

SKILLS REQUIRED BY STUDENTS FOR SELF - RELIANCE THROUGH THE KNOWLEDGE OF MULTIMEDIA IN ANAMBRA STATE

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Abstract

Changes in economic and social fundamentals call for acquisition of relevant skills, knowledge and capabilities among students. This paper x-rayed the concepts of multimedia, uses of multimedia in education and training, business and industry, entertainment and games. Emphasizes were laid on the multimedia skills required to become a competent artist and career opportunities in multimedia that can assist students for self-reliance after school. The paper also highlighted some of the challenges in teaching and learning multimedia among others; inadequate funding, poor power supply, and lack of expert human resources. All these challenges have to be overcome so that multimedia based teaching and learning can be conducted properly to enable students acquire multimedia skills and knowledge effectively. It was concluded that career opportunities in multimedia could aid students for self - reliance after school with adequate knowledge of multimedia. The study recommended among others that governments should provide adequate fund to education sector, employ qualified teachers to teach multimedia as courseware and provide adequate multimedia tools in schools to enhance teaching and learning of multimedia in schools and colleges

Keywords: Skills, Students, Self-Reliance, Knowledge, Multimedia

Introduction

Information Technology (IT) comprised the knowledge, skills and understanding needed to employ information and communication technologies appropriately, securely, in teaching, learning, and employment. Information and communication technology includes Multimedia. Multimedia is a multiple media which refers to technology that presents information in more than one medium for instance, text, still images, moving images and sounds. An instructor can make a multimedia presentation in the class through combination of power-point with audio music and video clip of an event. Multimedia, according to Anigbogu (2015) is defined as an integration of multiple media elements 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. To Okoye (2015), multimedia is the integration of different kinds of media into one presentation.

The changes in economic and social fundamentals resulting in high level of unemployment among youths trigger the need for acquisition of relevant skills and knowledge through multimedia. High rate of unemployment in the society may be attributed to lack of relevant skills and ignorance of the career opportunities in multimedia one required for self reliance. The benefits of multimedia in education and training, business and industry, entertainment and games cannot be over emphasized. Effective multimedia presentations incorporate user participation or interactivity. Interactivity allows the user to choose the information to view, control the pace and flow of information, and respond to items and receive feedback. In fact, multimedia is any combination of text, images, illustrations, animation, sound and video for the purpose of communicating information electronically. Initially, it was used almost exclusively for computer games.

An interactive multimedia presentation is typically organized as a series of related pages. Each page presents information and provides links or connections to related information. These links can be video sound, graphics, text files and to order pages and resources. By clicking special areas called button on a page, user can make appropriate links and 'navigate' through a presentation to locate and discover information. So, there are several buttons on a page. An operator can select the buttons as desired to direct the flow and content of presentation. Recently, interactive multimedia is now used in business, education and even at home. In education, interactive multimedia is used in-class presentations and demonstrations, long distance learning and online testing over the internet. At home, multimedia is mainly used for entertainment. Thornburg (2011) describes multimedia as the use of more than one technique (text, audio, still images, and moving images) to tell a story. Business used multimedia for high quality interactive presentations, product demonstrations and Web-Page Design.

Multimedia skills required to become a competent artist include: creativity skill, communication skill, management skill and problem-solving skill. Although one needs creativity in all other career paths, creativity remains the crème de la crème in Multimedia Arts. Career opportunities in multimedia that can aid students for self employment after school are highlighted, thus; Interpreter/translator, film/video editor, technical writer, video producer/director, public relation specialist blogger, sound engineer and Artist/illustration. High rate of unemployment among youths despite multiple career opportunities in multimedia triggers this write up.

Conceptual Framework

Multimedia

Scholars shared their varying opinions on multimedia according to their understanding of the subject matter. Multimedia, according to Anigbogu (2015) is defined as an integration of multiple media elements (audio, 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. To Okoye (2015), multimedia is the integration of different kinds of media into one presentation. For example, a multimedia presentation may include video, music, voice, graphics and text. Thornburg (2011) describes multimedia as the use of more than one technique (text, audio, still images, moving images) to tell a story. A multimedia news story, then, is any piece that uses two or more media to tell it. Pavithra et al. (2018), stated that

multimedia is the electronic media usage with six components: Audio, graphics, text, animation, video, and interaction.

Self reliance: This could be seen as personal dependence or self rule. Self-reliance is the social and economic ability of an individual, a household or a community to meet essential needs (including protection, food, water, shelter, personal safety, health and education) in a sustainable manner and with dignity. Ability to be self-employed in a business or service so as to be free from external control and constraints.

Theoretical Framework

i. Multimedia Learning Theory

Multimedia learning theory was originally developed by Richard Mayer in 1997 as a cognitive grand theory to explain how multimedia help students to learn better. According to Mayer, the cognitive theory of multimedia learning is based on three cognitive science principles of learning that assist students to learn multimedia more effectively. Firstly, the human information processing system has two channels for visual/pictorial and auditory/verbal processing. This principle states that students may learn better from images and words than just words. Secondly, each channel has a limited capacity for processing (i.e. limited capacity assumption) and they try to understand the information by creating mental representations from the information sources. The last principle states that active learning entails carrying out a coordinated set of cognitive processes during learning such as filtering, selecting, organizing and integrating information based on existing knowledge.

The cognitive theory of multimedia learning specifies five cognitive processes in multimedia learning: selecting relevant words from the presented text or narration, selecting relevant images from the presented graphics, organizing the selected words into a coherent verbal representation, organizing selected images into a coherent pictorial representation, and integrating the pictorial and verbal representations and prior knowledge. Multimedia instructional messages should be designed to guide appropriate cognitive processing during learning without overloading the learner's cognitive system.

Moreno and Mayer (2002) also stated that the process of transferring knowledge from two channels (audio and visual) could be successful when information is integrated with existing knowledge. So, when students are actively processing incoming information, they also use their existing knowledge to help the process. This theory enables multimedia instructors to teach the students from the previous knowledge to the unknown. Combination of images and words will help students learn multimedia better than words only.

ii. Generative Theory of Multimedia Learning

The Generative theory of multimedia learning (Mayer, 1997) describes multimedia in a way that focuses on presenting information in dual mode without increasing the cognitive load to enhance learning. In brief, the Generative theory suggests that students learn better from words and pictures than from words alone, since dual presentation of information help students construct verbal and pictorial mental models together and build connections between these models rather than constructing either a verbal or pictorial mental model. Within the frame work of the theory, Mayer later introduces several design principles and revises those principles in Moreno and Mayer (2002). Mayer and Moreno (2003) summarized the principles of the Generative theory. The principles relevant to this study are highlighted thus: The multimedia representation principle states that is better to present a learning material in words and pictures than merely in words. The contiguity principle emphasizes that it is better to

present corresponding words and pictures simultaneously rather than separately when presenting a learning material. Finally, the coherence principle states that multimedia explanations are better understood when they include very few extraneous words.

In relating this theory to the present study, “Skills Required by Students for Self-reliance through the Knowledge of Multimedia in Anambra State”, yielded a representation principle, contiguity principle and coherence principle for Art work, designing and using multimedia to minimize the cognitive load and assist students learn and acquire new skills.

Uses of Multimedia

Education and Training: Multimedia in education has been extremely effective in teaching and learning. Multimedia is very vital in teaching students a wide range of subjects. When teaching or lecture becomes extremely informative, pictures, video, images can boost learning and aid students to retain such information effectively. In education and training industry is by far the most active area in multimedia (Okoye, 2015). Multimedia technology provides flexibility for students which enhance learning. Most people agree that “learners retain about 20% of what they hear; 40% of what they see and hear; and 75% of what they see, hear and do”. Multimedia programs provide teacher with an exciting new tools for stimulating class discussions, conducting student research, and promoting teamwork. The interactive nature of multimedia promotes active participation and affords user control over the pace and flow of delivery. Educational multimedia also called Courseware, allows adult learners to determine when and where they want to access training, whether at home, work or school. Other multimedia resources related to education include multimedia reference materials, electronic textbooks and course supplements, online lecture notes, interactive testing and virtual simulations.

Business and Industry: The Uses of multimedia in business include interactive presentations, product catalogues, annual reports, safety manuals, employee handbooks, and Electronic Performance Support System (EPSS).

Entertainment and Games: Although educational courseware is the most established multimedia product, the entertainment and games industry have gotten the greatest commercial success. Multimedia CD-ROMs as glossy packages are now common place in local software stores. Not only do these multimedia materials help learners, they promote computer literacy at a very young age. Multimedia games are also used in training, entertainment and skill acquisition and development. The precise equipment to be used for multimedia will depend on the level of involvement. To experiment with the technology, multimedia students need only purchase a personal computer capable of playing back multimedia. Creating multimedia content requires a more advanced system configuration.

Multimedia Presentation Software

Presentation software allows user to create multimedia slide- shows, animated business presentations, and informational applications. Software in this category uses a slide-based, timeline metaphor for sequencing a multimedia presentation. This linear format is supplemented by outlining and sorting tools, which allow user to easily rearrange and navigate the slides in a presentation. One can also specify hyperlinks for jumping directly to a specific slide. Some of the more advanced multimedia features that can be incorporated include path animation, object and slide transitions, background music, and video clips. In addition to the program files, most presentations, software packages also include clip art media, bit –mapped

images, sound and video clips and graphical elements such as buttons and icons. Products in this software category include Adobe Persuasion, Astound, Asymetrix Compel, Corel Click and Create, HyperCard, Lotus Freelance, and Microsoft Power Point.

Multimedia Authoring Programs

Multimedia presentations are presentations that incorporate multiple media elements in its content. Such elements could include: text, graphics, audio, music, video in the final multimedia output. Multimedia presentations are enriched with all these elements so as to help user to fully understand and appreciate the message in a given presentation. To produce a multimedia presentation, multimedia software is used. Widely used multimedia authoring programs include:

Micro media Director, Author ware, Tool book, Dream weather etc.

Multimedia programs are very useful in the production of educational materials, games movies, documentaries etc. It should be noted that the multimedia materials are largely interactive in their framework (Okoye, 2015).

Developing Multimedia Presentations

The creation of interactive multimedia presentations follows several steps:

Plan, Design, Create and Support. The same development process is followed regardless of the complexity and size of the project. These steps are discussed as follows:

- **Plan:** This determines the overall objective of the project, the resources required and the person or team who will work on the project. In to specify objectives and set project is needed.
- **Design:** Create a story based board for the project. A story board is a design tool used to record the intended overall logic, flow and structure of a multimedia presentation. It consists of a series of rectangles, each representing a single page in the presentation. Each pages content, style and design along with the links to video, audio, graphics and text, or any other media is specific.
- **Create:** Use an authority program to create the interactive multimedia presentation once the different elements specified in the story boards, such as graphics, sound and video are available.
- **Support:** Evaluate effectiveness, identify errors and effect corrections where needed.

Multimedia Skills Required to Become a Competent Artist: These skills include: Creativity skill, Communication skill, Management skill and Problem-solving skill.

Creativity Skills

In pursuing a Multimedia Arts degree, a creative mindset is the primo skill an individual must have. Although one needs this in all other career paths, creativity remains the crème de la crème in Multimedia Arts. With all the monotonous ideas available in the market, one needs to step out and add personal unique flavor. Shun dull ideas and squeeze out the best creative juices.

Communication Skill

Even though media gadgets and tools take a lot of time, good communication skills still matter to be successful in the field. Express your ideas out and deliver your views and opinion well. Communication skills help you to expound your thoughts with your peers and vice versa. You

must know how to listen intently and return an interesting response. This gift of gab will surely bring your career to great heights.

Management Skill

Management skill is the hone needed for good art work. Multimedia careers can be very tough and demanding, hence one must manage the time and prioritize errands. Deadlines and projects consume time and may dare an individual to give up his social life. However, with management skill as one of the hallmarks, one can finish tasks well. Flexibility is also the key.

Problem - Solving Skill

A successful Multimedia Artist has the initiative to solve intricate problems. With logical and analytical reasoning skills, one can easily adapt to changes and sudden snags common in the Multimedia Arts field. The fact is that an idea can face glitches; therefore an Artist must put possible solutions on the table.

Career Opportunities in Multimedia

Developing a multimedia production requires many skilled and talented people. There are jobs in multimedia industry which can assist students settle for self-reliance after school if they can acquire the relevant skills and knowledge involved in multimedia. Some of the career opportunities are listed below:

Interpreter/Translator, Film/Video Editor, Technical Writer, Video Producer/Director

Public Relations Specialist, Blogger, Sound Engineer and Artist/Illustrator

Interpreter/Translator: Formal education is less important than language skills for this job. Interpreters and translators need to have native-level proficiency in both languages, the language of the original text or speech, and the language of the finished product. Translator who work with the written word, must also have an expert-level knowledge of grammar and style in both languages.

Film/Video Editor: The explosion of online and mobile video content had led to a corresponding increase in demand for film and video editors, who take footage and transform it into a finished product. Editors must be adept at using film editing software programs and generally, have a degree related to film or broadcasting.

Technical Writer: Technical Writers create everything from instruction manuals to articles to documentation, and tend to work in STEM- related industries. To do this job, you'll need a bachelor's degree and experience with a technical subject, as well as the ability to explain complex concepts to a variety of different audiences and hit deadlines.

Video Producer: If you spend any time online, you've probably noticed that video is taking over your favourite sites. Someone has to create those eye – catching, meme-inspiring video moments; and that person is Video Producer. As the internet video boom continues, expect to see more of these jobs on the horizon.

Public Relations Specialist: If you have fantastic communication skills and are comfortable talking up the merits of your favorite brand or product, a career in PR might be the perfect fit for you. PR Specialists typically work for advertising agencies, public relations firms, or large companies with in –house PR teams. They design and execute media strategies to keep their employer's products and services in the news – in a good way.

Blogger: Companies often employ bloggers as part of their marketing strategy; engaging blog provides a friendly public face for the company, while potentially helping the organization's ranking on Google and other search engines. Writers who work primarily on blogs have to be to turn out attention – grabbing copy that adheres to the organization's voice and style guidelines, while keeping social media and SEO Principles in mind.

Sound Engineer: Sound Engineers work in a variety of different environments, from recording studios to stadiums to theaters, recording sound files...They also often maintain recording equipment. Sound engineers have variable schedules, depending on the needs of their clients.

Art Director: Art directors design visual concepts for promotions and products. They may work in print, online, television, and other media. Depending on their industry, art directors may have previously worked as graphic designers, photographers, or illustrators. To succeed at this job, you must be able to communicate well and manage a team of artists, as well as having proficiency in relevant design software.

Content Strategist: The occupational outlook for editors might be pretty poor – the profession is expected to decline by 3% over the next few years, according to the Bureau of Labour Statistics - but that doesn't mean that those skills are out of demand. Tech –savvy - Editors who don't mind learning how to use Google Analytics and basics of SEO can transition themselves from editorial management roles into this relatively new occupation, and earn a good living doing it.

Social Media Specialist: If you already spend most of your time on Twitter, Instagram, TikTok, etc., the good news is that it doesn't have to be a waste time. If you're willing to embrace the strategic marketing side of social, you might be able to turn your passion into career. Just be advised: In addition to a bachelor's degree and plenty of social media know-how, this job requires tact and discretion.

Challenges in Teaching and Learning of Multimedia

Some of the challenges facing teaching and learning of multimedia are discussed below:

- Inadequate funding
- Inadequate availability of digital tools/Effective utilization
- Poor Power Supply
- Human Resources

Inadequate funding: Education requires adequate financing for quality teaching and learning of multimedia. There is need for adequate fund allocation to education sector as a vital condition for quality in education and national development for self reliance. There is inadequate provision of fund to schools by the government. According to Ejimofor, Igboamalu & Enwezor (2016), financing education in Nigeria was seen as topical issues of interest among educational administrators, policy makers and planners because of the realization that no education programme can be implemented without adequate fund. Learning environment is crucial to learners, hence adequate funds should be provided to education administrators to enable them meet with the school needs; equipment, digital tools, create and maintain conducive class environment for effective teaching and learning of multimedia in schools.

Onuselogu (2015) maintained that lack of sufficient funds and the escalating cost of financing the education system have placed the government in a sort of dilemma. However, education managers should identify various ways of raising fund in their schools to maintain the quality in education in schools.

Inadequate Availability of Digital Tools and Effective Utilization: Availability of multimedia digital tools in schools and effective utilization of them are importance tools for academic excellence as they boost teaching and learning activities. Nwakpa (2011) maintained that adequate provision of material and human resources in schools are *sena quo none* to effective and efficient school administration and academic performance. So education administrators must ensure effective utilization of the digital gadgets by teachers and students. However, effective supervision is necessary for effective utilization of material resources – especially in multimedia training.

Poor Power Supply: Lack of enough electricity supply may hinder effective teaching and learning of multimedia. The teacher may not have easy access to the needed information. There should be a stable power supply. Solar system or uninterruptible power supply should be installed for effective teaching and learning of multimedia.

Human Resources: Lack of expert human resources and availability of multimedia personnel are among the challenges facing the teaching and learning of multimedia. Qualified human resources are very important factor in the school system. The quality of human resources matters a lot because any educational development hinges on them. The teachers and instructors are the ones, who interpret the aims and goals of the society. Taiwo (2009) the teachers as a facilitator of learning has a lot of impact on the child and the society as a whole.

Conclusion

It was concluded that skills required by the students for self-reliance could be achieved through the knowledge of multimedia. Multimedia games are also used in training, entertainment, skill acquisition and development. Multimedia technology provides flexibility for students which enhance learning for self reliance.

Recommendations

1. There is need for the governments (Federal, State and local) to provide sufficient funds to education administrators to enable them meet with multimedia tools.
2. Availability of multimedia digital tools in schools and effective utilization of them are important tools for academic excellence as they boost teaching and learning activities.
3. There should be a stable power supply. Solar system or uninterruptible power supply should be installed for effective teaching and learning of multimedia.

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