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Impact of Modern Digital Content Based Learning vs Accustomed Learning Method in Students Learning

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Abstract

Today world is upgrading with a blink of eyes with robotics and CHATGPT involvement in all sphere of world, to take responsibility is urged to students to track their learning (NITI AAYOG ,2019). The study determines the impact of Modern digital content-based Learning Vs Accustomed Method in students' practical representation, Visualisation and symmetry skills. The course was designed as per NCERT XII textbook and Materials prepared by Ministry of education subsets at school level. The impact was measured as per learning outcomes decided by Ministry of Education guidelines. ANCOVA analysis on samples indicate that there is significance difference between both method of teaching. Based on results, modern digital content-based Learning appeared as authentic environment of teaching.

Keywords: *Modern Digital Content-Based Learning Visualization and Symmetry.*

Introduction

United Nations have been constantly striving towards reaching out to support nations for achieving Sustainable Development Goal 2030. one of the crucial aims of SDG is goal 4 which deals and aims for quality education, In India, National Policy on Education got its nod in July 2020, since then there has been much excitement about the teaching practices and assessment of learning. Teachers and educational experts have been constantly involved in its advantages and what it has for coming foundation of nation (Children). Rechard (2018) mentioned in study that active involvement of stakeholders and healthy discussions can help becoming policy sharp and effective.

Need and Significance of the Study

As per study conducted by Morris (2010) Effectiveness of practices tools is more relevant when they help in achievement of analytical subjects taught at formal stage of Piaget stages mentioned. In context of effective teaching at school level, researcher made an attempt to study modern digital content-based learning practices tools in teaching of mathematics - visualization and symmetry at middle school stage. Mathematics is counted as most crucial subject when it comes to higher thinking and visualization skills. Therefore, researcher thought of studying about this particular subject area. Keeping with the pace and self-direction of the practice's topics demanding more analytical thinking and special contributions were taken as part of study.

Operational Definitions

- *Modern Digital Content Based Learning*

Technology which are free and open sourced available are easily adaptable in classroom learning (Cheng,2023). Digital content-based options such as visualization 360 degree using maps and spatial representation software are basically considered for present study. Canva sources were shown for user friendly experiences.

- *Accustomed Learning Method*

Learning is modification of behaviour as defined by educationist. Accustomed learning method is acclimatized method where learner and teacher both are familiar with teaching aids and conventional method.

Objectives

1. To compare post practical representation test of visualization on groups.
2. To compare post practical representation test of symmetry on groups

Hypotheses

There is no significant difference in the score of groups on Visualization test

There is no significant difference in the score of groups on symmetry test.

Methodology

The present study is an equivalent quasi experimental design. The sample were selected randomly and were allotted group by lottery method. There were 40 students for the study 20 control group and 20 experimental group from 7^{th} grade of English medium with mandatory curriculum (NCERT- Textbook Mathematics). Intervening variables were reduced as students belong to same locale and same economic status (annual salary of gaurdian ranged from 4LPA to 8LPA).

Results and Discussions

The research results are found on IBM SPSS 24 Version. The statistics used is ANCOVA keeping pre-test as covariate.

Table 1. Between subject factors

Groups	N
Group 1	20
Group 2	20
Total	N=40

Table 1. represent 1 for experimental group (with systematic order and complete cycle were followed for modern digital content-based learning practices tools)

2 for accustomed group (with unsystematic order and incomplete cycle were followed for modern digital content-based learning tools)

Table 2. Descriptive Statistics

Group	Mean	Std. Deviation	N
1	22.0000	5.67543	20
2	20.2000	2.28496	20
Total	21.1000	4.36654	40

Table 2 represent descriptive statistics for the scores obtained. Here mean for experimental group is 22.00 which is greater than mean for control group which is 20. The result indicates that post test scores of experimental group(modern digital content based) is more than treatment group 2 (accustomed mode).

Here from the result above, it can be concluded that there is not much significant approximation as targeted. Therefore, it can be said that null hypothesis cannot be rejected. That means the statement that there is no significant difference in the score of groups on Visualization test cannot be rejected.

Table 3 Levene's Test of Equality of Error Variances

Dependent Variable: POST-TEST			
F	df1	df2	Sig.
12.497	1	38	.001
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.			
a. Design: Intercept + PRE-TEST + GROUP			

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1.00	22.054[a]	.944	20.141	23.967
2.00	20.146[a]	.944	18.233	22.059

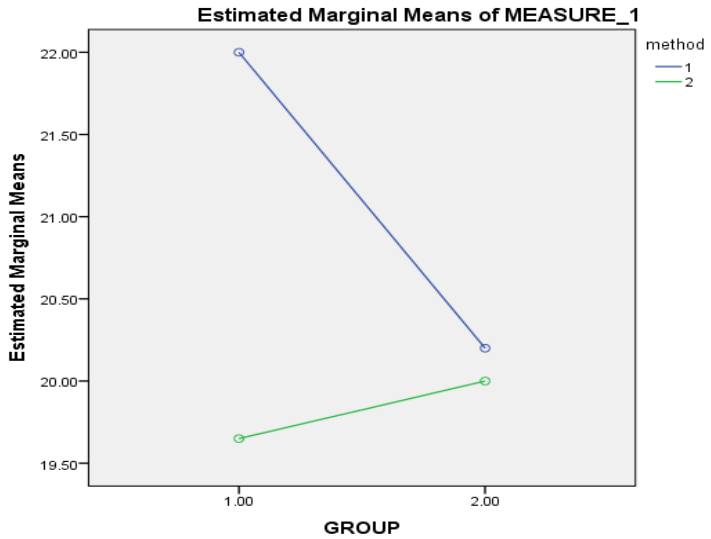
Covariates appearing in the model are evaluated at the following values: PRE-TEST = 19.8250.

Form Table 3 it can be clearly seen that for experimental group it is 22.054 and for control group it is 20.146. Though there is difference but it is found to be in much less significance. Therefore, p value is seen which is found to be more than 0.01. Hence null hypothesis could not be rejected. There is no significant difference in the adjusted mean score of groups on post practical representation test keeping pre-test as covariate.

Table 4 Pairwise Comparisons of groups

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.[A]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1.00	2.00	1.908	1.336	.162	-.800	4.615
2.00	1.00	-1.908	1.336	.162	-4.615	.800

From the above table it can be concluded that there was a significant difference in the adjusted mean score of groups on post practical representation test keeping pre-test as covariate. Shindey (2005) found exact result in his study on self-directed guide to designing courses. This study dealt with significant learning techniques.



Graph 1: representing interaction between groups and methods

From the graph it is clear that modern digital content-based method is effective in visualization and symmetry skills. This means that interaction of modern method is useful in pre and post scores. This further implies that development of modern digital methods are useful in learning of STEM subjects among senior secondary students in comparison to accustomed method employed.

Conclusion and Implications

The result from above study indicates that the objectives were reached with surprising results. Groups did not give much difference in the scores. Therefore, we cannot reject null hypothesis i.e. there is no significant difference in the score of groups on Visualization test. It gave value of p less than 0.01 which made it eligible for rejection of null hypothesis. *The systematization plays very crucial role in implementation of digital content-based Learning practices tools for analytical subjects like STEM.*

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