

**CREATIVE TEACHING METHOD: AN INDEX FOR RE-POSITIONING
SCIENCE EDUCATION IN NIGERIA THROUGH
COMPETITIVENESS, INNOVATION IN TEACHING AND
ENTREPRENEURSHIP**

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Abstract

In this highly globalized and competitive world creative teaching method is a major requirement for Nigeria to compute in this challenging world .Thus, in this paper attempt was made to highlight the meaning of education and science education, importance of science education, problems towards the development of science education in Nigeria, meaning of creativity, creative teaching as well as developing creativity.

Keywords: creativity, teaching method, competitiveness, innovation.

Donahue (2017) believed that the word “education” originates from Latin to mean “to lead”. Thus education to citizens or members of any country or society is an attempt, deliberately or otherwise, to lead them either spiritually, morally, academically or skillwise from one thing to another. Joshi (2018) argued that education is beyond the walls of a school or formal learning environment. That is to say education is both formal and informal. Smith (2015) views education as: ‘the wise, hopeful and respectful cultivation of learning undertaken with the belief that all should have the chance to share in life.’ By and large education can be seen as the process of imparting or acquiring specific knowledge or skills. Federal Government of Nigeria as contained in the National Policy of Education (NPE,2014) viewed education as “an instrument per excellence” for actualizing national development.

Specifically, science education is the teaching and learning of science. It deals with introducing people to the science content and process Kola, (2013). Science education is the pillar upon which nation’s development rest. Nwachukwu (2012) argued that science education is the key to reducing illiteracy and poverty. It contributes to areas such as agriculture, commerce and industrial development of countries the world over.

Indeed, the importance science education to national development cannot be over emphasized. Achievement in science education is achievement in national economic growth. Kola (2013) hold the view that a well- trained science education graduate can be self-employed or even employer of laborby:

1. Establishing own school,
2. Establishing small business outfit such as chalk making
3. Establishing ICT cafes, e.tc

Kola (2013) discussed, extensively, the problems militating against the development of science education in the country. These include the following:-

- a) Security. This is an issue of concern across Nigeria. Security challenges range from insurgency of Niger Delta in the south-south, separatists in South East, Cattle hustlers and kidnappers in North Central, South West and North West to Boko Haram in the North East. These challenges result into loss of rear experts in science education through mass resignations or death apart from destructions of the inadequate facilities. In some cases, schools are closed for severally months
- b) Corruption. This is perhaps the father all challenges facing the country. It can be seen and felt in very aspects of our lives. Evidences of corruption are vivid in religious activities, social activities (like marriage), educational and heath institutions e.tc. A sad situation is when the recovered looted fund are looted. Rear resources set aside for developing science education in the country end in private pockets or accounts.
- c) Political. The political in the country lack the vision and will to take science education to the next level over the years. This evident in the budgetary allocation to education which is in most cases less half of the UNESCO recommendation of 26%
- d) Economy. Nigeria's economy is heavily depended on oil. The effect here is more pronounced in the purchase of science equipment from abroad.
- e) Teacher. There is the problem enough and qualified science education teachers in the country. Another problem is utilization of the few available science education teachers.

Sadly, students' performance in science subjects especially in public examinations such as the West African Examinations Council (WAEC) lives much to be desired. Table 1 shows students' enrolment and performance in Biology, Chemistry, Physics and Mathematics in WAEC examinations from 2008 to 2012

Table 1 Enrolment and Performance of Students in Biology, Chemistry, Physics and Mathematics from 2008 to 2012

Year	Biology		Chemistry		Physics		Mathematics	
	Total Entry	% pass at grade A1-C6	Total Entry	% pass at grade A1-C6	Total Entry	% pass at grade A1-C6	Total Entry	% pass at grade A1-C6
2008	1259965	33.94	418423	44.44	415113	48.26	1268213	57.27
2009	1340206	28.95	468546	43.69	465636	47.83	1348528	47.04
2010	130048	49.65	465643	50.70	463753	51.27	1306535	41.95
2011	1505199	38.50	565692	49.54	563161	63.94	1508965	40.35
2012	1646150	35.66	627302	43.13	624658	68.74	1635357	50.58

Source: Sakiyo&Badau (2015)

Such poor or not too impressive performance is attributed to factors like students' interest (Isa, 2017) or the way the subjects are presented Nizolman, (2013). The method of teaching will go a long way in improving students' performance.

The main objective of this paper is to discuss creative teaching method as a way to reposition science education through competitiveness and innovation.

Meaning of Creativity

The term creativity is a concept viewed differently by different people. To likes of Woodman & Schoenfeldt (1989) creativity is seen as a social concept that is used to "designate something perceived by others" as creative. Kokot & Colman (1997) looked at creativity as "anything that someone does in a way that is original to the creator and that is appropriate to the purpose or goal of the creator". Creativity allows people to see things differently and better deal with uncertainty. It boosts the brain and thus promotes learning

Creative Teaching Method

Many educators are of the believe that effective teaching is function of clear understanding the appropriate teaching methods relative to specific learning situations. Creativity is "a quality which causes the teacher to develop original and imaginative ideas in teaching" (Ghofur 2012). Therefore, creativity should be a living experience of the teacher. Here the teacher attempts to change students' experience together with them. The teacher may include new planning procedures, new ways to seek students' interest, better organization of the subject matter, or greater variety in teaching methods (DePorter, et al 2002).

Hornig, etal (2005) asserted that unlike with the conventional methods, creative instruction allow the students to think independently, participate actively as well as to

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express themselves as freely as possible. Thus the students are more likely to become creative professionals. Creativity is the “process of identifying one’s self as well as defining one’s own existence” (Ghofur, 2012). It is an abstract concept unless it is applied in classroom. For a complete creative teaching, creativity should cover such areas as:

1. Creativity in methods. The teacher is expected to vary teaching methods and make lessons as fresh as possible.
2. Creativity in facilities .Physical facilities in the classroom can be effectively used as stimuli to arouse creativity.
3. Creativity in assignment. Thought provoking assignments are needed.
4. Creativity Qualities of the teacher. The teacher has to be highly creative. We should not take intelligence for creativity as creativity much broader.
5. Enthusiasm. Interest of both the teacher and the learners is essential.
6. Open Mindedness. The teacher should avoid bias and jumping to conclusions.
7. Sensitivity. A creative person should be sensitive to his environment. And
8. Personal Growth. A creative teacher grows with his age.

Creativity Development

Ghofur (2012) advanced the following suggestions towards developing creativity. These are:

- a) Good reading habit. Since reading aids teaching and learning, there is the need for both teachers and learners to develop and sustain good reading program.
- b) Problem-solving techniques. The creative person is one who is always involve in “isolating the problem, suggesting solution, evaluating solutions, selecting the best solution out of the rest and putting it into practice on experimental basis” (Ghofur, 2012).
- c) Brainstorming Approach. List all ideas that come cross you .You may ideas with others in the field.
- d) Patient and intelligent judgment. A creative teacher listens to ideas or initial reactions.
- e) Encouraging creativity in students.

Suggested Strategies for Creative Instructions

The following are few suggestions for effective creative instructions:

1. Student-centred learning. A major role of the teacher is to serve as a facilitator. He should guide the students to discover and reflect. He should prepare questions for group discussions and allow the students to how to approach them independently. According to Horng et al the teacher “act as a learning partner, navigator and sharer, while students transform from passive listeners to observers, performers and co learners”.
2. Class management strategies. To promote and sustain creativity in the classroom, there is the need for friendly interactions as well as appreciating the students’ individual differences and needs. Students are treated kindly, gently but firmly in both tones and body language. They should be allowed to express ideas and thoughts without interruption. Teachers should as humorous as possible without negating disciple.
3. Connecting in-school and out of school experiences. It is common for teachers to dogmatically adhere to textbooks without any attempt to connect to students’ out-of – school experiences. Teachers should attempt as much as possible to link the two worlds.

Teachers should use ethno science or ethno mathematics in teaching science or mathematics. Students should not only learn science but also appreciate the fact that science is not foreign. Rather science is a reality and available in the school, at home or at the market.

4. **Effective Questions.** A lot of people believe that ability to raise good questions is a sure way to creativity. Thus, students should be encouraged to ask and seek answers to questions and thoughts.

Importance of Creativity in Learning. Creativity is very important for teaching to be successful. The following are some reasons to believe that creativity is important in learning:

1. Learn with fun
2. Freedom of Expression
3. Emotional Development
4. Enhances Thinking Capability
5. Reduced Stress and Anxiety
6. Boosts Problem Solving Skills
7. Improves Focus and Attention
8. Better Communicators
9. Follow Passions
10. Future opportunities
11. Innovative Mindset
12. Drive Lifelong Learning

Science Education-Innovation and Competitiveness

Sener & Sandogan (2011) defined innovation as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. They further argued that as a major requirement for innovation the product, process and method must be new or significantly new to the firm or system. Generally, innovation can be seen from four angles: product, process, marketing and organizational. Briefly, these are explained as follows-

a) **Product innovation** is the bringing a new or significantly new good or service respect of technical specifications, software etc.

b) **Process innovation** is the implementation of new or significantly improved production or delivery ways

c) **Marketing innovation** refers to the implementation of new or significantly improved marketing methods covering packaging, pricing etc.

d) **Organizational innovation** is seen as changes in workplace or external relations.

It can be seen, from above, innovation is vital on competitiveness and sustainable economic growth in both micro and macro economy levels (Sener & Sandogan, 2011).

Conclusion

For any organization or country to develop it needs creative workforce. A workforce that both innovative and competitive. This is possible only if our science education remodeled so as to the trained manpower. Creative teaching method appears to the way out. A new or significantly improved science education is a pinnacle for sustained development. Nigeria must direct its attention by applying appropriate policies

stimulating development in science education for it to be competitive globally economically and technologically. For this to be achieved creative teaching method should be appreciated and used.

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