

# “A STUDY OF EFFECTIVENESS OF SCAFFOLDING TECHNIQUES ON ACHIEVEMENT IN MATHS OF STANDARD 4TH STUDENTS”

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**Abstract:** Learning environment affect on student's achievement. Some of them are scaffolding techniques. In this study, researcher wants to know effectiveness of scaffolding techniques on the student's achievement with respect to the gender. Researcher choose purposive sample which is very small for this experimental research. In this study in this experiment researcher made two equivalent group-individual pair using pre test. After it do experimental work on groups. There is significant difference between traditional method and scaffolding method notify by researcher.

**Key Words:** Achievement, maths, scaffolding , scaffolding technique.

## 1. INTRODUCTION:

The importance of new ideas in education can be considered as the development of education. The extent to which the new technique changes in learning and teaching methods is enlightening. An attempt to know how different methods affect student achievement is useful. One such method is scaffolding. Scaffolding theory was first introduced in the late 1950s by Jerome Bruner, a cognitive psychologist. He used the term to describe young children's oral language acquisition. Helped by their parents when they first start learning to speak, young children are provided with informal instructional formats within which their learning is facilitated. Scaffolding refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process. Scaffold instruction is that it provides for a supportive learning environment. This technique helps the student in the learning process. But it will be interesting to know how it affects students' achievements compared to the conventional method. Researchers have tried to know how the gender of students will affect this method.

## 2. LITERATURE REVIEW:

Patel(2019) work on effectiveness of scaffolding techniques on Achievement in Science of standard 8th students. This study found to be effective in term of achievement of student at std.8th learning science by scaffolding approach. scaffolding learning approach make student independent learner and Increase their achievement. Scaffolding based programme was effective as compared to the traditional method of teaching. Driel, Slot, and Bakker(2018) work on A Primary Teacher Learning to Use Scaffolding Strategies to Support Pupils' Scientific Language Development The findings show that a teacher can learn to apply multiple scaffolding strategies for stimulating scientific language development. Patterns in the use of scaffolding strategies arose related to the aim of the strategy, the situation (i.e., phase of the empirical cycle and teaching approach) and the required pedagogical content knowledge (and skill) of the teacher. Holton, Derek, and Clark, David (2006) suggested conception of scaffolding with four key elements, scaffolding agency – expert, reciprocal, and self-scaffolding, scaffolding domain – conceptual and heuristic scaffolding, the identification of self-scaffolding with metacognition and the identification of six zones of scaffolding activity; each zone distinguished by the matter under construction and the relative positioning of the participant(s) in the act of scaffolding.

## 3. RESEARCH PROBLEM :

“A study of effectiveness of scaffolding techniques on Achievement in maths of standard 4th students”

## 4. OBJECTIVES:

- To study the effectiveness of scaffolding approach on the achievement of male student in maths.
- To study the effectiveness of scaffolding approach on the achievement of female student in maths.

- To study the effectiveness of scaffolding approach in compare to traditional approach on the bases of achievement of students in maths.

## 5. HYPOTHESIS:

- There is no significant difference in the mean achievement of male student learning maths through traditional approach and scaffolding approach.
- There is no significant difference in the mean achievement of female student learning maths through traditional approach and scaffolding approach.
- There is no significant difference in the mean achievement of student learning maths through traditional approach and scaffolding approach.
- There is no significant difference in the mean achievement of male student and female student learning maths through scaffolding approach.

## 6. RESEARCH AREA AND LIMITATION:

- The present study is limited to the government primary schools of lathi Taluka.
- The sample presented in the present study is limited to the children of the Government Primary School in Jarakhiya village of Lathi Taluka of Amreli district in India.
- The present study was limited to standard four only.

## 7. RESEARCH METHODOLOGY:

This paper is basically experimental in nature. This type's research is usually referred to as experimental research and in this experiment researcher made equivalent group-individual pair using pre test for this research.

## POPULATION AND SAMPLE

This study is based on experiment so sample is very small and purposive. The sample presented in the present study is the children of STD 4th of the Government Primary School in Jarakhiya village of Lathi Taluka of Amreli district in India.

Table 1.1

School	male	female	total
Jarakhiya plot shala	4 OUT OF 4	6 OUT OF 8	10 OUT OF 12
Jarakhiya pay center shala	8 OUT OF 9	6 OUT OF 7	14 OUT OF 16
Total	12 OUT OF 13	12 OUT OF 15	24 OUT OF 28

## RESEARCH TOOL

The aim of present study to compare the effectiveness of scaffolding approach and traditional approach on the achievement of students and to know effect of gender on the achievement of students in maths. In this regards, the investigator were developed following research tools.

1. Achievement test based on concept of maths which is learning before by students. For making equal groups, one experimental and second control group.(pre test)
2. Material of scaffolding techniques for learning selected units of maths of standard 4th.
3. Achievement test. (Post test)

## INFORMATION GATHERING PROCESS

An experimental plan was created for data gathering, which is shown in the following flowchart. The pre test was based on the students' previous study. Thereafter, two equal groups were formed based on its merits. Then a group called control group and the other group was known as experimental group. The teaching work was done in a traditional method on the control group. The teaching work was done using the scaffolding technique on the experimental group. Then post test was conducted on both groups. The hypotheses were examined using result of post test through the statistics methods.

**FLOW CHART OF EXPERIMENTAL PLAN**

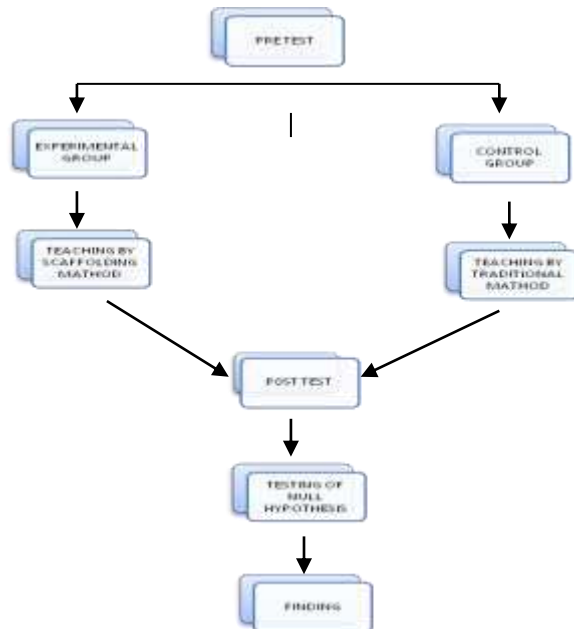


Fig 1.1

**7. DATA ANALYSIS AND INTERPRETATION:**

For data analyses of null hypothesis find out the t-ratio at significance level 0.05.

Table 1.2

**T-ratio of male student’s achievement  
 Learning maths through traditional approach and scaffolding approach.**

	NUMBER	MEAN	SD	r	SED	T-RATIO	SIGNIFICANCE AT LEVEL 0.05
<b>Experimental group</b>	6	22.5	2.81	0.92	0.61	2.19	NO
<b>Control group</b>	6	21.17	1.57				

Here value of t-ratio 2.19 is the less than 2.571 (for df = 5) so the null hypothesis can be accept.

Table 1.3

**T-ratio of female student’s achievement  
 Learning maths through traditional approach and scaffolding approach.**

	NUMBER	MEAN	SD	r	SED	T-RATIO	SIGNIFICANCE AT LEVEL 0.05
<b>Experimental group</b>	6	24.33	1.80	0.32	0.87	2.86	YES
<b>Control group</b>	6	21.83	1.86				

Here value of t-ratio 2.86 is the greater than 2.571 (for df = 5) so the null hypothesis cannot be accept.

Table 1.4

**T-ratio of total student’s achievement  
 Learning maths through traditional approach and scaffolding approach.**

	NUMBER	MEAN	SD	r	SED	T-RATIO	SIGNIFICANCE AT LEVEL 0.05
<b>Experimental group</b>	12	23.42	2.53	0.65	0.56	3.43	YES
<b>Control group</b>	12	21.50	1.76				

Here value of t-ratio 3.43 is the greater than 2.201 (for df = 11) so the null hypothesis cannot be accept.

Table 1.5  
**T-ratio of male student’s and female student’s achievement  
in learning maths through scaffolding approach.**

	NUMBER	MEAN	SD	r	S <sub>ED</sub>	T-RATIO	SIGNIFICANCE AT LEVEL 0.05
male	6	22.50	2.81	0.30	1.13	2.21	NO
female	6	25.00	1.53				

Here value of t-ratio 2.21 is the less than 2.571 (for df = 5) so the null hypothesis can be accept.

### 8. FINDINGS:

- There is no significant difference in the mean achievement of male student learning maths through traditional approach and scaffolding approach at level 0.05.
- There is significant difference in the mean achievement of female student learning maths through traditional approach and scaffolding approach at level 0.05.
- There is significant difference in the mean achievement of student learning maths through traditional approach and scaffolding approach at level 0.05.
- There is no significant difference in the mean achievement of male student and female student learning maths through scaffolding approach at level 0.05.

### 9. RECOMMENDATIONS:

- For further study we can do this type of research with different subject like science.
- We can also compare two different methods for different standard.

### 10. CONCLUSIONS:

Hence, we can see that gender appears to be a dominant factor. We cannot see effectiveness of scaffolding approach on total students.

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