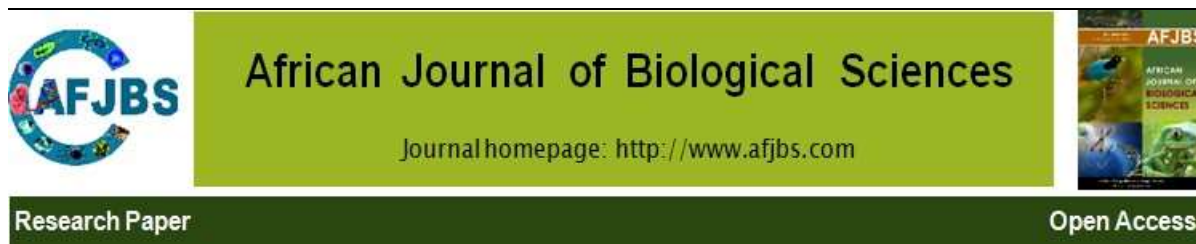


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EFFECTIVENESS OF MULTIMEDIA LEARNING TOOLS IN EDUCATION

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Abstract:- The present study aimed to explore the effectiveness of multimedia learning tools in education. This paper is review based, in which 25 studies included related full-text research, reviews, systematic reviews, research papers, guidelines, commentaries, and book chapters. Multimedia tools have become an important part of the education over the past few years. From a global perspective, India occupies an important position in the field of education. India is second in the world in the use of Multimedia tools in the field of education. The multimedia tools are changing the way we learn concepts and theories of education. Multimedia tools can be defined as the use of a combination of technology, content and instruction in the education system to make the education more effective and efficient. Multimedia tools is fun learning for all students and particularly effective for child learning as the innovative audio-video feature boosts the cognitive elements in a child's brain. Schools are significantly adopting Multimedia tools in their academic, and trying to make the classroom environment more inclusive and participatory.

Keywords: Multimedia, E-learning, Educational Technology, Multimedia Classroom

INTRODUCTION

An instructional scenario where the student is given control to examine the content at their own pace and in accordance with their own unique interests, requirements, and cognitive processes is one of the main applications of interactive multimedia for instruction. The main goal of interactive multimedia content is to completely alter the function of the instructor rather than to completely replace them. Therefore, multimedia needs to be incredibly well-thought-out and complex enough to imitate the finest teacher by fusing the best technological capabilities with a variety of cognitive process components. With today's multimedia courseware, a program should be adaptable and allow for modification once it has been

designed and integrated with the proper reaction. Multimedia as a tool can amplify and reinforce the effects of fieldwork and science classroom activities, even though it cannot completely replace experiential learning. We can successfully illustrate science ideas to our children and reinforce media literacy skills by utilizing new information platforms like podcasts, blogs, and streaming video and audio. Additionally, by allowing students to produce original content, we can reinforce literacy skills while also providing them with opportunities to demonstrate their mastery of a concept through the use of digital media tools like photo-sharing, video-publishing, and map-making apps. Almost all universities nowadays assert to have a plan in place for making the most of the potential presented by digital media and the internet to enhance and progress traditional education. The term "e-learning" was coined and generated publicity in the mid-1990s, coinciding with the introduction of the World Wide Web. Some predicted significant modifications to the educational landscape or the demise of traditional schooling altogether. It appears that there is currently no clear answer to the question of how multimedia technology might enhance learning through exploration and enjoyment.

MULTIMEDIA AND EDUCATIONAL TECHNOLOGY

Multimedia is a buzzword heard and talked about among today's educational technologists. Without being more specific, the term means "the appropriate integration of various media such as text, audio, and video," or it can refer to the development of mass-produced hardware and software packages for individual use and learning. Educational technology is the study and ethical methods to facilitate learning and improve performance through the creation, use and management of appropriate technical methods and resources. It is very simple and well defined as a set of tools to help student-centred learning. It is recommended that teachers become "consultants on the side-lines" rather than "thinkers on stage". Educational technology, also known as "learning technology", is the use of technology in teaching and learning. Material skills here are not limited to the use of new tools and technologies such as laptops, tablets and smartphones. Internet, Wi-Fi, YouTube, etc. are very popular with today's students for their learning skills, but there are good and better learning management systems, communication systems and good teaching and student population management, feedback and performance assessment methods etc.

OBJECTIVE OF THE STUDY

- The present study aimed to explore the effectiveness of multimedia learning tools in education.

LITERATURE REVIEW

This paper is review based; the researcher conducted a comprehensive literature review by searching electronic databases, including Web of Science, Scopus, Library, Research Gate, Google Scholar and Information Science Abstracts, using the keywords: Multimedia, E-learning, Educational Technology, Multimedia Classroom. This included 25 studies related full-text research, reviews, systematic reviews, research papers, guidelines, commentaries, and book chapters. The researcher also reviewed many review articles concerned with the same topic and also reviewed the articles that are available as abstracts only. The researcher excluded articles that could have a commercial background. Some of the reviews are given below-

Solanki, Ankit (2022) - Teaching and Learning through Multimedia Tools : A Systematic Review. This essay examines the systematic usage of various Multimedia teaching and learning methods. It examines how Multimedia technologies have demonstrated to be a practical means of ensuring that everyone has access to high-quality education and aiding children in performing better in school. The review process entails a comprehensive search of

pertinent scientific literature, selecting relevant studies based on predetermined inclusion criteria, analysing the literature, and synthesising. The studies have investigated the use of multimedia in learning and teaching. Currently available tools contain more than just text and images. They also include 3-D, animation, audio, and video. The study concluded that most Multimedia teaching and learning tools are designed with the subject's pedagogical content and the solution's users. On the other hand, the technology and components that went into creating the various Multimedia tools that various groups and themes used may be related to their success.

Abdulrahman, M.D. (2020) - Multimedia tools in the teaching and learning processes: A systematic review. This paper provides a systematic review of different multimedia tools in the teaching and learning processes with a view to examining how multimedia technologies have proven to be a veritable strategy for bridging the gap in the provision of unrestricted access to quality education and improved learners' performance. The review process includes conducting an extensive search of relevant scientific literature, selection of relevant studies using a pre-determined inclusion criterion, literature analysis, and synthesis of the findings of the various studies that have investigated how multimedia has been used for learning and teaching processes. The review examines various case study reports of multimedia tools, their success and limiting factors, application areas, evaluation methodologies, technology components, and age groups targeted by the tools. Future research directions are also provided. Apart from text and images, existing tools were found to have multimedia components such as audio, video, animation and 3-D. The study concluded that the majority of the multimedia solutions deployed for teaching and learning target the solution to the pedagogical content of the subject of interest and the user audience of the solution while the success of the different multimedia tools that have been used on the various target groups and subjects can be attributed to the technologies and components embedded in their development.

Samat, M.S. (2020) - The Effectiveness of Multimedia Learning in Enhancing Reading Comprehension Among Indigenous Pupils. The development of education is growing, and the technology-infused lesson is a powerful tool to attract pupils' attention, especially in reading. This approach can be seen as an adaptive movement to equip the learning process and the fourth industrial revolution. Nowadays, the demand of the technology-infused lesson is increasing as it is proven to help pupils learn the language better. Hence, this study explores multimedia learning as an approach to teaching reading comprehension. Besides, this study aims to answer two questions, which are the effectiveness of multimedia learning in helping indigenous pupils learn comprehension and which elements of media are effective in enhancing reading comprehension among indigenous pupils in Malaysia. Two instruments used to collect the data from 20 indigenous pupils in one primary school located in Kluang, Malaysia, and an action research design was used to achieve the purpose. The respondents were chosen through the judgment sampling technique. SPSS was used to analyse the data collected from the test, and thematic analysis was employed to analyse the semi-structured interview. The result shows that the implementation of multimedia learning in teaching reading comprehension is useful as the combination of multiple elements of media scaffold the process of understanding. On the other hand, audio is the least effective in helping pupils comprehend the information.

THE NEED OF MAKING MULTIMEDIA COURSEWARE

Multimedia is not only a powerful tool for presentations, it also offers unique educational benefits and can provide a way for students to experience a subject in a hands-on way. The

key to delivering this experience is to deliver graphics, video and audio simultaneously, rather than sequentially. Technology does not drive education. Their work is based on the learning needs of the students. By using multimedia, the learning program becomes more objective, motivating, flexible in time and space, does not affect distance, adapts to individual learning styles and strengthens cooperation between teachers and students. By using multimedia, the delivery of information becomes more effective, because teachers can present information through various media, which is an effective teaching method for the delivery of knowledge. Figure 1 shows the interactive multimedia resources that can be delivered to students in a variety of teacher-centered, student-centered, student-centered, and learner-centered courses using a combination of content and multimedia technology.

In the teaching style, the teacher is in control of the information given to the students and is responsible for the amount of information given to the students. Teacher-focused methods include presentations and demonstrations of information processing. In addition, students can retain and remember information and understand content through highly interactive activities, exercises, and tutorials. The multimedia course can be burned to a CD_ROM and loaded into the online classroom, leading to teacher-led mode where the course curriculum is open on the computer and students can follow the teacher's lectures on the computer.

In a learner-centered approach, students create their own knowledge and bring real-world experiences to the learning process, with the teacher as facilitator. Course media can be defined as an online file that is delivered over the Internet through a web browser, resulting in an online course where students can access the course content from a computer browser. Students can engage in learning at their own time and place, so the learning style is student-centered. This multimedia resource can be used to promote teamwork and active learning in a cooperative and collaborative process. It encourages higher levels of learning, increases comprehension and retention, and focuses on the development of the whole learner in a personal, self-directed way.

In the hybrid mode, teachers can easily incorporate teaching and learning methods whenever they find it useful to enhance and enhance the learning process of students. Here you can also download and send satellite and broadband technologies for distance learning. Meanwhile, students study the material in their own time and place and communicate with teachers via video conferencing.

USE OF MULTIMEDIA IN AN EDUCATIONAL SETTING

Let's look at some examples of what we call "creative use". Let's say a student wants to write a paper about forest animals. Historically, the main source of information has been encyclopaedias, which are usually found in libraries. With access to interactive multimedia, students can gather a variety of information about lions from CD-ROM sources. Students can also copy the outlines, skeletons and muscles of a lion and a tiger to learn what the two animals are. The multimedia approach allows students to add images of animals in their natural habitat and include them in their reports. Then, by adding the title and credits, the template has a new and creative way to convey its own vision.

Similarly, university professors can use multimedia CDs to improve the quality of their courses by preparing or reviewing information and adding intensity and understanding to lectures. Medical procedures, first aid training, paramedic training or doctor training are simple and integrated through multimedia.

The video disc allows doctors and paramedics to manage the entire process, analyse all possible outcomes and evaluate the possibilities before starting the patient's treatment.

MULTIMEDIA TOOLS FOR CLASSROOM

Technology is constantly changing the world around us. Academia is different. Students and teachers around the world are looking for interesting and innovative ways to make learning more effective, sustainable and relevant in the world outside the classroom.

- **Adobe Spark:-** Students can use existing templates for an assignment or as personal inspiration. Students choose design themes, drop in photos, add text, and more. Projects can be safely shared with peers and teachers. Step-by-step lessons help educators meet curricular objectives and add creativity to the classroom.
- **Casio:-** Casio's education solutions aim to deliver flexibility as they support active learning and collaboration. To help alleviate the challenge of technology set-ups, Casio's LampFree Network Model projectors offer a variety of features designed to reduce set-up time in the classroom and keep students focused on the curriculum. Casio's blog also offers tips and tutorials.
- **iMovie:-** With iMovie for iOS and macOS, students can browse video clips to create Hollywood-style trailers and 4K-resolution movies. They can even start editing on iPhone or iPad, then finish on a Mac. Students can unlock their creativity with green-screen effects in iMovie for iOS and macOS, placing themselves or their characters in exotic locations with a tap or a click.
- **SoundCloud:-** Students can use SoundCloud to create and share their own podcast, all from one place. With a Pro Unlimited plan, they can schedule releases, highlight their most popular podcasts, and more.
- **Book Creator:-** Book Creator is a simple tool for creating awesome digital books. Create your own teaching resources or have your students take the reins. Combine text, images, audio and video to create interactive stories, digital portfolios, research journals, poetry books, science reports, instruction manuals, "about me" books, comic adventures, and more.
- **Discovery Education Experience:-** Discovery Education Experience is a learning platform combining curriculum resources with teaching strategies personalized for your needs. Discovery Education Experience assists educators in creating real-world learning opportunities that engage all students and lead to improved academic achievement. The service's standards-aligned content is assignable and can be bookmarked and saved for later use and remixed to meet the varying needs of diverse student populations in a safe and secure environment.
- **Nearpod:-** Create interactive lessons in minutes—save prep time by importing existing lessons (pdfs, jpegs, ppts) and adding virtual field trips, collaboration tools, quizzes, polls, and more. Or, start in Google Slides add your favorite Nearpod activities.
- **Google Slides:-** Google Slides saves you time, keeps you organized, and allows you to connect and collaborate with your students in real time. Get started today with resources and tips from educators like you.
- **Soundtrap:-** Soundtrap for Education empowers students and teachers to explore creative sound recording in all subjects, for all ages and ability levels. It features integrations with major LMS systems and smart user management. Easy-to-use classroom features include assignments, lesson plans, and more. Teachers can give remote lessons through the virtual learning environment.
- **GradeCraft:-** This learning management system that helps instructors build gameful courses & encourages students to focus on the craft of learning. Flip the framework of your course so that everyone starts at zero: students earn their way up to success as

they complete milestones. Empower your students to make choices about when and what type of work they want to do: they choose how to demonstrate their learning.

- **Piktochart:** Choose from a library of over 800 professionally designed infographic, presentation, and print templates. Wherever your ideas take you, you might just get there faster with our ready-made designs. Add beautiful interactive charts, animated icons, images, and videos. Edit fonts. Change colors. Move things around. It's design on your terms – right from within our intuitive drag-and-drop editor. Put your visual work out for the virtual world to see. Print it. Share it directly to your social media accounts, or password-protect it for sharing with clients and colleagues. Whoever you want to reach, we want everything you touch to delight each life it touches.
- **Glogster:** Students can tell stories in classrooms, share experiences from a field trip, and express ideas using images, graphics, audio, video, and text—all on one digital canvas. Users can find information and inspiration with a constantly-growing library of more than 40,000 top-quality glogs from classrooms around the world. Categorized into 80 topics across 9 disciplines, these hand-picked glogs make up a rich and engaging resource.
- **Popplet:** In the classroom and at home, students use Popplet for learning. Used as a mind-map, Popplet helps students think and learn visually. Students can capture facts, thoughts, and images and learn to create relationships between them.
- **Explain Everything:** Create collaborative learning experiences where students and teachers can share thoughts and ideas in real-time. Strengthen leadership and collaboration skills by giving students the tools to create and share their own tutorials, animated stories, and presentations.
- **Canva:** Discover creativity for the modern classroom. With our simple drag-and-drop design tools we help teachers and students explore and express their learning with ease. Premium tools and content are available for free to schools.
- **VoiceThread:** Ed.VoiceThread is a platform where students develop critical thinking, communication, collaboration, and creativity skills. Educators can use VoiceThread's K-12 features for student presentations, conversational practice, professional development, rich assessment, and more.

BENEFITS MULTIMEDIA EDUCATIONAL PROGRAMS

A variety of multimedia training programs have been designed, developed and implemented as solutions to problems identified in many areas. There are many combinations of multimedia content and methods used to try to solve the problem. Many organizations and institutions around the world are working hard to explore multimedia implementation and multiple use. Benefits of Multimedia Educational Programs –

1. **Better Problem Solving:** One of the main benefits of multimedia learning is that it increases learners' problem-solving ability. This is due to the fact that multimedia learning is oftentimes more interactive and stimulating. As opposed to reading a problem in a textbook, learners are able to visually see the problem and therefore enhance their ability to solve it.
2. **Deeper Understanding of the material:** Another important benefit of multimedia learning is that it enables learners to develop a deeper understanding of the material. Two channels through which the brain processes information, are visual and auditory. When these two channels are deployed effectively, learners can understand the content quicker and more comprehensively. As learners have more information stored, they are also better able to recall the information at a later time. Therefore, multimedia enables learners to both gain and retain a deeper understanding of the learning content.

3. **Higher Positive Emotions:** It is well-known that emotions play a critical role in learning. When learners have more positive emotions, such as joy, interest, gratitude, and amusement, they are more likely to achieve better learning outcomes. Since multimedia learning has been shown to increase positive emotions, it can also improve learning.
4. **Access to Knowledge:** With the emergence of the internet, society gained access to a vast amount of information that was previously unavailable. While this increased access to information has had numerous benefits, one of the most pivotal has been the impact that it has had on education and learning. Because the internet includes seemingly infinite amounts of information from different sources and in various formats, it has greatly enhanced the potential of multimedia learning.
5. **Immersive Learning Opportunities:** Providing learners the opportunity to utilise more of their senses enables them to really immerse themselves in the material. And this is one reason why multimedia learning can be such a beneficial method. As multimedia learning incorporates visuals and audio, it enables learners to explore the material hands on.

CONCLUSION

According to the document, the change in educational work is being reinforced by integrated multimedia technologies, which encourage new educational models, the development of new concepts for content development and many creative ways of transmitting information to the learner. An important aspect of future research and research on the effectiveness of multimedia in educational contexts is that the future promises the availability of multimedia technologies for everyone, but with little use and discretion. In terms of learning ability, multimedia is important with different research styles, different perspectives and different management methods. Therefore, the Multimedia Community seems to be the best way to bring together researchers and educators from different backgrounds to improve multimedia education and improve teaching and learning.

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