

EFFECT OF ONLINE MASTERY LEARNING STRATEGY ON ACHIEVEMENT IN ENGLISH IN RELATION TO ACADEMIC STRESS

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ABSTRACT

The purpose of the study was to investigate the effect of online mastery learning strategy on achievement in English in relation to academic stress. The sample was drawn from 9th class English students (N= 100) taken from two different schools of Mohali district in Punjab, affiliated to CBSE, New Delhi. Instructional material based on online mastery learning strategy were prepared and implemented to the experimental group after pre testing. The gain scores were computed after post test for all the students. Academic stress scale was also administered. A analysis of variance()was used to arrive at the following conclusions (i) Online mastery learning was more effective on achievement in English in comparison to conventional teaching strategy. (ii) Performance of students with different academic stress group through online mastery learning strategy was found significant (iii) Significant interaction effect was found between the two variables.

INTRODUCTION

In today's competitive as well as technological world, after food, clothing and shelter, education has become the fourth necessity for man. It is education only that has been proved to be a powerful tool to combat the cut-throat competition that man is facing at every phase in life. Education involves the transformation of knowledge or learning between two sources i.e. from teacher to the learner (Dorasami, 1996). According to Atherton (2011) strategies are one of the factors which ultimately shape the psyche of the students. For effective teaching teacher should select proper teaching strategies and techniques because it is a way of presenting the subject which keeps in mind the psychological and physical requirements of children.

As the great aim of education is not knowledge, but action and online learning has been considered best way to convert the gained knowledge into action. Online learning based on internet solutions gives flexibility because the Internet has made it possible to change, search, save, distribute and share information fast (Brown,1997). Online learning involves the use of a computer or electronic device (e.g. a mobile phone, tabs) to provide educational or learning material. It helps the students to increase the interaction between student and teacher.

Online learning is an electronically supported medium that provides all children with the appropriate and comfortable learning conditions so that they can learn properly. It is the information and communication system that serves as the assigned media to implement the process of learning. In online learning programme the study material is delivered through different via medias like internet, audio/video tape, satellite TV and CD-ROM etc. It can be through self-help or instructor and it can be in the form of text, image, streaming video and audio or animation. These types of online learning programmes provides the basis to the students to learn on their own as well as able to match face to face courses in respect of academic quality and effectiveness (Adepoju, 2002). Mastery learning strategy is a new approach to student-learning which provides successful and rewarding learning experiences to almost all the students (Okey, 1977) and technology helps to transform education from faculty centered to learner centered and to make instructions better by replacing the "Sage on the stage" with interactive individualized learning possibilities (Kelly & Schorger, 2002).

Online mastery learning strategy is starting to be considered as not just a via media of transfer of information but as an excellent

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medium for learning. Originally in education the internet was for the transmission and retrieval of information, principally for the course notes and assessment details. The interaction resulted positive when it results in submission of assignment of the students and teachers gets comments to their lessons in return (Liu, 2005). Main aim of online mastery learning approaches is to modify the instructional settings so that students having a number of entering abilities, skills, knowledge, attitude and values can perform successfully (Deshpande, 1966). So, online mastery learning strategy stresses on the idea that teaching should organize learning through ordered steps. Online mastery learning strategy engages the learner in multiple instructional methods, learning level and multiple cognitive thinking types (Okey, 1974). With the help of such strategy the teacher can motivate students as well as can help slow students in becoming smart, fast and perform better. Such type of learning improves student as well as teacher's chance for long term social and personal prosperity.

Academic achievement has been considered as the inimitable responsibility of all educational institutions. Academic achievement has been considered as important as it helps the students to understand the hierarchy of success i.e. higher the achievement more are the openings for the students and they can go for better lives and better jobs. To attain correlation between different factors and academic achievement it is necessary to understand to a teacher that what contributes too high and low achievement of students. These factors can be of different kind like poor school environment, home background, unmotivated teachers and their own personal interests, ability and language background. Achievement is the accomplishment or proficiency in a given skill or body of knowledge. According to him academic achievement as attained ability or a degree of competence in school tasks usually as measured by standardized tests and expressed in age or grade units based on norms derived from pupil's performance Good (1959). Achievement is the

extent to which learner is profit from instructions in a given area of learning. In other words, achievement is reflected by extent to which a person from the training imparted to him has acquired the skill of knowledge. It is the general and specific learning experiences Crow and Crow (1961). Achievement test is how well students have mastered the subject matter in a course of instruction Megargee (2000).

Stress is the internal response of the individual to pressure, when the pressure experienced is greater than normal abilities, stress is there. In the school situations, this pressure may be accountable for individual's success and failure hence. Academic stress is more renounced among students in high school levels because of transmitted values of docility, passivity, conformity and lack of interest, adding to their level of frustration while they are in process of preparing themselves to step out of schools and compete for admissions to professional colleges (Cofer & Appley, 1964).

Academic stress among students is an outcome of many factors such as socio-economic status, number of siblings, ordinal position in the family, IQ of the child, attitude of family towards him, school and education perceived self confidence and competence, atmosphere to studies and social support provided etc. Children suffering from academic stress show signs of emotional disabilities, aggressive behavior, shyness, social phobia, psychosomatic illness, such as constipation, vomiting, fever, chest pain, abdominal pain dizziness etc (Calaguas, 2013). Academic stress occurs when there is substantive imbalance between environmental demand and response capability of organism. The term academic stress in physical sciences means, a force and pressure exerted upon a person who resists the force /pressure in his effort to maintain his original state and in the process suffers some degrees of discomfort (Cofer & Appley, 1964).

NEED AND SIGNIFICANCE OF THE STUDY

An appropriate teaching strategy helps the teacher in solving learner's problems as well as to

bring remarkable improvement in their overall behaviour. Review of different instructional strategies gives quite positive results in comparison to conventional teaching strategy. According to Figueroa - Rexach (2004) effective teaching is not a set of every day instructional strategies that are used in specific manner but instead of that it is consistent data, driven decisions that are different every day and dependent on student's individual differences as well as on learning outcomes. In such conditions online teaching can prove fruitful for teacher as well as for students. Online learning is a relatively new concept, which has become widespread in a short time. Innovative instructional strategies when applied in English language teaching can help to motivate and do better in the field of language learning. Online teaching may provide a more natural constructivist learning environment than the traditional teaching for English language students. Present paper highlights the need to know the role of online master learning strategies in teaching of English language. The study compares the effectiveness of different teaching methods on student's achievements in English language learning in relation academic stress. Findings of the present study will definitely add to the existing quantum of knowledge in the field of educational technology. Therefore, the investigators made an attempt to enquire into the effect of online mastery learning strategy on achievement in English grammar in relation to academic stress.

OBJECTIVES

The present study was designed to attain the following objectives:

1. To compare the performance of the groups taught through online mastery learning strategy and conventional method of teaching.
2. To study the performance of students having different groups of academic stress.
3. To study the interaction effect between online mastery learning strategy and academic stress.

HYPOTHESES

The following hypotheses were formulated for conducting the study such as:

H1O The performance of online mastery learning strategy will be higher than that of conventional teaching strategy in English.

H2O The performance of low academic stress group will be significantly higher than that of average and high academic stress groups of students in English.

H3O The performance through online mastery learning strategy does interact with different levels of academic stress in English.

METHODOLOGY OF THE STUDY

It is necessary to adopt a systematic procedure to collect the necessary data which helps to test the hypotheses of the study under investigation. Various steps of research methodology to be followed in the present study are as follow:

SAMPLE

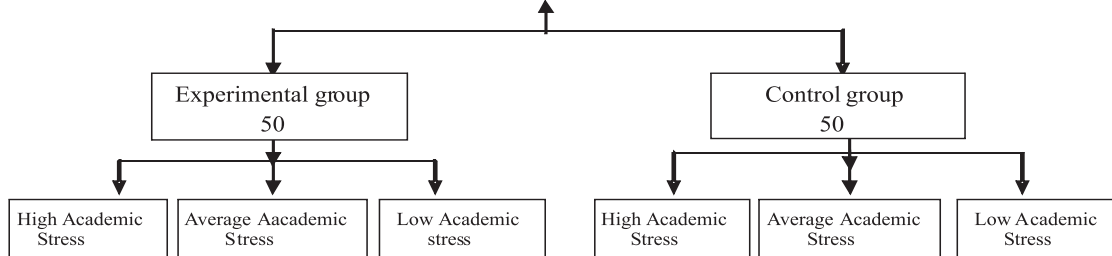
In the present paper, in order to satisfy the real effort in experimental research, the logical statistical inference of purposive and random sampling was initially employed to select two schools which have Local Area Network Facility and then random sampling technique was used. The sample of 100 English students of 9th class was drawn from two secondary schools i.e. 50 students from Attri Public School, Lalru and 50 students from Guru Nanak Public School in Mohali district in Punjab which were affiliated to Central Board of Secondary Education, New Delhi. The schools were fulfilling the basic requirements for the present study i.e. computer facilities and English as a medium of instruction. The study was purposed to be conducted on two intact groups i.e. experimental group and conventional group. The two intact sections of 25 students were selected from each school.

DESIGN

For the purpose of the present investigation pre and post- test factorial design was employed. In order to analyze the data 2×3 analysis of

variance was used for the two independent variables i.e. instructional treatment and academic stress. The first variable was studied at two levels i.e. online mastery learning strategy and conventional teaching strategy. The variables of academic stress were studied at three levels such as high, average and low academic stress. The main dependent variable was performance gain which was calculated as the difference in post-test and pre-test scores for the subject. The schematic layout of the factorial design for performance gain has been given below in fig 1.

Fig 1: Schematic layout of the factorial design (2×3) SAMPLE (100)



TOOLS USED

The following tools were used for the data collection:

- (i) Scale of Academic Stress by Bisht (1987) was used.
- (ii) An Achievement Test in English Grammar was developed by investigators.
- (iii) Five Lessons based on online mastery learning strategy and conventional teaching strategy was developed by the investigators.

PROCEDURE

After the selection of adequate sample and distribution of students in two groups for the implementation two strategies, the present experimental study was conducted in four phases. Firstly, an academic stress scale was administered in each school. Secondly, a pre-test was administered to the students of both the experimental and control group. Thirdly, experimental group was taught through online

mastery learning strategy and control group was taught by conventional teaching strategy by the investigators. Fourthly, after the completion of the instructional programme, the same achievement test in English was administered as post-test to the students of both the groups. The answer-sheets were scored with the help of scoring key. Time limit for the test was half an hour.

ANALYSIS AND INTERPRETATION OF RESULTS

Analysis of Descriptive Statistics

The obtained data were analyzed to determine the nature of the distribution of scores by employing mean and standard deviation. The two-way analysis of variance (2×3) was used to test the hypotheses related to strategies of teaching and academic stress. The mean and standard deviation of different sub groups have been presented in table-1.

Table 1. Means and S.D. of achievement scores for the different sub groups

Academic Stress	Teaching						Total		
	Online Mastery Learning			Conventional Method			N	Mean	SD
	N	Mean	SD	N	Mean	SD			
High Academic Stress	14	26.71	6.06	14	10.00	3.35	28	18.35	9.77
Average Academic Stress	22	32.45	4.61	22	11.95	2.60	44	22.20	11.01
Low Academic Stress	14	34.50	4.81	14	12.07	2.33	28	23.28	12.00
Total	50	31.42	5.88	50	11.44	2.85	N=100		

Source: field study, 2013

It may be observed from the table-1 that the mean scores of online learning strategy (31.44) was higher than the conventional method of teaching (11.44). This shows that online mastery learning strategy was more effective than the conventional method of teaching. It is also confirmed that the mean of the three subgroups of academic stress i.e. high, average and low group is 18.35, 22.20 and 23.28 respectively. It also shows that low academic stress group was higher than that of high and average academic stress.

ANALYSIS OF VARIANCE ON ACADEMIC STRESS

The mean of different sub groups, sum of squares degree of freedom, mean sum of squares and the F-ratio have been presented in table 2.

Table 2 :
Summary of Analysis of Variance (2×3) factorial designs

Source of Variance	Sum of Squares	df	Mean Sum of Squares	F- ratio
Treatment (A)	9445.16	1	9445.166	559.20**
Academic Stress (B)	387.20	2	193.60	11.46**
Interaction (A×B)	119.59	2	59.79	3.54*
Error Term	1587.69	94	16.89	

** Significant at 0.01 level

* Significant at 0.05 level

(Critical Value 3.95 at 0.05 level and 6.92 at 0.01 level, df 1/94)

(Critical Value 3.10 at 0.05 level and 4.85 at 0.01 level, df 2/94)

MAIN EFFECTS

Treatment (A)

It may be observed from the table-2 that the F-ratio for difference in mean gain scores of online mastery learning strategy and conventional teaching strategy is 559.20, which in comparison to the table value was found significant at 0.01 level of confidence. It shows that the difference beyond the contribution of chance. Hence the hypothesis H1O: The performance through online mastery learning strategy will be higher than that of conventional teaching strategy, was accepted. The result indicates that the performance through online mastery learning strategy group was more effective than that of conventional teaching groups.

Academic Stress Groups (B)

It may be seen from the table-2 that the F- ratio for difference in means of the three groups of academic stress is 11.46, which in comparison to the table value was found significant at 0.01 level of confidence. The result indicates that three

groups of academic stress were different in respect of achievement scores. Hence, the hypothesis H2O: The performance of low academic stress group will be higher than that of average and high group, is accepted.

Interaction Effect (A×B)

It may be observed from the table-2 that the F-ratio for the interaction between online mastery learning strategy and academic stress group is 3.54, which in comparison to the table value was found significant at 0.05 level of significance. Thus, the hypothesis H3O: The performance through online mastery learning strategy does interact with different levels of academic stress in English, is accepted. The result indicates that the two variables do interact with each other.

DISCUSSION

The present study revealed that the performance of students through online mastery learning strategy in English was found more effective than the conventional method of teaching. The results were supported by Smith, Smith and Boone (2000) and Goldberger (2001) revealed that both experimental and control groups mastered the content, but the online group performed at a slightly higher level. Cooper (2005) found that online learning play an important role with recall and satisfaction in the online learning

environment. Ghani, Hamim and Ishak (2006) concludes that the combination of online learning in science and mastery learning proved helpful to the people involved in the leaning session. Boyle (2008) revealed that online instructions improve knowledge, behaviour and attitude towards seating. Zhang and Kenny (2010) indicated that language proficiency strongly impacted the learning of these students in online learning environment. Chou (2012) revealed that a positive relationship exists between self-directed learning abilities and online learning performances. These findings are contradictory to the findings of Smith (1999) Beard (2003) and Scrima (2009) who revealed that there was no significant differences between the performance of experimental and control groups on overall scores.

For achievement in English with regards to academic stress, it was concluded that three groups of academic stress were different in respect of achievement scores. The findings were supported by Gera (1998), Hesselberg (2000), Kaur (2000) and Rani (2003) found that academic stress significantly influenced the academic achievement scores of students. Manhas and Gakhar (2006) concluded that significant positive correlation exist between academic stress and emotional intelligence. Kaur (2008) found that the parent involvement and teacher taught relations greatly affect the cognitive skills and stress of the adolescents. Sosa, Barrientos, Castro and Gracia (2010) they found that low academic performance was related to stress. Khanekhesi (2011) the results of the study showed that there is a significant difference between academic grades in academic stress.

For the interaction effect of instructional strategy and academic stress, it was concluded that the performance through online mastery learning strategy do interact with different levels of academic stress. The findings were supported by Grover (2006) who revealed that in online learning environment academic stress has strong impact on learning of the students. Sharma (1998) and Frick, Frick, Rence and Dey (2011) also found that the students taught through mastery learning give positive results and were not found effective by stress in any case.

CONCLUSION

The present study reveals that achievement scores in English of students taught through online mastery learning strategy were more effective than that of conventional teaching strategy. Further, the gain mean with online mastery learning strategy group was higher for low academic stress in comparison to the average and high stress group and the difference across two methods of teaching was statistically significant. However, online mastery learning was found interacting with different academic stress groups in respect of gain scores. The study recommends the use of online mastery learning for better performance of students in English grammar at secondary stage.

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