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A Study Of Effectiveness Of 'Cross Over Learning' Method For Science Subject At Primary Level Students

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Dr. Manisha Indani

Head, Department of Education,

Kavayitri Bahinabai Chaudhari

North Maharashtra University, Jalgaon

2.Ms. Priyanka Pawar

M.Ed.Student

Abstract :

This research study is based on innovative teaching method for Science subject. The primary students afraid about the science subject. Most of the students and their parents use to send their children to the coaching classes from the primary stage. It creates burden on the students. Science is the subject that can be apply in the day today life also. Teacher should develop the scientific attitude of the students. From the primary classes if proper teaching method is adopted then it will make sound base for the future. Therefore an attempt has been made to taught the science subject by using Cross Over Learning Method. In cross over learning method formal way of teaching and informal way of teaching is adopted. The main objective was to select the lesson for science subject and develop the material for Cross over Learning Method and to study its effectiveness in terms of achievement of the students in science subject. For this research study two schools were randomly selected. Two classes of six slandered were selected. Total 100 students were selected by using simple random method. Both the classes randomly assigned in Control group and Experimental group. Experimental method was used to study the effectiveness of the Cross Over Learning Method. Pre teat and post test control group design was used to control the extraneous variables. The treatment was given for 30 days. It was found that Cross Over Learning makes the students active learners. They become happy while learning the Science subject. The Cross Over Learning Method was more effective then traditional method of teaching Science subject,

Key Words: Innovative learning, Crossover Learning , enjoyable learning

1.0 : Introduction:

In recent times, the significance of quality education has garnered considerable attention. Internationally, significant transformations are underway in the realm of education. It is imperative that the school environment exudes a sense of positivity, fostering a welcoming atmosphere for students. It is crucial that students are eager to attend school, ensuring that their learning experience is enjoyable. Teachers ought to transcend mere textbook knowledge and engage in the holistic education of children. The educational system bears the responsibility of nurturing individuals who are not only academically adept but also morally upright and conscientious. The cornerstone of this endeavor is an engaging

educational experience, which lays the foundation for a well-rounded and humane society. Encouraging an environment where students feel empowered to inquire without inhibition is paramount, alongside ensuring that all children derive pleasure from the process of learning.

Recognizing the need for a shift in this paradigm, the implementation of the National Education Policy (NEP) 2020 has been set in motion. A key objective of this new policy is the cultivation of individuals who exhibit rational thinking, compassion, empathy, adaptability, scientific acumen, creative imagination, and moral values. Furthermore, the NEP emphasizes the instillation of moral, humane, and constitutional values such as empathy, respect for others, cleanliness, etiquette, service, equality, justice, social duty, and responsibility. The policy advocates for the integration of enjoyable elements into the educational framework, aiming to enhance interest in learning and bolster achievement through the implementation of small-scale projects and supplementary programs.

To fulfill the aforementioned objectives, the researcher advocates for the incorporation of engaging activities at the school level and has therefore embarked on a study to evaluate the efficacy of "cross over learning" in enhancing students' grasp of scientific subjects. This approach encompasses a blend of formal and informal learning, encompassing excursions to various locales such as museums, after-school clubs, nurseries, caves, zoos, and forests, where students can observe and learn about diverse living organisms. By establishing connections between academic content and real-life issues that hold relevance for students, this methodology aims to bridge the gap between theoretical learning and practical application, promoting a comprehensive educational experience that extends beyond the confines of traditional classrooms.

1.1 Concept of Cross-Over Learning:

Cross-over learning is a teaching method that involves integrating multiple subjects or disciplines to create a more comprehensive and engaging educational experience. This approach encourages students to make connections between different areas of knowledge and apply skills learned in one subject to solve problems in another.

By incorporating cross-over learning, educators aim to promote critical thinking, creativity, and a deeper understanding of concepts by showing how different subjects are interconnected. For example, students studying history could analyze the impact of scientific discoveries on historical events, or math students could use equations to understand real-world environmental issues.

Overall, cross-over learning encourages a holistic view of education and helps students develop a broader range of skills that can be applied across various disciplines and in real-world situations.In this method teacher can mingle formal and informal way of teaching.

1.2. Need of the present research work :

Most educational institutions adhere to traditional teaching methods without incorporating innovative educational tools, resulting in students struggling to grasp the subject matter effectively.

An impactful approach to 'cross over learning' involves educators immersing themselves in natural environments to teach, integrating various elements such as trees, bushes, animals, and caves relevant to

the subject matter. By correlating classroom teachings with real-world observations, students can enhance problem-solving skills, articulate their ideas, and amalgamate formal and informal education to cultivate their abilities.

This form of experiential learning is more enduring than conventional methods of promoting environmental awareness. Through direct interaction with nature, students not only acquire practical skills but also develop a profound appreciation for the natural world and its attributes. It presents a dynamic avenue for students to harness educational opportunities effectively.

While prior research has extensively explored the utilization of mind maps, concept maps, and the flipped classroom approach in the realm of science education, limited emphasis has been placed on the concept of 'cross over learning'. Hence, there is a pressing need to delve into this uncharted territory through research endeavors.

1.3: Objectives of the research :-

The following objectives were set in the present research.

1.To create learning experiences to stimulate student learning through 'cross over learning' methods.

2. To study the effectiveness of ‘Cross over Learning Method’ for teaching science subject at primary level.

3. To compare the effectiveness of ‘Cross over Learning Method’ and Traditional Method for teaching science subject at primary level.

1.4 Hypothesis :-

The following hypotheses have been formulated for the present research.

1. There is no significant difference between the pre-test and post-test mean scores of the group taught through 'cross over learning' method.

2. There is no significant difference in the mean scores of the post test between the group taught in the traditional way and the group taught through 'cross over learning'.

1.5 Assumptions:-

In the present research, the following assumptions have been formulated.

1. Teaching through student-centered teaching method improves student retention.
2. Difficult concepts in science become easier when given direct experience.

1.6 Research Method

The present research was to be carried out on the topic 'Study of the effectiveness of cross over learning method for enjoyable learning of science subject at primary level'. As this research falls into quantitative method, experimental research method was used.

1.7 Experimental Design:-

In this research study Pre test -Post test control group design was used.

1.8: Variables:

Independent variable – teaching through cross over learning method and traditional method

Dependent Variable – Achievement in Science subject

1.9: Sample:

For the current study, the researcher employed the cluster sampling technique to determine the sample. From a pool of 47 primary schools in Jalgaon city, 2 schools were chosen through a random selection process. Subsequently, all students in the sixth grade from these 2 schools were included using the cluster method. From these two classes , randomly assign them into experimental group and control group. In essence, a total of 100 students were designated as the sample for the current investigation.

1.10: Research Tools :-

Researcher used self-constructed component test based on science topics. The same test was used as pretest and post-test to both the control group and the experimental group.

1.11: Teaching Material used :

For teaching Science subject through cross over learning method, the researcher adopted formal classroom teaching as well as Informal teaching. For Informal teaching live experiences of growth of the plant , field visit to observe various types of flowers, leaves, etc, Tree plantations, group activities to recognize leaves, birds, trees , cultural activities were conducted.

1.11: Inferential Analysis and Application of Collected Information:-

Based on the information collected by the researcher in the present research, inferential analysis and interpretation for hypothesis testing are done as follows. **Hypothesis No. 1 – There is no significant difference between the pre-test and post-test mean scores of the group taught through 'cross over learning'**.

In order to test the above hypothesis student t test was employed.

Table no 1.1: Inferential analysis of Pre & Post test of Experimental group

Test	Total Student	Mean	SD	df	Obtain t value	Table t value	Level of Significance
Pre test	50	8.5	2.52	99	33.94	1.98	0.05
Post test	50	21.94	1.28				

Upon implementing a novel approach of teaching the science curriculum through the method of cross-learning method there was a discernible enhancement in the academic performance of the students.

Hypothesis No. 2. – There is no significant difference in the mean scores of the post test between the group taught through traditional method and the group taught through 'cross over learning'.

In order to test the above hypothesis student t test was employed. □

Table no 1.2: Inferential analysis of Post test of Experimental group and Control group

Group	Test	Total Student	Mean	SD	df	Obtain t value	Table t value	Level of Significance
Control	Post test	50	15.52	1.58	99	22.28	1.98	0.05
Experimental		50	21.94	1.28				

The data presented in table no. 1.2 unequivocally demonstrates that the Cross over Learning method is notably more efficacious in imparting knowledge of the science subject at the primary level.

Findings and discussion:

1. Following the implementation of the Cross Over Learning Method, a noticeable improvement was observed in the academic performance of the students.
2. When teaching the Science Subject, it was evident that the Cross Over Learning Method surpassed the effectiveness of the Traditional teaching approach for Science subjects.
3. The students in the experimental group exhibited a greater sense of ease and enjoyment while engaging in learning through the Cross Over Learning Method.

Discussion:

There are numerous rationales behind the aforementioned conclusion. By offering students practical experience in a picturesque setting, it aided them in retaining the information for an extended period. Skills were cultivated, rules, definitions, and formulas were comprehended and memorized without the need for rote learning. Imagination and critical thinking were stimulated.

In contrast to conventional teaching methods, contemporary approaches involve students actively engaging, learning through practice, utilizing their own reasoning capabilities, fostering a conducive atmosphere by integrating daily life encounters, and enhancing retention. The instructor serves as a facilitator, assigning projects and encouraging the submission of visual aids. Consequently, the cross-over learning methodology has demonstrated its superiority over traditional techniques.

References:

Books

- ❖ Srinivasa, K.G, Learning, Teaching and Assessment Methods for Contemporary Learners, Sringer Nature, Singapure Pte Ltd. 2022.
- ❖ Dr.Mrinmoy Mandal, Innovative Teaching & Learning Pedagogy,Prachi Digital Publisher, India
- भांगडे. शै.,धांडे, पि. (२०१४), मूल्यनिर्धारण व मूल्यमापन, नित्य नूतन प्रकाशन, पुणे.
- सोहनी, ची. त्र्य.(२००६) अध्यापनाची प्रतिमाने, नूतन प्रकाशन, पुणे.

Unpublished Disertation

- ❖ निंबोळकर, नितिन निवृत्ती(2008) विज्ञान अध्यापनात पारंपरिक अध्ययन पद्धती व संकल्पना प्राप्ती प्रतिमान यांच्यातील परिणामकारकतेचा तौलनिक अभ्यास, unpublished M.Ed.dissertation: KBCNMU, Jalgaon
- ❖ लाड,पल्लवी बाबुराव (2009) विज्ञान अध्यापनात माइंड म्यापिंग तंत्राच्या परिणामकरतेचा अभ्यास, unpublished M.Ed.dissertation: KBCNMU, Jalgaon
- ❖ पाटील, लीना हेमचंद्र (2010) माध्यमिक स्तरावर विज्ञान अध्यापनात पारंपारिक अध्यापन पद्धती आणि अग्रत संघटक प्रतिमान यांच्या परिणामकारकतेचा तौलनिक अभ्यास unpublished M.Ed.dissertation: KBCNMU, Jalgaon

Glimpses of Crossover learning method

Plantation

measuring height of the plants

Introduction of various plants

Group activities on identification of living and non living things