



Role of Multimedia and Animation in System of Education in India.

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ABSTRACT:

Due to the epidemic, many countries' educational systems are currently operating entirely or in part remotely. Students will have to set up lessons using fresh teaching techniques to do this. That is, it is best to use engaging multimedia tools so that the learner can adjust to and easily understand the learning environment. The article's structure includes research on the organization and use of multimedia technology.

Keywords: Multimedia, distance learning, electronic resources, Animation use, Softwares, transfer of knowledge, graphics, animation, educational technology.

Introduction:

Education has historically played a significant role in both developed and developing societies. The cornerstone of a person's mental and personal development is education. The advancement of technology has led to an improvement in the educational system as well. With the usage of Internet technology, the idea of "Distance Education" emerged in the field of education. The expansion of the worldwide computer network known as the Internet has made it possible to improve the system of global education in new ways. First, the necessity for new forms and techniques of instruction has arisen due to a significant change in the technology supply of educational institutions and a wide access to secular information resources.

In addition to traditional teaching methods, remote learning is a brand-new style of instruction that was made possible by the integration of contemporary information and communication technology resources into the educational process. In distant learning, the teacher and the educator stay in constant contact with one another via specially designed training courses, command methods, electronic communication, and other Internet-based tools. Access to the global Information Education Network is provided by distance learning that uses Internet technologies.

All those who wish can continuously develop their talents through distance learning. Acquiring education During this training, the instructor uses interactive techniques and selects items that are educationally systematic on their own. Communicates with other members of the "vertical training group" and is directly supervised by the teacher. Receivers of education in the group.

Information System Technology (ATT) is still one of the major factors influencing how people live their lives and the evolution of society today. This is due to the rapid development of information system technologies in personality society, which is causing profound changes in all spheres of human life. All facets of human existence, including performance, communication, as well as the domestic and cultural realms, are covered by information system technologies. They are providing excellent chances for everyone to advance and raise their standard of living as well as offering doors for individuals to join the global information community.

Many nations have come to understand the immense advantages of information system technologies' quick adoption and advancement. The global information system technology industry is developing differently than other markets, and there are numerous prospects for this market to grow in the future. These nations' economies have grown sustainably as a result of the economic activities related to the sharing and application of knowledge and information. In other words, the dawn of a new era of knowledge-based economics.

A large number of electronic information multimedia encyclopaedias, reference books, textbooks, and guides are being produced with the intention of finding a fresh solution to the challenges that now exist in the process of creating education. Each of them is an expression from the hypermediacies that rationally links by fusing images and videos. A webpage hosting portions of them is available online. It was able to use contemporary ICT technologies to convey a wide variety of information since specialist multimedia technology emerged.

It is now necessary to develop into a competent, mature competitive cadre without fully grasping new information and telecommunication technologies or professional knowledge and abilities. The use of computer technology into the teaching of educational sciences should provide prerequisites and constraints that will allow for the creation of pertinent electronic learning materials for each course. It is crucial that these responsibilities are carried out in the educational direction of pedagogical higher educational institutions.

The electronic manual and its composition, which enables the integration of electronic information resources and the development of information infrastructure, were developed taking into account the educational and psychological requirements. Opportunities for science teaching have been created by the development of electronic manuals:

Audio-visual instruction of step-by-step instructional materials; - Possessing the knowledge, credentials, and abilities to produce electronic information resources; - Monitoring and assessing students' scientific knowledge. It may be argued that the development of an electronic manual aims to teach

college students how to produce their own electronic information resources. Thus, "multimedia" broadly refers to the Information Technology spectrum of different software and technical tools intended to have a greater impact on the user (reader, listener).

Emerging, cutting-edge multimedia technology is a tool that can be used in the educational process. Full-fledged multimedia, which incorporates full-text, image, voice, video, animation, and graphic data, was developed in the year 1986.

Currently, the term "multimedia" has a variety of meanings, including "illuminates the order of processing of various information," "adjusts technology using and implementing processing tools," "means of application," "product based on multimedia technology," "multimedia application," "computer hardware support," and "the generalised type of information is a special type of aggregation of static (text, graphics)," "the multimedia application," and "the multimedia" (speech, music, video, animation).

The reader has the potential to receive and interpret around 1,000 conditional signs in one minute, while "launching" about 100,000 visual organs, according to scientific investigations that were presented orally in the material. Therefore, it follows that the employment of multimedia tools in the educational process, which rely on the reception of information through vision and hearing, will be extremely beneficial.

According to its broad definition, multimedia (multimedia tool) is the creation, storage, processing, and production of many types of information, such as texts, images, plans, tables, diagrams, photographs, video and audio clips, etc. in digitized form.

Thus, it is clear that information is merged in a few different forms and given in a concise multimedia sentence.

Audiovisual information, multimedia:

- "overlying" (superimposing) visual information within the border of the screen area and within the preceding (next) screen region to "overlap" (silence) the visual information;
- turning off various audiovisual content;
- the use of animation effects;
- distortion of visual information (such as stretching or stretching an image, zooming in or out on a certain linear parameter);
- discrete audiovisual information transfer;
- tint the image to add colour;
- to indicate the area that has been chosen for "under the magnifying glass" consideration or for further movement of visual information;
- multichannel imaging that allows for the optional activation of an audiovisual "window" on one screen (for instance, a video film in one "window" and text on another);
- Because modern processing techniques like regular System, Event (video film) presentation are used, it gives the chance to speed up contemporary teaching and increase teaching motivation. Information is represented via multimedia programmes in a variety of ways, including text, voice-over, video, animation, and three-dimensional graphics.

For numerous subjects and educational orientations, electronic encyclopaedias, situational game simulations, and multimedia adequate training have currently been developed.

Digital multimedia is more interactive than conventional forms of information delivery due to this. They can also change the speed and quantity of repetitions used when transferring training materials at the same time. Additionally, the multimedia tool allows readers to engage and set themselves apart from other information delivery channels.

The open and massive teaching process can benefit from the usage of multimedia in a number of ways at once. Initially, multimedia instruction can follow cognitive learning strategies like information receipt and interpretation. Second, multimedia can increase students' motivation. In the conclusion, multimedia can aid in the growth of teamwork abilities and knowledge acquisition among pupils. A broader perspective to conceptual reading in students can be developed through the use of instructional multimedia technologies, which will lead to a deeper comprehension.

Research Method :

The term "educational media" describes forms of media that disseminate information for educational purposes. They are typically used only for teaching and learning. Multimedia is commonly understood to be any mix of text, images, sound, animation, and video that is transmitted and managed by the computer, despite the fact that individual definitions abound. Using this definition as a guide, interactive multimedia is any non-linear multimedia, or technology, that places user control ahead of computer control. This change in power enables the information flow to be specifically adjusted. Through menu-driven programmes, interactive multimedia applications, process simulations, performance-dependent programmes, direct manipulation environments, or combinations of various interactive techniques, these applications center on the user. Multimedia has generally been successful because it makes use of multiple senses, especially the two that are most important for absorbing information: sight and sound. Motion and music can also draw attention, pique interest, and motivate others as a result. However, multimedia by itself is only somewhat engaging and does not necessarily necessitate the user to be actively in charge of or paying attention to what is being displayed.

The fact that the concepts being portrayed are so minutely detailed is frequently one of the challenges in communicating science or engineering topics. Learners' comprehension of the material, whether it be the patterns of atoms or biological cells, is frequently constrained by the media being utilised to teach it. Science and engineering texts frequently include abstract, two-dimensional pictures that the reader must understand. Most frequently, as spatial ability declines, students have a harder time understanding such drawings and the small details they depict. Most often, the Materials in Focus programme provided students' first introduction to virtual reality and interactive technologies that were specifically connected to materials science. The Materials in Focus interface as a result.

Given the recognition of the significance of spatial ability, it is sense to list the main strategies that have been employed to improve engineering

students' spatial abilities and comprehension of engineering topics. A large portion of the literature and research focuses on problems including group and individual differences related to a range of dependent factors, like gender, cultural background, and other environmental aspects. However, more research is being done today to find suitable technology and useful methods that can be applied with some degree of assurance.

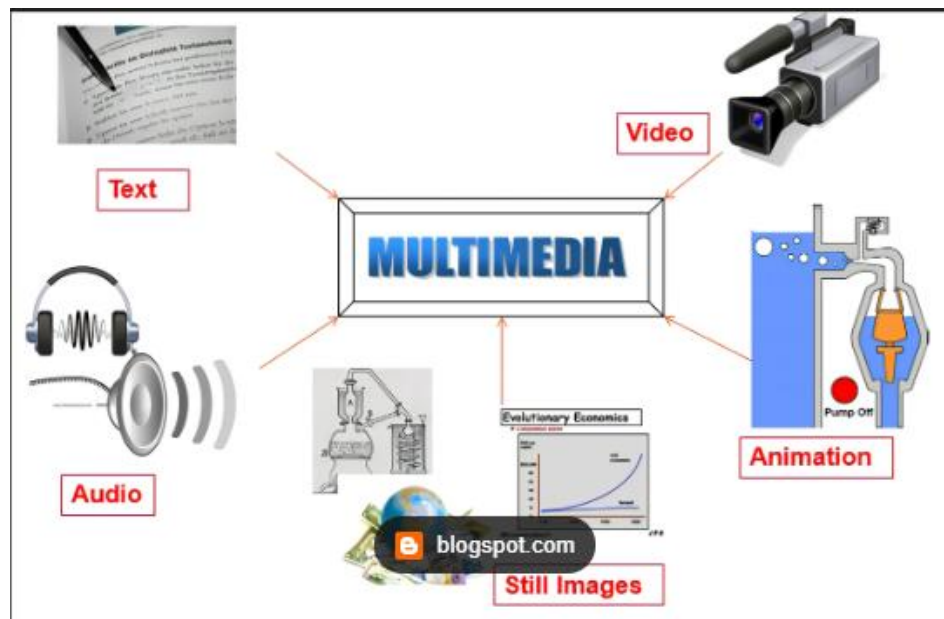
Computer-based multimedia is expanding in the broader context of education at the same time that technology is influencing engineering education. Researchers are examining a number of cause and effect interactions to determine why multimedia training is effective on a broader scale. However, it is not surprising that more efforts are being made in particular fields, including engineering education. Researchers in engineering disciplines have historically attempted a variety of techniques to teach and advance the spatial abilities of engineering students, albeit this has not been a key priority within the engineering curriculum. Each method has had varied degrees of success.

Computer-based multimedia is becoming more prevalent in the greater context of education as technology also affects engineering education. The reasons why multimedia training is successful in this broader sense are being examined from a variety of cause and effect interactions. But it comes as no surprise that more effort is being put forward in some fields, like engineering education. Researchers in engineering disciplines have historically attempted a variety of techniques to teach and advance the spatial abilities of engineering students, each with varied degrees of success, despite the fact that it is not a key focus within the engineering curriculum.

For instance, a picture of the Ganges in Varanasi can reveal a plethora of knowledge about the geography, geology, climate, history, and economics of the region in addition to being aesthetically beautiful. Similar to this, listening to a politician's speech on tape can help us identify important semantic details that are not immediately apparent from reading a transcript.

Multimedia components :

Multimedia components include text, graphics and images, audio, video, and animation. Within a multimedia application, the other three elements—audio, video, and animations—are moving objects or dynamic objects, whereas texts, photos, and graphics are three static (non-moving) elements.



Text

For communication in whatever medium, text is crucial. It incorporates the use of various text styles, sizes, hues, and backgrounds. Text can be used to link to other media or screens in a multimedia application. This is what hypertext is. You can either produce text there in the authoring programme itself or import it from outside text files. ASCII/Unicode, HTML, Postscript, PDF, Note, and Word processor are all examples of text.

Images and Graphics

Multimedia applications are appealing because of their graphics. Through still images, they assist with idea illustration. The two forms of graphics that are employed are bitmaps (paint graphics) and vector (draw graphics). Images that can be acquired from scanners or cameras are known as bitmaps. Computers can draw vector graphics because they just need a little amount of memory. Different types of picture formats exist, including the captured image format and the format used when storing images. The two fundamental characteristics of the acquired image format are the spatial resolution, which is defined as pixels by pixels (225x225), and the colour encoding, which is defined as bits per pixel. Both elements rely on hardware and

software for image input and output. When we store an image, we are actually storing a two-dimensional array of values, where each value is the data related to a single pixel in the image.

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Audio

The easiest approach to grab attention is with audio. Speech, music, and sound effects could all be necessary for a multimedia application. These are referred to as the sound element or audio. to pique the audience's curiosity. Audio is used for educational and training purposes.

Analog and digital audio are the two categories of audio. relates to the duplication and transport of digitally stored audio. the process of digitising and saving audio or music to a computer or CD.

Video

The process of electronically taking, storing, processing, sending, and recreating a series of still pictures that depict scenes in motion is known as video technology. Compared to animation, video tends to be more photorealistic in its visual sequences and live recordings.

Video uses all the components of multimedia to bring your goods and services to life, but it comes at a hefty price. Although downloading videos takes up a lot of data, they are particularly effective at communicating some types of information. Video aids in the realistic demonstration of tools and procedures in e-learning, among other things.

Animation

A static image can be animated to appear to be in motion.

Digital animation is used in multimedia. The two main categories of digital animation are 2D (2 Dimension) and 3D (3 Dimension) animations. Basic items can be animated in two dimensions. On the screen, these things move and are placed in various settings or positions.

The term "3D animation" describes the process of turning still images into moving three-dimensional digital objects. Examples of animations include turning and flying across the screen. Animations depend heavily on the size and file type of the graphics that are being animated because they typically involve graphics.

CONCLUSION :

The linear display of instructional material is typically carried out using multimedia tools, hypertext and hypermedia technologies, and principles of teaching. Such tools, which have a linear interface and can access multimedia information, have a lot more possibilities for interaction. Students can conduct information searches using hypertext multimedia technologies in open and remote learning in order to properly reply to inquiries. This method, unlike traditional books, enables the creation of learning materials that incorporate text, music, animation, visual modelling, finite statistics, video clips, and other multimedia information. When compared to the more commonplace older methods, multimedia technology in education offers some advantages:

- Enhances cadets' capacity for thought;
- The cadet experiences simultaneous sight and sound (the right and left hemispheres of the brain exhibit parallel activation);
- There is a chance to impart didactic materials through animations so as not to overburden the cadets during training.
- The size of the material taught to cadets rises in comparison to traditional techniques.
- The materials being studied can be demonstrated or replicated in modest amounts.

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