and Yoong Suan (1995) added that KBSM (Integrated Secondary School Curriculum) is required to be practiced by deep approach learning methods as well as surface approach.

Although the new system introduced seems to be much better, but the learning style is still the same and maintained a high number of dropouts. Haslam and Haris (1993) said the system cannot be practiced 100% due to some problems in teaching techniques, student's study orientation skills or student's study habits and attitudes, case study and field project which has to be done outside school. These problems are one of the critical factors that had affected their academic performance in the examination.

In order to overcome the problem, the government took an initiative by introducing a special learning system in school known Smart School system (Azian, 2006). Smart school depends on computer and browsers based, teaching IT, centralized help desk and service centre (Goh, 2000). This project did not succeed 100% due to the study skills problems among students and effectiveness of teaching methodology among teachers (Azean, 2006). Effective teaching by the teacher is considered as one of the successful factors which influences the performance of students. Learning can be improved by improving on the effectiveness of teacher but students still show so much difficulties in adapting and adopting a system of learning in the university especially during the transitional period of their first year studies (Bojuwye, 2002). Radeliffe et al, (2003); Edwards et al (2001) said the difficulties of studies encounter come from three aspects that is of students judgment; the environment; content of study, organization and social setting.

A. Problem Statement

It is very clear that the need of good and efficient study orientation skills is a compulsory element to the students. They will encounter so many problems in their study due to the different needs of study skills and learning system (William, 2005; Kimberly, 2004). The students task in overcoming their study difficulties is a need to adapt and adopt a new academic and social environment. Understanding behaviorist study methods to the cognitive phases need to be adjusted by the students and this will always contribute the difficulties in them (Womble, 2003; Singham, 1998; Estes, 1994).

Katherene (2003) stated the obvious problem faced by these secondary school students when they study in the university or during their first year study is to adapt to the way of study. It is related to study skills parameters such as note-taking during listening to lecture, assignment writing skills library skills, examination skills, effective study techniques, and academic background. Studying in the university is a more autonomous, divergent, lecture style approach and some use e-teaching system (Syed Osman, 2005). This sort of problems actually begins when they are in the upper secondary. Nuy (1991) noted that learning in the university is a mastery of learning which encompasses highly structured learning and problem based learning. It is more on inquiry learning and student's centered learning approach. Judy (2003) stated Monash University in Australia had introduced the Monash Transition Program to help first year students in adjusting their study skills to the new teaching and learning environments and physical environment. Moffat e al. (2005) added there were several programs introduced in helping the students during their transitional period. He said that, University of Melborne's Faculty of engineering has had a purpose in building a transition program as one of the annual efforts in helping the students. This practice was also exposed to some universities in United State of America, Japan and China.

This research is attempting a new design of SOS in measuring and correcting devices in enhancing students SOS so that they can improve in their academic performance. This design will give a positive impact in helping to improve student's study orientation skills as well as their academic performance and prepare them to study in the university.

B. Objectives

The objectives to be achieved by the research are:

1. To determine the effectiveness of the study orientation skills devices in improving respondent's study orientation skills.
2. To find out the relationship between study orientation skills and the academic performance among respondents.

C. Research Hypotheses

To find out the significant differences between pre-test and post-test of SOS among respondents and the relationship between pre-test and post test of SOS and GPA scores as well as the relationship between SOS and GPA the following hypotheses have to be tested. Below are the null hypotheses to be answered by the research finding:

1. There is no significant difference between pre-test and post-test of study orientation skills respondents.
2. There is no significant difference between pre-test and post test on grade points average of respondents.
3. There is no correlation between study orientation skills and academic performance among respondents.

D. Scope of Studies

The scope of study for this research is to measure and to correct study orientation skills of first year undergraduates who are pursuing courses in Computer and Civil engineering and the relationship of SOS to their academic performance. Measuring and correcting SOS was done through innovated device which was the modification of Survey of Study

Habits & Attitudes manual that has been modified into a website. Beside the measuring and correcting website, other correcting devices were innovated and used in correcting respondents SOS. The correcting devices mentioned above are SOS text and SOS kit, SOS, Ghani's format of Note-taking, DVD and lecture on SOS (Abid, 2006; Lisa, 2005; McNamarah, 2004).

The evaluation on SOS is hundred percent based on SSHA questionnaires which is modified into a website. The study orientation skill is only measured based upon the scores in students study habits and items from the study attitudes questionnaires. The study habits score is the summation of delay avoidance and work method whereas study attitudes score is the summation of teacher approval and educational acceptance. The academic performance is evaluated based upon first semester and second semester grade point average of the first year session.

This research is also a study on the selected aspects of study orientation skills that was selected from the survey done showed in table 2; organizing skills, listening skills, reading skills, note-taking skills, presentation skills, assignment and essay writing skills and motivation skills. Second main objective is to measure the correlation between SOS and academic performance among respondents. Obviously when there is an increment in SOS there will also be an increase in academic performance (Deborah, 2006; Gurung, 2003).

II. METHODOLOGY

A. *Research Framework*

The research framework of this research comprises of pre-test, followed by the research treatment and post-test. This flow will be done in duration of two semesters of study during the first year undergraduate's period. The research framework can be illustrated as in the following diagram:

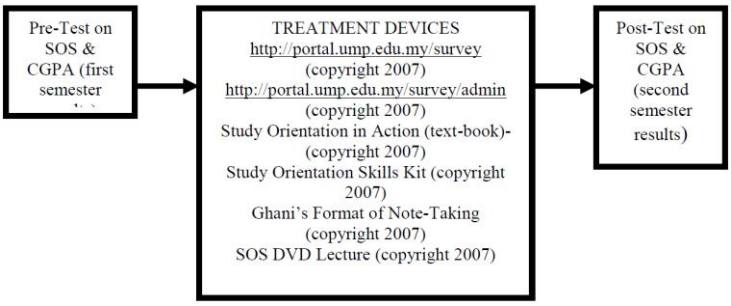


Figure 1: The research framework

The research framework can be explained in detail by following the flows of the research process which can be simplified as follow:

B. *Research Process*

The process flow of this research is as in the following diagram

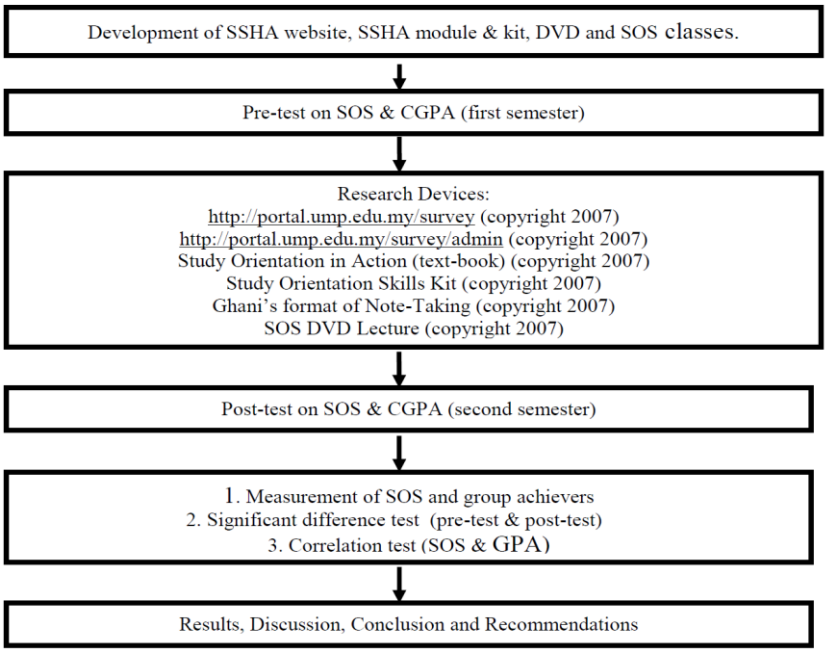


Figure 2: Research process

C. Research Design

This research uses the quasi-experimental design comparison of group pre-test and post-test design rather then randomly-assigned control groups as the baseline in measuring the impacts of the research. It is more precise to say that the type of comparison quasi-experimental group design used involves an equivalent time series design with equivalent samples material design. This research substitutes statistical controls for the absence of physical control and minimizes Hawthorne effect and the Placebo effect (William, 2006). Isaak (2007 also used quasi-experiment compared group pre-test and post-test design in his research on Matriculation students study orientation skills and academic performance.Other researchers who have used quasi-experimental compared group designs are Oyedeji (2006) and Abid Hussein (2006). Both researchers also conducted a study on the SOS and its relationship to the academic performance. The simplification of the design can be seen in diagram as the following:

Research Design:

O1	X	O2	SOS
GPA1		GPA2	GPA

O1 - Pre-test for Group A
X1 - Remedial Devices given for group A (same device)
O2 - Post-test for Group A
GPA1 - Grade point average first term exam
GPA2 - Grade point average second term exam

From the above diagram, 01, 02 and X1 are the pre-test, post-test and remedial devices given to respondents. The respondents will be given the treatment by SOS remedial devices. A Pre-test was given to measure the respondents study orientation skills followed by measuring academic score for term one school examination (GPA1). After the treatment given then post-test (O2) on SOS will be carried out together with the collection of academic score in second term of school examination will be taken (GPA2).

The difference between pre-test and post test scores in SSHA and CGPA will be determined to find out the significant differences and the correlation between two variables.

III. Results and Discussions

A. Is There Any Significant Differences between Pre-test and Post-test in the Study Orientation Skills among Students?

There is no significant difference between pre-test and post-test scores refering to the results in the table below. The results are suppose to reject Ho if and only if Ftest>Fcrit at p = 0.05. (0.35741< 4.151749). However, the mean score for study orientation skills parameter in post test 71.46) is greater than pre-test (68.58). All the SOS parameters showed that there was an increament in post-test scores accept for educational acceptance (EA) which shows lower in mean score in post test (16.38; 16.63).

Anova Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Pre-SO	24	1646	68.58333	310.3406
Post-SO	24	1715	71.45833	244.6938

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	99.1875	1	99.1875	0.35741	0.55288	4.051749
Within Groups	12765.79	46	277.5172			
Total	12864.98	47				

Hypothesis Null: there is no difference between pre-test & post-test in so score
Hypothesis Alternative: there is difference between pre-test & post-test in so score
Reject Ho if Ftest>Fcrit or P-value < 0.05
0.35741< 4.151749 and 0.55288-05 < 0.05
So Accept Ho.

There is a sufficient evidence to conclude that there is a difference between pre-test & post-test in so score students at significance level 0.05

TABLE 2.
MEAN SCORE OF STUDY ORIENTATION SKILLS IN PRE TEST & POST TEST.

Category	Pre-Test Mean	Post-Test Mean
DA	14.92	16.04
WM	16.04	17.04
TA	21	22
EA	16.63	16.38
SH	30.96	33.08
SA	37.63	38.38
SO	68.58	71.46

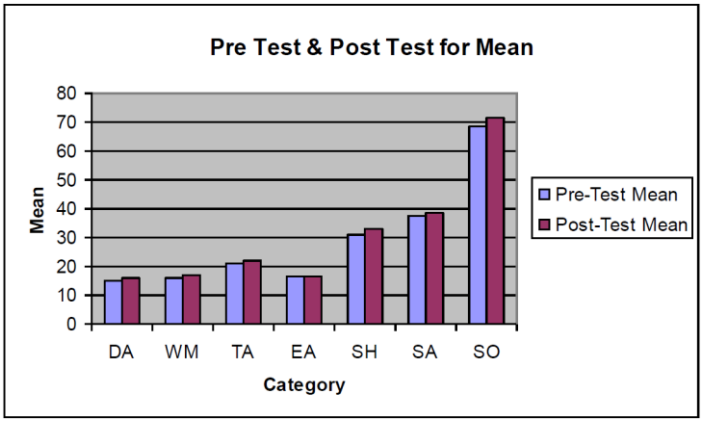
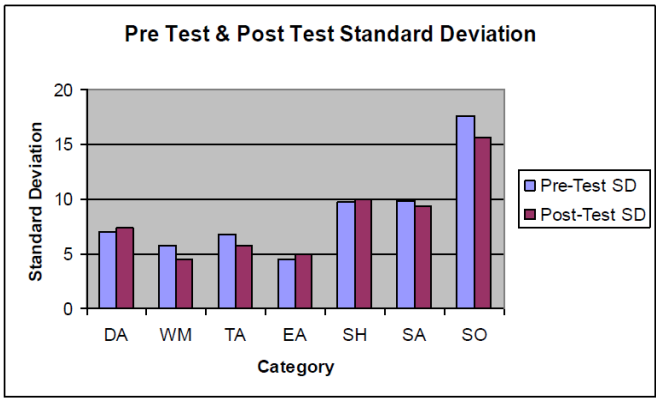


Figure 4: Pre Test and Post Test Mean

TABLE:
PRE TEST AND POST TEST MEAN

Category	Pre-Test SD	Post-Test SD
DA	7.04	7.43
WM	5.81	4.49
TA	6.74	5.7
EA	4.53	5.04
SH	9.8	10
SA	9.92	9.32
SO	17.65	15.64



B. There is no Significant Difference between Pre-test and Post Test on Grade Points Average of Respondents.

Table below shows that there is a significant differences in achievement score between pre-test and post-test among respondents. It shows that the value of Ftest>Fcrit at P-value < 0.05 or 6.583 > 4.098 at P – 0.05. Post test mean score for achievement test has increased to 78.85 compared to the pre-test mean score 66.6. This results show that the

effectiveness of SOS programmes at secondary school level in increasing academic performance of students

SUMMARY

Groups	Count	Sum	Average	Variance
Pre-test	20	1332	66.6	248.6737
Post-test	20	1577	78.85	207.1868

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1500.625	1	1500.625	6.583702	0.014359	4.098172
Within Groups	8661.35	38	227.9303			
Total	10161.98	39				

Hypothesis Null: there is no difference between pre-test & post-test in so score
Hypothesis Alternative: there is difference between pre-test & post-test in so score
Reject Ho if Ftest>Fcrit or P-value < 0.05
6.583 > 4.098 and 0.0143 > 0.05
SO-reject Ho.
There is a sufficient evidence to conclude that there is a difference between pre-test & post-test in so score at significance level 0.05

1. Pre-Test Correlation between Study Orientation Skills and Grade Point Average

	Pre-Result	Pre-test SO
Pre-Result	1	
Pre-test SO	0.2614552	1

2. Post-Test Correlation between Study Orientation Skills and Grade Point Average

	Post-Result	Post-test SO
Post-Result	1	
Post-test SO	0.1646272	1

Result above shows there is a weak correlation between SOS and academic performance among respondents. However the correlation showed in pre-test and post-test (0.2614 and 0.1646) is definitely proves there is a correlation between SOS and academic performance among respondents.

IV. Discussion

From the above results, it shows that there is no significance in SOS score between pre-test and post-test t; Ftest>Fcrit at p = 0.05. (0.35741< 4.151749). However, the mean score for study orientation skills parameter in post test 71.46) is greater than pre-test (68.58). All the SOS parameters showed that there was an increment in post-test scores except for educational acceptance (EA) which shows lower in mean score in post test (16.38; 16.63).

This result signifies that there is an improvement in the knowledge and practice of SOS among respondents based upon an increment of mean score of SOS and all other parameters except EA although there is no significant difference. From the general overview by the researchers this results may be due to the lack of practice among respondents on the utilization of the device materials because the devices used are all in English. Secondly, the duration of three month given for practice before the examination allocated for them is not enough. Although in some cases, Hawthorne's effect may take place if we allow them to practice SOS at longer period of time. This may be due to the maturity development among respondents.

Result for the significant test on the academic performance showed there is a positive significance difference between pre-test and post-test. It showed that the value of Ftest > Fcrit at P-value < 0.05 or 6.583 > 4.098 at P – 0.05. Post test mean score for achievement test has increased to 78.85 compared to the pre-test mean score 66.6. This result had showed that although SOS score did not show a significant difference but the effectiveness of SOS in increasing value of mean score between pre-test did show a positive result in increasing the academic score among respondents. This

result means that if the time allocation given to the respondents in a longer duration it may increase the value of SOS and it will exhibit very much better results in the academic performance of the students. Nevertheless interviews done among respondent's shows that Ghani's format of note taking especially had given them much effect and influence on their study and in improving their academic performance.

The Correlation test score showed in pre-test and post-test (0.2614 and 0.1646) definitely showed there is a correlation between SOS and academic performance among respondents. But there is only small correlation between SOS and academic performance. This result once again proved that duration of time given to the respondents in practicing SOS skills is not enough. Once again the feedback and results from the interviews among respondents agreed upon these issues.

V. Summary

Generally the findings of this research once again support the past finding that signifies an increment in SOS will increase the academic performance among respondents. The finding also showed that time allocation in practicing SOS skills among respondents is crucial and should be longer than the duration of three months. This finding can be summarized by a small increment in SOS mean score between pre and post-test. Future research in SOS should be focused on the best time taken in improving SOS among respondents. Further research should also focus on the effectiveness of Ghani's format of note-taking due to the response gain in this experiment.

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