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## **A critical study on multimedia technology; Concept of implementation, issues and future concerns**

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### **Abstract**

Inclusion of Technology in education is now being widely accepted as a major viable component of classroom teaching. This is fuelled by the emergence of worldwide information and computer communications technologies. However, IT based Education is being adopted only in science and engineering subjects widely. Technology has the capacity for increasing student independence, increasing participation in classroom activities and simultaneously advancing academic standing for students with special needs, providing them the ability to have equal access to their school environment. Teachers primarily require access to learning resources, which can support concept development by learners in a variety of ways and to meet individual learning needs. Multimedia learning resources which support constructive concept development, provides the opportunity to the teacher to focus more on being a facilitator. The teachers adequately equipped with latest techniques in the field of multimedia are able to create appropriate environment for teaching learning. Studies carried out on Multimedia learning until ignored important factors that could influence the appropriate selection of media and have thus failed to yield conclusive multimedia design guidelines. Through this paper an attempt has been made to summarize some key issues, characteristics of Multimedia Programme and how a broader range of parameters could play a positive role in developing effective multimedia environments.

**Keywords:** Effectiveness, information, information and communication technology, multimedia technology, programme and teaching-learning

### **Introduction**

**Changing Scenario of Classroom Teaching-Learning:** The changes in the student population of special needs students, such as students with disabilities and language issues, that have occurred in schools in recent years are having a major impact of changing the learning goals, the teaching methods, and the means of assessment for all students. In the present scientific and technological age the conventional method is not sufficient to arouse interest among the students and does not needs up to the intellectual, psychological and emotional needs of the students in the new millennium.

**Integrating Technology in Class Room Teaching-Learning:** This millennium is characterized not only by population explosion but also by galloping advancement of science and technology. Information Technology is progressively invading each and every area of modern civilization. Integration of Information and Communication Technology is essential to meet challenges of the new decade. Technology has the capacity for increasing student independence, increasing participation in classroom activities and simultaneously advancing academic standing for students with special needs, providing them the ability to have equal access to their school environment. Inclusion of Technology in classroom can decrease students isolation and allow them to become part of regular subject area classrooms. Instructionally necessary devices can be shared among individuals. The instructionally necessary devices are the devices that assist in the instructional process at a course or grade level, and this level has important implications for the standard classroom teacher. These devices help meet an educational need based on a developmental delay, which ideally would be improved, thereby eliminating the need for the item in an individual's future.

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**Interactive Multimedia as a mean of Classroom Teaching:** The term multimedia appeared in the 1990s and was defined by Reddi and Mishra (2003) as:

“An integration of multiple media elements (audio, video, graphics, text, animation etc.) into one synergetic and symbiotic whole that results in more benefits for the end user than any one of the media element can provide individually”.

A Multimedia system combines elements that are familiar from the worlds of film, video, animation, graphics as well as computing wizardly to represent information and develop computer enhanced learning material. Multimedia learning basically integrates five types of media to provide flexibility in expressing ideas and creativity of students.

**How Multimedia Transfer the Information Effectively:** Multimedia holds greater promise in enhancing learning as well as in improving the quality of education. Multimedia holds greater promise in enhancing learning as well as in improving the quality of education. It also can stimulate the students mind and encourage learning through all sense because multimedia can combine so many media together. Multimedia enables students get a live vision of life's aspect and scientific factors. Any diagram can be explained in detail with 3D effect. It helps the student to understand the lesson clearly. Multimedia ensures flexible learning.

- **Engagement:** Multimedia uses of onscreen characters that can increase students engagement. This makes it easier to absorb the new information and facilitate the transfer of knowledge from working memory to long term memory. With the use of information in multiple presentation modes, the aids for text comprehension could conceivably be presented in textual form, in visual form, in auditory form, or in any combination of these presentation modes.
- **Quality Improvement:** Multimedia holds greater promise in enhancing learning as well as in improving the quality of education. Spoken narration combined with an onscreen visual guide that does not split the attention of the learner, but in fact can enhance the experience in certain instances.
- **Attention:** Sudden onset of pictures and animation is more effective for learning than static pictures alone, presumably by directing the learner's attention and focus to specific elements in the visual display. The sudden onset of having visual elements appear produces the same learning enhancements as an animated presentation. Thus, the procedure of flashing appropriate parts of the pictorial information as they are described in the spoken narrative is as effective as a full animation.

**Benefits of Multimedia for students:** The novelty and newness of any method always generates initial response and interest. The world of multimedia techniques, smart classroom concept, bag less schools, online examination system, all appear to be most attractive and alluring on the face of it, but to draw best out of these depends on the quality of receiver too.

- Multimedia application engages students and provides learning oppurtunites. Encourages deep reflective thinking and empower students to create meaningful

learning oppurtunites. It increases their motivtion and self- esteem.

- Multimedia is effective for students having difficulty in reading and writing. Researches tell us that the use of both words and pictures lets the brain to process more information in working memory.
- Multimedia encourages students to work in groups, express their knowledge in multiple ways, solve problems, revise their work and construct knowledge.
- Multimedia helps the learners in understanding the concept faster, creates interest, increasing their participation, makes classroom likely and boosts their achievement. It is very beneficial to students with special needs.
- Multimedia application allows students to function as designers, accessing and interpreting information and organising their personal knowledge and represent what they want to tell to others.

**Benefits of Multimedia for Teachers:** Teachers primarily require access to learning resources, which can support concept development by learners in a variety of ways and to meet individual learning needs. The teachers adequately equipped with latest techniques in the field of multimedia are able to create appropriate environment for teaching learning. Multimedia learning resources which support constructive concept development, provides the oppurtunity to the teacher to focus more on being a facilitator. It offers the teachers ample scope to present lessons. The teachers can fit the Multimedia right into their classroom to use it as a tool to reach a wide variety of learners. This offers teachers an immediate entryway into the students learning process. As teachers become familiar with benefits of using Multimedia in their classroom, they are bringing quality and creativity to their style of teaching. Incorporating Multimedia into classroom teaching not only caters to the context in which students are increasingly used to learning but also enables them to provide such an experience, which makes the students creative and innovative.

**Precautions while integrating Multimedia in Classroom:** As with any instructional tool, Multimedia may work better for some students than others. Several Researches on Multimedia has concluded that students learn in different ways and that information should be presented in different ways to engage students with differing learning styles. While Integrating Multimedia in the classroom we should have a Before hand knowledge of certain delivery characteristics like:

- Which specific individual differences variables have an effect on learning in Multimedia environments.
- Learners' knowledge structures should be activated prior to Multimedia exposure so that learners can apply their newly acquired knowledge and receive feedback.
- Which collaborative and competitive effects do Multimedia Information have on learners with different abilities and learning styles? For example, if learners can select information about individual words in different modes (e.g., visual, textual [verbal], and audio [verbal]), what do they choose?
- For what types of structures are visuals helpful (e.g. T. S. and L. S. of organs of plants and animal body, certain chemical and physical processes of day today life.) And how these visuals can be made effective.

- What is the effect of presenting both verbal and visual information (e.g. While conducting an experiment and understanding certain processes.)?
- What effect will a contiguous presentation of two different types of information have?
- What effect will a simultaneous presentation of two types of information have (e.g., audio plus textual, audio plus visual)?
- What effect does Multimedia learning have on overall learning?
- What do students report remembering about modes of information presentation?
- Which mode of information do learners use as retrieval cues for remembering/learning processes of science?

**Conclusion:** Adhering to any path blindly is always dangerous. Emulating the experience and trends of developed western countries without gauging and listing one's own potential and working half heartedly and that also on half baked ideas would not get us to the destination of desired improvement in the quality of higher education. Careful analysis with cautious optimism, latest techniques and fields in which these techniques are desired to be implanted is need of the hour. Different perspectives and factors affecting them should be minutely explored and analysed so that the execution and implementation of Multimedia techniques in the field of education can be effectively monitored.

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