

**Impact of Experienced Based Learning Methods of Science at Diploma
in Elementary Education**

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ABSTRACT

*The study reflects the impact of Experience Based Learning in Methods of Science at Diploma in Elementary Education. **Objectives of the study:** 1.To identify the learning problems in science through conventional methods 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 Experience Based Learning Science at D.El.Ed.. **Methodology:** Equivalent group Experimental method was adopted in the study. **Sample:** Fifty pupils of studying in Diploma in Elementary Education from District institute of Education, Kurukkathi were selected as sample for the study. Twenty five students were considered as Controlled group and another twenty five students were considered as Experimental group. **Tool:** Investigator'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 Split-half method and the calculated value comes to 0.77. 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*

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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:** *Experience Based Learning is more effective than traditional methods.*

Keywords: *Experience Based Learning, Conventional method and Diploma in Elementary Education*

Introduction

Elementary Education has unique place for developing school Education and Higher Education. To improve Higher Education is on the basis enabling effective school Education and enhancing teacher education. Effective teaching is depended upon the innovative methods of teaching. Learning methods of teaching science is the problems of the students-teacher at Elementary Education. Even if various 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 Experience Based Learning for acquiring more marks in methods of Teaching Science. The study edifies the impact of Experience Based *Learning methods of teaching Science at Diploma in Elementary Education.*

Need and Significance of the study

Experience Based learning reflects hands on training, through experience, through exploration and discovery. It is important to introduce an experience-based project in such a way that it motivates students-teacher to become personally engaged. Students-teacher should feel excited about the experiment, not overwhelmed by their environmental responsibilities. Find ideas about how to get started, ways to track the progress of the class, and how to assess students participation. Experiential learning

develops the students-teachers autonomy. By experiential learning, the students-teacher are faced with unknown situations and tasks in a real context. Problems of students-teacher faced the problems in enhancing knowledge Teaching of science. The experiential learning cycle consists of five important stages that pave the way to meaningful learning: 1) experiencing 2) **reporting** 3) **processing** 4) generalizing and 5) applying. The goal of experience-based learning involves something personally significant. Hence the researcher identified the Experience-based learning to find out the effectiveness of *Experience Based Learning in Methods of Science at Diploma in Elementary Education*.

Review of Related Studies

Suprpto, Nadi; Mursid, Ali(2017). focussed on attitudes toward (teaching) science and the learning of science for primary school among pre-service teachers at the Open University of Indonesia. **Methodology:** A three-year longitudinal survey was conducted, involving 379 students as pre-service teachers (PSTs) from the Open University in Surabaya regional office. Attitudes toward (teaching) science' (ATS) instrument was used to portray PSTs' preparation for becoming primary school teachers. Data analyses were used, including descriptive analysis and confirmatory factor analysis. The model fit of the attitudes toward (teaching) science can be described from seven dimensions: self-efficacy for teaching science, the relevance of teaching science, gender-stereotypical beliefs, anxiety in teaching science, the difficulty of teaching science, perceived dependency on contextual factors, and enjoyment in teaching science. **Findings:** The results of the research also described science learning at the Open University of Indonesia looks like. Implications for primary teacher education are discussed.

Blair, Denice J.(2016) investigated on Historic sites 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.

Gao, Xuesong(2015) introduced the experiential learning initiative at a major university in Hong Kong that prepares pre-service teachers with experience of engaging with social and cultural issues in teaching. It calls on teacher educators in different contexts to work together on similar initiatives that help pre-service teachers grow professionally through designing, developing, managing and promoting their experiential learning projects to enhance human development and improve human conditions.

Menon, Deepika & Sadler, Troy D.(2018) investigated on preservice science teacher education. Self-efficacy beliefs play a major role in determining teachers' science teaching practices and have been a topic of great interest in the area of preservice science teacher education. This qualitative study investigated factors that influenced preservice elementary teachers' science teaching self-efficacy beliefs in a physical science content course. The primary data sources included Science Teaching Efficacy Belief Instrument-

B (STEBI-B) responses, two semi-structured interviews, classroom observations, and artifacts. Analysis of STEBI-B data was used to select 18 participants with varying levels of self-efficacy beliefs: low, medium, and high. Four categories representing course-related factors contributing towards participants' science teaching self-efficacy beliefs were found: (1) enhanced science conceptual understandings, (2) active learning experiences, (3) teaching strategies, and (4) instructor as a role model. While some course elements such as hands-on learning experiences and inquiry-based teaching strategies seemed to impact all groups positively, the low-group participants were particularly benefited from the ways in which science concepts were presented and the pace at which learning progressed. One implication from this study is that science educators could include elements within science content courses to potentially support preservice teachers with varied initial levels of science teaching self-efficacy.

Objectives of the study: 1.To identify the problems of conventional methods in teaching methods of 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 Experience Based learning in teaching of science at Diploma in Elementary Education.

Hypotheses of the study: 1.Students-teacher had problems in teaching of Science 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 control group and the pre test of Experimental group. 4. There is no significant difference in

achievement mean score between the pre test of Experimental group and the post test of Experimental group.

Method of study

Equivalent group Experimental method was adopted in the study. **Size of the Sample:** Fifty students-teacher of studying in D.El,Ed from District Institute of Education and Training, Kurukkathi were selected as sample for the study. Twenty five students-teacher were considered as Controlled group and another twenty five were considered as Experimental group. **Tool:** Investigator's self-made achievement test was used as a tool for the study. An achievement test was consisted of twenty five questions

Preparation of tools

The Researcher'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

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 15 students-teacher in DIET for the pilot study. This exercise was repeated twice over two sets of 15 students-teacher each. The clarification raised by the students-teacher was cleared then and there and the filled

answer scripts were collected by the researcher. The selected students-teacher were not involved either the control group or experimental group.

Reliability of the tool

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 Split of method and the calculated value was found out 0.71. Hence the reliability was established for the study.

Validity of the tool

A test is said to be valid if it measures what it intends to measure. The expert opinion from Senior Lecturers was obtained before freezing the design of the tools. Subject experts and experienced teacher educators 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 The experiential learning cycle consists of five important stages that pave the way to meaningful learning: 1) experiencing 2) **reporting** 3) **processing** 4) generalizing and 5) applying. 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. Experience-Based learning was used in the classroom for learning science of teaching for three weeks. The posttest was administered and the effectiveness of the experience -Based 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 District Institute of Education and Training.

In the pre-test, mean scores of students-teacher's score is 22.45 which shows the Teaching of science through conventional methods and the Experimental group students-teacher's mean score is 30.46. It substantiates that Students-teacher of D.El.Ed had problems in learning Teaching of science at DIET, Kurukkathi.

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 among Students-teacher of D.El.Ed , in DIET, Kurukkathi.

Table -1

Achievement mean scores between pre test of control group and posttest of Control group.

Stages	N	Mean	S.D.	df	t- value	Level of significance
Pretest control group	25	22.40	2.47	48	0.968	P<0.05
Post test control group	25	23.10	2.64			

The calculated 't' value is (0.968) lesser than table value (2.00). Hence null hypothesis is accepted at 0.05 level. 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 control group and pre test of Experimental group in achievement mean scores of the students-teacher in learning of Teaching science.

Table-2

Achievement mean scores between pretest of Controlled group and pretest of Experimental group.

Stages	N	Mean	S.D.	df	t- value	Level of significance
Pretest controlled group	25	22.40	2.47	48	0.071	P>0.05
Pre- test Experimental group	25	22.45	2.46			

The calculated 't' value is (0.071) lesser than table value (2.00). Hence null hypothesis is accepted at 0.05 level. Hence there is no significant difference between the pre test of Controlled group and pre test experimental group in achievement mean scores of the students-teacher in Teaching of science.

Hypothesis 4:

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-3

Mean scores between pretest of Experimental group and posttest of Experimental group.

Stages	N	Mean	S.D.	df	t- value	Level of significance
Pretest Experiment al group	25	22.45	2.46	48	7.84	P<0.05
Post test Experiment al group	25	30.67	4.62			

The calculated 't' value is (7.84) greater than table value (2.00). Hence null hypothesis is rejected at 0.05 level. 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.

Findings:

1. In the pre-test, mean scores of students-teacher's score is 22.45 which shows the Teaching of science through conventional methods and the Experimental group

students-teacher's mean score is 30.46. It substantiates that Students-teacher of D.El.Ed had problems in learning Teaching of science at DIET, Kurukkathi.

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 control group and pre test of Experimental group in achievement mean scores of the students-teacher in learning of Teaching science.
4. There is 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.
5. Experience -Based learning gave significant improvement in Teaching of science .

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 accelerated to implement to use in in-service programme.
3. It may be implemented in teacher's education at B.Ed level.
4. It may be encouraged in alternative school.
5. Late bloomers can be improved by using it.
6. It may be more supportive to promote Sarva Siksha Abiyan in grass root level.

Conclusion

The research reveals that Students-teachers of Diploma in Elementary Education had problems in enhancing Teaching of Science through conventional methods. Enhancing teaching of science by employing Experience-Based learning in Teaching science is more effective than conventional methods. Hence it may be more reassuring to enrich Teaching of science at Diploma in Elementary Education

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