PROMOTING PARTNERSHIP AMONG PRIVATE CERAMICS FIRMS/PRACTITIONERS AND TERTIARY INSTITUTIONS IN NIGERIA FOR IMPROVED CERAMIC PRODUCTIVITY

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Abstract
With technological advancement, many countries have improved the production of ceramics for economic progression. In a third world nation like Nigeria, there seem to be a gap between the opportunities offered by new technologies and the practice of ceramics. To bridge the gap, the role of collaborative partnership cannot be over-emphasized. This paper therefore, advocates partnership between private ceramics firms/individual practitioners and Nigerian tertiary institutions for improved productivity in both quality and design of ceramics wares. In order to address this, the paper discusses ceramics' training in Nigerian educational system with emphasis to the study of ceramics in Nigerian higher institutions. Furthermore, the challenges of ceramics education as well as the benefits of collaborative partnership to ceramics practice in Nigeria are pointed out and discussed. The paper concluded by listing a number of recommendations which can help in advancing ceramics production in Nigeria.

Introduction
Ceramics production in every society is very imperative. Hence, it is an aspect of contemporary Nigerian art that needs to be sustained and developed for economic growth, especially when compared to the multifaceted utilitarian-functions it offers or performs in different areas of human life. On the other hand, formal ceramics training in Nigeria is mostly carried out in higher institutions like Colleges of Education, Polytechnics, and Universities. While quality and design plays paramount roles in the achievement of standard ceramic products, the processes and techniques are very often hampered by the kind of facilities/equipments that are exposed to learners (ceramics students) in some tertiary institutions. Apart from that, the inability of the Nigerian educational system to meaningfully sustain a smooth period of training (study) without being intermittently affected by circumstances like strike is still an issue that needs to be addressed in order to give quality ceramic training for Nigerian youths.

These, among other issues, constitute major challenge to sustaining a viable environment for the training and practice of ceramics art/technology in Nigeria. The result is that, this has adversely affected local ceramic production and consequently paved way for huge influx of foreign ceramic wares supplying the domestic and industrial needs of the Nigerian populace; thereby reducing the chances of developing the indigenous ceramic industry. This paper, therefore, advocates for partnership between private ceramics firms/individual practitioners and ceramics departments in Nigerian tertiary institutions; not only as an option for improved productivity in both quality and

design of ceramics wares in Nigeria, but also as a strategy for galvanizing local support for the adoption of better ceramic production methods that would advance the economic growth of Nigeria.

Ceramics Training in Nigerian and the Need for Collaborative Partnership

Ceramics training in Nigeria can be viewed in two folds: Traditional (informal), and modern (formal). The traditional ceramics training, in most cases, was carried out in pre-colonial African societies as a family craft/business that focused essentially on meeting the utilitarian needs of the immediate communities. Informal channels of ceramics instructions like apprenticeship system were the commonest means through which ceramic skills were acquired, developed and transmitted from one cultural period to another in traditional Nigerian societies. Ceramics wares like cooking pots, ritual vases, storage pots, and dishes were commonly produced by traditional potters. It was not until 1904 that modern ceramics was introduced in Nigeria (Gukas, 2007). After the introduction, attempts were made to integrate traditional and modern techniques/methods of handling ceramics production. The efforts of Michael Cardew, for instance, were instrumental to setting early foundation for the training and practice of modern ceramics in Nigeria[1]. Because the production of ceramics (pottery) was essentially considered in traditional African communities as a purely women's business, it was necessary to build the foundation of modern ceramics practice on the existing structure in traditional societies. In order to achieve this, Cardew decided to start a pottery industry, based not on organized factories but on small scale craftwomen to respect and defend the already-developed traditional ceramics method (Na'Allah, 2001). It was through Cardew's efforts that the famous traditional woman potter, Dr Ladi Kwali became known (**Plate I**).

His (Cardew's) programme of making traditional potters did not just meet the cultural needs of the people; it was also run as a modern continuation of the old country workshops. As such, distinctions among kinds of clay and kinds of pots had an almost religious significance for Cardew.

The establishment of tertiary institutions between late 1950s and early 1970s in Nigeria helped in restructuring the training of ceramics, not just as an academic programme with vocational orientations, but as a means for economic growth. As such, most universities, polytechnics and colleges of education that have art departments are offering Ceramics as a core aspect of the art programme. According to Azeez (2011), the objectives of art in the three-tiers higher education in Nigeria is somehow related. For example, Art departments in Polytechnics are to produce creative, skilled and professional artists for the needs of the society in the commerce, industry and culture. In colleges of education, art departments are to train professional art teachers to fill the man-power needs of primary and junior secondary schools; while the university art departments are to produce competent artists with the right intellectual perspective on the role of art as an instrument for social change, as well as research purposes. The objectives of ceramic training/education in Nigeria take its roots from the overall objectives of art in the three-tier higher education.

However, efforts made to fully achieve these objectives (especially in the area of ceramics) have not yielded considerable results as there are no proper synergy between the different segments of the ceramics training/education bodies and its actual industrial practices especially in the private sector. Olusola (2011) acknowledged this when he notes that, there are apparent widening gaps and disconnection of cultural cross-current in the art training and technology. Part of this is attributed to the issue of inadequate and obsolete infrastructural facilities as most of the institutions are not well equipped with state-of-the-art facilities that are expected of a conducive learning environment (Adebisi, 2013). On the other hand, private firms take advantage of newly introduced technology to employ the best facilities that will bring them gains in the production industry. This means that, for Nigeria to achieve high quality training of her ceramics graduates, as well as ensure standard ceramics practices /industrial productions that are safe for environmental sustainability, there must be a good synergy between art departments (institutions) and private ceramics firms and

individual ceramics practitioners. It is therefore necessary to discuss the specific areas that this kind of synergy/partnership between private ceramics firms/practitioners and tertiary institutions would benefit ceramic practice in Nigeria.

Benefits of Collaborative Partnership in Ceramic Practice in Nigeria

There are many benefits attached to collaborative partnership between different segments of the ceramic industry in terms of training, production and practices. Such areas include: Increased skill competence in ceramics graduates, improved productivity, knowledge exchange, economic advancement, promotion of quality research in ceramics, development of new programmes for sustainability of ceramics practice, as well as new environmentally safe trend in ceramics industry.

Increased skill competence in Nigerian Ceramics Graduates: The skill competence of most Nigerian graduates is often questioned by employers of labour within the Nigeria society. Apart from the fact that most ceramics students in higher institutions do not have access to modern facilities necessary for building a hitch free career in ceramics, they are faced with disruptive forces such as strikes which keep them outside the study for a longer period than necessary. For example, ceramics sections of most colleges of education and indeed other higher institutions in Nigeria do not have basic throwing wheels of considerable modern standard, not to talk of standard modern kilns for the firing and glazing of ceramic products. This has stalled studio experimentation and, in turn, restricted students to working only on aspects of the curriculum that do not require the use of ceramic producing facilities like kiln (**Plate II**).

In a situation where such facilities can be found, they are grossly inadequate and sometimes over-stretched since the number of students using them are overwhelmingly more than required. Ceramics students who passed through this kind of process would have very little or nothing to offer after graduation as they will be handicapped, in required skill competence and innovation needed for effective practice in a modern ceramics industry. On the other hand, through partnership, private ceramics firms that are well equipped with modern facilities as well as experienced staff can absorb students as well as exposed them to different production processes that are not familiar to the students. This will hopefully help the students in developing relevant ceramics skills that are marketable as well as promote ceramics practice in Nigeria. Apart from that, this will help the students in building a good working as well as training relationship with ceramics companies for further job development. The implication is that, this will not only help in fulfilling the objective and purpose of Industrial Works Experience Scheme (SIWES), it will further enhance the future of ceramics practice in Nigeria.

Development of New Programmes for Sustainability of Ceramics Practice: Na'Allah (2001) considers inadequate training programmes for manpower development in ceramics technology as a serious handicap to the growth of the ceramics industry. According to the author, the few higher institutions in Nigeria that offer ceramics as a course cannot continue with the programme up to professional level. This also has negative impact upon the system as most ceramics departments especially in some colleges of education and polytechnics do not have more than one ceramics lecturer. This, in some cases, reduces the chances of diversified approach to tutorship of students in both knowledge building methods as well as skill acquisition techniques. On a similar note, Oaikhinan (2014) mentioned that, as a way of addressing the issue of attracting young people into the ceramics industry, there is need to develop a number of ceramics training programmes. He noted that, such programmes should be designed to educate and engage young people in the world of process manufacturing and to raise awareness of the exciting and challenging career opportunities that are available within the ceramics industries. For employers, this will improve productivity and competitiveness by making sure people have the right skills for their jobs. Also, through recognizing their skills, people will be motivated, and this will in turn, provide relevant and high-quality training in ceramics[2]. This means that, private sector contributions will be developing people as part of expansion or succession planning for their businesses.

Improved Productivity: Improved productivity has to do with the quality and design of a product which makes it outstanding among other similar products in the market. As a result of this, the utilitarian value of the ceramics products as well as its market demand is increased. Improved productivity in most industries depends on the employment of best materials as well as standard production processes/methods, not only to meet customers' need especially in terms of quality and design, but also to achieve the industries' goal. Using collaborative partnership, ceramics experts practicing in the private sector will be invited from industries to give interactive lectures on new technological trends in the fields of ceramics. This will not only prepare the minds of students for the general practice of ceramics profession after school, but also propel positive growth in the Nigerian economy. In West African Ceramics Limited, for instance, such a partnership will help students to work with ceramics experts from Italy and French designers who combine the best raw materials, latest technology and carefully controlled production processes to manufacture tiles that are almost completely maintenance free[3].

Knowledge/Skill Exchange: Knowledge exchange is a vital means for developing the growth of any industrial sector of a nation. A good synergy as well as collaborative partnership between the Nigerian ceramics industries and art departments of higher education will bring about investments. This is because people will be sensitized on opportunities in ceramics production either in the production of raw materials or in the actual ceramics making process. Abraham (2009) notes that: through strategic investments and collaborations between government and the private sector, it is possible to harness the bountiful yet largely untapped potential of the country's ceramics industry. The promotion of partnership among private ceramics firms and art departments will enhance best practices in the area of ceramics production.

Promotion of Quality Research and Economic Advancement: Research is an integral part of any societal development. Quality research and economic advancement always go together. This is because; economic advancements are implementations of things a nation already has the knowledge to create. Such knowledge is usually obtained through researches that have been conducted especially on areas that fit the existing cultural practices of a particular society[4]. For example, one cannot just begin the production of a certain ceramics raw materials without conducting adequate research to ascertain the technological capability required to facilitate the process, or its actual need in the industry. Therefore, research first, while implementation of research findings must be taken seriously if the nation is to advance economically in ceramics. This means that, without implementing the findings of the quality researches conducted in Nigerian universities, polytechnics, or colleges of education; economic advancement through ceramics production wound remain a mirage.

Ceramics Researchers Association of Nigeria (CeRAN) has been organizing conferences in the past with themes that instigate researchers to delve into ceramics technology and how local material can be sourced to promote diversification in the production of ceramic products. Whether the results of these researches are tested to conform with the established standard or not, there is a seeming gap between the industry and ceramics researchers. At the moment, there exist a body of scientific papers dealing with research on possible utilization of locally available ceramic materials for the production of refractory bricks and insulators. This is quite necessary for industrial development in the country, especially in the area of building construction and electricity power supply. However, the extent to which the results of these researches being implemented for economic prosperity of Nigeria in the area of developing local ceramic industry is still an issue many people cannot explain.

Environmentally Safe and New Technology Trends in Ceramics Industry: There are new emerging trends in ceramics' production that students stand to benefits from the partnership between private ceramic researchers, practitioners or firms and art institutions in Nigeria. For example, ceramic insulators is becoming an essential material for the production of quality efficient

cookstoves that combines high thermal efficiency and minimum emission of noxious gases leading to environment conservation (climate change) while improving health and saving lives of women and children below the age of 5 years[5]. According to Hood (2014), there are abundant ceramic materials that can be locally sourced for making ceramic insulators for the production of improved cookstoves in Nigeria. Although, some institutions in Nigeria like Ceramic Departments of Ahmadu Bello University, Zaria; Obafemi Awolowo University, Federal University of Technology, Akure; and Federal Polytechnic, Akanu Ibiam do offer some programmes for the education and training on ceramic's technology, the ceramic industry has not been stirred to develop to its full potentials. In the private sector, ceramics training agencies like Epina Technologies and Dajo Pottery are also gradually taking shape in the country. Epina Technologies, for example, hosted a two-day international conference and training workshop in November 2013, on "how to set up small scale ceramics manufacturing business"[6]. Also, Dajo-Pottery Ltd (DPL), do offer training services for interested individuals under United Nations Development Programme (UNDP) and Industrial Training Funding (ITF)[7]. Apart from that, DPL is making advances in the area of ceramics technology to ease production processes. For example, the company has developed the Dajo Wonder Burner-DWB that can utilize four (4) types of low pour fuel oil (LPFO) fuel such as kerosene, diesel, and waste oils (popularly known in Nigeria as condemned engine oil). The DWB burner system can be used by bread bakers, ceramic and brick industries to enhance cost-effectiveness and versatility in their production. Apart from that, the company produces refractory bricks that can withstand temperatures beyond 1400°c using local materials, as well as other ceramic products like electrical insulators which are often imported into Nigeria by ceramic, cement and iron/steel industries. Ceramics electricity insulators for example are highly needed in Nigeria for power transmission lines especially at this period that active transformation in taking place in power sector. The ceramic electricity insulators hold and separate high voltage electric current running through the uninsulated high tension power lines. It protects the wires from dirt, water seepage and lightning (**Plate III**).

There is need, therefore, to promote partnership between the various segments of the ceramic industry in order to foster a collaborative synergy for the development of ceramics in Nigeria for economic advancement. This is mostly because; this will lead to job creation as well as increase the production of locally made ceramic products such as sanitary wares, table wares, industrial insulator for electricity power supply, and so on. Besides that, manpower, raw materials, energy and the market are the potentials that Nigerian government must consider for the development of ceramic industry. This can be done by fostering partnership between the private sector and the government by way of launching a program for that purpose.

Summary and Conclusion

This paper examines the opportunities of collaborative partnership between ceramic firms/practitioners and departments of ceramics in tertiary institutions in Nigeria. As such, relevant ways in which this will benefit the ceramics industry especially in creating opportunities for economic advancement were discussed. These include increased skill competence for ceramics graduates, improved productivity, knowledge/skill exchange, the introduction of new training programmes especially to step-up ceramics technology education, as well as new environmentally safe trend in ceramics industry.

The conclusion therefore is that, for ceramics industry in Nigeria to achieve its full production status of meeting the domestic and industrial demands, there must be a planned synergy within the sub-systems in order to effectively harness the potentials for optimum productivity. It is only through this partnership strategy that the local ceramics industry would grow to favorably compete with foreign ones that have flooded the Nigerian ceramic market with ceramic products of all sorts.

Recommendations

Based on the summary and conclusion above, a number of recommendations are hereby made in line with specific areas that,

in the writer's view, will promote partnership for increased productivity. These areas are:

1. Nigerian educational curriculum should be restructured to include partnership programmes between the private firms/practitioners and ceramics departments in tertiary institutions.
2. Also, ceramics department/sections in higher institutions should be upgraded with new/modern facilities for the improvement of teaching and learning of ceramics' education.
3. New training programmes in the area of ceramics technology should be introduced in order to development better and effective methods of production. This will not only improve productivity but will also pave way for economic advancement.
4. Private ceramics firms that are interested in ceramics education should be encouraged to organized workshops for the training of students (and other Nigerian youths) as this will stir interest of youths especially in pursuing careers in the ceramics profession.



Plate I: Ladi Kwali and Michael Cardew working together in a Ceramics studio, Abuja, Nigeria, 1955. Source: www.newrepublic.com



Plate II: An example of Kiln as one of the basic facilities needed in departments for training of ceramics students. Source: www.mickcanning.com



Plate III: An Example of Ceramics Electricity Insulators produced by Ceramics industry for use in the power generation; Source: www.diyandmore.com

Notes:

1. Michael Cardew in 1950s would go round to study the methods of pottery among the rural people. He encouraged them to work in his studio. As they worked with him, they gradually learn how to throw pots on the potter's wheel (**Anthology of Modern Nigerian Art, 2007, p-111**).
2. ***Eguakhide Patrick Oaikhinan*** *is a professor of material engineering, with specialisation in ceramics. He is the CEO of Epina Technologies, a global learning, management, and engineering blended solutions provider in Africa. He mentioned the statement during an interview with* ***Odinaka Anudu*** *where he discusses the Nigerian ceramics industry and gives suggestions on how to revive the sub-sector back to life.*
3. West African Ceramics Ltd is among the leading ceramics industries in Nigeria that combines modern technology and expertise in the production of Ceramics raw materials, wall and floor tiles, frit plants, and brick plants. It is located at Ogura Village, Near Niger Bridge, Ajaokuta, Kogi State (http://waclng.com).
4. The full description of economic advancement can found online via: http://timelines.wikidot.com economic-advancements.
5. An online published comment of Ahmed Hood on "***We are committed to reviving Nigeria ceramics industry",*** on August 4, 2014 at 8:01 am. **Source:** http://businessdayonline.com (*Ahmed Hood is currently working on the development of improved cookstoves*).
6. Epina Technologies is a global learning, management, and engineering blended solutions provider in Africa. **Source***: http://businessdayonline.com,*
7. Dajo Pottery Ltd is an international award winning indigenous ceramics company based in Makurdi. They produce Flower Vases, Kitchenware, Lamp stands, Digital murals (photo tiles) African Art Icons as well as industrial products like electricity insulators.

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