



## **Study of Effectiveness of Program about Practical Skills in Science on Second Year Student Teachers from D. T. Ed.**

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### *Abstract*

*Students–teachers in D.T.Ed. are from three faculties -Arts, commerce and science. Student teachers from science faculty are know much more thing about science practical skill than arts and commerce student teachers. Today’s world is a scientific world therefore students at primary level must have a scientific attitude. Primary level is a base of future educational building, and D.T.Ed. student teachers are prepare for a future ideal pillar of our nation. Therefore researcher needs to do research.*

*Researcher used mixed method. Achievement test in the form of practical work is used for data collection. Mean, t test & F test are used as statistical tool.*

**Keywords:** *Practical skills in science, science practical handbook,*

### **Introduction**

Students–teachers in D.T.Ed. are from three faculties -Arts, commerce and science. Student teachers from science faculty are knowing much more skills about science practical than arts and commerce student teachers. Fifteen experiments from science subject is compulsory for second year of D. T. Ed. student teachers as a practical work.

**Need** Today’s world is a scientific world therefore primary level student must have a scientific attitude. Primary level is a base of future educational building, and D. T. Ed. Student are prepare for a future ideal pillar of our nation. Therefore researcher need to do research.

**Statement** Development of a programme regarding practical skills in science & study of its effectiveness on D. T. Ed. Second year student teachers.

## **Objectives**

- (1) To select the practicals in science and technology subject which is included in D.T.Ed. second year syllabus.
- (2) To frame the structure of program related with practical skills in science.
- (3) To implement framed program for D.T.Ed. Second year student- teachers.
- (4) To study the effectiveness of program on D.T.Ed. second year student teachers practical skills in science
- (5) To compare the practical skills in science of D.T.Ed. student teachers according to their faculties arts, commerce and science in twelfth standard.

## **Assumption:**

Practical skills in science in D.T.Ed. student teachers have different level of practical skills in science.

**Limitation** Conclusion of the study is depends on response of student teachers practical work.

## **Delimitations**

1. Research is limited only for D.T.Ed. second year student teachers who are learning through Marathi medium in Bhor city, Pune district, Maharashtra.
2. Research is limited only for five practicals from chemistry, physics, biology each which is included in D.T.Ed. second year syllabus.

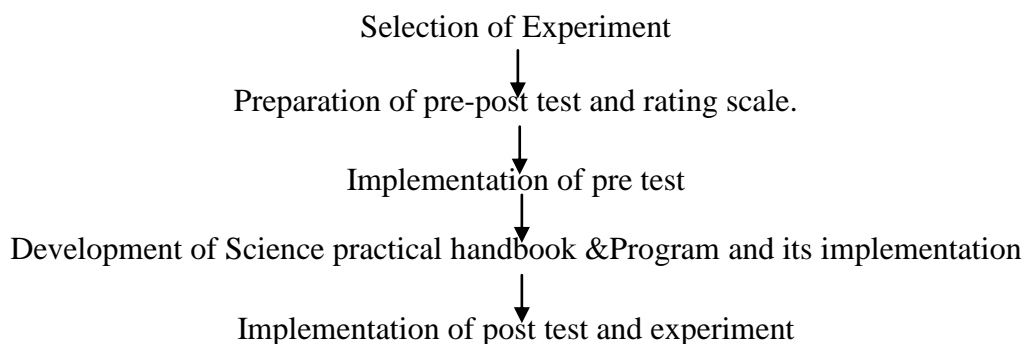
## **Methodology**

**Type of Research** Applied Research

**Research Method** Mixed Method

	<b>Mixed Research Method</b>
<b>Product Method</b>	Development of science practical handbook.
<b>Experimental Method</b>	Study of effectiveness of program regarding practical skills in science on D.T.Ed. second year student teachers

**Flow chart of procedure**



**Design** Single group pre test post test design is used for study

**Variables**

**Independent variable** Programme developed by researcher for developing practical skills in science on D.T.Ed. second year students- teachers .

**Dependent variables** D.T.Ed. second year students-teachers practical skills in science

**Attribute variable** D.T.Ed. second year students teachers subjects studied at higher secondary level (i.e. Arts, Commerce,& Science) .

**Population** All student teachers learning in second year D.T.Ed. colleges (Marathi medium) recognized by N.C.T.E. & M.S.C.E.R.T.

**Sampling**

**Selection of college** Sau.Nirmalatai Thopate D.T.Ed.colleges ,Bhor,Pune,Maharashtra is selected by purposive method because it was convince to investigator for study.

**Selection of Student Teachers** 15 student teachers (D.T.Ed.) are selected from selected college by purposive method.

**Research tools**

<b>Data collection tools</b>	<b>Achievement test</b>
	<b>Rating scale</b>
<b>Statistical tools</b>	<b>Mean</b>
	<b>t test</b>
	<b>F test</b>

**Achievement Test** Achievement test in the form of practical work in science developed by researcher is used for data collection.

**Rating Scale** Rating scale developed by researcher is used for observation of science practical skills in D.T.Ed. second year student teachers.

**Mean M** is calculated from student teacher score in achievement test and used for 't' calculation.

**'t' Test** 't' test is used for testing the significant difference between mean of practical skills in D.T.Ed.second year student teachers before & after the implementation of programme.

**F Test** F Test is used for testing the significant difference between Means of student teachers score according to their faculties studied in higher secondary school.

### Analysis & interpretation of collected data

According to rating scale, marks are given to practical skills in science of student teachers in the pretest and posttest. Both tests includes six experiments (Two from Physics, Chemistry & Maths) in each. From the scores of student teachers in pretest & posttest, means are calculated & t test is used to study the difference between means. F test is used to study the difference between means of student teachers score in post test related to practical skills according to student teachers faculties studied in higher secondary school.

**H01** There is no significant difference between Means of student teachers score in achievement test related to practical skills before & after the implementation of programme.

**Table 1. t test**

Test	r	Df	M	Dm	SD	SEm	SE <sub>Dm</sub>	calculated t value	t value from table (0.005level)
Pre test	0.64	14	17.86	7.67	3.83	0.99	0.77	9.96	2.13
Post test			25.53		2.67	0.69			

**Observation and interpretation** From the above table one, it is clear that calculated 't' value is more than the table value at 0.05 level and so the difference between mean of pre

test & post test regarding practical skills in science are significant at 0.05 level, so null hypothesis is rejected.

**H02** There is no significant difference between means of student teacher score in achievement test related to practical skills in science after implementation of program regarding student teachers faculties studies in higher secondary school.

**Table 2 F test**

Subject Faculty	Total student	Mean	C	S2b (df=2)	S2W (df=12)	Calculated 'F' value	'F' value from table (0.005 level)
Arts	05	26.2	9779.26	3.74	96	0.233	19.41
Science	05	25.4					
Commerce	05	25					

**Observation and interpretation** From the above table two, it is clear that calculated 'F' values are less than table value at 0.05 level and so the difference between means of student teachers practical skills related to their faculties studied in higher secondary school (Arts, Commerce, Science), so null hypothesis H0<sub>2</sub> is accepted.

### Conclusions

1. D.T.Ed second year student teachers practical skills in the science is improved after implementation of programme.
2. There is no significant difference in student teachers practical skills in the science according to faculties studied at higher secondary level.(Arts, science,commerce)

**Educational implication** Programme regarding the practical skills in science developed by researcher is useful to D.T.Ed. Teacher Educators & student teachers.

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