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Students' Perception of Ceramics Education in Nigeria Tertiary Institutions

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Abstract

An investigation was conducted into the problems militating against students' enrolment in ceramics education at tertiary institutions in Nigeria. The design of the study was a descriptive survey. The target population of the study was 8234 (eight thousand, two hundred and thirty four) students of four faculties in Nnamdi Azikiwe University Awka, Anambra state. These faculties were: Arts, Engineering, Physical Sciences, Environmental Sciences and Education. The sample was obtained using stratified random sampling technique to select 10% of each stratum (male and female students) which was 823 (eight hundred and twenty three) in all. The instrument for data collection was questionnaires. The data was analyzed using mean score, standard deviation and t-test statistics for the three research questions and one hypothesis posed for the study. The result of the tested hypothesis at 0.05 level of significance disclosed that there is no significant difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria. The findings of the study showed that more than 80% (eighty percent)

of students were of the opinion that ceramics education cannot guarantee a job opportunity for them after graduation.

Introduction

Ceramics education is one of the major programs in Nigeria tertiary institutions designed to promote growth in aesthetics, technical knowledge, and conceptual approaches. The programme uses individual tutorials, group seminars, and critiques to provide a variety of settings for development and exchange of ideas relevant to the arts in general, and ceramics in particular. Tertiary education also referred to as third stage, third level, and post-secondary education, is the educational level following the completion of a school providing a secondary education. Brick (2006) defines tertiary education as including universities as well as institutions that teach specific capacities of higher learning such as colleges, technical training institutes, community colleges, nursing schools, research laboratories, centres of excellence, and distance learning centres. Higher education is taken to include undergraduate and postgraduate education. Tertiary education generally culminates in the receipt of certificates, diplomas, or academic degrees. Perception is the ability to see, hear, or become aware of something through the senses. It is the state of being or process of becoming aware of something in such a way.

The undergraduate programme in ceramics education is designed with the philosophy and intent of providing a broad, yet specific, base of knowledge as related to the ceramic arts (Nick, 2008). Educational experiences include technical explorations with ceramic materials and firing processes (electric, gas, wood, raku, primitive, and vapor). Two- and three-dimensional design concepts and aesthetics are studied as related to ceramic arts. Historical precedents, contemporary issues; artists, and art works are incorporated throughout the curriculum. The studio environment is one where vessel aesthetics; form and surface design, are taught along with ceramic sculpture (Dennis, 2009). Conceptual development and innovative contemporary forming processes are taught in addition to traditional techniques of hand-forming, wheel-throwing, and mould-making.

Any nation that seeks relevance and competitiveness in the age of globalization must make every effort to give its citizens the best education possible. Ceramics Education is an instrument par excellence that a nation can rely upon to bring about self-reliance. The National Policy on Education (NPE, 2004) has provisions for the teaching of art at all levels of education. It recognized the role of art education which includes ceramic study as one of the powerful instrument for self-reliant economy. It is one of the disciplines in our educational programme that avail trainees the opportunity of acquiring appropriate skills, abilities and competences both mental and physical as equipment for the individual to live and contribute to the development of the society.

But the reality of the situation is that the teaching of ceramics in Nigeria's tertiary institutions has a huge setback because of students' ambivalent negative perception towards the course. Many students have neglected ceramics education; some of them have even despised the course. Consequently, students' enrolment into the Department of Fine and Applied Arts to study ceramics has been on the decrease in the recent time. One thing that has become worrisome is the fact that the children of professional ceramists, those who teach ceramics in higher institutions now opted for courses or careers other than ceramics (Arayela, 2006). Due to the increase in popularity of sciences in the society, students now develop more interest in science courses to the detriment of art related courses, especially ceramics (Okon, 2010). Some students have developed hatred on ceramics education for no just reason. This may be attributed to the false stories they were told about arts education in general and ceramics in particular. Some students also believe in the fallacy that those who study arts in the university never get rich because it has little or no job potentials (Bello, 2003). Students speculate that ceramics education is a very difficult and tedious discipline. Therefore, anyone applying to study the course is subjecting himself or herself to perpetual stress and suffering. Others speculate that ceramics education is for those who were either less intelligent or did not meet up with the requirements

for their choice of study and then decide to manage it temporarily and reseat for another O' level or JAMB examination later.

The researcher submitted that understanding of students' perception of ceramics and factors responsible for the choice of other disciplines like architecture, mathematics, computer science, microbiology, engineering and other fields of human endeavour beside ceramics could assist in designing a genuine programme that will attract youths and encourage more students towards ceramics. Until the factors responsible for the reluctance of most Nigerian youths to enter into ceramics profession are clearly identified and courageously tackled, ceramics development efforts will continue to end in futility and the masses will continue to suffer in abject poverty and the hard earned foreign exchange will continue to be spent on importation of ceramics products in Nigeria (Umaru, 2002). In order to ameliorate these precarious situations, this research was designed to look into ceramics education in Nigeria tertiary institutions and students' perception of it.

With the facts established so far about ceramics education in Nigeria tertiary institutions and students' perception of it, the problem of this study is posed in form of a question: "what is the students' perception about ceramics education in Nigeria tertiary institution?"

Importance of Ceramics

Ceramics play an important role in addressing various households, environmental and industrial needs. Apart from ceramic table and sanitary wares which includes cups, plates, pots, vases and baths among others, much of the construction industry depends on the use of ceramic materials. This includes brick, cement, tile, and glass. Cement is used to make concrete which in turn is used for roadways, dams, buildings and bridges, uses of glass in the construction industry include various types of window, glass block and fibres for use in insulation of ceiling panels and roofing tiles. Brick is used for homes and commercial buildings because of its strength, durability and beauty. Brick is the only building product that will not burn, melt, dent, peel, warp, rot, rust or be eaten by termites. Tile is used in

applications such as flooring, walls, countertops, and fireplaces. Tile is also a very durable and hygienic construction product that adds beauty to any application. The electronic industry would not exist without ceramics as ceramics can be excellent insulators, semiconductors, superconductors and magnets. Numerous as the advantages of ceramics are the students' perception of ceramics in Nigerian Universities are negative.

Significance of the study

There seems to be a downward trend in the students' enrolment into the Department of Fine and Applied Arts to study ceramics in various tertiary institutions across the nation. This may be engendered by students' negligence and perception about ceramics as a course in the University. Some students may have assumed that ceramics is tedious and difficult to study in the tertiary institutions. The study represents a step forward in the writer's attempt to fulfil an urge to come to a deeper understanding and appreciation of ceramics. The study is very significant because of the importance and lucrative nature of ceramics to mankind and if properly looked into by the Government, it will encourage economic growth, national development and attract youths and more prospective students towards ceramics.

Statement of the problem

In contemporary Nigerian society, it seems that sciences have been popularized and also given priority more than arts by the federal government and even the citizenry. Due to the increase popularity of sciences in the society, students now develop more interest in science courses to the detriment of art related courses, especially in ceramics education. Some students have also developed hatred for ceramics for no just reason. This may be attributed to the false stories they were told about arts education in general and ceramics education in particular. Some students also believe in the fallacy that those who study ceramics in the university never get rich because it has little or no job potentials.

Purpose of the study

The main aim of this study is to examine students' perception of ceramics education in Nigeria tertiary institutions. Specifically, the study seeks to:

1. Determine the students' general opinion about ceramic education in Nigeria.
2. Find out the students' view on the importance of ceramics education in Nigeria.
3. Ascertain the students' view on the contribution of ceramics education to national development in Nigeria.

Research questions

The following research questions guided the study.

1. What is the students' general opinion about ceramic education in Nigeria?
2. What is the students' view on the importance of ceramics education in Nigeria?
3. What is the students' view on the contribution of ceramics education to national development in Nigeria?

Hypothesis

The following hypothesis will be tested at 0.05 level of significance.

H₀: There is no significant difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria.

Research methodology

The design of the study was a descriptive survey. The target population of the study was 8234 (eight thousand, two hundred and thirty four) students from five faculties in Nnamdi Azikiwe University Awka, Anambra state. These faculties are: Arts, Engineering, Physical sciences, Environmental Sciences and Education. The sample was

obtained using stratified random sampling technique to select 10% of the stratum which was 823 (eight hundred and twenty three). This was to ensure adequate representation of the subjects thereby reducing sampling error. Half of the number is males and the other half female students (1:1). The instrument for the study was a researcher developed questionnaire titled Ceramics Education in Nigeria Tertiary Institutions and Students Perception Questionnaire (CENTISPO) structured on a 4 – point rating of Strongly Agree (SA) 4 points, Agree (A) 3 points, Disagree (D) 2 points and Strongly Disagree (SD) 1 point.

The instrument was validated by incorporating the suggestions of the researcher's colleagues in the Department of Fine and Applied Arts, from Nnamdi Azikiwe University Awka, Anambra state. The reliability of the instrument was established using the Cronbach Alpha analysis. The reliability coefficient value yielded 0.85 which was considered adequate for the study. The instrument was personally administered to the respondents by the researcher and two trained research assistants face to face. A total of eight hundred and twenty three (823) copies of the questionnaires were administered and collected on the spot from the respondents. On the process of collection, 6 (six) questionnaires were wrongly filled, 8 (eight) were mutilated, while 9 (nine) got lost on transit. Therefore, only eight hundred (800) questionnaires were successfully collected from the respondents. The researcher had to work with the 800 (eight hundred) questionnaires. The data was analyzed using mean score, standard deviation and t-test statistics for the three research questions and hypotheses posed for the study. Any mean score lower than 2.50 implied disagree whereas equal to or higher than 2.50 implied agree to the items. T-test statistics was used in testing the null hypotheses at 0.05 level of significance.

Literature review

A ceramic is an inorganic, non-metallic solid prepared by the action of heat and subsequent cooling (Wiki, 2010). Ceramic materials may have a crystalline or partly crystalline structure, or may be amorphous

(e.g. a glass). Because most common ceramics are crystalline, the definition of ceramic is often restricted to inorganic crystalline materials, as opposed to the non-crystalline glasses, a distinction followed here. According to Zephaniah (2008) the earliest ceramics made by humans were pottery objects, including 27,000 year old figurines, made from clay, either by itself or mixed with other materials, hardened in fire. Later ceramics were glazed and fired to create a coloured, smooth surface. Ceramics now include domestic, industrial and building products and a wide range of ceramic art. In the 20th century, new ceramic materials were developed for use in advanced ceramic engineering; for example, in semiconductors (Dennis, 2009).

Education in its general sense is a form of learning in which knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, research, or simply through auto didacticism (Dewey, 2008). Generally, it occurs through any experience that has a formative effect on the way one thinks, feels, or acts. Ceramics education is therefore a form of learning in which knowledge and practical skills of how to make ceramic products for consumption is transferred from lecturer to students in any academic institution.

Tertiary institution is a study beyond the level of secondary education. Institutions of higher education include not only colleges and universities but also professional schools in such fields as law, theology, medicine, business, music, and art (Sarvon, 2003). They also include teacher-training schools, community colleges, and institutes of technology. At the end of a prescribed course of study, a degree, diploma, or certificate is awarded.

A student is a learner, or someone who attends an educational institution. In some nations, the English term (or its cognate in another language) is reserved for those who attended university, while a schoolchild under the age of eighteen is called a pupil in English (or an equivalent in other languages), although in Nigeria a person enrolled in Junior Secondary one (J.S.1) is often called a student

(Nnadi, 2004). In its widest use, *student* is used for anyone who is learning, including mid-career adults who are taking vocational education or returning to university.

Perception (from the Latin *perceptio, percipio*) is the organization, identification, and interpretation of sensory information in order to represent and understand the environment (Schater, 2011). All perception involves signals in the nervous system, which in turn result from physical stimulation of the sense organs (Bernstein, 2010). The premise of this paper is centred on the perception of students on ceramics education in tertiary institutions across the nation.

Stanwick and Sherman (2006) investigated outcomes from various levels of ceramics education and training and found out that the employment outcomes six months after training depend on the level of ceramics education and training undertaken. They also considered initial outcomes by gender of ceramics education and training (ECT) students. They found that males had a smoother transition to employment, obtaining better employment outcomes six months after training when compared with females.

Smith and Green (2005) conducted a follow-up survey of school students one to three years after they had left school. They found that participating in a school-based apprenticeship in ceramics production provides a clear pathway into apprenticeship or traineeships in a similar industry area.

Using the Longitudinal Survey of Australian Youth Data, Anlezark, Karmel and Ong (2006) found that students have a very wrong perception about ceramics education. Students speculated that the course have no job potential, therefore will not lead them anywhere in future after graduation. They also noted a mismatch between the ceramics courses and programs which students undertook at school, and those which they studied after school. This leads to the question of whether school ceramic studies need to be better linked with the world of work and post-school study or, alternatively, should concentrate on providing a broad pre-vocational skills.

Lamb and Vickers (2006) examined the number of students that applied for ceramic studies in Mutchana University, Newcastle at the commencement of new section. They found out that the number of students enrolled to study ceramics education in the university is on decline. This is an indication that admission into ceramics education is drastically reducing year by year.

Harris, Rainey and Sumner (2006) conducted a study on the rate of students drop-out from ceramic studies on campus at Hyaghi University, Norway. The findings recorded showed that students admitted to study ceramics education in the school were dropping-out either at the end of every semester or at the end of a particular academic year. This trend was attributed to their negative view about ceramics education in general.

Results

The results of the data analyses were presented in the order of research questions and hypotheses posed for the study.

Research question one: What is the students' general opinion about ceramic education in Nigeria?

Table 1: Mean rating and standard deviation on the students' general opinion about ceramic education in Nigeria (N = 800)

S/N	Items	Male students			Female students		
		\bar{X}	SD	DEC	\bar{X}	SD	DEC
1	Ceramics education is a difficult and tedious course	3.18	3.41	A	3.42	4.58	A
2.	Ceramics is not a prestigious profession	3.35	3.35	A	3.18	3.15	A
3.	Ceramics production is a very lucrative business	1.83	3.30	D	2.23	2.58	D
4.	Ceramics education has no job potential	2.98	2.47	A	3.06	2.63	A
5.	Ceramics education is for less intelligent students	3.16	3.09	A	2.88	2.15	A

\bar{X} = Mean, **SD** = Standard Deviation, **DEC** = Decision

The table one above reveals that items 1,2,4, and 5 have mean scores that is above the cut-off mark of 2.50 which was regarded as acceptable limit as indicated by the researcher. However, the respondents disagree on the item 3 in the table. Therefore, all items in the table one above were considered acceptable except item 3. This is an indication that the respondents have the same opinion about ceramic education in Nigeria.

Research Question Two: What is the students' view on the importance of ceramics education in Nigeria?

Table 2: Mean rating and standard deviation on the students' view pertaining the importance of ceramics education in Nigeria (N = 800)

S/N	Items	Male students			Female students		
		\bar{X}	SD	DEC	\bar{X}	SD	DEC
6	Money spent on ceramics education is a waste	3.31	3.06	A	3.09	3.02	A
7	Ceramics education should be made compulsory in the tertiary institutions in Nigeria	2.38	1.55	D	2.34	1.68	D
8	Ceramics education should be proscribed from the tertiary institutions in Nigeria	3.42	4.58	A	3.16	3.09	A
9	Department of ceramics education should be established in various tertiary institutions	2.27	1.57	D	2.06	1.40	D
10	Ceramics education encourages self-reliant	1.81	1.50	D	1.80	1.78	D

X = Mean, **SD** = Standard Deviation, **DEC** = Decision

The table two above reveals that items 6 and 8 have mean scores above the cut-off mark of 2.50 that was regarded as acceptable limit as indicated by the researcher. The table also indicates that the respondents unanimously disagree with items 7, 9, and 10. Therefore, items 6 and 8 were considered acceptable, while items 7, 9, and 10 were not acceptable. This shows that the students' has the same view on the importance of ceramics education in Nigeria.

Research Question Three: What is the students' view on the contribution of ceramics education to national development in Nigeria?

Table 3: Mean rating and standard deviation on the students' view pertaining the contribution of ceramics education to national development in Nigeria (N = 800)

S/N	Items	Male students			Female students		
		X	SD	DEC	X	SD	DEC
11	Ceramics education encourages wealth creation in Nigeria	1.98	1.30	D	2.04	1.74	D
12	Ceramics education encourages job creation in Nigeria	2.23	1.33	D	1.98	1.61	D
13	Ceramics education teaches Nigerians how to produce indigenous ceramics product	2.88	2.15	A	3.31	3.06	A
14	Ceramics education encourages Nigerians not to depend on foreign ceramics product	3.18	3.15	A	2.98	2.47	A
15	Government should give priority attention to Ceramics education in Nigeria	2.06	1.40	D	2.38	1.55	D

\bar{X} = Mean, **SD** = Standard Deviation, **DEC** = Decision

The table three above reveals that items 13 and 14 have mean scores above the cut-off mark of 2.50 that was regarded as acceptable limit as indicated by the researcher. The table also indicates that the respondents unanimously disagree with items 11, 12, and 15. Therefore, items 13 and 14 were considered acceptable, while items 11, 12, and 15 were not acceptable. This shows that the students' has the same view on the importance of ceramics education in Nigeria.

Null Hypothesis: *There is no significant difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria*

Table 4: Summary of t-test on the difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria

S / N	Items	Male		female		PL	t-cal	df	t-crit	remk
		\bar{X}	SD	\bar{X}	SD					
1	Ceramics education is a difficult and tedious course	3.18	3.40	3.43	4.56	0.05	-0.088	798	1.96	A
2	Ceramics is not a prestigious profession	3.35	3.35	3.18	3.15	0.05	0.074	798	1.96	A
3	Ceramics production is very lucrative	1.83	3.31	2.23	2.58	0.05	-0.308	798	1.96	D
4	Ceramics education has no job potential	4.298	2.47	3.05	2.64	0.05	-0.040	798	1.96	A
5	Ceramics education is for less intelligent students	3.16	3.09	2.88	2.15	0.05	0.148	798	1.96	A

X = Mean, SD = Standard Deviation, PL = Probability Level, t-cal = t-calculate, df = degree of freedom, t-crit = t-critical, rem = remark, NS = Not Significant

In the table above, the t-calculated value of each item was obtained; the degree of freedom of all items was 798, while the critical t-table of 1.96 was obtained at 0.05 level of significance. From the table, it can be seen that the t-calculated values for all items were less than critical t-value. Therefore, the null hypothesis of no significance difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria was accepted.

Discussion of findings

The result on table one showed that students submitted that ceramics is a difficult and tedious course to offer. They assume that it is a course they had to waste their time molding cups and plates with clay and water. They even perceive ceramics education to be a dirty course. They decline admission into ceramics because they believe that it will not make them prestigious in future. They absolutely debunk the idea that ceramics production is a very lucrative job. They were also of the opinion that ceramics as a discipline cannot guarantee a job opportunity for them in future when they might have graduated from the University. They also conjecture that such a course is meant for weak and low intelligent students to manage instead of staying at home idle.

The result on table two revealed that students were of the view that money spent on ceramics education is a waste. In others, parents sending their children to go and study ceramics in tertiary institutions were just wasting their money foolishly. They refuted the suggestion that ceramics education should be made compulsory in the tertiary institutions in Nigeria. They unanimously agreed that ceramics education should be proscribed from tertiary institutions in Nigeria. They disagreed with the ideal to establish department of ceramics education in various tertiary institutions in Nigeria. They also oppose the assertion that ceramics education encourages self-reliant.

The result from table three disclosed that students disagreed with the fact that ceramics education encourages wealth creation in Nigeria. Students were against the claim that ceramics has job potential; let alone encouraging job creation in Nigeria. They agree that the only good thing about ceramics education is that it teaches Nigerians on how to produce indigenous ceramics product for domestic use and not to depend on ceramics products imported from abroad. They absolutely counter the idea that Nigeria government should give priority attention to ceramics education. They considered such move as a waste of time and national resources.

The result on table four which tested the hypothesis at 0.05 level of significance divulged that there is no significant difference between the mean ratings of male and female students on their general opinion about ceramic education in Nigeria. This implied that their opinions are analogous.

Conclusion

Students who are of the opinion that ceramic education in Nigeria is a difficult, tedious, course that is not lucrative and has no job prospects speak out of ignorance and in some cases, laziness.

Ceramics education is an instrument per excellence that a nation can rely upon to bring about self-reliance. It is one of the few disciplines in our educational programme that avail trainees (students) the opportunity to acquire appropriate skills, abilities both mental and physical as equipment for the individual to live and contribute to the development of the society. In Nigeria for instance, where high unemployment is the case, any student who studied ceramics does not need to stay in the employment market waiting for jobs that does not exist.

Since ceramics education trains student to produce indigenous ceramic products such as cups, plates, pots, vases, and other household utility wares among others, and be self reliant. The items mentioned are seriously and heavily in demand daily by consumers as household, utility wares and souvenirs during occasions such as wedding, burial ceremonies among others. Those who studied ceramics in tertiary institutions and are producing these ceramics product mentioned are not only self employed but also employed others thereby becoming employers of labour and assisting the government in reducing unemployment. Few examples of such students are Goddy Udeh of Frontline Ceramics, Enugu, Nigeria, Tony Etuokwu of Kindred Ceramics and Uzzi Festus of Uzzi Ceramics both in Benin City, Nigeria.

Recommendations

Based on the findings, the following recommendations are made:

1. The government should design a genuine programme that will attract youths and encourage more prospective students towards ceramics education.
2. Government in partnership with the Universities, Polytechnics, as well as colleges of Education in Nigeria should endeavour to provide facilities and equipment needed for effective teaching and learning of ceramics in their respective institutions.
3. The factors responsible for the reluctance of most Nigerian youths to enter into ceramics profession such as the belief that ceramics is a tedious course that is not prestigious discipline and has little job potentials should be clearly identified and courageously tackled.
4. The Federal government should ban the importation of ceramics product in Nigeria. This will encourage local ceramics production and increase its demand. This trend will attract prospective students into vying to study ceramics education in the university with intention of going into ceramics production after graduation.
5. Seminars and workshops in ceramics education should be organized for prospective students where they will be thought the importance of ceramics and even how to make it.
6. Parents should be advised to encourage and support their children to study ceramics education at the university level.
7. The Federal government in collaboration with commercials should design a scheme that will enable graduates of ceramics education to have access to small and medium term loan, so that they can borrow money and set up their own ceramics industry.

References

- Anlezark, A., Karmel, T. & Ong, K. (2006). Have school ceramics education and training programs been successful? Adelaide, NCVER.
- Arayela, O. (2006). The Changing Roles of Ceramics within the Context of *Globalization*. A Lead Paper Delivered at the Ceramic Association of Nigeria I (CERAN) National Conference "Akure 2006" Federal University of Technology, 1 Akure, Nigeria. Pp. 1, 5-8, 10.
- Bello, F. B. (2003). Ceramic techniques for Post-primary Institutions in Kaduna state M.A Thesis Department of Industrial Design, ABU Zaria. Pp. 30, 66, 73.
- Bernstein, D. A. (2010). Essentials of Psychology. Cengage Learning. Pp. 123-124: ISBN 978-0- 495-90693-3. Retrieved 25 March 2011.
- Brick, J. (2006). "What is academic culture?". *Academic Culture: A Student's Guide to Studying at University*. Sydney, N.S.W: National Centre for English Language Teaching and Research. pp. 1–10.
- Dennis, B.C. (2009). The Impact of Small-Scale Ceramics Industries on National Development. *Ashaku Journal of Ceramics*, 24(2), 13-15.
- Dewey, J. (2008). *Democracy and Education*. The Free Press pp. 1-4.
- Harris, R., Rainey, L. and Summer, R. (2006). Crazy paving or stepping stones? Learning pathways within and between vocational education, training and higher education. Adelaide: NCVER.
- Lamb, S. & Victers, M. (2006). Variations in VET provisions across Australian schools and their effects on student outcomes. *Research report 48*, Australian Council for Educational Research, Melbourne.

- Nick, A.M. (2008). Contemporary Ceramics in Nigeria: Ashaku, *Journal of Ceramics Education*, 41(3), 228-257.
- Nnadi, J. (2004). Making students self reliant and globally competitive through quality education in Nigeria *Ashaku Journal of Ceramics*, 52(2), 13-15.
- NPE (2004) "National Policy of Education" Federal government press, Federal ministry of education, federal capital territory (FCT) Abuja, Nigeria.
- Okon, B. A. (2010) Clay as a medium for promoting creative ability for ceramics leaching in Nigeria. *Ashaku Journal of Ceramics*, 52(4), 33-35.
- Schacter, D. (2011). *Psychology of Education*. Worth Publishers, Atlanta Georgia, USA.
- Smith, E. & Green, A. (2005). How workplace experiences while at school affect career pathways. Adelaide, NCVER.
- Stanwick, J. & Sherman, R. (2005). Australian Qualifications Framework lower-level qualifications: Pathways to where for young people? Adelaide: NCVER.
- Umaru, M.S. (2002). Tradition/Contemporary Ceramics Landscape of Expectations. Unpublished Conference Paper Ceramic and National Development Zaria. P.8.
- Wiki (2010). Ceramic Tile and Stone Standards. Ctoa.org. Retrieved on 2011-11-28.
- Zephaniah, W. (2008). The hidden treasurer in ceramics production. Bumanax paper house, Carimo: Singapore. Pp. 8-9.