

EFFECTIVENESS OF MULTIMEDIA INSTRUCTIONAL SYSTEM FOR TEACHING SCIENCE AT SECONDARY LEVEL STUDENTS

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Abstract :

Education is ongoing process throughout the life. In 21st century the world is rapidly growing and changing; to cope up with this modern education system is also changing rapidly. Together with changes new expectation appeared towards teacher from the society as a part of which teacher's role is also changing as per.

All the developed and developing nations are focusing on the improvement, generation and sharing of the knowledge and also the flow of the new technology along with our country. In the national and international policy debates the proper knowledge occupies the central stage, in the age of productivity and innovation.

Education fields include teaching – learning, research and management. For good teaching- learning practice, it should be interactive which need large amount of information. Computer is in the best storage for such huge information which can easily get used for different purpose.

Using Multimedia Instructional System in classroom at school is a new paradigm especially in developing countries. Multimedia Instructional System offers students, teacher and school an additional medium or tool of instruction that enhance learning process. And so the present research work can provide useful to the field of education as well as for nation too.

In the changing world as education system is changing, it needs new things to be get integrated in the education teaching learning process. So Multimedia Instructional System containing multimedia is used for the teaching purpose at every stage of education system along with secondary level.



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Keywords : Education, innovation, Multimedia Instructional System, etc.

1. INTRODUCTION:

In the rapidly changing world the concept of education system is also changing which ultimately needed the changed and more powerful role of teachers. Teacher is important part of the educational systems in which role of the teacher ids not only having subject related knowledge but

teacher should perform the multitasking role like mentor, tutor, Guide, philosopher provider and also role model for students

The modern age regarded as a time in which information has become a valuable thing that is quickly and disseminate and easily available especially through the use of computer technology which is used worldwide. Exploration of new technology advancement in present machinery or technology is the specialty of this age. Also computerization is the major factor.

Education fields include teaching – learning process, research and management. For good teaching – learning practice, it should be interactive which need large amount of information. Computer is the best storage for such huge information which can easily get used for different purpose. Also for the good interaction and effective teaching, good quality of communication is needed.

This is new and distinct period of time, in which technology affects all activities of our lives, especially the younger generation who were born post- internet, the education system is in the revetment of confront to adopt to the technological developments of the 21st century.(Hamedi& Ezleila, 2015)

Today’s educational system must provide lifelong learners who are able to process large amount knowledge every day. The traditional educational system is teacher centered. In this system students receive knowledge only transmitted by the teacher and somewhat from book which is out dated now. Thus, the good students are those who have good listening skills, take note summarizing contents and passed in the test. On the other hand in the students need to be independent and lead themselves , react very actively to solve the problem, and acts as generator of knowledge in the 21st century that should be adjusted to the student’s own learning goals.(Hamedi& Ezleila,2015)

2. CONCEPTIONAL AND OPERATIONAL DEFINATIONS OF THE TERMS:

1. Effectiveness:

Effectiveness also defines as, “The degree to which something is successful in producing a desired result, success.

The proposed paper aims to take effectiveness means total score scored by sample Std IX students from Indumati Devi Highschool for Girls Kolhapur school for the experimental purpose after experiment.

2. Multimedia Instructional System:

In this paper Multimedia Instructional System means Instructional System containing multimedia viz the integration of multiple forms of media. Multimedia assigns to computerized information that is presented contemporaneously in more than one medium. It consists not necessarily all but sometimes few elements, of the following elements: text; still graphic images, motion graphics, animations, hyper media, photographs, video and audio i.e. sound, music and narration and so on many more for teaching science subject of Std IX.

3. Secondary level students:

A secondary school is also known as High School. It usually provides educational instruction for students during the period from ages 14 to 16 i.e. here students consider from the Std. IX of Indumati Devi Highschool for Girls Kolhapur.

3. OBJECTIVES OF THE RESEARCH:

- To study the effectiveness of Multimedia Instructional System in teaching science subject at secondary level.
- To compare the effectiveness of conventional method of teaching and Multimedia Instructional System method for teaching Science.

4. Research Methodology:

The main purpose of the present study was to observe effectiveness of Multimedia Instructional System for secondary level students and to see its effectiveness on the performance of the students. Multimedia technique was used to develop the instructional system. The following paragraphs show the effectiveness of Multimedia Instructional System for teaching science of present research.

- The investigator planned goals and objectives of Multimedia Instructional System of teaching concept in Science and designed proposed system for Std. IX students of Indumati Devi Highschool for Girls Kolhapur
- The internal evaluation of a Multimedia Instructional System of teaching concept in Science done within the subject expert.
- The investigator analyzed and interpreted the data obtained in internal evaluation.
- A pretest of 20 marks administered on the sample. The answer-scripts were assessed; the scores were collected, analyzed and interpreted.
- The experimental group instructed by using Multimedia Instructional System of teaching concept in Science, while control group was instructed by using Conventional Instructional System.
- A posttest of 20 marks administered on the sample. The responses of the students were collected in terms of scores. The data was analyzed and interpreted.
- 'Is the Multimedia Instructional System used in experimental group of students proved helpful to the students from the group?' was question to be answered. A comparative analysis and interpretation of the gains in achievement was done to answer the question.
- Conclusions were drawn about the effectiveness of the Multimedia Instructional System of teaching concept in Science and suggestions were stated.

5. Analysis & Interpretation of Data:-

The data was analyzed with the help of statistical and non-statistical measures. The technique of t test was used. The investigators tabulated the collected data and calculated the t- values to

compare achievement of students from control and experimental group.

Table: t-values of different test of scores scored by students

Test	Control Group Mean	Exp. Group Mean	t-value	df
Pretest	4.2	4.5	0.32(NS)	38
Posttest	12.4	17.5	5.40(S)	
Pre over Posttest	Pre 4.2 Post-12.4	---	8.5(S)	
Pre over Posttest	-----	Pre-4.5 Post-17.5	14.02(S)	
Gains	8.2	13.0	5.40(S)	

NS: Non Significant, S: Significant

6. CONCLUSIONS:

1. Teaching of science subject at secondary level in school with the help of Multimedia Instructional System is more effective and better than teaching through conventional teaching method.
2. The academic achievement performed by students is more through Multimedia Instructional System and got better result in every subject than the students taught through conventional teaching method.

These findings of the study completely indicated that the Multimedia Instructional System help to the student for more academic achievement, more will to study, better environment for learning process.

As we have already stated that the effect of conventional method is cannot denied, but a combination of skills and experience of teacher and the use of multimedia teaching instruction will definitely bring about a more effective teaching and learning.

7. DISCUSSION OF RESULTS:

According to the theory of constructivism, knowledge is not taught but it is created and learned by the learner himself through constructing new knowledge on the basis of old knowledge with the help of others, such as teacher's or study partners under a certain setting, by utilizing certain study recourses so the students should be the centre of teaching in the process of education and student centered methodology should be used for the teaching in modernized world. Teachers should understand the need of students and try to meet with those needs. So from the point of view of this paper, multimedia assisted teaching approach can help students. Learn in a better way.

It cannot be denied that multimedia assisted approach can make science subject more interesting, and to some extent, to change the situation of having to learn in to willing to learn. Multimedia Instructional System combines audio, video, graphics, images and text together and it offers a brilliant colorful dramatic, direct study environment. It consists of different kinds of forms, activities and exercises. It can engage the students in the learning process and enhance the student's interests for learning.

It can facilitate science subject in teaching and learning process and make it more efficient and well equipped. Well designed multimedia Instructional System containing information of all concepts given in the complete science subject curricula can provide students with the lot of useful information such as word study, organization of the text, language structures, useful expressions, sentence explanations, cultural background. With the just click of a mouse and students can present the visual information, with the help of hyper media student get connected with new information the students needed easily efficiently, saving a lot of time otherwise used in lecturing an blackboard writing as per conventional or traditional method used till now every now and then.

The four elements which are considered as a pillar of education system are nothing but teachers, students, teaching materials and multimedia facilities. They are interconnected, intervened and interacted efficiently during the teaching- learning process it seems according to today's modern views.

This paper has proven that teaching and learning with multimedia Instructional System instruction is more effective than general or conventional or traditional teaching instruction with text book in terms of student's achievements and retention in the subject science. Despite, there are defender that claim learning process is influenced more by the content and instructional strategy in a medium use by teacher in teaching process than by the type of medium get used (Schramm, 1977) and it is also claimed that media are simply a vehicles that deliver instruction during teaching but do not influence students achievement and academic gain. (Clark, 1983),

Still the effectiveness of teaching with multimedia Instructional System cannot be denied. Teacher should take advantage and benefit of multimedia teaching instruction not only to teach but also to create environment where students wish to learn with joy and enhance student's motivations interest and achievement.

In order to evaluate the impact of using Multimedia Instructional System on education a descriptive and narrative as well as mixed or mingled research methodology is designed.

8. RECOMMENDATIONS:

1. It is recommended that self learning material be developed for every secondary level teacher while teaching the subject like Science.
2. Multimedia Instructional System is necessity of the teachers for secondary level to show more effect for teaching and learning process in the subject Science.

3. The teacher should have proper understanding of the subject which they studied and without proper understanding of the subject; one cannot use multimedia technology approach.
4. The teacher should comprehend the concept of implementation of multimedia Instructional System for science subject at secondary level of educational system.

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