Use of Multimedia Technology in Education and Entertainment

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Abstract—*The purpose of this paper is to highlight the uses of multimedia in different fields and assess the literature related to multimedia technology. An extensive literature survey was carried out to explore the works related to the multimedia using various online search tools and data were retrieved and then analyzed to highlight the uses of multimedia in different sectors. The study found that multimedia technology is being used in different fields. With the advancement in technology, new gadgets were used to make teaching-learning more attractive. Moreover, technologies revolutionized the world of entertainment with animations and high-quality sounds, videos, and images. The paper highlights the importance and uses of multimedia technology in different aspects of life.*

Keywords*: Multimedia, Technology, Education & Uses of technology.*

"1. Introduction"

Technology came into being with the appearance of sound cards, then compact disks, use of the digital camera, the video which made the computer an essential educational tool. Although the concept of multimedia technology is broad & it has infinite usage fields; it is a profound element as educational technology in addition to its use in medical & statistical domains & in establishing databases. Nowadays, multimedia expanded to become a field on its own. Multimedia has diverse meaning, depending on its use. It can mean the deployment of computers to deliver information like text, image, audio or video, but it could be also the capacity to manipulate and distribute content that includes an image, audio or video via a communication device. By definition, multimedia includes the design, implementation, manipulation, storing, and delivering various types of media to interested users **[18].** Enabling learners to solve a problem by means of self-study, teamwork and active involvement. Simulations, models and media-rich study materials like still and animated graphics, video and audio integrated in a structured manner facilitate the learning of new facts much more effectively. The interactive nature of multimedia provides the room to improve the traditional "chalk-and-talk" method of teaching environment **[7].**With more flexibility for students to get used to the individual learning strategy. It makes possible both the instructor and learners to work jointly in an informal setting. Furthermore, it encourages and enhances peer learning as well as individual creativity and innovation. Multimedia are being used for many reasons by different people in different organizations/offices/environment **[15].** Multimedia is all about adding various effects to make communication effectual. It is frequently heard and discussed among educational technologist. Internet and multimedia are changing the traditional methods of teaching and learning, and enlarge the sphere of dissemination of knowledge and information. As a result, it (multimedia) has become one of the often-referred media in education, culture and for the learning process. It has become one of the highly influential applications in every sector of personal, professional, and business environment. It also includes many components which can be accessed at the same time **(Arora and Lekhi,2002).** In addition to this, MOOC (Massive Open Online Courses) is an example, where multimedia learning enables the beginner to manage his or her own rapidity of learning. It is an online course aimed at indefinite participation and open access via the web. Besides traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students, professors, and teaching assistants. MOOCs are a recent and widely researched development in distance education. In an interactive multimedia presentation, learners are free to navigate through the contents and select the sections that they want to learn, thus optimizes the use of classroom time **[6].** Indicating multimedia has the strength of a high level of customization, in which it provides the users with several options to decide how materials (such as visual, audio and textual) are presented. Single multimedia courseware, therefore, can be adjusted to address different users' learning styles and needs. Apart from this, multimedia also plays an important role in the field of Libraries. Especially When

talking about the development of libraries i.e., present situation of the modern library system differs from all previous situations (the library technologies are undergoing active digitization). Consequently, learners have found new avenues for spending time – posting on social networking sites, instant messaging on mobile phones, viewing videos on Internet and mobile, online games and so on; the list is so long.However, it (multimedia) has opened multiple channels for transmission as well as providing valuable information in an affordable and easy way. The conventional book is slowly being replaced by electronic resources (electronic books, CDs, DVDs) [14].

"2. Multimedia in Various Fields"

With the development of technology, numerous applications are marked for Multimedia Technology. The advancement of technology has opened up newer fields for Application development. One such field, which is having tremendous potential and fall under the broad preview of multimedia, is virtual reality. Today, multimedia is used in every Industry. Multimedia became more popular after the mid-1990s when the price of hardware began to fall. Then people started using it in industry, business, education, entertainment and for other purposes. Today, we can find multimedia at home, in school, at work, in public places, such as libraries, and on the Internet.The broad categorization of multimedia Applications is discussed below.

Multimedia Usage in Education

Education encounters, in modern times, challenges in all aspects of social, economic & cultural life. The most important of which are over-population, knowledge explosion, philosophy development, the change of teacher's role, the spread of illiteracy, lack of staff, the technological development & mass media [1]. This led the teaching staff to use the modern teaching technologies to face some of the main problems, which education & its productivity encounter, by increasing the learning level which may be achieved through providing equivalent opportunities for all people whenever & wherever they are, while taking into account the individual differences between learners [20]. Although multimedia can be seen as one of the best educational techniques because it addresses more than one sense simultaneously, as it addresses the senses of sight & hearing. Multimedia includes a number of elements some of which are Texts, spoken words, sound & music, graphics, animations and still pictures. These elements were mainstreamed in a comprehensive presentation so as to provide effective education, which in turn will support the participation of the different senses of the learners in diverse syllabi. (Hadmin, 2000).They (elements) make the reading process a dynamic one instead of the written presentation of the texts printed in the book. Presenting different drawings & pictures supports the clarification of ideas & communication of information. Using different presentations like video clips along with maps or other kinds of presentations help to get the

information closer to reality. Adding music makes the idea clearer and it attracts the attention of the learners[21].In education, Teenagers have played computer games for years, but many multimedia applications combine education and entertainment and they let them visit virtual worlds or change the endings of films. Many computer games with, focus on education are now available. A simple example, in this case, is an educational game, which plays various rhymes for little kids. in addition to playing rhymes, the child can paint the pictures, increase reduce the size of various objects, etc [13].Multimedia helps teachers & learners look into topics from a broader perspective as each topic comprises enormous information and helps learners to remember & transfer their knowledge [10].Even [16]conducted a study entitled "A study of multimedia and its impact on students' attitude". The study aims at comparing the smart classroom with the traditional method of teaching. And also aims to examine the effectiveness of using interactive whiteboards, active board to increase student participation in the classroom. The researcher used the experimental method. Two groups of randomized matched subjects and post-test only designis used. The sample size was 40 IX grade students. In which 20 students were kept in the control group and 20 students were in the experimental group and used a questionnaire to measure the student's attitude. the rating scale consists of 20 items and 1 to 4 scales of four different types' responds- Strongly Disagree, Disagree, Agree and Strongly Agree. This rating scale provided information to determine student attitude toward the use of a whiteboard in the classroom. The results indicate that the students who participated in the survey enjoy the use of multimedia as an instructional tool and believe that it helps to provide additional opportunities for learning.Hussainet' el (2018)found out that multimedia plays different roles in libraries, it saves on space, money, maintenance, and operational inconvenience, etc. librarians have started using multimedia as a tool to train their staff in the new library technologies/applications and also to the users to provide training about using library resources. Nowadays a large number of photographs, audio recordings and textual material in the various collections are available in libraries. Multimedia is helping the librarians in integrating all the information from various forms/sources subject-wise and making meaningful multimedia databases both for day-to-day use and archiving. There are various kinds of multimedia systems/information resources available in libraries and information centers which include: i) CD-ROMs; ii) video discs (VD); iii) laser discs (LD); iv) audio video cassettes; v) web; vi) databases on servers; and vii) digital video. Many big publishers have now converted their reference books including, encyclopedias, dictionaries, handbooks, etc from the traditional print form to multimedia format. **Singh, (2016)** in his paper titled "Use of multimedia technology in Library", states that multimedia is one of the digitized information which is now being used by the users in the libraries. The main strength of the use of multimedia technology is its interactivity and has become a strong medium for training and instructions. At present most

of the publications are available with the multimedia application.[3]found out that multimedia has a positive effect on the knowledge and emotions of the students who study scientific subjects. There are various tools and resources which provide access to media you can use for research or teaching purposes, including media files you can edit and repurpose. For example, at some point in your research career, you will be asked to give a presentation. Then you will probably use presentation materials to accompany lectures and quite possibly in other teaching contexts. Software engineers often use multimedia in computer simulations for anything such as military or industrial training. It is also used for software interfaces which are done as a collaboration between creative professionals and software engineers.

Multimedia Usage in Entertainment and other fields

Multimediais not only widely used in education, advertising, and other promotional areas, but also fully playing its role in the entertainment industry. The entertainment industry has used this technology the most to create real life like Games. Several developers have used graphics, sound, animation of multimedia to create a variety of games. The special technologies such as virtual reality have made, these games just like experiences of real life. Many multimedia games are now available on computers. The children can enjoy these experiences, for example, they can drive cars of a different variety, fly aircraft, play any musical instrument, play golf, etc. Multimedia productions are also using the creation of many movies where the multimedia components are mixed with real-life pictures to create powerful entertainment atmosphere [19]. Also, can be considered as something diverting or engaging i.e. a public performance, a usually light comic or an adventure novel, that engages users in amazing experiences such as reading a book, listening to music, enjoying videos and playing a game. Researcher in his study says that analysts report that in February 2004, 51 million people were using Microsoft's Windows Media Player, Apple sold over 2,016,000 iPods during the 4th quarter of 2004 as compared to 336,000 one year ago, Jupiter Research estimates in 1.7 billion $ the 2009 online music market in the US, the gaming industry surpasses even the cinematography industry expecting to increase the sales up to 31.6 billion $ in 2009. a)finds that exhibition industry design, not supposed to limited by the planning and layout of space must be able to highlight the information organizers try to convey. To accomplish this mission, designers use multimedia tools and rich multimedia means to make the theme stand out, attracting the visitor's interest. The combined effect of plenty of beautiful pictures, professional dubbing, music, three-dimensional animation, virtual reality, and video clips offers the new audio-visual experience for viewers and provides an ideal channel for a large amount of information for modern people who focus more on efficiency[19]. The vivid means of multimedia (two-dimensional and three-dimensional animation, interactive animation, pictures, music, and video) is easier to display a variety of business philosophy exhibition halls and easy to be accepted by people of different ages and cultural levels. The entertainment industry is setting the standard for what today's audience find important and will pay attention to. It effectively reaches almost everyone sells billions of dollars worth of goods and culture to them. 'Edutainment and infotainment' have made education's traditional print-oriented teaching methods woefully obsolete(Curcio, 1995). When computer games started to be used for educational purposes on a large scale, what was designated under the coined term edutainment became seen as a solution for instruction [4]. Edutainment often referred to computer-based instruction that relied on some of the motivational aspects of a game, but focused more on learning and memorizing facts than on analyzing or engaging in other higher-level cognitive processing in Bloom's taxonomy [12].Thus, a mixture of entertainment and education give rise to edutainment. The main aim of this mixture is to support education with entertainment with an application compounded with educational aims and measurements and providing learners with the best possible results.The publishing industry has changed drastically because of the availability of Multimedia. The publications which are meant for the family such as newspapers, family Magazines, etc. are readily available online, that is in the multimedia form giving real-life experiences. For example, the online- news clippings are not only read but can also be experienced by seeing the video file associated with it, where a rich mix of sound, visuals, and movies is provided for publication [11].The business world has changed a lot over the past couple of decades, and this is mainly due to the increased use of multimedia advertising in business. In business, advertisers use virtual reality in multimedia applications to advertise their products in three dimensions (3-D). Using multimedia for graphs and tables is now the best way for managers to present company results. In industry, pilots learn to fly using multimedia simulations of real situations, and scientists simulate experiments with dangerous chemicals in safety.

"3. Conclusion"

Technology revolutionized our life and now is a vital part of our life. The use of various means of multimedia technology helps us to gain knowledge or provide information to us. The only a single medium of information is just not sufficient to provide meaningful messages to a variety of spectators. Such as while talking on the telephone to a friend, we can hear his voice but cannot see his face. When you write a letter to a friend describing him about your journey, only the text can be read. You cannot hear the voice of someone. If you send him a picture along with the letter, he can imagine the fun you had during your journey. However, if you send a video clip, he could visualize more about the fun you had. So, the more mediums of information you use the impact of the communication increases. On the other hand, the focus has shifted to serious games, designed to promote deep learning by increasing the quality of students teaching experience to bring a positive learning environment and students with being enthusiastic about learning by creating an enjoyable

atmosphere in order to make subjects more enjoyable and make learning permanent. While the teaching environment is being arranged, some preparations which attract students' attention should be made. Lesson presentation can be brought about more pleasantly and more easily by material developing with existing materials**[9].**

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