



EFFECTIVENESS OF EXPERIENTIAL LEARNING IN SCIENCE AT DIPLOMA IN ELEMENTARY EDUCATION

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ABSTRACT

The study lime lights the effectiveness of Experiential Learning in Learning Science at Diploma in Elementary Education. **Objectives of the study:** 1.To find out the problems of conventional methods in learning Science.2.To find out the significant difference in achievement mean score between the pre test of control group and the post test of control group.3.To find out the significant difference in achievement mean score between the pre test of Experimental group and the post test of Experimental group.4.To find out the impact of Experiential Learning in Learning Science at D.El.Ed.. **Methodology:** Parallel group Experimental method was adopted in the study. **Sample:** Sixty pupils of studying in Diploma in Elementary Education from Andavar Teacher Training Institute, Poravachery were selected as sample for the study. Thirty students were considered as Controlled group and another thirty were considered as Experimental group. **Tool:** Researcher's self-made achievement test was used as a tool for the study. An achievement test consisted of twenty five questions. **Reliability:** Under this study, the reliability had been computed using test-retest method and the calculated value comes to 0.82. The value is quite significant and implies that the tools adopted were reliable. Hence the reliability was established for the study. **Validity:**The expert opinion of the co staff was obtained before freezing the design of the tools. Subject experts and experienced teachers were requested to analyse the tool. Their opinions indicated that the tool had content validity. **Findings:1.**In the pre-test, students score 21% marks in learning Science through conventional method and the Experimental group students score 79% marks. It shows the Experiential Learning in Learning Science at Diploma in Elementary Education.

KEYWORDS: Experiential learning, Conventional method and Diploma in Elementary Education.

INTRODUCTION

Teacher training in Elementary Education has unique place to step of the school education and Higher Education. Effective teaching is depended upon the innovative methods of teaching.Teaching science the problems of the students-teacher at Elementary Education. Even if many methods were using in preservice teacher training institute, Teaching of science was not fruitful to students-teacher at D.El.Ed The researcher endeavored to use Experiential Learning for acquiring more marks in Teaching of Science. The study enlightens the effectiveness of Experiential Learning in Learning Science at Diploma in Elementary Education.

NEED AND SIGNIFICANCE OF THE STUDY

The experiential learning includes learning by doing, through experience, through exploration and discovery, having the aim to teach the student how to learn, to develop his/her skills by individual work, to

emphasize his/her creativity and originality, but also its self-confidence. Experiential learning develops the student's autonomy. By experiential learning, the students are faced with unknown situations and tasks in a real context. Problems of students-teacher faced the problems in enhancing knowledge Teaching of science. Hence the researcher identified the Experiential learning.

REVIEW OF RELATED STUDIES

Baker, Marshall A. and Robinson, J. Shane(2016) examines that Experiential learning is an important pedagogical approach used in secondary agricultural education. Though anecdotal evidence supports the use of experiential learning, a paucity of empirical research exists supporting the effects of this approach when compared to a more conventional teaching method, such as direct instruction. Therefore, the purpose of the study was to examine the effects of an experiential learning approach to instruction on the successful intelligence of secondary agricultural education students, as measured across three domains--practical intelligence, analytical intelligence, and creative intelligence. It was concluded students who received the experiential learning treatment produced higher creativity scores that were domain specific. In addition, they scored higher in their practical use of knowledge when compared to their direct instruction counterparts. However, regardless of treatment, both direct instruction and experiential learning yielded similar analytical knowledge scores. Thus, it was recommended agricultural educators utilize a blended approach of instruction to provide balanced growth in all four modes of learning.

Coker, Jeffrey Scott and Porter, Desiree Jasmine(2015),examined Elon University set out to better understand experiential learning on campus. At the time, there was a pragmatic need to collect data that would inform revisions to the core curriculum, including an experiential-learning requirement (ELR) that had been in place since 1994. The question was whether it made sense to raise the experiential learning requirement from one to two units. So, using numerous student panels and rounds of faculty input, a relatively simple question was investigated: Does doing two or more units of experiential learning lead to better outcomes than doing only one? Since then a range of deeper research questions have been explored that might help improve the quality of experiences on campus. This article describes several major themes that cut across findings of that research. Three best practices related to experiential learning also emerged that would improve teaching and learning on many campuses: (1) provide a spectrum of experiential-learning opportunities; (2) frame experiences for broad liberal-learning outcomes; and (3) provide all students with access to each type of experience. Beginning with these broad approaches and then tailoring them for a campus's own student population appears to be an effective way to maximize experiential learning for student success.

Blair, Denise J.(2016) provide a variety of professional development (PD) programs for classroom teachers. Little is known, however, about the pedagogical approaches used by historic site professionals in educating their teacher audiences. Using data from PD websites and questionnaires completed by historic site professionals, two studies examine the types of pedagogical approaches institutions state they use for teacher PD, the alignment of historic site PD with characteristics of experiential learning, and issues relevant to researching experiential learning approaches used in these programs. Results indicate that institutions' pedagogical approaches for PD programs largely align with experiential learning characteristics but that research is needed to determine the pedagogical benefits of experiential learning for historic site PD and related learner outcomes.

OBJECTIVES OF THE STUDY:

- 1.To find out the problems of conventional methods in learning science of teaching.
- 2.To find out the significant difference in achievement mean score between the pre test of control group and the post test of control group.
- 3.To find out the significant difference in achievement mean score between the pre test of Experimental group and the post test of Experimental group.
- 4.To find out the impact of Experiential learning in learning teaching of science at Diploma in Elementary Education.

HYPOTHESES OF THE STUDY:

1. Students-teacher had problems in learning Science teaching by using conventional methods .2. There is no significant difference in achievement mean score between the pre test of control group and the post test of control group. 3. There is no significant difference in achievement mean score between the pre test of Experimental group and the post test of Experimental group. 4. Experiential learning of teaching science is more effective than conventional methods at Diploma in Elementary Education.

METHODOLOGY:

Parallel group Experimental method was adopted in the study. **Sample:** Sixty Students-teacher of studying in D.El,Ed from Andavar Teacher Training college, Poravachery were selected as sample for the study. Thirty students were considered as Controlled group and another thirty were considered as Experimental group. **Tool:** Researcher's self-made achievement test was used as a tool for the study. An achievement test consisted of fifty questions

CONSTRUCTION OF TOOLS:

The investigator's self made Achievement test was used for the pretests and post tests of both control groups and experimental groups. The same question was used for both pre and post tests to evaluate the Students-teacher through objective types of question which carried one mark for each question and contained 25 marks.

Pilot study

In order to ascertain the feasibility of the proposed research and also the adequacy of the proposed tools for the study a pilot study had been undertaken. During the pilot study, the problem under study had been finely tuned. Sufficient number of model question papers were prepared and distributed to 10 students-teachers in Andavar Teacher Training college, Poravachery for the pilot study. This exercise was repeated twice over two sets of 10 students each. The clarification raised by the Students-teacher was cleared then and there and the filled answer scripts were collected by the researcher. These Students-teacher were selected in such a way that they were not part of either the control group or experimental group.

Reliability of the tool

A test is reliable if it can be repeated with a similar data set and yields a similar outcome. The expectation of a good research is that it would be reliable. It refers to the trustworthiness or consistency of measurement of a tool whatever it measures. Under this study the reliability had been computed using Test-retest method and the calculated value comes to 0.79. The value is quite significant and implies that the tools adopted were reliable. Hence the reliability was established for the study.

Validity of the tool

The concept of validity is fundamental to a research result. A result is internally valid if an appropriate methodology has been followed in order to yield that result. A test is said to be valid if it measures what it intends to measure. The expert opinion of the co staff was obtained before freezing the design of the tools. Subject experts and experienced teachers were requested to analyse the tool. Their opinions indicated that the tool had content validity.

Procedure of the study:

1. Identification of the problem by administering pre-test to the both groups. 2. Planning. 3. Kolb's experiential learning. 4. Execution of activities through four steps Kolb's theory. 5. Administering post-test.

Data collection:

The researcher administered pretest to the students-teacher with the help of Teacher Educators. The question paper and response sheets were given to the individual student-teacher and collected and evaluated learning obstacles of the learners were identified by the pretest. The causes of low achievement by unsuitable methods were found out. Experiential learning was used in the classroom for learning science of teaching for three week. The posttest was administered and the effectiveness of the experiential learning was found.

Data analysis

Statistical technique t test was applied for the study.

HYPOTHESIS TESTING**Hypothesis 1:**

Students-teacher of D.El.Ed had problems in learning Teaching of science at Andavar Teacher Training college, Poravachery.

In the pre-test, students score 21% marks in enhancing Teaching of science through conventional methods and the Experimental group students score 79% marks. It shows that Students-teacher of D.El.Ed had problems in learning Teaching of science at Andavar Teacher Training college, Poravachery.

Hypothesis 2:

There is no significant difference between the pre test of control group and post test of control group in achievement mean scores of the students-teacher in learning Teaching of science at Students-teacher of D.El.Ed , Andavar Teacher Training college, Poravachery.

Table -1

Stages	N	Mean	S.D.	df	t- value	Level of significance
Pretest control group	30	46.50	4.45	58	1.72	P<0.05
Post test control group	30	47.30	4.48			

The table showing achievement mean scores between pre test of control group and posttest of Control group.

The calculated 't' value is (1.72) greater than table value (2.00). Hence null hypothesis is accepted at 0.05 levels. Hence there is no significant difference between the pre test of control group and post test of control group in achievement mean scores of the students-teacher in learning Teaching of science by conventional methods.

Hypothesis 3:

There is no significant difference between the pre test of Experimental group and post test of Experimental group in achievement mean scores of the students-teacher in learning of Teaching science.

Table-2

Stages	N	Mean	S.D.	df	t- value	Level of significance
Pretest Experimental group	30	52.43	5.07	58	22.87	P>0.05
Post test Experimental group	30	86.78	6.72			

The table showing achievement mean scores between pretest of Experimental group and posttest of Experimental group.

The calculated 't' value is (22.87) greater than table value (2.00). Hence null hypothesis is rejected at 0.05 levels. Hence there is significant difference between the pre test of Experimental group and post test experimental group in achievement mean scores of the students-teacher in Teaching of science.

Hypothesis 4.

Experiential learning of teaching science is more effective than conventional methods at Diploma in Elementary Education.

Achievement mean scores of the students-teacher in post-test of control group is 47.30 and the achievement mean scores of the students-teacher post test of Experimental group is 86.78. Score of the post test of Experimental group (86.78) is greater than Pre test of Experimental group (52.43). It shows that learning Teaching of science by using Experiential learning is more effective than conventional methods.

Findings:

In the pre-test, students score 21% marks in enhancing Teaching of science through conventional methods and the Experimental group students score 79% marks. It shows that Students-teacher of D.El.Ed had problems in learning Teaching of science at Andavar Teacher Training college, Poravachery.

2. There is no significant difference between the pre test of control group and post test of control group in achievement mean scores of the students-teacher in learning Teaching of science by conventional methods.
3. There is no significant difference between the pre test of Experimental group and post test of Experimental group in achievement mean scores of the students-teacher in learning of Teaching of science.
4. Enhancing Teaching of Science by adopting experiential learning gave significant improvement.

EDUCATIONAL IMPLICATIONS

1. Using experiential learning can be used for different subjects and it can be extended to primary level, secondary level and higher secondary level.
2. It can be encouraged to implement to use in in-service programme.
3. It may be implemented in teachers education at B.Ed level.
4. It may be implemented in alternative school
5. Slow learners can be improved by using it
6. It may be more supportive to promote Sarva Siksha Abiyan in grass root level.

CONCLUSION

The study reveals that Students-teachers of Diploma in Elementary Education had problems in enhancing Teaching of Science through conventional methods. Enhancing teaching of science through Experiential learning is more effective than conventional methods. Hence it will be more supportive to enrich Teaching of science Diploma in Elementary Education

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