Designing a Study Orientation Skills Kit to Improve Academic Performance of Form Five Secondary School Students

Mohd Ghani A.[1]   Suriya Kumar S.[2]   Muhammad Nubli A.W[2]
1. Faculty of Technology Management, University Malaysia Pahang
2. Centre for Modern Languages and Human Sciences, Universiti Malaysia Pahang, Malaysia

Abstract

The purpose of this research is to develop study orientation strategic tools towards achieving academic excellence among form five arts stream (O'Levels)Mat Kilau Secondary School (SMK Mat Kilau) students in Kuantan, Malaysia. The measurement of study orientation skills is done by innovating a website based on a survey of study habits and attitudes questionnaire (SSHA); http://kemahiranbelajar.ump.edu.my . The students' study orientation skills are analyzed and sorted into three groups of achievement; the higher achiever, normal achiever and lower achiever. The strategic tools comprise of the treatment website; http://survey.ump.edu.my/admin. , subject modules, Ghani format of note-taking, DVD on the selected of SPM subjects. The assessment on the academic performance is based on grade point average (GPA) scores of the students in their first term and second term examination results. 23 respondents were selected by simple random sample taken from the SMK Mat Kilau arts stream students. The research uses Quasi-experimental design with a pre-test and post-test by comparing both group samples. The finding has shown that the study orientation skills (SOS) website was able to measure SOS effectively among the respondents in the two groups. There is a significant difference in SOS between pre-test and post test scores of the respondents. In addition, it was also found that through the introduction of biofeedback techniques, students were able to increase their heart rate coherence which leads to improvement in their learning ability. The results also show that there is a correlation between SOS and GPA scores in pre-test and post-test within and between each group.

Keywords: study orientation, study habits, attitude, academic excellence ,bio feedback performance

1. Introduction

Manchala's (2007) analysis on Study Orientation Skills (SOS) among college and secondary school students depicts on the importance of having an exposure and awareness of SOS in secondary schools to enhance their academic performance. Manchala quotes that individual study skills are their study habits and function as a pivotal role in determining academic success in students' learning. Poor study method adopted clearly disrupts the progress of students. Nagaraju (2004) earlier identified students in secondary schools in India who often do not devote sufficient time to their studies and seldom have proper study habits. This supports the view that under achievers practise many non-productive study habits (Hargove, 1992). Indeed, students' study habits seem to show differences in how they learn and how serious they perceive of it in the teachings by their lecturers (Grobecker, 1999). Landsberger (2005) lists some key factors to achieve academic success which are taking responsibility, putting things in proper order, discovering one's key productivity periods and places, prioritising productivity periods and places for the most difficult study challenges, considering oneself in a win-win situation, consulting with the teacher, and continuously challenging oneself.

Apparently a lot of studies on the study difficulties experienced for students have been done by frontier researchers such as by Brown &Holtzman(1956, 1960). They developed a strategic tool known as Survey of Study Habits & Attitudes (SSHA) with a 100 item questionnaires to measure students study orientation skills. The SSHA comprises of the summation of study habits and study attitudes. Their work had been adopted by so many researchers globally and in so many fields. SSHA is said to be the most reliable and valid tool in measuring SOS until today. The continuation of work on SOS was done by Entwisle (1960), Hurburt (1990), Johnson (1991), Ewing (1993), Giovani (1994), John (1997), Bhatnager (1999), Partin (2002), and so forth. Studies have been done in Malaysia on SOS by using SSHA such as by RohanaZubir (1988), ZainulAsmawi (1988), Shahril (1994), Pandian (1997), Harianto (2006), and many more frontier researchers.

One way to help students to perform better in their academic performance is to practice a good SOS. SOS comprises of study methods, study techniques, study habits, study attitudes and study motivations Cloete&Schocet, (1986); Hersh (1984); Rasor (1998)opined by knowing the correct SOS, the students will be able eliminate anxiety and difficulties in learning. Elton (1988) added that the feeling of satisfaction will produce a well-being and potentiality in the individual and as a result, they will inherit a force of intrinsic and extrinsic motivation and higher self-awareness in learning. Shahril (1994) has shown that failure rate among science students depended so much on their study habits and study attitudes. Warren (1991); Estes, (1994) supported the findings and stressed that the SOS will directly affect science students academic performance. Svenson (1977) stated that group of students who have higher level of self-awareness will contribute a need and drive to resurrect their study methods in the new learning experiences. This kind of students also have a higher

perception and belong to the group of students who have in-depth study (atomistic) methods and holistic study methods.

Normally using the conventional SSHA manual will take a few weeks to evaluate and analyze the SOS, whereas using the new innovated website of SSHA by this study, the determination of SOS will only take about 40 minutes, together with the SOS treatments. This research also provides other treatment tools such as SOS text-book, SOS kit, SOS-DVD of format Ghani and SOS-DVD and lectures on SOS. Correcting the SOS at an instance will improve their academic performance. The finding of this research will be able to be a model in improving SOS and academic performance among students and also post graduates students.

1.1 Statement of Problem

There is so much literature and research done by well known scholars in the field of study skills to measure study orientation skills among students using the Study Skills Habits and Attitudes questionnaire. These studies used traditional methods of assessing the SOS and Great Point Average (GPA) among students across many disciplines which includes engineering, humanities and medicine. Eventually these traditional ways in measuring SOS takes time to interpret the data.

There is no one study that has been done before in assessing academic performance as being carried out by this research. Thus the academic performance is measured based on SPM examination(o'levels) results and students activities only. This research attempts to show the relationship between study orientation skills and academic performance so that a more accurate analysis can be used to determine academic success using SOS. Kuncel (2008) discovered study habits, skills and attitudes inventories and constructs match standardised tests and previous grades as predictors for academic performance. Thus this research is endeavouring to provide more methods in assessing student's performance based on SOS.

With regards to the above student's academic performance, this study is trying to develop study orientation strategic tools towards achieving academic excellence among students of SMK Mat Kilau and also to determine the level of study orientation skills among various group of achievers and its correlation towards the academic performance of SMK Mat Kilau students. The research used strategic tools such as new and more complete SOS devices comprising of a website for measurement, website for remedial and other devices such as textbooks, DVD, and lectures in measuring students SOS and method in re-correcting students SOS. Results from the research will show the SMK Mat Kilau students score in their SOS and its relationship to their academic performance. These findings can be used to access and provide remedial devices to all schools in Malaysia local or private school, colleges or Polytechnics.

1.2   Research Objectives

The objectives to be achieved by the research are:
1. To measure the study orientation of group achievement among respondents.
2. To find out the significant differences of SOS among respondents
3. To find out the relationship between SOS and academic performance among respondents.
4. To use biofeedback techniques for elevating coherence score among respondents.

1.3   Research Hypotheses

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 among 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

2.0 Literature Review

Study orientation skills are also known as study skills .Dash (1994). Study skills comprises of study methods, study techniques, study habits and study motivation. Estes, (1994) Warren (1991); Entwisle (1972), Brown &Holtzman (1956, 1960); added study orientation skills were the product of study habits and study attitudes.

Deborah (2006) added that study habits are related to motivation. Both factors will determine the students study behaviour in performing as a student. Study motivation will influence and sustain the student's mood, energy and drive towards their study activities. She added that the students who spend at least of one hour of homework everyday normally have good study habits as well as display a good academic performance. She said that among medical students who follow problem based learning showed that those who practice correct study habits will also display excellent results in their academic performance. Gurung (2003) added those students who exhibit a correct study habits in using pedagogical learning will show an improvement in their academic performance.

Snodgrass (1990) in using SSHA among 136 University of Alabama ,students found that there is a

strong positive correlation between the SOS and the academic performance among respondents. The finding shows that student with a good score in SOS had also demonstrated good scores in their CGPA.
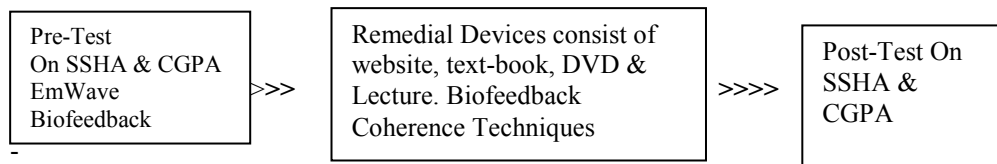
Hartie and Purdie (1999) in a study on meta-analysis investigation of the relationship between a range of study strategies and learning outcomes measures revealed that there were low correlations between a range of different types of study skill and from various learning outcomes . The findings presented showed that SOS had developed better learning outcomes among the respondents as they had practiced their learning methods in a holistic manner. Thus, the results interpreted in the said study was an indictment of the usefulness of engaging in good study behaviour. It is acknowledged that students do not do this of their own accord; it is only when they are taught to implement effective learning behaviour, then the cognitive and affective outcomes are enhanced.

The typical study of this genre specifies a variety of study skills, which later correlates with the scores on tests that measure students' use of these skills with some achievement outcomes, typically GPA. The results of the studies have found a positive association between achievement and the use of a particular strategy or set of strategies of many study skills programs. The skills   which are highlighted are related to organisation and management of time, goals setting, textbook study methods (namely scanning, underlining and SQ3R), memorising, using the library resources, essay writings, and preparing and sitting for examinations.
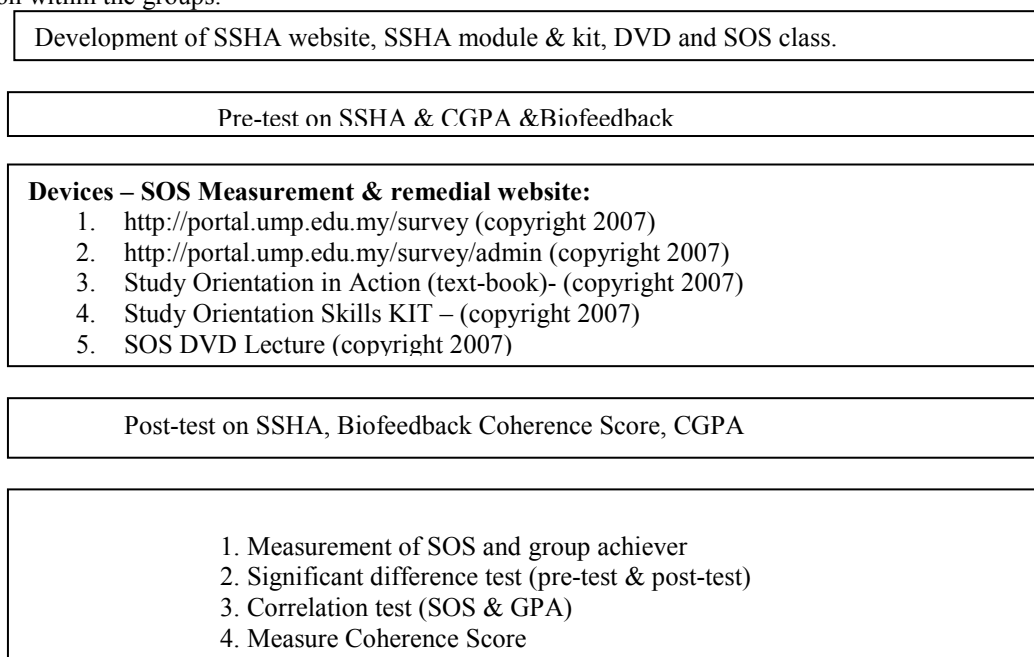
3.1 Methodology:
3.1.1 Conceptual Framework:
The conceptual framework for this research is as illustrated in the following chart as:

| Pre-Test On SSHA & CGPA EmWave Biofeedback | >>> | Remedial Devices consist of website, text-book, DVD & Lecture. Biofeedback Coherence Techniques | >>>> | Post-Test On SSHA & CGPA |

3.1.2 Research Process:
This research used a pre-test and post-test with remedial devices with respondents who were form five arts stream students. Pre-test was given to the respondents after two weeks they resumed their study in their second term. The assessment on SOS was measured and the GPA score for the first term results was obtained. Post-test was given after respondents received their second term results. The assessment on SOS and GPA was once again calculated as source of data. Analysis of data by percentage scores, mean scores and ANOVA was used to determined the significant difference at p-values of 0.05 between pre-test and post-test scores on SOS and GPA within the groups. The correlation test using Spearman – Brown formula was tested to find out the correlation within the groups.

Development of SSHA website, SSHA module & kit, DVD and SOS class.

Pre-test on SSHA & CGPA &Biofeedback

Devices – SOS Measurement & remedial website:
1. http://portal.ump.edu.my/survey (copyright 2007)
2. http://portal.ump.edu.my/survey/admin (copyright 2007)
3. Study Orientation in Action (text-book)- (copyright 2007)
4. Study Orientation Skills KIT – (copyright 2007)
5. SOS DVD Lecture (copyright 2007)

Post-test on SSHA, Biofeedback Coherence Score, CGPA

1. Measurement of SOS and group achiever
2. Significant difference test (pre-test & post-test)
3. Correlation test (SOS & GPA)
4. Measure Coherence Score

Figure 2: Research process

3.1.3 Sample
The 23 respondents from form five arts stream were chosen by simple random sample and they had completed

all the research activities. The total number (the research population) for the form five is 202 students. The respondents were chosen based on voluntarily basis and by their own effort to study about SOS. The same method of choosing the sample of respondents was done by the frontier researchers such as by Elshout-Mohr (1983), Gersten (1989), Carpenter (1990), Wang (1993), Yip (2005), and Isaak (2007).

4.1   Results and Discussion

4.1.1 The measurement of Study Orientation Skills in pre-test and post-test based on group achievers among Mat Kilau arts stream respondents:

As shown in Table 7, the Pre-test results showed that the number of higher achiever group was 7 (30.43%); normal achiever was 16 (69.57%) and under achiever was 0 (0%). Post-test results shows that there was a constant value of the higher achiever group;7(30.43%) and an decrease in the percentage value for the normal achiever group; 13 (56.53%) and increase in the under achiever number to 3(13.04%). Table 8 shows all parameters of SOS such as DA-Delay Avoidance (Means = 51.78 to 50.83), WM-Work Methods (46.91 to 48.17), TA-Teacher acceptance (37.48to 34.09), EA- (45.52to 40.87), SH-study habits (98.61to 99.00) and SA-study attitudes (82.52to 74.96) showed there was an increase in each means score.

This result has shown that there was an increase in the normal achiever group as well as a decrease in the percentage of under achiever after the respondents had received the treatment through devices of the study orientation skills. This means the respondents were successful in re-correcting their study orientation skills. Hence it was found that the website seems successful in measuring the value of study orientation skills among Mat Kilau arts stream respondents into three groups of achievers.

Table 7: Percentage score for group Achiever

|	Total		Percentage	
	Pre-Test	**Post-Test**	**Pre-Test**	**Post-Test**
Higher	7	7	30.43	30.43
Normal	13	16	56.53	69.57
Lower	3	0	13.04	0.00
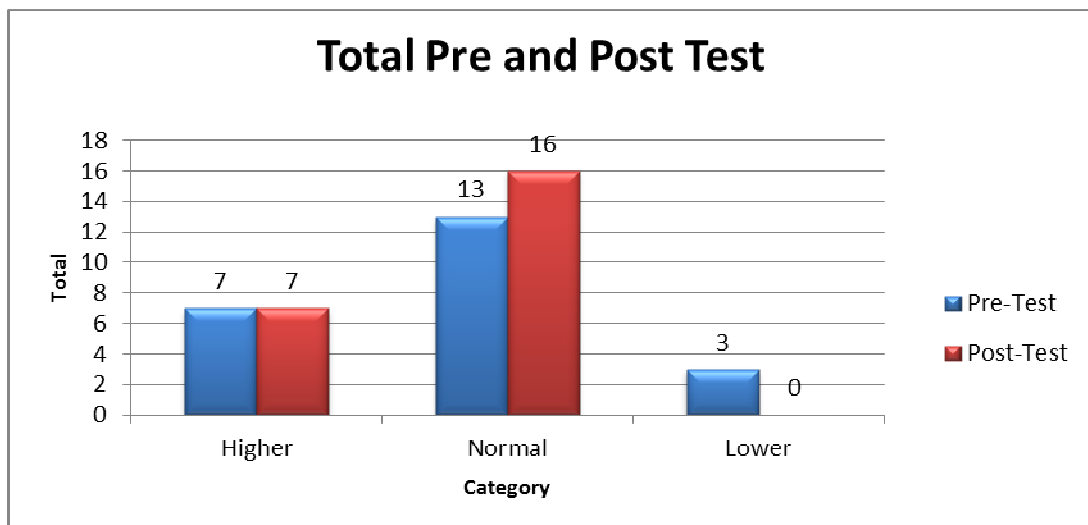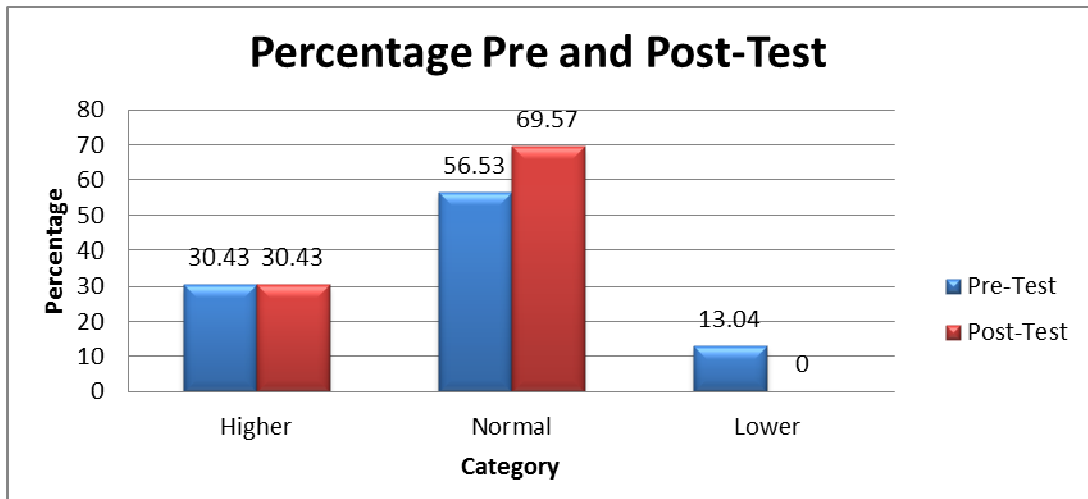
Obliviously, the histogram shows the details of the difference between pre test and post test scores

Table 8: Mean score in Pre Test and Post Test.

Category	Mean	
	Pre-Test	**Post-Test**
DA	50.83	51.78
WM	46.91	48.17
TA	34.09	37.48
EA	40.87	45.52
SH	98.61	99.00
SA	74.96	82.52
SO	173.96	181.13
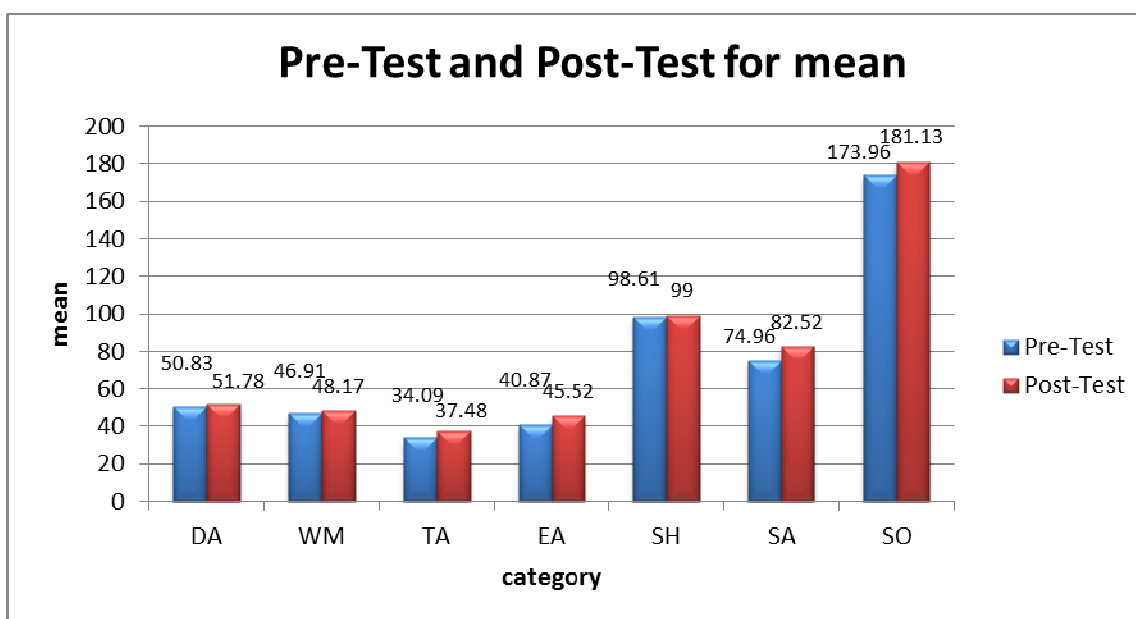
4.1.2. There is no significance difference between pre-test and post-test study orientation skills among Mat Kilau arts stream students.

H_0, Hypothesis Null: There is no difference between pre-test & post-test in so score for Mat Kilau arts stream students.

Table 9: Significant difference test scores between pre-test and post-test.

SUMMARY

Groups	Count	Sum	Average	Variance
Pre-SO	23	4001	173.9565	3303.482
Post-SO	23	4166	181.1304	3340.862

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	591.8478	1	591.8478	0.178151	0.675022	4.061706
Within Groups	146175.6	44	3322.172			
Total	146767.4	45				

0.18<0.68 and 0.66 > 0.05

So Reject Ho.

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

From the above table, the results has shown that there was a significant difference in study orientation skills among Mat Kilau arts stream students between pre-test and post-test at the alpha level of 0.05 (0.00001<0.05)

From table 9, the value of mean score for study orientation skills in pre-test was181.1304(variance 3303.482) was above from normal means 100. The post test results have shown that the value of mean scores for study orientation skills had increased to 173.957(variance 3340.86). The value of means has decreased smaller then the pre-test means and was closer to the level of normal means score of 100. The above results has shown that there was a positive impact in improving SOS among Mat Kilau arts stream respondents after the intervention phase was carried out with the respondents through the introduction of strategic tools.

4.1.3. There is no correlation between study orientation skills and academic performance among Mat KilauSastera **form five students.**

Table 10: Correlation between SOS and GPA in post-test

	Post-SO	Post-GPA
Post-SO	1	
Post-GPA	0.321145	1

r = 0.32 weak positive correlation

Table 10 shows that the results that there was a weak positive correlation between study orientation skills and grade point average among Mat Kilau arts stream respondents. The r Spearman Brown formula score was 0.32. This value shows that the correlation between study orientation skills and grade point average score after the respondents received the remedial devices within the 6 months of interval. The strong correlation is determined by the value of r > 8.0. Weak positive correlation was sometimes found due to the sample size and the duration of the remedial devices used in correcting the respondents study orientation skills. The smaller the number of the sample will contribute to the smaller the value of correlation between SOS and GPA.

5 Conclusion and Recommendation

The finding of this research revealed that study orientation skills is the critical predictor of the grade point average score or academic performance in the school learning atmosphere. The study orientation skills should be taught in the formal class setting, due to the presence of strong relationship between study orientation skills and the grade point average. The students need to learn study orientation skills suitable to their cognitive level. The most obvious study orientation skills aspects that they have to enhance are organizing skills, note-taking skills, presentation skills, essay writing skills and reading and listening skills (Petty, 2002). Tuckman (2007) revealed that since study orientation skills is a predictor to the grade point average or vice versa then teaching

study skills to the new students should have been taught as a separate and discrete subject. Furthermore, Scheunemann (2008) concluded that study orientation skills are tools that help facilitate students learning and to enhance their academic performance. Nakhei et al. (2008) clearly quoted that study skills had a significant correlation with educational achievement. The findings of this study has thus highlighted the significance of study orientation skills and its relationship in boosting academic performance. Hence, it is compulsory for study orientation skills be taught to students in schools at the earliest duration as possible.

Study orientation skills intervention devices used in this study proves that the modification of SSHA in the form of a website and other intervention devices used in this study administered had correctly and efficiently diagnosed and improved student's study orientation skills. The effectiveness of the remedial devices used is evident from the findings that there was a significant difference in the improvement of study orientation skills between before and after the respondent's had received the treatment. The effect of an increase in the study orientation skills, influences the increase in mean score of the grade point average . In this study it was also found that the correlation in terms of cause and effect between study orientation skills and grade point average had correlated significantly.

The intervention devices used has proven to have good value of internal consistency reliability and well controlled of external validity threat or good value generalizability. The remedial devices used also are a set of instruments that easily can be duplicated in the next research or research that is similar to the study. The instruments used in consolidating study orientation skills had saved a lot of time taken and were easy to access. Thus, the study on the study orientation skills can be carried out faster, efficiently and makes it easier in diagnosing and enhancing student's study orientation skills.

REFERENCES

Bhatnager, A. and Gupta, N. 1999.*Guidance and counseling volume 2.A practical approach* New Delhi: Vikas Publishing House Pot ltd.

Brown, W.F, Holtzman, W.H. 1956. *Survey of Study Habits & Attitudes Manual*.the psychology Corporation.

Carpenter, R.M. 1990.The relations of self-concepts and study habits of at risk student.Theses Ph.D., North Texas University United States.

Crede, M. and Kuncel, N. (2008). Study Habits Meta-Analysis, Perspectives on Psychological Science in Press, Vol. 3 (6), 425-453. (Retrieved on 2nJuly 2014 from www.psychologicalscience.org/journal/pps/3_6_inpress/crede.pdf)

Dash, M. 1994. *Educational Psychology*. New Delhi: Deep and Deep Publishing.

Deborah, A.S, 2006. Study Skills and Academic Performance. University of Michigan USA.

Elshout-Mohr, M. 1983.The Research-perspective of study skills group of the COWO.University of Amsterdam.*Higher Education*,12: 49-60

Entwisle N.J (1960), Personality and Attainment, *British Journal of Educational Psychology* ;(42),137-151.

Estes, T. 1994. *Reading and learning in the content classroom*. 2nd edition, Allyn& Bacon.

Ewing, N. J. 1993. Teaching style preferences of gifted minority student.Journal*of Gifted Education International*.9(1): 40-44.

Gersten, S.G. 1989. The Relationship between Study Habits, Attitudes And Orientation among Developmental Freshman of Kean College.Master Theses Dissertation, ERIC.

Giovanni N, (1994), "Campus Racism 101" Journal of Academic, V:80 N3, P18-12.

Grobecker, B. 1999. Mathematics reform and learning disabilities: *Learning Disability Quarterly*. 22: 43-58.

Gurung, R. 2003. Pedagogical AIDS and student performance.*Journal of Teaching and Psychology*.30(2): 92-95.

Harianto, H. 2006. The use, perceived usefulness and satisfaction with electronic resources in the IIUM Library: A Dissipative study of post graduates students.Master Thesis, UIA Gombak.

Hargove, G. 1992. Literacy demands of the undergraduate curriculum. *Reading Research Instruction*.31(4): 25-30.

Hartie, J., and Purdie, N. 1999. The relationship between study skills and learning outcomes: A Meta-analysis. *Australian Journal of Education*.43: 143-154.

Hurlburt, G. 1990. Teaching attitude and study attitudes of Indian education students.*Journal of American Indian Education*.29(3): 134-144.

Isaak, M.I. 2007. Academic, motivational and emotional problems identified by college students in academic jeopardy. *Journal of College Student Retention: Research*, *Theory and Practice*. 8(2): 171-183

John, P. 1997. *Implementation of cooperative learning in a large enrollment basic mechanic course*.School of Mechanical Engineering, Purdue University.

Johnson, D. 1991. *Active learning: Cooperation in the college classroom*. Interaction Books, Edina MN.

Landsberger, J. 2005. Electronic sources: Study Skill (online). http://www.ucc.vt.edu/st-dy.sk/stdyhlp.html (1st September 2006).

Manchala, C. 2007. *Achievement of bachelor of education students*. Delhi India: Discovery Publishing House .

Nagaraju, M.T. 2004. *Study Habits of Secondary School Students.* New Delhi. Discovery Publishing House

Nakhei, N., Shakoori, A., and Nauhi, E. 2008. Study habits and skills, and academic achievement of students in Kerman University of Medical Sciences. *Journal of Medicine Education* Summer & Fall.12: (3-4).

Pandian, A. 1997. *Reading in Malaysia*. UKM Bangi.

Partin, K. 2002. The Relationship between Positive Adolescent Attitudes Towarda Reading and Home Literacy Environment. *Journal of Research Horizon*. 43(1): 61.

Petty, G. 2002. *Effective teaching of study skills.* Version 2. (8 October 2002)

Rasor, L. T. & Rasor, R. A. (1998). Testanxiety and study behavior of community college students in relation to ethnicity, gender, and age. Retrieved in June 2008 from ERIC Database (ED415942)

Rohana Zubir. 1988. Descriptions of teaching and learning: A Malaysian perspective. *Studies in Higher Education*, 13(2): 139-149.

Scheunemann, K. 2008. Learning strategies and study skills. *COMD 735 – Language disorder*. School of Communication, University of Wisconsin.

Snodgrass, R., 1990. Temporal Databases: Status and Research Directions. *SIGMOD RECORD*. 9(4): 233-243

Svensson, L. (1977). On qualitative differences in learning. III - Study skill and learning. *British Journal of Educational Psychology, 47,* 233-243.

Tuckman, B.W. 2007. Evaluating a program for enhancing the study skills and academic performance of urban high school students. *American Educational Research Association*. Chicago.

Vinetta Sirohi. 2004. A Study of Achievement in Relation to Study Habits and Attitudes. *Journal of Indian Education.* 18(1): 122-134.

Wang, F.Y. 1993. *The relationship between science achievement and attitudes toward science*. Theses Ph.D., Texas University.

Warren, C.R. 1991. *Variables which affect young women's science achievement and attitudes toward science (Science Attitudes, Gender Differences)*. Theses Ph.D., The Ohio State University.

Yip, M. 2005. Relationship of study strategies and academic performance in different learning phases of higher education in Hong Kong. *Journal of Educational Research and Evaluation*. 1(1): 61-70.

Zainul Asmawi. 1988. *Intellective and non-intellective predictors of academic achievement of Indonesian college students*. Theses Ph.D., New York State University.

Authors Biography

Dr.Mohd.Ghani Awang is a senior lecturer in the Center for Modern Languages & Human Sciences, Universiti Malaysia Pahang in Kuantan Pahang, Malaysia. His first degree is in Bachelor of Science (Hons) Biology & Mathematics, second degree is Master of Education (Guidance & Counselling) in Study Skills and Doctor of Philopsophy (Technology Management) in study skills. He has about 25 years experiences teaching in the university. He is a former Director of Publication Center in UMP and Directors of a few private colleges. He has written 11 books and 5 of it in the study skills. He has done a lot of research in study orientation skills under university grant and FRGS grant. He also conducted workshop and training in study orientation skills for the university students, college, polytechnics and schoolstudents.

Suriya Kumar Sinnadurai is a lecturer in the Center for Modern Languages & Human Sciences, Universiti Malaysia Pahang in Kuantan Pahang, Malaysia. His first degree is in Bachelor of Education (Hons) TESL from Nottingham University. His Masters degree is in Masters of Arts TESL for National University Malaysia. He has about 20 years experience teaching in schools and 6 years at tertiary level. He is a member of the research team in study orientation skills under the university grant and also the FRGS grant. He also conducts workshop and training in study orientation skills for the university students, college, polytechnics and school students

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar