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EDUCATIONAL INNOVATION, CREATIVITY AND RESEARCH AS A TOOL IN THE TRANSFORMATION OF TEACHING AND LEARNING PROCESS IN NIGERIA

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Abstract

The study accessed the Educational Innovation, Creativity and Research as a Tool in the Transformation of Teaching and Learning Process in Nigeria, it is conceptual in nature, with the view to proffering solution against the demon attached to teaching and learning more especially in Nigeria. in this making, the paper is divided into the following sub-headings: the concept of educational innovation, definition of education, concept of educational innovation, relativity and innovation in education, concept of educational research, concept of transformation of learning recommendations, conclusion and references in order to enhance higher quality of learning productivities/outcomes in Nigeria

Keywords: Educational Innovation, Research Creativity, Transformation of Teaching and Learning

INTRODUCTION

All over the world, it is generally believed that education is the backbone and powerful instrument for global development, teaching and learning needs effective innovations of scale that can help produce the needed high-quality learning outcomes across the system. Innovation, research, creativity, transformation of teaching and learning are the key driving forces in social and economic development of any nation, the critical drivers of global economic trend today are know how creativity and transformation of teaching and learning, successful of educational development programmes in developing countries largely depends on the nature and extend of transformation of teaching and learning process. However, it is against this background that the study intends to access the Educational Innovation, Creativity and Research as a Tool in the Transformation of Teaching and Learning Process in Nigeria.

CONCEPT OF EDUCATIONAL INNOVATION

Definition of Education

The word 'Education' was derived from a latin word 'educare' meaning a breeding, a bringing up, a leading out, a rising up, a rearing and educate. According to Farrant (1980) Education can be defined as "the total process of human learning by which knowledge is imparted, faculties trained and skills development. Education is the way toward preparing man to satisfy his point by practicing all the resources to the furthest influences as civilian. He also defines education as the process of learning to care as a useful and acceptable member of the community to which one belongs. Education is also the act of gaining knowledge or the process of training and developing the knowledge, skills, mind character etc

especially by formal schooling teaching and training. Education is therefore the process of facilitating learning or the acquisition of knowledge, skills, value; morals, beliefs, and habits education method include teaching, training, storytelling, discussion and directed research.

Fafunwa, (2004), defined education as a process by which one acquired knowledge, information and skill in order to be useful to oneself, family and the society at large. This presupposed that, education prepares an individual for the future to be able to fulfill socio-economic and political obligations to oneself, family and the society at large. Adaralegbe, (1972) also defined education as a process which enables a person not only to be able to read and write, but also to be proficient in a given job or occupation to enable him fit himself for living in a society. Thus implies that education is the most powerful instrument of social changes. It empowers an individual economically, socially and politically. Furthermore, Education also serves the function of developing an individual socially, psychologically to enable an individual performs basic responsibilities to himself, his family and the society at large (Dare, 2002) defined education as "development in knowledge, skills, ability or character by teaching, training, study or experience.

Nwadibia, (2005), also, defines education as the total training acquires in reading, writing and experiences from exposures to persons and places including skills for ones betterment and positive adaptation to the environment one finds himself/herself. Furthermore, from above definitions education goes beyond ability to read and write alone, but can be expanded to include the acquisition of fictional skills, moral identity, performance of responsibilities and ambition in the society. Fafunwa, (1974) defined education as what each generation gives to its younger ones, which makes them to develop attitudes, abilities, skills and other behaviours which are of positive value to the society in which they live. This position reflects the sociological perspective.

Therefore, education could be understood to mean the total development of the individual child, through acceptable methods and techniques, according to his abilities and interests, as well as the needs of the society, to take his rightful place and contribute adequately to the advancement of his society (Amaele, 2003). According to Oyekan (1994), functional education remains the veritable instrument and strength of positive change for sustainable human development. It is a sacred ingredient of development and a potent means of an enduring life. Education is the bedrock of economic development of any nation. Thus, education could be serves as means of individual and community development through the process of educational researches, innovation, creativity in the transformation of teaching and learning.

Concept of Educational Innovation

In education, innovation can appear as a new pedagogic theory, methodological approach, teaching technique, instructional tool, learning process or institutional structure that, when implemented, produces a significant change in teaching and learning, which leads to better student learning. So, innovations in education are intended to raise productivity and efficiency of learning and/or improve learning quality (Serdyukov, 2017).

An innovation is an idea, practice or technology that is new to a decision-maker (Rogers 1995) and may be embodied in new and improved products and processes, new organizational forms, the application of existing technology to new fields, new resources, and new markets (Niosi *et al*., 1993). Creativity is thinking up new things. Innovation is doing new things (Levitt, 2002). To innovate is to look beyond what we are currently doing and develop a novel idea that helps us to do our job in a new way. The purpose of any invention, therefore, is to create something different from what we have been doing, be it in quality or quantity or both. To produce a considerable, transformative effect, the innovation must be put to work, which requires prompt diffusion and large-scale implementation. Innovation is generally understood as "the successful introduction of a new thing or method" (Brewer and Tierney, 2012). In essence, "innovation seems to have two subcomponents. First, there is the idea or item which is novel to a particular individual or group and, second, there is the change which results from the adoption of the object or idea" (Evans, 1970). Thus, innovation requires three major steps: an idea, its implementation, and the outcome that results from the execution of the idea and produces a change (Serdyukov, 2017).

Innovation is perceived as a rupture or change in the assumptions and practices of actors and institutions, which are not random or deliberate but require intent and planning in order to improve situations that may be problematic (Macchiarola, 2009). Similarly, Rivas et al. (2017) add that these types of planned actions drive deep changes based on desire and passion to teach and learn; they also believe that educational innovation implies rupture or change in terms of traditional education's characteristics, for example, rote, ritualistic and demonstrative learning. Innovation can be assessed by its novel, originality, and potential effect. As inventing is typically a time-consuming and cost-demanding experience, it is critical to calculate short-term and long-term expenses and consequences of an invention. They must demonstrate significant qualitative and/or quantitative benefits. As a psychologist Mihalyi Csikszentmihalyi writes, "human well-being hinges on two factors: the ability to increase creativity and the ability to develop ways to evaluate the impact of new creative ideas" (Csikszentmihalyi, 2013). In education, we can estimate the effect of innovation via learning outcomes or exam results, teacher formative and summative, formal and informal assessments, and student self-assessment. Innovation can also be computed using such factors as productivity (more learning outcomes in a given time), time efficiency (shorter time on studying the same material), or cost efficiency (less expense per student) data. Other evaluations can include the school academic data, college admissions and employment rate of school graduates, their work productivity and career growth. Assessing the effects of innvoation can also be based on the scale of implementation: singular/local/limited; multiple/spread/significant; and system-wide/total (Serdyukov, 2017).

Innovation is a third way replacing standard practices in teaching and learning with demonstrably better practices. Innovation is valued as a catalyst to growth. Other sectors have invested in the study of innovation: They have defined it, documented it, and attempted to spread it to obtain results that add value to desirable objectives (Mobbs, 2010). The process of adopting new innovations has been studied for almost a half a century, with the work of Everett M. Rogers (especially his ground breaking 1962 book *Diffusion of Innovations*) setting the stage for research on innovation. As defined by Rogers (1983), an innovation is "an idea, practice, or object that is perceived as new by an individual or another unit of adoption" (p. 11). An innovation provides an alternative solution to a problem or creates a novel solution to meet needs for an individual, group, or organization: The effectiveness of innovation, no matter at what level it is initiated in (Murphy, Redding, and Twyman, 2013).

Innovation can be directed toward progress in one, several, or all aspects of the educational system: theory and practice, curriculum, teaching and learning, policy, technology, institutions and administration, institutional culture, and teacher education. It can be

applied in any aspect of education that can make a positive impact on learning and learners. In a similar way, educational innovation concerns all stakeholders: the learner, parents, teacher, educational administrators, researchers, and policy makers and requires their active involvement and support. When considering the learners, we think of studying cognitive processes taking place in the brain during learning – identifying and developing abilities, skills, and competencies. These include improving attitudes, dispositions, behaviors, motivation, self-assessment, self-efficacy, autonomy, as well as communication, collaboration, engagement, and learning productivity (Serdyukov, 2017).

Innovations enriching education can be homegrown (come from within the system) or be imported (originate from outside education). Examples of imported innovations that result from revolution, trend, or new idea include the information technology revolution, social media, medical developments (MRI), and cognitive psychology. Innovations can also be borrowed from superior international theories and practices (see Globalization of Education chapter). National reform may also be a route to innovation, for instance when a government decides to completely revamp the system via a national reform, or when an entire society embarks on a new road, as has happened recently in Singapore, South Korea, and Finland. Innovations may come as a result of inspiration, continuous creative mental activity, or "supply pushed" through the availability of new technological possibilities in production, or "demand led" based on market or societal needs (Brewer and Tierney, 2012).

To raise the quality of teaching, you must enhance teacher education, professional development, and life-long learning to include attitudes, dispositions, teaching style, motivation, skills, competencies, self-assessment, self-efficacy, creativity, responsibility, autonomy to teach, capacity to innovate, freedom from administrative pressure, best conditions of work, and public sustenance. As such, we expect educational institutions to provide an optimal academic (Serdyukov, 2017). To identify an innovation in learning, must define the standard practice as well as the new way and determine that the new way is better. That is a high bar to clear. Validating the comparative advantage of a new practice with gold standard research is a desirable goal but one that lays a cold hand on the experimentation that fosters innovation. However, chasing after the next new thing with little evidence of its efficacy wastes valuable time and money and puts students at risk of missed opportunity to learn. A balance must be struck in highlighting the emerging practices that show promise as true innovation. A proposed innovation can be tested via formative, iterative evaluations prior to the needed validation with randomized, controlled trials (Layng, Stikeleather, & Twyman, 2006).

Innovation in any area or aspect can make a change in education in a variety of ways. Ultimately, however, innovations are about quality and productivity of learning (this does not mean we can forget about moral development, which prepares young people for life, work, and citizenship) (Camins, 2015). Every innovation must be tested for its potential efficiency. The roots of learning efficiency lie, however, not only in innovative technologies or teaching alone but even more in uncovering potential capacities for learning in our students, their intellectual, emotional, and psychological spheres. Yet, while innovations in economics, business, technology, and engineering are always connected to the output of the process, innovation in education does not necessarily lead to improving the output (i.e. students' readiness for future life and employment). Test results, degrees, and diplomas do not signify that a student is fully prepared for his or her career. Educational research is often disconnected from learning productivity and efficiency, school effectiveness, and quality output. Innovations in educational theories, textbooks, instructional tools, and teaching techniques do not always produce a desired change in the quality of teaching and learning. What, then, is the problem with our innovations? Why do not we get more concerned with learning productivity and efficiency? As an example, let us look at technology applications in teaching and learning (Serdyukov, 2017). Consequently, educational innovation if properly applicable could also serves as a powerful instrument for creativity and transformation of teaching and learning in Nigeria.

CREATIVITY AND INNOVATION IN EDUCATION

The main difference between creativity and innovation is the focus. Creativity is about unleashing the potential of the mind to conceive new ideas (Marshall, 2013). Creativity is an ability to make or bring to existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form (Olatoye, Akintunde & Ogunsanya, 2010). According to Pennick, (1992) described creativity as a process of becoming sensitive to problems, disharmonies, as well as identifying, searching for solutions, making guesses or formulation of hypothesis, and possibly modifying and restating them, and experimenting to find results and finally communicating the results. Runco, (2007), opines that creativity is a uniquely human trait that reflects our ability to adapt to changing circumstances, and our effective cognitive abilities to combine and improve upon idea to which we are exposed.

Besides that, creativity also produces actionable ideas, new concepts, new designs and new opportunities while innovation adds values to the new products (Olatoye, Akintunde & Ogunsanya, 2010). Adding to this point, Akinboye, 2003 said that without creativity, a person is not to access the fullness of information and resources available but is locked up in old habits, structures, patterns, concepts and perceptions. As the society becomes more complex, there is a gradual increase in the awareness that yesterday's methods do not effectively solve contemporary problems of the society (Akinboye, 1955 in Olatoye etc 2010) and this is why innovation and creativity are needed in nearly all the facets of the society. Creativity also refers to a psychological process, related to play, imagination, fantasy, feelings and emotions, meaning making and the use of symbols (Vygotsky, 1978; Joh-Steiner et al., 2010).

Innovation can be defined as new ideas, products or practices by an individual or group within a specific social system (Rogers & Shoemaker, 1971 cited by Kohler, Boissonnade & Giglio, 2015). Creativity in curriculum is a carefully planned, thematic approach to teaching and learning designed to support student's natural curiosity and stimulate their creativity. The curriculum is students or learners centered and have an emphasis on skills. Besides that, creative teaching means "teaching using imaginative approaches to make leaning more interesting, exciting and effective. This is a necessary part of all good teaching".

In education, it seems student creativity varies from country to country. Palaniappan (2009), he has compared creativity levels of Malaysian and American students. He reported that American students are significantly superior to their Malaysian counterparts in general creativity as well as in its components, namely fluency, flexibility, originally and elaboration (Olatoye, Akintunde & Ogunsanya, 2010). In addition, creative activities lead to innovation while creativity is the art of producing new ideas, approach or action, innovation is the process of both generating and applying such creative ideas and converting them into novel, useful and viable

products, services and business practices. Besides that, according to Trilling and Faded (2009), to be an effective in this new paradigm requires a move from teacher instruction requires a move from teacher-directed to student – centered learning, from direct teacher instruction to interactive exchange with and among students, from teaching context knowledge to equipping students with the relevant skills, and from teaching basic contents to problem solving processes (Kivunja, C.2014).

According to Tulbure (2012), effective teaching requires flexibility, creativity and responsibility in order to provide an instructional environment able to respond to the learner's individual needs and the attainment of good academic achievement and educational outcomes (Fayombo, 2015).

Moreover, most students learn best when the style of presentation is aligned with their preferred leaning style and it is important for teacher to understand the students' styles. By doing this, teachers many gain insights into ways of making academic information more accessible to diverse groups of learners and an increased awareness of individual learning styles can help educators import new information in a memorable way (Brady, 2013 cited by Fatombo, 2015). Creativity is the creative flame of innovation and the creativity education has become the essence of future education. In nutshell, when challenged by global competition, innovation is an assurance to enhance competitiveness and creativity / innovation can be greatly cultivated through education (Je Lee, 2011).

In addition, Jan 2002, defined the role of creativity in educational reform as making an all-out effort to promote creativity education as the focus of educational reform in the future. Therefore, to enable students to be creative, teaching must be innovative and creative so as to improve the learner's innovative capability. Bruce, R (1989), learning occurs in the interaction between the learners and the learning environment; when the appropriate strategies and skills are applied to technology use, making it a favorable tool for teaching, then better teaching effectiveness can be developed. Apart from that, Wu (2002), also pointed out that teaching innovation (during the teaching process) is when teachers use multi-faceted and likely teaching methods, and diversified and rich content to stimulate student's inner interest in learning, thus, developing positive student attitudes toward proactive learning and enhancing students' learning ability.

Hereby, teaching innovation and creativity can be separated into two secondary dimensions and their operational definitions can be explained as follows: (a) Innovation of teaching methods: means teachers using new and meaningful methods, for example, the application of cloud technology, conducting online education, or the use of an electronic whiteboard to solve teaching problems and being whiteboard to solve teaching problems and being. (b) Innovation of course designs: means to implement innovative course design that inspires students to integrate knowledge with a practical, flexible innovative ability, enabling them to make a more substantial contribution to the relevant areas in the future. According to Chen 2010), teaching innovation means teachers having creativity and showing vivid and likely teaching method to make students interested in learning, thus enhancing the teaching effectiveness (Je Lee, 2011).

There reasons for teaching innovation for students are: (1) Developing student capabilities for independent analysis, thinking and judgment; (2) Stimulating student interest and motivation for leaning; (3) Tapping student potential in creativity and problem solving; and (4) Enhancing students' leaning ability. The purposes of teaching innovation for teachers are: (1) Enhancing teaching quality and effectiveness; (2) Having rich and diverse teaching content and methods; (3) Having a diversified student assessment; and (4) Achieving educational goals and ideas, (Wu, C.S.2002, Chiu, C.W.2000; Chang, C.C.2008). Henceforth, Education is an engine for growth and progress for any individual, community, society and nation in general; appropriate application of creativity and innovations in education will improve transformation of teaching and learning process in Nigeria.

CONCEPT OF EDUCATIONAL RESEARCH

Research is a process of establishing a theory, a hunch, or a viewpoint based on observation and experimentation. Many researchers have been conducted on existing theories such as Piaget's theory of cognitive development, Maslow's hierarchy of needs theory, and McClelland's achievement motivation theory. There are also researches conducted on new theories, for instance, the new theory that emotional intelligence is a construct distinct from cognitive abilities (Bar On, 2000). Leedy (1997) defines research as the systematic process of collecting and analyzing information (data) in order to increase our understanding of the phenomenon with which we are concerned or interested. Best and Khan (1995) define research as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles or theories, resulting in prediction and possibly ultimate control of events. Willian and Stephen (2005) identified 7 classification of educational research as: Basic and applied research; Qualitative and quantitative research; Experimental research; Quasi-experimental research; Non-experimental quantitative research; Historical research; and Ethnographic research. Research is simply the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data. Research is a most important tool for advancing knowledge, for promoting progress, and for enabling man to relate more effectively to his environment, to accomplish his purposes, and to resolve his conflicts (Osuala, 2005)

According to UNESCO, 2008 education research refers to all efforts by the state or by person or entities are and whose aim is to improve educational methods and educational activities. Educational research refers to a systematic attempt to gain a better understanding of the educational process, generally with a view in improving its efficiency. It is an application of scientific method to the study of educational problems. Educational Research can be defined as a systematic and scholarly application of the scientific methods, interpreted in its broadest sense, to the solution of educational problems; in fact, any systematic study designed to promote the development of education as a science can be considered educational research. The term educational research should also be limited to systematic studies designed to provide educators with more effective means of attaining worthwhile educational goals (Osuala, 2005). Therefore, the educational research serves as a powerful tool of educational innovation, creativity in the transformation of teaching and learning process.

CONCEPT OF TRANSPORMATION OFLEARNING

The 2030 Sustainable Development Goals (SDGs) are underpinned by a transformative vision. This vision is especially present in the SDG Target 4.7, where education is understood as a tool with transformative power to contribute towards sustainable development. The transformation of societies is crucial for ending

poverty, protecting planet and improving the lives and prosperity of everyone (UN, 2015). However, to overcome current challenges such as the pandemic and different crises of sustainability (e.g. climate, humanitarian and inequalities), active individuals that are equipped with critical knowledge and skills are needed (Bridge, 2020).

Transformative education is not a new invention. It highlights the importance of active global citizenship and the need for transformation of our perceptions and interpretations of the world and mankind. The transformation of learning is the expansion of consciousness through which an individual can question themselves about their own feelings, beliefs, assumptions and perceptions on their purpose. Transformative learning means moving beyond the reproduction of knowledge towards critical reflection. It aims to use education as a process for accelerating the transformation of our broad sets of predispositions about the world, which stem from our social and cultural environment and make sense of our everyday life (Mezirow, 1978; 1997; 2000). Transformative learning involves deep structural changes in our perception and interpretation of the world and us (O'Sullivan et al., 2002). Transformative learning encourages people to reflect on their perceptions, understandings and interpretations about themselves, others and the world in general (Taylor, 2000). For transformative learning to happen, critical reflection of mental perceptions of the world, one's own experiences, predispositions, assumptions, actions etc. and their change is required (Balsinger *et al.* 2017).

Education should provide people with the knowledge, skills and values they need to take part in resolving the interconnected challenges of the 21st century (UN Secretary-General, 2012). It is no longer enough for education to provide basic literacy and numeracy; now it should equip individuals to be agents for sustainable change and to be able to tackle the global challenges. Recent conversations on the purpose of education raise the concept of 'regenerative education' where education is framed as an important tool to forge a path towards a more sustainable and just future (C.F. International Commission on the Futures of Education, 2021). Therefore, innovations, creativity and research need for transformation of community perceptions and interpretations of the Nigerian citezens.s

CONCLUSION

Educational innovation, creativity and research as a tool in the transformation of teaching and learning process in Nigeria. This was because the innovations, research and creativity were found very vital tools in teaching and learning process. Therefore, the research concluded that innovations, research and creativity are tool in transformation of teaching and learning process more especially in Nigeria

RECOMMENDATION

Based on the literature reviewed of the study, the following recommendations are presented for improving educational innovation, creativity and research as a tool in the transformation of teaching and learning process in Nigeria.

1. It is recommended that the government should provide all necessary research materials, tools, facilities, and adequate fund needed in teaching and learning from primary to universities.
2. All educational stakeholders and philanthropist should engage in taking responsibilities of education
3. Parent should provide effective reward and punishment style for encouraging student and teachers

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