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IMPORTANCE AND CHALLENGES OF IMPLEMENTING JUNIOR SECONDARY SCHOOL (JSS) CURRICULUM USING INNOVATIVE TECHNOLOGY IN NIGERIA

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Abstract

The importance of technology cannot be over stressed. Technology is needed in every field of human endeavour such as agriculture, construction, health, education, insurance, trade, commerce, industry, politics, economics and even in religion. In education, for instance, technology can be useful to both the teacher and the students. For the students, technology can help them in writing, reading, research, and so on. The teacher, on the other hand, can also use technology in setting questions for students, giving assignments to students, marking students' exams, saving their scores and other information about the students, among other things. To underscore the importance of technology in the field of education, this paper reviewed articles based on: Junior Secondary School Education, objectives of JSS education in Nigeria, Junior secondary school curriculum, instructional materials, procedures involved in using the computer to implement the JSS curriculum.

and also, examined some of the importance and challenges to implementing the curriculum using the computer which include among other things; irregular power supply, limited access to internet, high cost of computer sets. The way forward was suggested which included; compulsory but highly subsidized computer training for teachers, purchasing and donating of computer sets to both schools and teachers by the government and other major stakeholders in the education sector.

Keywords: computer, implementation, curriculum and junior secondary school.

Introduction

Education is the medium through which a society indoctrinates people into its culture and traditions. It plays an important role in people's day-to-day lives. According to Ossai, Eze, Chineke and Uwakwe (2020), education is the process of teaching and learning which usually takes place in the school. Ogwu, Ukwueze and Ukoha (2017), define education as a weapon for inculcating social values and practices. With education people are made to realize the needs and values of the society. Having been acquainted with the needs and values, education can go a long way in shaping the behaviour of people towards another and the environment. It is important to note that for education to shape the behaviour of the people, it has to be systematic. Education can be systematic in any society if it is well planned and organized in such a way that it takes care of the needs and the peculiarities of the people. What this means is that there must be a document that will regulate or guide the activities of both the teacher and the learner and that is the curriculum.

Curriculum is the vehicle that conveys the contents and tenets of education to the people under the auspices of a school. Education in any society can only take place when the curriculum is applied. It is the curriculum that contains the needs, aspirations and goals of

the people in any society. Also, when the curriculum is implemented using appropriate instructional materials, the needs, aspirations and the goals of the people are actualized. For these goals, needs and aspirations of the Nigerian people to be met, the government has stratified education into the following:

- Early Child Care and Development aged 0-4 years;
- Basic Education aged 5-15 years. It encompasses pre-primary for 1 year, 6 years of primary education and 3 years of Junior Secondary Education;
- Post Basic Education of 3 years in Senior Secondary Schools and Technical Colleges; and
- Tertiary Education provided in Colleges of Education, Monotechnics, Polytechnics and Universities (Federal Republic of Nigeria, FRN 2014; vii).

he Junior Secondary School (JSS), falls within the Basic Education level in Nigeria. It is the type of education that is acquired within the last three (3) years of the Basic Education programme. It can also be seen as that type of education that the learner is expected to acquire within his first 3 years in the secondary school. The implementation of education at this level cannot be possible without the curriculum. In the implementation of the curriculum the teacher is at the centre. But the teacher may not be able to do this if he does not use appropriate instructional materials in the teaching and learning activities in the classroom. What this means is that he/she has to be innovative so as to be able to employ the right innovative instructional materials. So, this paper looked at the importance and the challenges of using the computer as an innovative instructional material for the implementation of Junior Secondary School (JSS) curriculum in Nigeria.

Concept of Junior Secondary School (JSS) Education and Its Objectives

The Junior Secondary School (JSS) education as earlier observed is acquired in the last phase of the Basic Education programme in Nigeria. According to the National Policy on Education (FRN, 2014:12) the JSS education is the type of education which a child receives immediately after primary school education. As a component of the Universal Basic Education (UBE), it is within the foundation stage of the Nigerian education. The JSS education forms part of the foundation upon which both the Post Basic Education and Career Development and Tertiary Education is built. It is based on this stand point that the JSS education in Nigeria must be taken seriously. There are some objectives that guide the implementation of the JSS curriculum. Objectives of education serve as a compass that directs or guides or even regulates the activities of both the teachers and the learners in any educational setting. The JSS and other levels of education are being directed, guided and even regulated by some laid down objective. The objectives of JSS education according to the National Policy on Education (FRN, 2014:12) therefore, are as follows;

- a. To provide the child with diverse basic knowledge and skills for entrepreneurship and educational advancement;
 - b. To develop patriotic young people equipped to contribute to social development and the performance of their civic responsibilities;
 - c. To inculcate values and raise morally upright individuals capable of independent thinking and who appreciate the dignity of labour; and
 - d. To inspire national consciousness and harmonious co-existence irrespective of differences in endowment, religion, colour, ethnic and socio-economic background.
- These objectives as itemized above can only be achieved if the curriculum is effectively implemented.

Concept of Junior Secondary School (JSS) Curriculum

All education programmes in Nigeria have their curricular. It is the curriculum that specifies the roles played by both the teacher and the learner in the classroom. The curriculum contains the courses or subjects that should be taught to the learners depending on their levels. It also describes the methods and instructional materials that could be used to teach these courses or subjects in schools. The JSS curriculum according to Onuoha-Chidiebere, Nwokocha and Nwanorim (2017:60), includes; 1. English Language, 2. Mathematics, 3. Basic Science and Technology; - Basic Science, Basic Technology, Information Technology, 4. Physical and Health Education, 5. Religion and National Values ; - Christian Religious Studies, Islamic Studies, Social Studies Civic Education, Security Education. 6. Pre-vocational Studies;- Home Economics and Agriculture 7. French Language 8. Cultural and Creative Arts 9. Business Studies 10. Arabic (optional). It should be noted that the JSS curriculum will remain a mere document if it is not implemented. Implementing the curriculum is all about making the planned curriculum functional and potent.

Concept of Curriculum Implementation

The curriculum development process cannot be complete if the implementation aspect is missing. This, therefore, means that though all the processes involved in curriculum development are important, the aspect of implementation appears to be more important. The reason is because the extent to which the objectives of the curriculum have been achieved can only be ascertained after implementation. According to Mkpa in Ali-Okoro (2017), curriculum implementation is the task of translating curriculum into the operating curriculum by the combined efforts of the students, teachers and others concerned. It also refers to that stage in the curriculum process and system whereby all the relevant

curriculum inputs are brought into direct contact with the learners through a wide variety of activities so that learning experiences and mastery can be maximized at a minimal cost (Amadi,1993). Similarly, Ogele, Ishiwu and Nwokenna (2020), stated that curriculum implementation is all the efforts made within the school system to interpret and bring to reality the contents of the curriculum by using all the available resources (human and materials).

From the foregoing, it can be deduced that curriculum implementation is a task that must be accomplished by the teacher in the classroom. It should also be borne in mind that the corner stone of educational system is the curriculum therefore the teacher who implements the curriculum must be innovative. It is the innovativeness of the teacher that will make him/her to select those instructional materials that will be useful for the implementation of the curriculum.

Concept of Instructional Materials

Instructional materials are very important in any classroom business. The reason is because they are required for the implementation of the curriculum. It is the instructional materials that make teaching and learning real and concrete. They also make learning permanent in the learner.

Instructional materials according to Ossai, Eze, Chineke and Uwakwe (2020), are those materials used in teaching and learning situation for clarification of concepts. They further stated that instructional materials could be audio, visual or audio-visual aids which make teaching and learning easier. For Kalu, Ahanotu and Ajamgbe (2017), instructional materials help learners discover new meanings through practice and participation rather than being told. In other words, instructional materials take learning from the teacher to the learner thereby making the teaching and learning environment learner- centred. This means that the learner takes

charge of his/her learning because the use of instructional materials motivates him/her, arouses and maintains his/her interest, gives him/her confidence and causes him to pay attention in classroom interactions.

It is noteworthy to point out here that instructional materials would not be able to achieve the purpose for their use if not properly selected and applied. One of the objectives of the JSS education is to inspire in the learners national consciousness and harmonious co-existence irrespective of differences in endowment, religion, colour, ethnic and socio-economic background (FRN, 2014:12). The proper selection and use of instructional materials can be instrumental to the achievement of this objective. Achieving this particular objective among others is very important especially now the country is faced with a high level of insecurity. Computer is one of the instructional that if properly selected and used, can enhance the implementation of the JSS curriculum.

Computer: An innovative instructional device and its importance

Computer is an electronic machine that makes work faster and easier in this contemporary world. According to Wokoh and Nwankwo (2020), a computer is an electronic device that is designed to receive data, process it, and can also reproduce it based on demand or specification. It is manipulated by human beings. A computer has two devices, the input and output devices. The input devices are made up of: keyboard and joy stick while the printer and speaker make up the output devices. The other accessories of the computer include; mouse, central processing unit (CPU) and uninterruptible power supply (UPS). Computer is a multi-task electronic device and because it is characterized with a lot of speed, accuracy and reliability, it can complete more than one task within a very short period.

As an electronic device, computer was invented to serve as a fast calculating machine or device. It can collect, process, store, disseminate, retrieve and use information for decision making, planning, operating and controlling, public enlightenment and entertainment. In today's world of Information and Communication Technology (ICT), computer as an aspect of ICT is used in every field of human endeavour such as; offices, banks, shops, hospitals, hotels, industries educational institutions and in the political space. The ICT which is the hallmark of technology around the globe today could not have been what it is without the computer. That is why computer may be regarded as a hub around which every other activity in the information and communication technology revolves. When computer is connected to the internet, computer can help people do a lot of things fast, accurately and with ease within few seconds. For instance, people can use the computer to make some online purchases even in shops that are located in countries that are different from where they are. Computer can be used to check one's e-mail, it can be used to make payments like; electricity bills, water bills, hotel bills, school fees, even booking and payment of flight tickets can be handled electronically using the computer.

From the above, it has become obvious that the importance of computer in everyday activities of man cannot be dismissed with the wave of hand. It is based on this that one begins to imagine how life could have been without the computer. In the field of education, computer can be used to do a lot of things. The teacher as well as the students needs the computer. According to Okoyefi (2015), learners use computers to learn while teachers use it to gain access to pedagogic information and enhance instructional delivery. In the classroom, computer makes it easy for the teacher to select and use the pedagogy that is effective, efficient and enhances lifelong learning. The quality of education that is obtained in school is determined by the quality of instructional materials used by the teacher. The learners' level of motivation and participation in every teaching and learning situation is the function of interaction and teaching provided by the teacher through the instrumentality of the

computer. Computer is capable of activating the sense of sight, hearing and touch of the users. According to a Chinese adage cited by Eze and Elekwa (2002;173)

“A look is worth a thousand words,
I hear and I forget, I see and remember,
And I do and I understand.”

The use of computer as an instructional material brings the sense of hearing, sight and touch to focus in any teaching and learning situation. When the senses of hearing, sight and touch of the learner have been captured by the teacher while delivering his lesson, there would be full participation by the learner. This enhances the learner's performance.

The Junior Secondary School (JSS) is a bridge between the primary and senior secondary school education. This, therefore, suggests that education at this level should be taken seriously by making sure the JSS curriculum is well implemented using an innovative instructional material (computer).

According to Abubakar (2012), at the instructional material level, pupils use computer to learn reading, Mathematics, Social Studies, arts, music, simulation and health practices. From Abubakar's point of view, computer has no boundary when it comes to using it to implement the curriculum. Both science and arts subjects can be taught using the computer and as such it may be useful in teaching learners at all levels of education including the JSS students. Apart from the fact that the computer can be used to implement the curriculum, exposing this set of learners to some computer applications has some far reaching benefits on the part of learners. For example, due to some economic problems many Nigerians are going through, some students from poor families may not be able to go further in their education after their JSS education. So, with the little knowledge they have about some computer applications these students can start doing something on their own

and this would help reduce the army of unemployed people in the Nigerian society.

Using the computer to implement the curriculum

To implement the curriculum at the classroom level, some procedures have to be followed. Ofoefuna (2005) has marshaled out the various ways in which the computer can be used to implement the curriculum. They are:

- 1. Virtual teaching:** This is the type of teaching whereby the teacher and the learner do not come into close contact with each other. The teaching and learning can take place through video conferencing technique. Although both the teacher and the learner are some distances apart, this does not stop the learner from getting the required and necessary information and instructional guideline from the teacher. The idea behind the use of video conferencing in teaching is to reach the learner not necessarily in the classroom but outside the classroom or at the comfort of their homes. Under this arrangement the learner can ask questions and get answers from the teacher. Virtual teaching can be used to teach all subjects to learners at all levels including the Junior Secondary School students.
- 2. Multithreading:** Multithreading is another procedure through which the curriculum can be implemented. In multithreading there is a feature of web whereby different parts of information or materials for a subject can be put together in order that they will make sense to the learner. It requires on the part of the learner the ability to move back and forth while studying a subject. This will enable the learner to understand the subject better.

3. **Web-based Instruction:** The web-based instruction uses the internet and the World Wide Web (www) as the main component to learning materials and resource for teaching/ learning a subject. Information on any subject can be gathered using the internet through browsing. Internet can link several millions of computers within a very short period around the globe for proper dissemination of information. This type of procedure for curriculum implementation can be useful to both the teacher and students. With web-based instruction, the teacher is safe from the trouble of searching for materials or information with which a particular subject is taught. Learners on the other hand can source information on any subject using the internet as long as the syllabus is available.
4. **Instructional Slides and Tutorial (Audio):** These are teaching/learning aids that are made and written into compact disks with graphics and texts. These aids can be used in any teaching/learning situation with the help of some applications or software such as the power point Tutorials which are parts of these teaching and learning aids that are most times recommended for self-paced learning. What this means is that with these instructional Slides and Tutorials, no learner can be left behind in the business of teaching/learning both the fast and slow are carried along. Using this technology to implement the curriculum increases learners' participation in learning. For the Junior Secondary School students, these technologies can be used to teach them all subjects, both sciences and arts.
5. **Computer Assisted Instruction (CAI):** The computer assisted instruction (CAI) is an individualized method of teaching or instruction in which the computer is used. Using this technology requires students to interact with the computer in a teaching and learning manner. The CAI has a television screen which displays information. This information could be inform of video tape recording, motion picture sequences, slides, film strips or

other visual displays from the computer. The CAI makes provision for questions from the students while the computer responds by printing out comments and answers. It can be useful for curriculum implementation in schools especially at the Junior Secondary School level because it increases the students' level of participation.

Despite the usefulness of using the computer to implement the curriculum in schools, the technology is still being faced with some challenges.

Challenges of Implementing the JSS Curriculum using the Computer

The use of computer to implement the JSS curriculum in Nigeria has the following challenges:

1. Unavailability of Computer: Unavailability of computer is one of the factors that discourage the use of computer in the implementation of Junior Secondary School (JSS) curriculum in Nigeria. Many schools do not have enough computers while some others especially those in the rural areas do not have at all (Ossai, Eze, Chineke and Uwakwe, 2020). Even those schools that have computers do not have access to internet.

2. Teacher Factor: Many teachers in Nigeria either resist the use of computer in the teaching and learning or do not have the requisite skills that may enable them use computer to teach in their lessons (Nzewi, 2009). This is also a very big challenge to the use of computer for curriculum implementation

3. Irregular Power Supply: Many secondary schools in Nigeria do not have access to electricity and those of them that have suffer from irregular power supply (Yusuf, Igwe and Ene;2020). This, in no small measure affects the use of computer to implement the curriculum.

4. Cost: In any teaching/learning situation computer is a necessity but because of the high cost of procuring a computer set, it is now seen as a luxury. According to Nzewi (2009), the cost of computer is still high. As a result it is not within the reach of many teachers. The author further stated that most schools can also not afford internet connection fees. There is a common saying that 'you cannot give what you do not have'. When a teacher or school cannot afford a set of computer how can the teacher (the curriculum implementer) deliver his/her lesson using the computer.

5. Limited Access to the Internet: There is a problem of limited access to the internet in Nigeria. This may be as a result of few internet providers that are managing the Nigerian internet space. According to Yusuf, Igwe and Ene (2020), many schools in Nigeria especially those in the rural areas do not have enough access to the internet. This has hampered the implementation of the curriculum using innovative instructional material devices like the computer.

The way forward

Based on the challenges of implementing the JSS curriculum with the computer, the following have been suggested by the authors as the way forward:

1. Government and major stakeholders in education sector should assist schools and teachers to have their own computers. This can be done by donating set of computers to schools or selling to teachers at a subsidized price.
2. Government and Electricity Distribution Companies should improve on the supply of electricity to the Nigerian people and education institutions in particular.
3. The limited internet services to internet users in Nigeria can be taken care of if the government can provide a level playing ground for those who want to invest in the communication sector to come in.

4. Government should make a deliberate policy that computer should be used by teachers at all levels of the Nigerian education system to teach.
5. There should be compulsory but subsidized computer training for all teachers and students in the Nigerian schools.

Conclusion

In this contemporary world, technology has highly influenced the way things are done to the extent that it appears that nothing can be successfully done without the application of technology. Technology is seen and applied in all areas of human lives such as agriculture, education, health, sciences, construction, politics, even in the religious circle among others. So, for Nigeria as a country to successfully apply technology in its education system, it must sincerely remove all the factors that impede the effective and efficient use of technology to implement the school curriculum. Such factors include among others; irregular power supply, high cost of internet services, unavailability of computers in schools. When this is done, the country would have been on its path towards joining the comity of technologically developed countries of the world.

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