

Learning for transformation: Incorporating multimedia instructional-aids in teaching/learning music in Nigerian schools

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Abstract

This study stems from the fact that students easily get bored during classroom activities due to their low attention span usually connected with the traditional chalk-and-talk teaching system. Particularly, it investigates the effect of using multimedia instructional-aids in the teaching and learning music in Nigerian schools. The study involves two classes in a secondary school in Awka, Anambra State, Nigeria. One of the classes is the experimental group and the other, the control group. Forty (40) students make up each of the groups. The principles of the cognitive theory of multimedia learning, which postulates that learners learn better when words, materials and other activities are involved than in a situation in which mere words apply, have been applied. The result of the study is that there is a very impressive performance of the experimental group compared to the performance of the control group. Based on this, the study concludes that because multimedia instructional-aids arrest attention and sustain the attention towards achieving innovative teaching and transformative learning, they should be created, produced and be encouraged for use in teaching and learning of music in Nigerian schools.

Key words: *music, learning, multimedia, innovative teaching and transformative learning*

Introduction

Teaching and learning exercise has gone beyond traditional mode of learning which is essentially modeled on the behavioral learning perspective where the teacher controls the instructional process and is regarded as the source of expert knowledge, which is communicated to the students through classroom teaching environment. In this type of teaching, the teacher decides how much information is to be delivered to the learners, while the students remain passive and obedient recipients of knowledge and information and play little part in the learning process. However, with the use of multimedia: audio-visual technologies such as television, projectors, and musical instruments, etc, the scenario changes. Learning content can be presented with the use of multimedia and other instructional materials and delivered in a multi modal environment thus enabling the learner to interact with the content using the learning mode suitable to them. This method of teaching fosters a two way communication or interaction between the learner and the teacher. Learning in this way, takes place at the learner's own pace, depending on the learners' interest and assimilation rate. This mode of learning is student centered which will cater for individualistic needs in learning unlike the chalk-and-talk method.

The formative years of the child is a very crucial one and most impressionable because the learning experiences provided during these years both in school and home have a predominant influence on the future behavior of the child. Learning is an integral part of education which should aim at preparing the learner for the future and ought to extend to all aspects of life for a learner to be a balanced individual. Teaching and learning experience need to be an engaging one that stimulates the

learners, challenges them with authentic learning experiences and motivate them to seek, integrate and create knowledge. Over the years, several researches that have been carried out show that children have short attention span (Ikibe, 2002; Ashley, 2010 & Ojukwu, 2013). Their attention span begins to wane between twenty to thirty minutes. In teaching and learning environment, students can become bored easily not because of the subject itself but owing to the method of instruction adopted by the teacher. Teaching carried out in basic schools should be such that would spark the students' interest and inspire them to keep learning and take pride in their accomplishments. The teaching and learning in the 21st Century is meant to revolve around learners and not the teachers whose skills and competencies ought to be essential to engage students in meaningful activities through various innovative and transformative approaches.

Researchers have shown that a large percentage of learning occurs through the sense of sight, touch and hearing therefore, planned use of audio-visual aids and other instructional materials help to improve teaching and learning (Gardner, 1998; Le Doux, 1998; & Marshall, 2004). At the basic level of learning, teaching should involve as much as possible sensory experiences of all kinds because all these contribute to strengthen and enrich the child's perception. Teaching at this level should be geared through multimedia system such as audio-visual aids (pictures, charts, maps, globes, diagrams, flannel graphs, sound recordings) which are basically materials of sight and sound. These materials offer a variety of experiences which stimulate the senses and promote self-actualization in children. Audio-visual aids reinforce the spoken or the written words with concrete images and thus provide rich perceptual experiences which are the basis of

learning. A visual presentation adds variety to teaching and breaks the monotony of verbalization in classroom instruction. A visual presentation of an idea or a concept using picture helps children to develop mental images of the object under discussion. A mere verbal presentation cannot serve this purpose. Seeing, touching and hearing together can be more convincing and effective than just hearing. A child gets bored with words but loves to look at pictures, manipulate instruments of different kinds presented before him.

Multimedia instructional devices have been in existence in Nigeria but have not been fully integrated in the Nigerian educational system. However, it is possible to find a few Nigerian parents who are aware of the inherent advantages that accrue to the development of their children when the children have access to multimedia instructional materials such as instructional videos. Unfortunately, most of these videos are designed to represent Western educational tradition and are not as diversified as they should be to meet the many instructional needs in Nigerian schools. For instance, scarcely would one find those designed for music pedagogy.

This work therefore draws attention to the significance of multimedia instructional materials in general but more particularly in music pedagogy. It argues that the full integration of multimedia instructional materials in Nigerian schools would stimulate interest to learn and intensify learning in case emphasized here, music. On this premise the following questions are crucial to this work:

- What are the prospects of integrating multimedia instructional-aids in teaching and learning of music in Nigerian basic schools?

- What is the difference between the performance of students who learn music with multimedia instructional-aids in schools and those who do not?

These questions would be attended to by recourse to the principles cognitive theory of multimedia learning. More about this theory would given attention later.

Overview of relevant concepts

Multimedia

According to Palmer and Young (2003:13) Multi is a suffix in a compound word, which means many or more, meaning ‘that which is composed of more or many things.’ Multimedia can be variously defined and interpreted in different human activities. In a layman’s view, multimedia can simply be seen as component of two or more mediums, it is not important whether the components are of the same or different sensory compartment. In other words communication can also be said to be multimedia since it involves audio and visual sense by which the information is acquired. Mayer (1998:2) enumerates different interpretations of multimedia within different contexts:

For some people, multimedia is a presentation of information by the computer of: text, graphics, animation and sound. For others, multimedia means a presentation in which a group of people sit in a room watching images on one or more screens and listening to music or an orator.

Going by Mayer interpretation of multimedia, so many things come to play such as: Watching television, VCR or DVD can also be called multimedia experience. PowerPoint presentation which involves a person presenting slides off the computer onto a wider screen and talks about each slide is a form of multimedia. Chalk and speech which involves the teacher writing, drawing, illustrating on the blackboard and verbally explaining the lesson is also a form of multimedia. Textbooks can also serve as multimedia since it consists of printed text and illustrations.

Many authors also gave their own definitions of multimedia thus: Jerram and Gosney (1995:5) comment, 'Multimedia is a clearly based phenomenon which has its applicability and impact in business, education, entertainment and personal creativity.' For Simons (2000:5), it is 'an artistic form in which several different artistic expressions are fused and connected: visual, musical, theatrical and dance, where modern technical media are used: photograph, film VCR, sound recording etc.' Multimedia 'represents information to more than one medium,' (William, Sawyer & Hutchinson, 1995:370). Multimedia is 'a system that unites two or more media into one product or presentation' (Lockard and Abrams, 2001: 230). All the above definitions go to explain that multimedia can be used in a wide field of human activities and for the purpose of enhancing music teaching, the definition of multi media will be derived from computerized, synthetic displays of audio and visual media: images, text, sound, video and animation.

Applying multimedia in the teaching of music has educative role of stimulating developmental changes in the students. The structure of multimedia is made up of two or more different media. In the teaching of music, multimedia are classified with

regard to the senses they simulate thus: audio, visual, kinesthetic, olfactory and taste, there by focusing more attention to sensory class work.

Learning

Learning is defined as ‘a process that brings together cognitive, emotional and environmental influences and experiences for acquiring, enhancing, or making changes in one’s knowledge, skills, values and world views’ (Illeris, 2004:34). Learning is experiential and this experience could be derived from musical activities. Learning produces changes in the organism and the changes produced are relatively permanent (Vygotsky, 1978: 29). Vygotsky further posits that learning is ‘a process of acquiring new or modifying existing knowledge, behavior, skills, values or preferences and may involve synthesizing different types of information’ (p. 38). Learning builds upon and shaped by what one already knows. It is not automatic. Human learning can occur as part of education, personal development, schooling or training. It may be goal-oriented and may be aided by motivation. Learning may occur consciously or unconsciously. For the purpose of this study, learning is seen as a process of knowledge acquisition that provides meaning and involving the learner’s personal experiences, dreams fantasies and specificities that gear towards permanent change of attitudes. The learner having acquired knowledge relates to the world in his/her own perspective thus expanding narrow visions and perceptions acquired in the learning process. The learner now creates his/her own world view through action and imaginative fashion instead of accepting the world as pre-given.

Transformative learning

Clark, (1993:47) defines transformative learning as ‘learning that induces more far-reaching change in the learner than other kinds of learning, especially learning experiences which shape the learner and produce a significant impact, or paradigm shift, which affects the learner’s subsequent experiences’. In this study, transformative learning is seen or described as learning that goes beyond just content acquisition, or learning equations, memorizing or learning historical facts and data. It is a desirable process for learners to learn to think for themselves, through total emancipation from mindless or unquestioning acceptance of what one has come to know through life experience. Transformation simply implies to change the frame of reference of the learner through experiential learning /discovery learning; which are the attributes of creative musicologists: in other words transforming learners through experiential learning and problem-solving activities in a classroom learning situation.

Innovative teaching

The dictionary definition of innovative is ‘introducing or using new ideas, techniques (cf. Oxford Learners’ Advanced Dictionary of Current English, 2006:645). Based on this, innovative teaching could be said to be an act of being creative, ingenious or ahead of the times in teaching. It involves the teacher indulging in advanced teaching methods or having advanced view of the subject matter. Music being an activity-based subject demands that an innovative teacher should endeavor to introduce changes, utilize many strategies and varieties of instructional materials in other to meet up with demands of the subject. An innovative teacher discourages the students from being passive listeners during music lessons and encourages them to take part in what

goes on in the class by providing students with hands-on activities both in the class and during extracurricular activities. It has been acknowledged widely that for students to do well in music and to develop practical skills which will be useful to them in their later lives, they must be actively involved in the process of learning. Students learn best if the activities they are made to participate in are seen as useful to them in real life (*National Teachers' Institute* (NTI), 2011).

Cognitive theory of multimedia learning

The cognitive theory of multimedia learning hinges on a principle known as the 'Multimedia Principle' which states that 'people learn more deeply from words and pictures rather than from words alone (Mayer, 2007:47). Mayer's cognitive theory of multimedia learning is structured in the light of how human mind works. This theory proposes three main assumptions as it concerns learning with multimedia thus:

- There are two separate channels (auditory and visual) for processing information
- Each channel has a limited capacity
- Learning is an active process of filtering, selecting, organizing, and integrating information based upon prior knowledge.

It should be noted that human beings can only process a finite amount of information in a channel at a time, and they make sense of incoming information by actively creating mental representations. Mayer also discusses the role of three memory stores: sensory – which receives stimuli and stores it for a very short time; working – where the information is processed to

create mental constructs or schema; and long-term – the repository of all things learned.

Mayer's cognitive theory of multimedia learning presents the idea that the brain does not interpret a multimedia presentation of words, pictures and auditory information in a mutually exclusive fashion; rather, these elements are selected and organized dynamically to produce logical mental constructs. Furthermore, Mayer underscores the importance of learning based upon the testing of content and demonstrating the successful transfer of knowledge when new information is integrated with prior knowledge.

Gardner, (2006) in the Multiple Intelligences Theory states that an individual possesses in varying strengths and preferences at least eight discrete intelligences, namely: linguistic, logical, mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal and naturalistic. Marshall, (2004:8) no doubt corroborates this view and posits, 'the relative strengths and weaknesses among and between these intelligences dictate the ways in which individuals take in information, perceive the world, and learn'. Gardner is of the opinion that the eight intelligences listed are independent since they grow in dissimilar ways in different individuals though closely intertwined. Many scholars also observe that when an individual grows to be more capable in one area, the whole group of intelligences may be improved. The above view further strengthens the view that teachers need to take all of these intelligences into account when planning instruction since the manner in which the subject matter is conveyed influences the individual ability to learn. This serves as a great improvement in supporting children to implement and discover all their intelligences.

These theories give credence to the application of multimedia instructional-aids in the teaching and learning of music. The application is designed to appeal to various senses of the learner since the process of learning differs from student to student and is compatible with their individual developmental potentialities. Students' styles of learning; levels of acquiring information; abilities to apply knowledge in the same, similar and various problem-solving situations, all differ. Multimedia instructional-aid will provide possibilities for students' self actualization, affirmation of all students' needs in the class, acquire new knowledge, develop skills, habits, form their own opinions and become transformed.

Methodology

This study is conducted in a boys' secondary school, Igwebuikwe Grammar School, Awka, Anambra State, Nigeria. Two classes from the junior secondary have been selected and eighty students have been involved: (40) students from JSS 1A, which served as the experimental group and (40) students from JSS 1B, the control group. The researcher had a session of training the music teachers in the school to handle the multimedia equipment deployed for the study. The equipment has been used to teach music to the experimental group and the control group has been taught in the traditional talk and chalk system for a period of three weeks.

The multimedia instructional-aids used have been developed by the researcher. They are an interactive learning module in which songs/music, simulation, instrumentation, graphics, role play, texts and animation are integrated. It is important to note that the multimedia instructional-aids are based on JSS music curriculum. Basically, the learning items in the scheme of work

for one term have been represented in the video. The experimental are allowed to view each topic without interruption for twenty (20) minutes in each lesson followed by an interaction with the teacher and classwork evaluation of the students. The teacher is allowed to rewind the video during the interactive session for clarification of ideas or concepts.

At the end of the period, a test is administered. The table below shows a summary of the performance of the groups'

Table 1: The summary of performance of the groups

S/N	Group of learners	No. of students	Percentage average Performance of each group	Remarks
1	Control Group	40	25%	Very Poor
2	Experimental Group	40	75%	Very impressive
Total		80	100	

Results and discussion

The performance of the experimental group of learners is very impressive compared to the performance of the control group. This goes to explain that the traditional methods, techniques and strategies used in music pedagogy is less productive and should be replaced with the demands of the current times. The result of the performance supports Ugoo-Oknkwo (2014:44) position that there is insufficient use of instructional materials for teaching and

learning music and comments that ‘music cannot be taught on read and teach basis’.

The very impressive performance of the experimental group is evidently contributed to by the effects of the multimedia-aids which as pointed out include stimulation of interest in students to learn and the intensification of learnt material. Of course, there is little which a teacher using the traditional chalk and talk method could do to stimulate students’ interest in the degree to which electronic animation and configurations could. To win attention and arrest it by impressionistic strategies without a backfiring effect of sustenance is usually very difficult if not impossible in many cases. This describes the very poor performance of the control group.

From the foregoing, this work is of the position that the integration of multimedia instructional-aids would make lessons in music more interesting and creates a platform for qualitative interaction between learners and their teachers. It would also facilitate a wider range of comprehension since all the senses are actively involved in the learning process.

Emerging evidence is that the teachers contribute minimal manpower and man-hour in the instructional procedure and this notwithstanding produce much more than the traditional techniques and method could afford.

The following recommendations practically arise from the results of this study:

- Multimedia instructional-aids for teaching and learning music should be created and produced for Nigerian schools, primary and secondary;

- Government at all levels should ensure that fund for education be judiciously used especially in the area of creating and producing multimedia instructional-aids;
- Curriculum planners should work out curriculum for subjects, especially music, to respond to contemporary demands of globalization and information and communication technology;
- Capacity building workshops should be organized for teachers to make them ICT compliant and equip them with the technical knowledge to operate and effectively use available multimedia devices and other equipment; and
- Home usable multimedia instructional-aids should be created and popularized to afford learners of the facility of continuing with lessons given at school at home.

Conclusion

This study has determined the superiority of the teaching and learning method involving multimedia instructional-aid and the traditional method of chalk and talk, which still dominates in most schools in Nigeria. Using a class in Igwebuike Grammar School, Awka, Anambra State, Nigeria, an experimental group and control group have been selected. The experimental group are handled using multimedia instructional-aids while the control group are handled using the traditional chalk and talk method. The results are expected based on the postulations of the cognitive theory of multimedia learning. The experimental group performed very impressively while the control group performed very poorly. This result supports the position of this study that multimedia instructional-aids for teaching and learning of music would make lessons in the subject interesting and create a more

workable platform for qualitative interaction between teachers and learners. The implication of this position is basically operational in achieving transformative learning. That is learning that produces far more-reaching change in learners and shapes them to make a significant impact on the learning process and outcome. It is also operational in achieving innovative teaching. Hence, the recommendation of capacity building workshops for teachers to bring them to the level technical compliance that is required of teachers in a globalizing world.

Overall, utilizing the power of all the senses in learning new materials could work effectively upon the application of the resources multimedia instructional-aids afford.

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