ORIGINAL RESEARCH PAPER

Education

EFFECTIVENESS OF ANIMATED BASED TEACHING STRATEGY IN ENHANCING ACHIEVEMENT OF SECONDARY STUDENTS IN MAGNETISM CONCEPTS

KEY WORDS: Animated Based Teaching Strategy, Effectiveness, Magnetism Concepts, Achievement

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ABSTRACT

In classroom, students feel boredom when teachers are teaching through traditional method. To alternate the same, it is necessary that the teachers should attract the students and enhance their learning through various teaching strategies. Animation is one of the main attractive strategies for kids to sustain attention for prolonged time. Animation also helps the teachers to enhance the attention and achievement of students in the classroom. Animation helps the student to satisfy the learning needs and at the same time, it improves the level of understanding and achievement while observing the concepts through animation. Animation definitely kindles the interest, attention and learning of students. Animated based magnetism concept is taken for the present study. The main and foremost objective of the study is to find out the effectiveness of animated based teaching strategy in enhancing achievement of secondary students in magnetism concepts. For the present study, investigators adapted pretest posttest equivalent group experimental design. 26 samples studying 10th standard at Government Higher secondary School, Randham village, Tamil Nadu were taken as sample for the present study through random sampling technique. The result of the study indicated that, the achievement of experimental group students is higher than students at control group after adopting animation based teaching strategy in magnetism concepts. Posttest mark of experimental group secondary students is higher than pretest marks of both control and experimental group students. The present study implied the necessity of animation based teaching strategy for learning magnetism concepts of students. The same study may be implemented to other concepts in science and other subjects. The same may also be executed to students with different abilities and disabilities.

INTRODUCTION

In the present scenario, education is provided in India from central, state and local. India has made progress in terms of increasing the primary education attendance rate and expanding literacy to approximately three-quarters of the population in the 7–10 age group, by 2011. While quantitatively India is inching closer to universal education, the quality of its education has been questioned particularly in its government run school system.

Development of modern science and technology was sought to be achieved by expanding the existing institution and establishing new institution developed to development of human resources to carry out teaching and research. Today animation drawings and the background are either scanned into or drawn directly into a computer system. Animation is the process of making the illusion of motion and the illusion of change by means of the rapid succession of sequential image that minimally differs from each other in the illusion as in motion pitcher in general is through to rely on the phenomenon and beta movement but the exact causes as still unclear.

The Animation methods that use stop motion animation of two and three dimensional objects 3D animation uses computer graphics, while 2D animation is used for stylistic. Animation attracts the persons with all age groups. Students get attention and interest when they are seeing animated characters in the computer/TV. In classroom, teachers should attract the students by teaching the content using animation which enhances their learning. Animation helps the teachers to enhance the achievement of students in all subjects.

Magnetism is a class of physical phenomena that are mediated by magnetic fields. Electric currents and the magnetic moments of elementary particles give rise to a magnetic field, which acts on other currents and magnetic moments. The most familiar effects occur in ferromagnetic materials, which are strongly attracted by magnetic fields and can be magnetized to become permanent magnets, producing magnetic fields themselves. Only a few substances are ferromagnetic; the most common ones are iron, nickel and cobalt and their alloys. The prefix ferro- refers to iron, because permanent magnetism was first observed in lodestone, a form of natural iron ore called magnetite, Fe_3O_4.

Although ferromagnetism is responsible for most of the effects of magnetism encountered in everyday life, all other materials are influenced to some extent by a magnetic field, by several other types of magnetism. Paramagnetic substances such as aluminum and oxygen are weakly attracted to an applied magnetic field; diamagnetic substances such as copper and carbon are weakly repelled; while antiferromagnetic materials such as chromium and spin glasses have a more complex relationship with a magnetic field. The force of a magnet on paramagnetic, diamagnetic, and antiferromagnetic materials is usually too weak to be felt, and can be detected only by laboratory instruments, so in everyday life these substances are often described as non-magnetic.

To develop both creative and divergent knowledge in Science concepts, especially magnetism, students have to improve the skills not only through practical but theory knowledge too. Other type of learning and attraction is needed for students to enhance their knowledge. Animation definitely helps students to satisfy the learning needs and improve the level of understanding and achievement. In the present study, Animation kindles the interest, attention and learning of students while observing the magnetism concepts. So, at this juncture, the present study is a needful one.

Review of related literature

Bohn (1994) explained in his study on comparison of achievement between students taking as development science course using computer assisted instruction. The course in the traditional classroom setting presents experiment research using a pretest posttest control group design. 't' test for independent samples and analysis of covariance on the basics of data obtained from the two group of students the result obtained from the 't' test and analyses of covariance indicated that there was significant difference between the mean scores in the final examination of the two groups.

Collis and Marick van Der Wende (1999) studied the position of animation used in higher education institution and its influence on decision making process in connection with functional higher

education approaches including the implication of expenses and efficiencies pursuant to animation implementation in Norway, Finland, Belgium, England, Australia and USA.

Farrell's (1999) study reported that animation training and workshop are needed not only to improve the skills of the instruction, but also, as a means of getting them involved in the process of integrating animation in teaching and learning.

Banik (2001) conducted a study on commanding animation technology. The author concluded that the rapid pace of change in technology means that the citizens are looking to communication suppliers to provide state-of-art facilities and services. The ability to use new technology, to best advantage everywhere in the world, will be key competitive advantage. From the above studies, it is clear that computer assisted instruction, particularly, animation influence the achievement, decision making, instructional skills and communication of students with diverse needs. There is very low of no number of studies is conducted in animation based magnetism concepts for students in schools. So, at this juncture, the present study is a needful one.

OBJECTIVES OF THE STUDY

The main and foremost objective of the study is to find out the effectiveness of animated based teaching strategy in enhancing achievement in magnetism concepts for secondary students. The other objectives are:

- To find out significant difference between achievement of secondary students before and after adopting animated based teaching strategy in magnetism concepts
- To find out significant difference between control and experimental group secondary students in the achievement before and after adopting animation based teaching strategy in magnetism concepts
- To find out the gap closed after adopting animation based teaching strategy in magnetism concepts

Hypotheses of the study

- There exists significant difference between achievement of secondary students before and after adopting animated based teaching strategy in magnetism concepts.
- There exists significant difference between control and experimental group secondary student's achievement before and after adopting animated based teaching strategy in magnetism concepts.
- The gap is closed after adopting animation based teaching strategy in magnetism concepts.

Methodology

For the present study, investigators adapted pretest posttest equivalent group experimental design. 26 students studying 10th standard at Government Higher secondary School, Randham village, Tamil Nadu were taken as sample for the present study. Samples were categorized into 2 equal groups of 13 each and pretest was conducted. Control group receives traditional method of teaching whereas experimental group receives animation based teaching strategy in magnetism concepts for a period of 6 days. Posttest was conducted for all the samples. The data thus collected were tabulated and analysed with statistical techniques.

Analysis and Interpretation

TABLE 1: Level of Significance of pretest and posttest marks of control group secondary students before and after adapting animation based teaching strategy in magnetism concepts

Control	Test	Mean	SD	n	t value	Level of Significance
	Pretest	10.84	2.67	13	0.08	No Significant at 0.05
	Posttest	10.92	2.43	13		

From the above table, it is clear that, the calculated t value 0.08 is lower than the table value 2.13 at 0.05 level. The result indicated that, the achievement of pretest and posttest of secondary students in control group remains same. Thus, the hypothesis, "There exists significant difference between achievement of pretest and posttest control group secondary students" is **rejected.**

Therefore, from the above table, we conclude that there is no difference between posttest and pretest achievement of secondary students while teaching magnetism concepts through traditional method.

TABLE 2: Level of Significance of pretest and posttest marks of experimental group secondary students before and after adapting animation based teaching strategy in magnetism concepts

Experimental	Test	Mean	SD	n	t value	Level of Significance
	Pretest	10.62	3.48	13	2.23	Significant at 0.05
	Posttest	13.54	3.18	13		

From the above table, it is clear that, the calculated t value 2.23 is higher than the table value 2.13 at 0.05 level. The result indicated that, the achievement of posttest of experimental group secondary students is higher than pretest marks. Thus, the hypothesis, "There exists significant difference between the achievement of pretest and posttest of experimental group secondary students before and after adopting animation based teaching strategy in magnetism concepts" is **accepted.**

Therefore, from the above table, we conclude that there is difference between posttest and pretest achievement of secondary students which indicated that animation based teaching strategy in magnetism concepts influence the achievement of secondary students.

TABLE 3: Level of Significance of secondary students in relation to pretest marks of control and experimental group before adopting animation based teaching strategy in magnetism concepts

Pretest	Group	Mean	SD	n	t value	Level of Significance
	Control	10.84	2.67	13	0.18	No Significant at 0.05
	Experimental	10.62	3.48	13		

From the above table, it is clear that, the calculated t value 0.18 is lower than the table value 2.13 at 0.05 level. The result indicated that, the achievement of control group students and students at experimental group in pretest before adopting animation based teaching strategy in magnetism concepts remains same. Thus, the hypothesis, "There exists significant difference between pretest marks of control and experimental group secondary students before adopting animation based teaching strategy in magnetism concepts" is **rejected.**

Therefore, from the above table, we conclude that there is no difference between achievement in pretest of control and experimental group secondary students.

TABLE 4: Level of Significance of secondary students in relation to posttest marks of control and experimental group before adopting animation based teaching strategy in magnetism concepts

Posttest	Group	Mean	SD	n	t value	Level of Significance
	Control	10.92	2.43	13	2.36	Significant at 0.05
	Experimental	13.54	3.18	13		

From the above table, it is clear that, the calculated t value 2.36 is higher than the table value 2.13 at 0.05 level. The result indicated that, the achievement of experimental group students is higher than students at control group. Thus, the hypothesis, "There exists significant difference between posttest marks of control and experimental group secondary students after adapting animation based magnetism concepts" is **accepted.**

Therefore, from the above table, we conclude that there is difference between posttest achievement of control and experimental group secondary students which indicated that animation based teaching strategy in magnetism concepts influence the achievement of experimental group secondary students.

DISCUSSION AND CONCLUSION

The findings of the study implied the need for animation based teaching strategy among secondary students to improve the level of achievement in magnetism concepts. The study indicated that animation based teaching strategy in magnetism concepts influence more in the achievement of secondary students in the classroom. From the study, it was found that the animation based teaching strategy is very effective in improving achievement among secondary students in magnetism concepts. It demands the need of animation in improving attitude, attention, self-motivation and learning of secondary students in magnetism concepts. The present study implied the necessity of animation based teaching strategy of learning for students while studying magnetism concepts. The same study may be implemented to other concepts in science and other subjects. The same may also be implemented to students with different abilities and disabilities.

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