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## Creativity in the Improvisation and Utilization of Instructional Materials for the Nigerian School System

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**Abstract:** *Improvisation refers to the act of making up for deficiencies in the process of teaching and learning. That is, when a ready-made instructional material which is relevant in a particular teaching-learning situation is not available, the teacher makes an alternative provision for such an item. The teacher can only produce such alternatives using local resources if he is creative enough. The aim of this paper is to examine the need to encourage creativity in improvisation and utilization of instructional materials in Nigerian school system. The paper therefore, looked at the concept of creativity, improvisation of instructional materials, utilization of instructional materials in the teaching-learning process, the need to encourage creativity in improvisation and utilization of instructional materials in our school system and finally proffered recommendations for such encouragement.*

**Keywords:** *Creativity, Improvisation, Instructional materials, Utilization*

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### Introduction

Improvisation refers to selection or provision of substitute for something not readily available. It is the process by which educational materials can be designed and developed using locally available materials to meet specific instructional needs. That is, when a ready-made instructional material which is relevant in a particular teaching-learning situation is not available, the teacher makes an alternative provision for such an item. The teacher can only produce such alternatives using local resources if he is creative enough.

Creativity thus implies the act of turning new and imaginative ideas into reality. Creativity is characterized by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena and to generate solutions. Creativity involves two processes, thinking then producing (Rollo, 2017). It is only the creative mind that will easily formulate and concretize ideas as a means of solving specific learning needs of individuals. Improvisation and creativity are the two major concepts that promote effective production, selection and utilization of adequate instructional materials for teaching and learning especially in many of the developing countries where the technology of production is still growing.

The term utilization refers to the usage degree of a given material in the execution of a given task (Asogwa, Onu and Egbo, 2017). It is the extent to which an instructional material in instruction is put into use by the teachers. The ability of the teacher to effectively utilize the available instructional materials optimizes the attainments of instructional situation. Uzuegbu,

Mbadiwe and Anulobi (2013) refer to instructional materials as any device used to assist the instructor in the preparation of a lesson, teaching of the lesson and facilitate students' learning of the subject matter. They include those objects that are commercially acquired or improvised by the teacher to make conceptual abstraction more concrete and practical to the learner (Iwu, Ijioma, Onoja and Nzewuihe, 2011).

In Nigerian school system, despite the huge financial investment, the Federal and State Governments have made in the provision of instructional materials in schools, there has not been any encouraging result on its application in the school system. Researches abound which go to confirm this assertion. Ibiwoye (1980) revealed that schools in Zaria Local Government Areas have some educational problems but significant among them was the clear absence of instructional materials. Also, Ike (1980) in his own study noted that instructional materials were poorly used amongst the secondary school teachers in Imo State. He further stated that the teachers did not have the manipulative skills with which to utilize the materials. Finally, Nnabuike (2017) carried out a similar investigative research among the primary and secondary schools sciences in Enugu state. He thus revealed that there was apparent under-utilization of the instructional materials in teaching sciences at lower levels in the state.

To this end a concerted effort needs to be made to see that teachers make use of the most appropriate instructional materials for specific learning situations. Where the appropriate instructional materials are not available, the substitute should be provided. The thrust of this paper is the need to encourage creativity in the improvisation and utilization of instructional materials in Nigerian school system.

### **Concept of creativity**

Creativity is defined as the tendency to generate or recognize ideas, alternatives or possibilities that may be useful in solving problems, communicating with others and entertaining ourselves and others (Robert, 2017). According to Robert, there are three reasons why people are motivated to be creative:

- Need for novel, varied and complex stimulation;
- Need to communicate ideas and values;
- Need to solve problems.

In order to be creative, one needs to be able to view things in new ways or from a different perspective. Among other things one need to be able to generate new possibilities or new alternatives. Tests of creativity measure not only the number of alternatives that people can generate but the uniqueness of those alternatives. The ability to generate alternatives or to see things uniquely does not occur by chance; it is linked to other, more fundamental qualities of thinking, such as flexibilities, tolerance of ambiguity or unpredictability and the enjoyment of things heretofore unknown.

According to Rollo (2017) creativity:

“is the act of turning new and imaginative ideas into reality. Creativity is characterized by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena and

to generate solutions. Creativity involves two processes—thinking and producing. It is the process of bringing something new into being. It requires passion and commitment. Creativity brings to our awareness what was previously hidden and points to new life. The experience is one of heightened consciousness and ecstasy”.

Creativity is the ability to perceive new relationships and break new grounds resulting in invention, construction or production of new things, ideas, approaches or solutions to problems, by original, intellectual or artistic efforts (Onyejemezi, 1992). In his own discussion of creativity, Lubart (2017) defines creativity as a discipline and a crucial part of the innovation equation. There is no innovation without creativity. The key metric in both creativity and innovation is value creation. George (2017) saw creativity as a skill that can be managed. Creativity begins with a foundation of knowledge, learning a discipline and mastering a way of thinking. One can learn to be creative by experimenting, exploring, questioning assumptions, using imagination and synthesizing information. Learning to be creative is akin to learning a sport. It requires practice to develop the right muscles and a supportive environment in which to flourish.

Supporting the above assertion, Richard (2017) states that creativity is a practice. That is, creativity comes from working hard and doing it regularly. He maintained that using the following five skills every day, one will develop skills in creativity and innovation.

- Association: drawing connections between questions, problems or ideas from unrelated fields,
- Questioning: posing queries that challenge common wisdom,
- Observing: scrutinizing the behaviour of customers, suppliers and competitors to identify new ways of doing things,
- Networking: meeting people with different ideas and perspectives,
- Experimenting: constructing interactive experiences and provoking unorthodox responses to see what insights emerge.

Creativity is a phenomenon whereby something new and somehow valuable is formed. The created item may be tangible such as an idea, a scientific theory, a musical composition or a joke or a physical object such as an invention, a literary work or a painting (Wikipedia, 2017).

Creativity according to Demian (2017) is referred to as:

“Seeing the interaction of seemingly unrelated topics and combining them into something new, starting with nothing and ending up with something, interpreting something you saw or experienced and processing it so it comes out different than how it went in, seeing something that does not exist and then making it so, the ability to connect the seemingly unconnected and meld existing knowledge into new insight about some element of how the world works, it is using as many senses as possible to express an idea, it is a zone from which great, useful things are created”.

Beliefs that only special, talented people are creative diminish our confidence in our creative ability. The notion that geniuses such as Shakespeare, Picasso and Mozart were 'gifted' is a myth, according to a study at Exeter University (Richard, 2017). Researchers examined outstanding performances in the arts, mathematics and sports, to find out if the widespread belief that to reach high levels of ability a person must possess an innate potential called talent. The study concludes that excellence is determined by:

- opportunities
- encouragement
- training
- motivations, and
- most of all, practice

Few showed early signs of promise prior to parental encouragement. No one reached high levels of achievement in their field without devoting thousands of hours of serious training (Richard, 2017).

Creativity can be expressed in a number of different forms, depending on unique people and environments. One characteristic of creative people, as measured by some psychologists, is what is called divergent production. Divergent production is the ability of a person to generate a diverse assortment, yet an appropriate amount of responses to a given situation. Other researchers of creativity see the difference in creative people as a cognitive process of dedication to problem solving and developing expertise in the field of their creative expression. Hard working people study the work of people before them and within their current area, become experts in their fields and then have the ability to add to and build upon previous information in innovative and creative ways. Creative people tend to be more open to new experiences, are more self-confident and are more ambitious, self-accepting, impulsive, driven, dominant and hostile compared to people with less creativity (Wikipedia, 2017). Finally, Richard (2017) says that:

“Creativity is about making something new, rather than merely applying or discovering something new. Creative solutions are insightful, they are novel, they are simple, they are elegant and they are generative. When you find one creative idea, more often than not it triggers other ideas in the same fashion”.

A key to being creative, as Richard sees it, is the ability to find associations between different fields of knowledge, especially ones that appear radically different first. The process is iterative rather than linear and requires people with curiosity, energy and the openness to see connections where others cannot. New solutions are often the combination of two or more existing concepts.

### **Elements of Creativity**

The following are elements of creativity:

- The first element of creativity is willingness to do something new. No one can teach or force one to become creative. An artist sees various shapes and colours even in a crumpled ball of paper thrown in the dustbin. A creative person will never throw away an empty soft drink can. Rather he/she would make a nice pen stand out of it. Creativity has to come from within.
- Accepting challenges. One needs to take risks sometimes. Attempt things differently. As they say “variety is the spice of life”
- Be open to critics. Do not feel bad if your boss does not appreciate your idea instead sit with him/her and find out as to why your superior feels that your idea would not work out. There is absolutely no need of losing interest in work. Ponder over various other options and see which idea fits best in the current situation. Do not forget to take feedback from your superiors as well as follow workers.
- Open communication rather than working in isolation. It is always better to work in teams. People who work in advertising agencies are perceived to be most creative. How do you think that an advertisement is created? Believe me to create a new advertisement for their respective clients, everyone be it key account executive or the marketing team and even the creative director sit together, brainstorm ideas and reach to new concepts, thoughts, and eventually a new advertisement is created.
- Thorough research. What is most important in creativity is that one need to have thought at least. Reading helps you in this, reading and something various knowledge based websites help one get the right thoughts and ideas. Do not take the risk of attending a brainstorming session if you have not done your research carefully (Management Study Guide, 2017).

### **Characteristics of the creative personality**

The following are the features of the creative personality.

- Creative individuals have a great deal of energy but they are also often quiet and at rest.
- Creative individuals tend to be smart, yet also naïve at the same time
- Creative individuals have a combination of playfulness and discipline or responsibility and irresponsibility
- Creative individuals alternate between imagination and fantasy at one end, and rooted sense of reality at the other.
- Creative people seem to harbor opposite tendencies on the continuum between extroversion and introversion.
- Creative individuals are also remarkably humble and proud at the same time.
- Creative individuals to a certain extent escape rigid gender role stereotyping and have a tendency toward androgyny.
- Generally, creative people are thought to be rebellious and independent.
- Most creative people are very passionate about their work, yet they can be extremely objective about it as well.
- The openness and sensitivity of creative individuals often exposes them to suffering pain yet also a great deal of enjoyment (Robert, 2017).

### **Improvisation of instructional materials**

Improvisation means to make without extensive preparation and using those materials and devices that are locally available within the environment and do not involve high costs, in providing alternative or substitutes to factory made imported equipment (Obianwu, 1996). This also implies that a creative teacher can find alternative materials to use where the recommended ones are not available.

According to Ugwueke (as cited in Owuamanam, 2017) improvisation refers to “selection or provision of substitute for something not readily available”. It is the process by which educational materials can be designed and developed using locally available materials to meet specific instructional needs. Improvisation is linked with the concept of Self-reliance. When the available resources in our environment are used, they help us spend less on imported and expensive commercially produced media. In the course of improvisation, models can be used when the real material is not available. Models are always similar in appearance to the things they represent. However, they may be of the same size, smaller or bigger than the things they represent (Owuamanam, 2017).

Improvisation is therefore one sure method of creating an atmosphere that will sensitize and stimulate the child’s curiosity in learning. This is because a creative teacher in order to improvise knows that his environment is rich with all types of resources including resource persons. He capitalizes on the indigenous ingenuity of our people to make design or fabricate materials required for teaching and learning according to his specifications and based on sound educational principles.

Some local materials that can be used for improvisation include the following: bamboos for making of test tubes and pipettes, discarded woods or metals sheets for fabricating models or mockups, bottle tops, local plant, seeds and rocks are all prime resources to a creative teacher (Obianwu, 1996). Improvisation can bring out inherent talent in pupils and teachers and in the long run will lead to our self-sufficient in both human and material resources.

### **Utilization of instructional materials in the teaching and learning process**

Instruction consists of setting the stage so that someone can learn. To achieve this objective, there are a lot of inputs in terms of human and material resources. Instructional materials include all those devices, man machines, apparatus and materials used to effect a meaningful change in behaviour. They are relevant materials utilized by the teacher during instructional proceeds for the purpose of making the contents of the instructions more practical and less vague. Instructional materials appeal to the senses of seeing, touching, smelling, feeling and hearing. They include visual, audio and audio visual materials.

The term utilization refers to the usage degree of a given material in the execution of a given task (ResearchGate, 2017). It involves creation of value in things (Asogwa, Onu and Egbo, 2013). Utilization to a large extent judges the value of instructional materials by the degree in which it singly or collectively satisfies the derived instructional needs. In the teaching-learning process, there can never be any effective teaching without adequate use of instructional materials. The teacher has to determine at what stage of his lesson he has to introduce specific learning materials as a means of concretizing the abstract ideas.

Selection and utilization of appropriate instructional materials is not an easy task for the teacher because he has to consider so many factors before making up his mind on which items to

use or not. The teacher should assure himself of the criteria guiding his selection and use of the materials. According to Onyejemezi (as cited by Owuamanam, 2005) such criteria include:

- the curriculum content objectives;
- the relevance of the materials to the culture of the learners;
- the nature of the subject matter;
- the relevance and appropriateness of materials to the specific lesson topics;
- adequacy of the materials to be used within the lesson time limit;
- availability of support facilities;
- affordability of the cost of the materials to those whose job it is to utilize them;
- the ability of the teacher to effectively integrate the materials in the teaching-learning process.

It is only when all these criteria are considered and the instructional materials selected that the teacher can strive to make maximum and effective use of them in presenting his content materials. Thus, the utilization of instructional materials in instruction can help teachers improve motivation and learning, address students with different learning abilities, expose students to a wider world of information and experts and implement new teaching techniques. It can provide teachers' access to new ideas such as ways to study themes, how to access information that is difficult to find, clarification of difficult terms or concepts and how to present information using different instructional media (Keya, 2017).

Utilization of instructional materials in teaching-learning helps the teacher in extending his learner's horizon of experience, stimulate learners' interest, increase the probability that student would learn, retain better and bring about the skills they are expected to perform (Research Gate GmbH, 2017). It helps both the teachers and learners to overcome physical limitations during the presentation of subject matter.

### **The need to encourage creativity in improvisation and utilization of instructional materials in our schools**

#### **Improvisation of instructional materials**

The very essence of creativity is its novelty or its originality. The product of creativity must be something observable or some product of creation. It could be works of art, compositions in form of a sculpture, a symphony or even a novel. Following the supply and demand limitation of major importers from the country, which brought about the fall in the price of oil by more than 40% since June 2014 when it was \$115 a barrel, which is now below \$70 after five years of stability, it is well-known fact that Nigerian's continuous large earnings or revenue from this sector will be impossible (Uzonwanne, 2016).

In the light of the above observation on our economy, it will be difficult for the Nigerian government to be able to provide ready-made learning materials for the thousands of primary and post-primary schools scattered across the length and breadth of the country. However, if the teachers desire to contribute their quota in promoting quality education, they shall have no option other than to look for alternative means of producing the relevant materials.

There is inadequate supply of support facilities with which to operate and maintain the imported sophisticated equipment in Nigeria. Most of the imported instructional materials are mainly electronic gadgets as well as projection facilities. Each of these gadgets needs electricity for its operation. So, in the rural schools where electricity is not available, the equipment will lie idle and depreciated. In the urban schools, frequent power interruptions are bound to cause extensive damages in the gadgets.

Trained educational technology personnel especially the academic and technical staff are not enough for the primary and post-primary schools in the country. Educational technologists are indispensable in the teacher educational institutions because they know more about the production techniques. They are in a better position to advise and help students and also train them in the technique of making instructional materials. The imported gadgets need expert knowledge for their operation and maintenance.

Once more, since the imported ready-made equipment were commercially oriented, they were to cut across cultural barriers. To this extent, certain topics we discuss are culture bound. Therefore, there is the need to produce materials that will readily suit specific teaching-learning situations taking into considerations the culture of the people. It will be easier for a teacher in collaboration with the students to produce materials using local resources that will satisfy their peculiar learning needs than for the teacher to try to modify the commercially produced ones to suit him.

Improvisation which is an outcome of exercising creative abilities must emphasize the use of local materials especially those which are readily available and accessible to both teachers and students. Creative abilities and exercising of resourceful skills in production of instructional materials will help to cut down on the importation of gadgets and other sophisticated accessories. Such a reduction on importation will serve dual purposes. Firstly, it will reduce the drain on the country's foreign reserve and secondly, encourage the development of indigenous technology.

#### Utilization of instructional materials

The principal role of the classroom teacher in the teaching-learning situation is that of determining what are worthwhile learning experiences to which the learner will be exposed. The teacher also determines the instructional objectives to be attained and subsequently designs, selects and utilizes the appropriate instructional materials to facilitate learning outcomes. The ability of the teacher to effectively utilize the available instructional materials optimizes the attainments of instructional situation.

In the teaching – learning process, there can never be any effective teaching without effective use of instructional materials (Owuamanam, 2005). The teacher has to determine at what stage of his lesson he has to introduce specific learning materials as a means of concretizing the abstract ideas. For this, the utilization of instructional materials and techniques depend much on the teacher's commitment and resourcefulness stemming from his professional competence. It is on this stand that the Revised Version of the National Policy on Education (section 57) stated that no educational system can rise above the quality of its teachers. It also stated in section 59 (1) that all teachers in our educational institutions, from pre-primary to University, will be professionally trained (N.P.E, 2004).

Similarly, Onyejemezi (as cited in Owuamanan, 2005) states that “Resource materials do not achieve any of the attributed values. Their usefulness depends on what the teacher makes out of them. Intelligent handling of these materials in the classroom is therefore necessary. Teachers as facilitators in the whole teaching-learning processes are indispensable. So, without right qualification, inspiration, resourcefulness, creativity and exposure to the current innovations in the field of education, teachers would be unable to apply instructional materials in their teaching.

Therefore, without adequate number of inspiring and well-qualified teachers who ought to be meeting their responsibilities in our schools, the society cannot have good education. In this case, a teacher must be devoted to his work. Supporting this assertion, Walter (as cited in Ike, 1980) states that, “a devoted teacher is one who does not bother about prospects and salaries, but of his patriotic duty to groom human material”. He uses every opportunity he has to pick up materials that could help him create some instructional materials. Thus, the devoted teacher must be attracted to his subjects. Highet cited in Nnolim (1988) observes that:

“Teaching is an art, not a science... teaching is not like inducing a chemical reaction. It is much more like painting a garden or writing a friendly letter. You must realize that it cannot all be done by formula, or you will spoil your work, your pupils and yourself”.

From the above assertion, it means that quality education also demands quality teachers. It is only devoted, creative, inspiring, well qualified teachers that can recognize the need to use the available resources, teaching strategies to solve problems in education. Consequently, the teacher should possess creative abilities in the improvisation and utilization of instructional materials for teaching – learning process in Nigerian school system.

### **Recommendations**

To encourage creativity in the improvisation and utilization of instructional materials in our school system, the following recommendations were made:

- Educational Resource Centres should be established at the local government levels to enable both primary and post-primary schools within the area benefit from the services of the centres. The centres will be where teachers will meet for discussions, investigations, study short courses and conferences. The centres will also be used for the development and testing of instructional materials.
- The federal and state Ministry of Education should as a matter of urgency grant scholarship to those willing to study Educational Technology in higher Institutions in order to produce the much needed educational technologists.
- The federal Ministry of Education should also re-introduce the financial grant it used to give to the teacher education institutions for the purchase and maintenance of instructional materials.
- Workshops and seminars should be organized from time to time for teachers where they will be taught not only to produce instructional materials but also how to use them effectively for the achievement of educational goals.

## **Conclusion**

Improvisation is the process by which educational materials can be designed and developed using locally available materials to meet specific instructional needs. The teacher can only produce such alternatives using local resources if he is creative enough. This paper has examined the need to encourage creativity in improvisation and utilization of instructional materials in Nigerian School System. The establishment of Educational Resource Centres will encourage teachers as well as the student-teachers to explore their creative skills in producing their own instructional materials. When teachers and their students produce their own instructional materials their creative abilities and skills are individually developed. In the process when teachers accept the challenges of improvisation, they will stop battling with abstractions and their work will become easier, clearer, interesting and more rewarding. In effect, teaching and learning will become simplified and the much desired quality education will be attained.

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