CONFLUX
pISSN 2320-9305 eISSN 2347-5706

Volume 11, Issue 1, December 2022
https://cjoe.naspublishers.com

EFFECT OF EXPERIENTIAL LEARNING APPROACH ON STUDENTS' ACHIEVEMENT AT SECONDARY LEVEL IN BIOLOGY

Ms. Rashmi N.[1]

Abstract

The Present paper is an attempt to study the Effect of Experimental learning approach on students' achievement at secondary level in Biology. The main objective of this study was to find out the effect of Experimental approach in achievement of students at secondary level in biology with respect to Experimental Group and the Control group. The research design was true experimental group pre-test, post-test. Here the investigator had tried out on the sample of 90 students of class IX by teaching them using experiential learning approach and conventional method of teaching. The findings of the study reveal that the students of experimental group, which was taught by experimental learning approach performed significantly, than those students who belonged to the control group. Consequently, experimental learning approach proved to be an effective intervention to help the students become active learners and to enhance their achievement in Biology.

INTRODUCTION

Tell me and I forget, Teach me and I remember, Involve me and I will learn.

~ Benjamin Franklin, 1750

Experiential Learning is the process of learning by doing. By engaging students in hands-on experiences and reflection, they are better able to connect theories and knowledge learned in the classroom to real-world situations.

Experiential learning is a philosophy and methodology in which educators purposefully engage with students in direct experience and focused reflection to increase knowledge, develop skills, and clarify values". Experiential learning is also referred to as learning through action, learning by doing, learning through experience, and learning through discovery and exploration, all which are clearly defined by these well-known maxims:

Learning through providing variety of learning experiences during teaching biological science is experiential learning. Learning through experience is not a new concept. Not at all like customary homeroom circumstances where understudies might contend with each other or

[1] Assistant Professor, RV teachers College, Jayanagar 2nd Block, Bangalore-11

stay uninvolved or unmotivated and where the guidance is exceptionally organized, understudies in experiential gaining circumstances collaborate and gain from each other in a more semi-organized approach. Guidance is intended to draw in understudies in direct encounters which are attached to true issues and circumstances in which the teacher works with as opposed to coordinates understudy progress.

NEED AND IMPORTANCE OF THE STUDY

Experiential learning permits members to develop sincerely and socially as well as scholastically, completely preparing them for the intricacies of their following stage throughout everyday life.

Students likewise figure out how to find for themselves; instead of depending on just given material, they foster the analytical abilities to track down replies to questions.

Numerous relational abilities require nonverbal signals that must be drilled through perception and practice more to acquire by defying these difficulties in genuine, through different situations. Experience-based learning gives these open doors the direction of guides and educators. Throughout the long term, experiential learning has demonstrated to have a great many advantages that add to a youngster's turn of events.

Students can more likely understand ideas, they learn how to design and conduct experiments in biology laboratory. In teaching biology, using experiential approach is to provide students with more opportunities to observe and experiment; to apply knowledge; to discover and explore biology, through which they can continue to improve their skills. Via experiential learning, the aim of teaching biology is to link students to the realistic situations.

REVIEW OF RELATED LITERATURE

Yoon et al., (2013) investigated how experiential learning places such as museums might reinforce middle school students' science learning. They came to the conclusion that it is critical to strike a balance between scheduled learning and informal activities in order to improve conceptual knowledge and scientific inquiry.

(Aikenhead, 2001; Ferreira et al., 2012): Field trips have also been credited with providing youngsters with meaningful learning opportunities and a sense of belonging.

A study, made by Sarwar1, Bashir, Khan, and Khan, 2009, revealed that the high achievers have better study orientation, study habits and attitude, than the low achievers. The

researchers discovered that prior planning and preparation, pedagogy employed during the field trip, and relating the field trip to children's everyday experiences were all essential factors in fostering children's learning.

Sikhwari (2014) found a substantial association between motivation and academic accomplishment in a study on the relationship between motivation, self-concept, and student academic achievement. According to the findings, intrinsic motivation is positively associated to students' academic accomplishment, whereas extrinsic motivation is negatively related to their achievement.

STATEMENT OF THE RESEARCH PROBLEM

The problem selected for the research study was "Effect of Experiential Learning approach on students' achievement at secondary level in Biology".

OBJECTIVES OF THE STUDY

1. To develop lesson transcripts based on Experiential learning in Biology for Class IX students.
2. To compare mean scores of control group and experimental group in their pre-test with respect to achievement of standard IX students.
3. To compare mean scores of control group and experimental group in their post-test with respect to achievement of standard IX students.

HYPOTHESES OF THE STUDY

1. There is no significant difference in the pre-test scores of control and experimental group with respect to achievement in Biology of standard IX students.
2. There is no significant difference in the post test scores of control and experimental group with respect to achievement in Biology of standard IX students.

OPERATIONAL DEFINITIONS

Experiential Learning: According Kolbe, experiential learning can be defined as a learning process where knowledge results from the combination of grasping and transforming an experience.

Effectiveness: It indicates the degree of change in the level of creativity in mathematics of students of standard IX.

Conventional method teaching: This method of teaching is traditional way teaching in which chalk and talk method is literally used, It is teacher centered and text book oriented. The emphasis here is mainly in remembering and reproducing of concept facts, principles, formulas and theories. The students are passive listeners and do not participate actively in the teaching-learning process. This method is by and large being used by secondary school teachers at present.

Achievement in Biology: It is represented by the scores of students of standard IX obtained by administering achievement test which is constructed and validated by the Researcher.

Gender: comprises boys and girls studying in standard IX.

METHODOLOGY

Population and Sample

Students studying in 9th standard forms the population of the study and 80 students of National Public school forms the sample of the study.

Tool used:

The researcher has constructed set of 40 questions in the Biology for the Chapter "food production and Management" and further it is validated by the subject Experts**.**

Design of the Study: Pre-test and Post –test design was used by the researcher.

Statistical Techniques Used: Measures of central tendency, standard deviation and t-test was used

Variables of the Study:

1. Independent variable:
   a. Experiential Learning
   b. Conventional Method of Teaching
3. Dependent variable: Achievement in Biology
4. Intervening variable: Gender

ANALYSIS AND INTERPRETATION

Hypothesis -1: There is no significant difference in the pre-test scores of achievement in Biology of control and experimental groups of standard IX students.

Table 1. Source, group, number, mean, standard deviation and 't' value of control and experimental groups with respect to pre-test scores of achievement in Biology of standard IX students.

Source	Group	N	Mean	S.D	't' Value	Level of significance
Achievement in Biology	Control	40	15.62	5.62	1.605	NS
	Experimental	40	17.37	4.05		

From the table 1, it can be seen that, obtained 't' value is 1.605 at 0.01 level is less than the table value and is not significant. It indicates that the mean scores of achievement in Biology do not differ significantly. Thus the null hypothesis 'there is no significant difference between control and experimental groups with respect to pre-test scores of achievement in Biology is accepted. Hence it may be concluded that, experimental and control group were alike and equal with reference to achievement of Biology before subjected to treatment.

Hypothesis-2: There is no significant difference in the post test scores of control and experimental group with respect to achievement in Biology of standard IX students

Table 2. Source, group, number, mean, standard deviation and 't' value of control and experimental groups with respect to post-test scores of achievement in Biology of standard IX students.

Source	Group	N	Mean	S.D	't' Value	Level of significance
Achievement in Biology	Control	40	10.3	3.73	8.220	0.01 level significant
	Experimental	40	17.37	4.05		

From the table 2, it can be seen that, obtained 't' value is 8.220 is greater than the table value and is significant at 0.01level. It indicates that the post test scores of environment awareness ability differ significantly. Thus, the null hypothesis 'there is no significant difference between control and experimental groups with respect to post-test mean gain scores of achievements in Biology is rejected and the alternative hypothesis is accepted. Thus, it means 'there is significant difference between control and experimental groups with respect to post-test mean gain scores of achievement in Biology. Hence it may be concluded that, experiential learning approach have helped in understanding of the concepts and which in turn have enhanced the achievement in Biology.

FINDINGS OF THE STUDY

There is significant difference between control and experimental groups with respect to post-test mean gain scores of achievement in Biology.

REFERENCES

Aikenhead,G.S.(2001).Students' ease in crossing cultural borders into school science. Science Education, 85.

Al-Agili M. Z. G., Mamat, M. B., Abdullah, L., & Maad, H. A. (2012). The factors influence students' achievement in mathematics:AcaseforLibyan's students. World applied sciences Journal, 17(9).

Amir, M. Muris, &Arsyad, M. (2015) "Development of Device physics-based Learning experiences on Learners Ninth-Class Science high school 9 Pinrang," Journal of science and physics education, vol.11(3), pp. 202-213.

Ariani, M. G., &Mirdad, F. (2016). The effect of school design on student performance. International Education Studies, 9(1), 175-181.https://doi.org/10.5539/ies.v9n1p175

Arthur, A.D. &Raine, J.W., "Experiential Learning and Teaching At A Distance: How Distinctive An Experience?" Journal of Developing Public Managers for Changing World, vol. 5(1), pp. 141-159, 2017.Association of Experiential Education. (2014).

Ayub, N. (2010). Effect of intrinsic and extrinsic motivation on academic performance. Pakistan Business Review, 8, 363–372.Behavioral Sciences. 2013; 18(10):103-26. Behavioral Sciences. 2013; 18(10):103-26.

Bernik,M. &Žnidaršič, J. (2012).Solving complex problems with help of experiential learning.Organizacija, 45(3), 117-124.

Buzdar, M., Mohsin, M. N., Akber, R., Mohammad, N., (2017).Students‘ academic performance and its relationship with their intrinsic and extrinsic motivation. Journal of educational research, vol.20 no .1

Ezeagba, C. (2014). The problems in the teaching and learning of accounting as a vocational subject in Nigeria secondary schools. AFRREV STECH: An International Journal of Science and Technology, 3(2), 208-226.

Ferreira, M. M., Grueber, D., &Yarema, S. (2012). A community partnership to facilitate urban elementary students ‘access to the outdoors. School Community Journal, 22, 49-64.

Fitri, R. Y. (2017). The effect of problem-based learning model (PBL) and adversity quotient (AQ) on problem-solving ability. American Journal of Educational Research, 5(2), 179–183.

Geh, E.Z. (2014). "Organizational Spiritual Leadership Of Worlds —Made‖ and —Found‖: An Experiential Learning Model For—Feel‖,"Leadership & Organization Development Journal, vol. 35(2), pp. 137-151, 2014.

Javed, S. (2015).A shift from teacher centered to experiential teaching method. Doctoral Dissertation. Institute of Business Management, Pakistan.

Jayanthi, S. V. ,Balakrishnan, S. , Ching, A. L. S. , Latiff, N. A. A. , & Nasirudeen, A. (2014). Factors Contributing to Academic Performance of Students in a Tertiary Institution in Singapore. American Journal of Educational Research, 2(9), 752-758.

****