Performance Enhancement of Teaching and Learning Process through Multimedia

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ABSTRACT
This paper focuses on how multimedia could enhance teaching and learning system. Features of multimedia based education and the teaching approaches that promote active learning. Multimedia could support constructing, developing, and evaluating students’ mental representations. "There is substantial research supporting the effectiveness of multimedia-assisted project-based learning. When multimedia-assisted project-based learning is used in a constructive, cooperative learning environment; students learn more and retain their knowledge better. One can observe the role of Multimedia in a sense that it becomes more attention-getting and attention-holding.

Keywords: Multimedia System, Educational Benefits of Multimedia tools, Performance Analysis, Multimedia system in Classrooms

I. INTRODUCTION
Multimedia technology has evolved tremendously and changed the way we look at computer. The first computers were seen as single purpose machines that solved incredible complex mathematical problems. With the rapid development of multimedia and internet one can easily predict that these technologies will change the life style and culture of many people.

Multimedia is more than one concurrent presentation medium (for example, on CD-ROM or a Web site). Although still images are a different medium than text, multimedia is typically used to mean the combination of text, sound, and/or motion video. Some people might say that the addition of animated images (for example, animated GIF on the Web) produces multimedia, but it has typically meant one of the following:

- Text and sound
- Text, sound, and still or animated graphic images
- Text, sound, and video images
- Video and sound

- Multiple display areas, images, or presentations presented concurrently
Multimedia also focuses on electronic media devices used to store and experience multimedia content.

II. WHAT IS MULTIMEDIA SYSTEM?
A Multimedia system include following features

- Information Representation
- Techniques of Information Storage
- Better Transmission
- Effective Search and retrieval
- Delivery
- Production/authoring tools
- Compression and format
- Multimedia information encoding and data interchange formats
- Digital video audio networking and communication
- Database Management available through multimedia assistance.
- Multimedia applications and application program interfaces, and multimedia end system architectures

III. MULTIMEDIA IN EDUCATIONAL INSTITUTIONS (COLLEGE/UNIVERSITIES)
In a few decades Multimedia becomes a popular tool used to improve the education of students in the India and other countries. Students use computers as intelligent tutors, for drills and simulations, and to employ multimedia presentation tools. Using multimedia presentation we can show or demonstrate anatomy of body, discuss about functioning of different argons of body in live environment. Student use of multimedia presentation tools, especially, is increasing in College across the nation. Colleges and
Universities are perhaps the most important & needy destination of multimedia. Multimedia will provoke radical changes in the teaching process during the coming decades, particularly as smart students discover they can go beyond the limits of traditional teaching methods. Multimedia presentation tools can be used by faculty to present lessons, and by students to learn topics and present what they have learned to others. Multimedia can involve text, image, graphic, sound, and animation simultaneously. Multimedia presentations can positively affect student achievement and progress. Using multimedia presentation in class room we can discuss the internal structure of body parts in a live environment.

IV. BENEFITS OF IMPLEMENTING MULTIMEDIA IN THE CLASSROOM (FROM AN STUDENT'S PERSPECTIVE)

- Educators can adapt the multimedia presentation for those students that may be physically challenged. Students with hearing impairments or physical disabilities will be able to use the hardware adaptations necessary to succeed with the programs.
- Language barriers can be knocked down by using any of the language transition facilities, thereby allowing students to use their knowledge in their own language and then translate for the educator to understand or vice-versa.
- Technology standards addressed – Technology is an important aspect of life today. Students must be ready to compete in a highly technological world.
- Access to limitless resources for teaching and learning – Teachers are no longer limited to textbooks as vast amounts of knowledge and teaching ideas may be explored.
- Student centred learning – Students will show accountability for learning when collaborative activities or project based learning is implemented through technology.
- One reason to implement multimedia into the classroom is because it is engaging. Multimedia allows us to make our lessons entertaining, therefore grabbing the attention of our students.
- The second reason is that it allows us to provide differentiated instruction. Having different ways to present information to our students allows teachers to meet the needs of all students.
- The third reason is that multimedia is a great way to make sure our lessons are organized. There are many tools that we can use to help organize our presentation, therefore making it easier to understand.
- The fourth reason is that we are exposing our students to the real world. Our students are going to be required to use multimedia in their jobs one day and by exposing them at an early age we are preparing them for the future.
- The last reason to use multimedia is that is can enhance concepts that are not as interesting as others. There are many ways that the web can turn a not so interesting topic into something the students are willing to learn.
- Students relate to visual interactions, especially if there is a game like atmosphere to the presentation. This method helps the students become more engaged in the project.
- Improves Traditional Audio-Video Presentations- Audiences are more attentive to multimedia messages than traditional presentations done with slides or overhead transparencies.
- Increase in comprehension- Full interaction with the user which creates greater comprehension and higher level thinking skills.
- Preparation for the future- Exposing students to this type of presentation will prepare them to use and understand this type of technology in the future.
- Teachers are able to step back and be the facilitator while students are engaged in group projects.
- Helps to prepare the teacher. A quality multimedia presentation makes sure that preparation has been done a head of time so that class instruction will be organized, include a variety of learning types, and be relevant.
- Helps students to retain and increase the learning because they are engaged, using more than one sense, provides scaffolding, visuals, and higher order thinking.

V. EDUCATIONAL BENEFITS OF MULTIMEDIA TOOLS (FROM AN EDUCATOR'S PERSPECTIVE)

- Multimedia allows teachers to address various learning styles in the classroom. Students can see, hear, and imagine what things feel like as multimedia is used to bring a subject to life.
- Teaches skills that will help our students become life-long learners and prepared for the job force.
- Provide students with opportunities to represent and express their prior knowledge.
- Empower students to create and design rather than "absorbing representations created by others."
- "Encourages deep reflective thinking."
- Create personally meaningful learning opportunities.

VI. PERFORMANCE ANALYSIS OF TRADITIONAL AND E-LEARNING METHODOLOGY

A study have been conducted on a group of 60 students. 30 students have been taught by traditional method i.e. black board & chalk and another 30 students have been taught by E-Learning techniques. Result of the performance have been shown to the graph given below.
It is interpreted by the above graph that student acquiring minimum marks are greater in number in traditional method and students getting maximum marks are greater in E-Learning methodology.

VII. PROJECT MANAGEMENT SKILLS

- Team dynamics
- Scheduling i.e. creating a timeline for the completion of the project.
- Efficient budgeting using multimedia tools
- Assigning resources and time to different parts of the project.
- Assigning roles to team members.

VIII. RESEARCH & DEVELOPMENT SKILLS

- Determining the nature of the problem and how research should be organized.
- Posing thoughtful questions about structure, models, cases, values, and roles.
- Searching for information using text, electronic and pictorial information sources.
- Developing new information with interviews, questionnaires and other survey methods.
- Analyzing and interpreting all the information collected to identify and interpret patterns.

IX. ORGANIZATION AND REPRESENTATION SKILLS

- Deciding how to segment and sequence information to make it understandable.
- Deciding how information will be represented (text, pictures, movies, audio, etc.).
- Deciding how the information will be organized (hierarchy, sequence) and how it will be linked.

X. PRESENTATION SKILLS

- Attracting and maintaining the interests of the intended audiences.
- Presentation skills can be enhanced tremendously using multimedia tools.
- Less communication skills are required
- Enrich the presentation contents by using multimedia with less effort.
- Mapping the design onto the presentation and implementing the ideas in multimedia.

XI. REFLECTION SKILLS

- Demonstrate our achievement/work effectively
- Evaluating the program and the process used to create it.
- Revising the design of the program using feedback.

XII. CONCLUSION

Multimedia, as product and application, can have potential roles in enhancing the teaching learning system. Faculty should be convinced of its importance, relevancy and practicality. Using the statistical analysis we have found that the performance of students can be enhanced by using multimedia tools. Multimedia applications engage students and provide valuable learning opportunities. Since multimedia presentations are relatively new, they replace antiquated materials that students today lose interest very quickly. This is great for mainstreamed classrooms.

REFERENCES


