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ARCHITECTURAL EDUCATION AND RESEARCH: a responsive tool to meet contemporary challenges in architectural practice

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ABSTRACT: *This paper highlights the implications involved in the education of architecture students and equipping them to adequately confront the inherent challenges of their profession. Some of these challenges include environmental, socio-cultural, economic, technological, local and global factors. The paper further looks at architectural research as a crucial tool that architects, both academics and practitioners alike, must utilize in order to effectively address the technical, aesthetic, and behavioural issues that arise from the study and practice of the profession. The paper proffers suggestions for architectural educators in Nigeria to rise up and face the challenges of architectural education in the 21st century.*

Key words: *challenges, knowledge, profession, implication, technology.*

INTRODUCTION

According to Ojo (1990) the general purpose of education is to prepare people to improve society in which they live. Architectural education is therefore, aimed at producing a professional, ready for an active, creative research and professional career.

Best (1974) views research as 'the systematic and objective analysis and recording of generalizations, principles, or theories, resulting in prediction and ultimate control of many events that may be consequences or causes of specific activities'. Vielle (1974) sees research as 'international and systematic activities of research that lead to the conceptualization, expression, design, and production of something new'. Research is one of the veritable tools for generating information and knowledge for development. Jaiyeoba (2004) describes it as 'sine qua non' for development. The way in which knowledge can be transformed and developed to affect the society in real terms could be used to measure aggregate success in research. Research in architecture is peculiar, since it is both an academic discipline and a profession. The goals of architectural education and research are essentially to advance the practice of architectural profession and provide adequate research opportunity that is responsive to the

changing contemporary challenges to meet national and international demands. Arayela (2002) points out that research in architecture should be viewed more often as a team endeavour than an individual activity. He observed that researchers working in groups can tackle problems in different approaches, sharing ideas, and knowledge together toward making its contribution to human welfare. This must however be based on the peculiarities of the practice of the profession in the given socio-economics conditions and entrench the creative methods as a synthesis of the scientist, the engineer, the artist, and the administrator. Hence a good architectural education must among others produce a highly qualified architect capable of designing an environment and space for the ever changing processes of human activities in the spheres of work, rest, and play within the limits of rational aesthetic. It is therefore the position of this paper to discuss ways of strengthening architectural education in the 21st century.

THE NIGERIAN ARCHITECTURAL EDUCATION IN PERSPECTIVE

The Minimum Academic Standard for architectural education in Nigerian Universities as devised by NIA/ARCON spells out the following basic modules:

- I. Architectural design

- ii. Communication skills
- iii. History and Theoretical studies
- iv. Building Construction Technology.
- v. Environmental Control Systems
- vi. Humanities
- vii. Physical sciences
- Viii. Management studies.

It is seen here that the research content has not been given proper attention. However, Chukwuali (2002) proposes a concentration of the modules into four study units in architectural education which include:

- The Design units;
- The Humanities units (history and social sciences)
- The Technology/construction unit;
- The Research and practice unit.

Research and practice unit seeks to improve the scientific enquiry method in the design process thereby strengthening the theoretical objectives of the curriculum as against the overwhelming learning to the practical objectives. The method of architectural design takes into cognizance the introduction of a research approach, the translation of the design process into a practical problem solving situation that further improves the development of the reasoning ability of the student. This unit thus, integrates research methods, principles and data analysis into the design process. Nkwogu (2002) describes the curriculum of architectural education in Nigeria as 'obsolete', and calls for its review and restructuring in order to elevate the profession to a full-fledged academic professional discipline such as engineering, medicine and law. Architectural education should provide a balance between the practicalities of the studio design and the acquisition of culture based behavioural knowledge, which enables students to relate properly to the society and environment. Two major perceived weaknesses of the curricula of most schools of architecture in Nigeria are:

- i. The emphasis laid on the architectural design studio at the expense of other technical and behavioural studies,
- ii. The absence of research areas of study, which are of great importance

to enhancing the ability of the architect to respond to the societal needs and peculiarities.

Adeyemi (2000) argues that the overemphasis on the studio isolates architecture students from the rest of the universities and denies them of the time to carry out scholarly research and acquire equal knowledge in other disciplines relevant to architectural practice. Architecture programme should not stop at just producing 'scheme designers' it should educate and prepare its graduates into engaging in researches on the built environment as it relates to man, user perception and user friendly structures. The mission of architecture as modifiers of the environment that supports and enhances human activities should never be forgotten. Vitruvius (Encarta encyclopaedia, 2005) posited that the architect is supposed to be well-versed in manual skill and scholarship. He should be educated, skilful with the pencil, instructed in geometry, know much history, know the opinion of the jurist and be acquainted with astronomy and the theory of the heavens'. Therefore architectural education should go beyond professional training unto specialization and research.

Schools of architecture in Nigeria have various philosophies for different programmes they run. Some lay emphasis on the theory of architecture while others on practical aspects. None of the schools of architecture examines and equips students on scientific investigation. However, the Union of International Architects (UIA) has spelt out the objectives of architectural education to ensure uniformity of the curriculum to include:

- an understanding of the profession of architecture and the role of the architect in society in particular in preparing briefs that take account of social factors.
- knowledge of urban design, planning, and the skills involved in the planning process.
- an ability to create architectural designs that satisfy both aesthetic and technical requirements.
- the design skills necessary to meet building user's requirement within

- the constraints imposed by cost factors and building regulations.
- an adequate knowledge of physical problems and technologies and of the functions of buildings so as to provide them with internal conditions of comfort and protection against the climate.
 - an understanding of the methods of investigation and preparation of the brief for a design project.
 - an adequate knowledge of the fine arts as an influence on the quality of architectural design.
 - an adequate knowledge of physical problems and technologies and of the functions of buildings so as to provide them with internal conditions of comfort and protection against the climate, UIA Education Charter, section II.3.

It is seen here that all aspects of architectural education and research are adequately touched.

IMPLICATION OF ARCHITECTURAL EDUCATION AND RESEARCH IN THE 21ST CENTURY

One of the fundamental needs in strengthening architectural education is the development of more adequate research basis. A large number of works (Best, 1974, Jaiyeoba, 2004, Anunobi, 2006) have identified that, there has been inadequate research content in architectural educational system in Nigeria. Research method in educational institutions should be viewed as a very crucial tool to architectural practice. The current curriculum in architectural education is designed in such a way that research in architecture is virtually non-existent. The architectural education has been tailored in training of design skills and less of intellectual development through scientific research. Anunobi (2006) points out that holders of masters' degrees in architecture find themselves seriously handicapped in the pursuit of doctoral degree. They have to begin from the scratch to learn elementary statistics and modern research and reporting style'. The problem assumes a crisis dimension if the doctoral pursuit is by dissertation only without

coursework. Thus, it is pertinent that the curriculum of architectural education at the undergraduate level should be altered and builds in more academic research content, and deemphasize much design. These should include research methodology, research statistics, research seminars, and quantitative method as well as scientific enquiry method. Uji's (2000) 'systems methodology' approach to design theory also recognizes this lack of research direction in current methodology for architectural profession. Hence the early inculcation of research content in architectural curriculum will make architect graduate to be balanced both professionally and academically in the 21st century. Likewise, they will evolve new and dynamic development in construction technology methods, and building materials as students and practitioners of architecture continue to keep themselves abreast with these new developments in their field of endeavour. The scope of architectural education will also become widened and strengthened through research.

SUGGESTIONS FOR ARCHITECTURAL EDUCATORS IN NIGERIA

Anderson (1998) explains that the split between research and practice that is evident in architectural profession is being centrally concern with the current structure in architectural training and practice which ought to fulfil the goal of the profession to the highest standards. The insufficient attention given to research has created several crippling obstacles. Schools of architectures will continue to be perceived by the humanities as a professional programme which train practitioners incapable of understanding the philosophical and epistemological concerns of the academic world (Akande et al, 2006). On the other end, the scientist will continue to view architects as artists unaware of the complexities of the scientific world and, as a result, unable to conduct true research. Jaiyeoba (2004) suggests that there is an urgent need for architects, educators and practitioners to close ranks through

workshops and seminars to discuss strategies/approaches to research taking into consideration past and present limitation. The following are therefore suggested:

- Architectural educators should lift the level of professional practice to a greater height in the country through research.
- There is the need to strengthen architectural education in the development of a more adequate research basis through outreach to initiate the following:
 - a. **Networks and information Dissemination.** This will:
 - Facilitate the exchange and updating of information among faculty/schools using internet;
 - Coordinate and publish the work of living labs' such as intelligent workplace under the centre for building performance and diagnostics of Carnegie Mellon.
 - Create and circulate slide for video course material. For example this could comprise ten lectures by contemporary design visionaries, case studies of great buildings.
 - b. **Assessment and Accreditation.** This will;
 - Encourage individual schools to conduct a self- assessment to create a base line of sustainability components in all aspects of curriculum and operation.
 - School self- assessments can be used in aggregate to develop and publish sustainability ratings for all architectural school, and work with NIA and ARCON to examine and revise the accreditation standards.
 - Ph. D programme in schools of architecture should be encouraged and made accessible for those that are research oriented.
 - Funding and provision of adequate grants in our architectural schools should form one of the bases of accreditation.
 - There should be provision of courses which focus on the importance of research in the architectural profession and the fundamental

method of conducting research at undergraduate level, thereby making students better equipped to bridge the gap between the professional fields such as architecture, and the research field such as environmental psychology.

CONCLUSION

The practice of architectural profession as obtained as present in Nigerian education should be reviewed. This review should begin from the educational structure to the practice of the profession in content to bring it in accordance with contemporary realities. This can only be achieved through a review of architectural curriculum in structure and content. Architectural education would have to be widened so that it can accommodate research component into new technology and management techniques. In this millennium the architect has to be versatile in all human endeavours to be able to perform tasks of different kinds before him. Research is a crucial tool that architects both students and practitioners alike must utilize in order to effectively address the technical, aesthetic and behavioural issues that arise from the study and practice of the profession. Continuing Professional education should be arranged for architect practitioners to make them writing practitioners while educators should practice more to become academic practitioners. The convergence of ideas will provide a vibrant atmosphere for research and development.

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