Designing to meet human needs: Place of environment-behaviour studies in architectural education

Adewale Bukola *, Department of Architecture, Covenant University, Ota, Nigeria.
Aderonmu Peter, Department of Architecture, Covenant University, Ota, Nigeria.
Fulani Omoyeni, Department of Architecture, Covenant University, Ota, Nigeria.
Jegede Foluke, Department of Architecture, Covenant University, Ota, Nigeria.
Adeboye Albert, Department of Architecture, Covenant University, Ota, Nigeria.
Izobo-Martins, Oladunni, Department of Architecture, Covenant University, Ota, Nigeria.

Abstract

The role of architecture is to create spaces that meet the needs of users. Architecture of buildings is influenced by many factors such as behavioural, socio-cultural and physical which affect the design, meaning and use of space to different individuals and group of people. In view of this, some courses that deal with man-environment behaviour studies were incorporated into the curriculum of architecture schools, but it has been observed that the guiding principles of the curriculum formulation and implementation of these courses are yet to establish institutional ideology; to enforce the context relevance, and implementation in the instructional plans so that architects under tutelage can create environments that will respond to the need of users. Using secondary data from literature and curricula of four architectural schools in South-west Nigeria, this paper examines how adequately students are sensitize on the relationship between man and environment as an important way of meeting his needs. It was discovered that aspects of Environment-Behaviour studies were rarely incorporated into the curricula of the schools investigated. This paper recommended that curriculum review be done parametrically in favour of EBR pedagogic dynamics.

Keywords: environment-behaviour, human needs, architecture design, design studio.

---

* ADDRESS FOR CORRESPONDENCE: **Adewale Bukola**, Department of Architecture, Covenant University, Ota, Nigeria. *E-mail address*: bukola.adewale@covenantuniversity.edu.ng / Tel.:+4-345-332-444

1. Introduction

Architecture is the art and science which above all others, combines expression, technology, and the satisfaction of human needs. Its purpose is to make places where people feel more human, more alive and more fulfilled (Moore, 2006). Critically, little attention has been paid by designers of buildings to the determinant forces such as behavioural, socio-cultural and physical; which in a great deal affect the design, meaning and use of space to different individuals and group of people. For instance, for elderly class of the society, as they grow older, they tend to retain competency, dignity in the face of declining health and, in the word of Maslow, 'psychological' and 'physiological' abilities. In between the societal spectrum, there are appreciable figures of people with disabilities, especially physical; to what degree can architectural designers respond to ageing conditions? At the other end of age spectrum, in what ways can the design of built environment support and stimulate children development, especially in cognition, moral, intelligence and sense of responsibility to civic engagement. In view of these observations, this paper posit that curriculum and syllabi of architecture schools need to be dieted (Aderonmu, 2012) with proportional measure of course ingredients that deal with man environment-behaviour studies, since architects are trained to create environments that will respond to the needs of users.

2. Background Studies and Theoretical Basis of the Design Studio Teaching

The role of architecture is to create places where users' needs are met and where they feel more relaxed and satisfied. Architecture, the art and science of making places, is influenced by such factors as behavioural, socio-cultural and physical among others which inform the design of spaces created for human activities. Based on this, there is need to identify specific needs of human and not design for anonymous people.

Architectural schools in Nigeria have at least one course on architecture and human behaviour or environmental psychology which encourages students' skills development for incorporating aspects of human behaviour in design development. It involves the application of behavioural insights to the design process (Moore, 2006).

Dayaratne (2013) observed that design studio inculcate casual approaches to the conception of space and form, that is, subjects that will involve deep conception of space and form; unfortunately they are not often part of the curricula of architectural schools. Design studio briefs are often developed based on real life situations, so, architecture students are left to imagine and interpret the needs of the clients. In most cases, these interpretations did not address the users' needs. The design studio is therefore central to architectural education that proffers solutions to human needs.

Adedeji and Amole (2010) in a review of Rapoport work reaffirmed that architecture is a socio-cultural element engaged to meet human needs in his relationship between house form and culture. Lawrence (1989) defined housing in terms of the relationship between man and his environment. He provides a theoretical framework for the study of the relationship between man and his environment with the opinion that contextual as well individual factors define the relationship between man and his environment. Architects must be aware of these factors to have successful designs. Others proposed models which viewed architecture as a way of forming bond with place (Jorgensen & Stedman, 2006) and developing a sense of community (Kooti, Dawn & Randall, 2011). Bonding with place and developing sense of community with place result when a place meets human needs. Nammuni (1991a, 1991b, 1991c, 1991d) cited in Dayaratne (2013) argued that the social dimension as part of architect's internalized process are to be fused into the conception of architecture. He proposes developing an empathy with the user through internalization and imagination.

Dayaratne (2013) posits that places have behaviour, rules and rituals associated with them which architects can render in space; also that the design process was based on the idea that architecture is a "place–enabling act". Before a space can become a place, it must have been lived in, experienced

and absorbed by the users into the systems of places they already have in mind. This implies that a successful architectural design will transform spaces to places that address human needs. Dayaratne conceptualized a design sequence that could aid the fulfillment of the role of architecture as a place enabling act. He opined that the social, psychological, religious, culture and the past of the primary users must be understood.

Salama (2009) developed the "theory of knowledge integration". He hypothesized that many architectural educators focus on issues important to an audience of fellow architects rather than focusing on issues important to their client, hence the need to introduce the theory of knowledge integration that believe that identifying design problems is more important than developing concepts toward solutions.

From the above view of the relevance of environment behaviour relation studies to architectural education, a conceptual model was developed for this study.
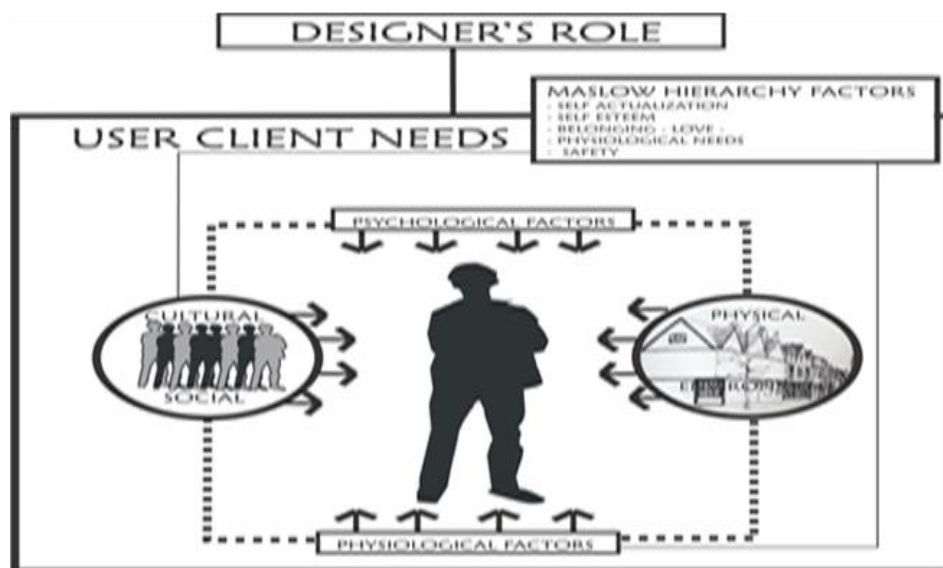

Figure 1: Designers' Roles and Client Needs
Source: Adapted from Moore, 2006

3. Methodology

The curricula of four (4) accredited universities offering Architecture in South West Nigeria were selected for this study. These are University of Lagos (UNILAG), Covenant University Ota (CU), Federal University of Technology Akure (FUTA) and Caleb University, Lagos. From the four university selected for the study, two are privately owned and two are owed by the Government. The curricula were qualitatively analyzed with the aim of comparing their content that sensitize and teach the students on the relationship between man and environment and the aspects of environment- behavior studies. Strength Index and percentage of the incorporation were also compared and analyzed quantitatively.

4. Results, Findings and Discussions

The findings are discussed as follows: CU offers a total of 173 credit units' course from year 1 to year 4 to and out of the 173 units, 7 units were assigned to environmental courses, making EBS a total of 4% of the EBS course contents offered. UNILAG offers 133 credit units courses from year one to year four. Out of the 133 units, 9 units are designated for environmental courses, making 6.7% of the EBS contents offered. Caleb University offers a total of 175 units spread over 4 sessions (eight semesters). Out of the total 175 units, only 9 units (four courses), and approximately 5% context relevance of EBS offered. Further examination of the synopsis revealed that two of the courses only hint at EBR while the actual course content has little context relevance to EBS. The remaining two courses have considerable EBR content. It was however observed that only one of them actually addressed EBS matters.

FUTA's undergraduate course in architecture spreads over 5 sessions with 195 units. This is in line with the trend in universities of technology in Nigeria. When examined the curriculum contained six (6) courses (13 units) designated environmental studies at every level of the study from year one to year 5. This accounts for 6.7% EBS content of the total units offered.

The study also included the Benchmark-style minimum standard for architecture (BMAS) by The National university commission in Nigeria (NUC). The BMAS recommends that current development in environmental studies be incorporated into the curricula of Nigerian schools of architecture to make students aware of relationship between man and his environment. Out of the recommended 154 units for undergraduate classes, 20 are designated environmental studies and 14 units are assigned to arts and humanities courses. A total of 34 units (22%) are thus dedicated to EBS. The shortfall of this however is that this allotment lumps several courses together. When the actual course list is examined, only three (3) courses (6units) are EBS courses. The findings are summarised in the Table 1 below:

Table 1. Percentage of EBS content in the Curriculum

School of Architecture	Total Undergraduate Course Load	Credit Load of EBS Courses	Percentage (%)	Credit Load Ratio of EBS to Architectural Design Studio(ADS)	Diet-Strength Index(DSI)
Private School 1(CU)	173	7	4	7:24	50.46
Private School 2(CALEB)	175	9	5.1	9:40	38.92
Public School 1(UNILAG)	133	9	6.7	9:32	37.41
Public School 2(FUTA)	195	13	6.7	13: 36	70.42

From Table 1 above, the credit load ratios of EBS to architectural design studio (ADS) were compared. The diet-strength index (DSI) for FUTA was most 70.42(36.11%) significant.

5. Conclusion

The synergy of enumerated factors that contribute to the designers' responsive methods of architectural design enables a pragmatic design problem-solving formula. The issue on context relevance to the improvement of the user-client conditions in the use of spaces as it relate to different needs. Essentially, the application of the environment-behaviour knowledge in design will help in

controlling the design principles aims to integrate all useful factors including the hidden aspects of the curriculum. The field of environment-behaviour studies should also be part of the architecture school philosophy. The pedagogy of schools should make EBR studies paramount in the design process by implementing design philosophy in the direction of total client-user satisfaction of human needs the brief interpretation need to eliminate environmental induced stress. The alignment of the designers' acumen, intelligence, and creativity with client-user needs will be tantamount to acceptable design and great buildings. Since great buildings are usually judged by how conducive they are to human existence which is alive, more human, more capable and free (Moore, 2006). More so, participatory revolutionary pedagogy (Aderonmu, 2012) should be given an important place in the instructional tools as employed by the design studio teachers. Mores so, further research need to be carried out on the contents and context relevance of EBR courses offered in FUTA. Finally, knowledge pattern in the empathy of designers as architects, clients, and the application of the client-users' information about the true needs must be incorporated to the pedagogic dynamics of all affected stakeholders.

References

Adedeji, J., A., & Amole, S., A. (2010). *Book Review: House Form and Culture; Amos Rapoport, 1969*. Englewood Cliffs, N.J: Prentice Hall 150 pp. ISBN: 978-0133956733.

Aderonmu, P., A. (2012). A Framework for Sustainable Education in Nigeria: Strategies of Re- Integrating Vocational Skills into Educational Curriculum. A paper published at 2012 Architects' Colloquium Conference, at Musa Yar' a dua Center, Abuja. pp.2. ARCON publishers.

Dayaratne, R. (2013). Environment-behaviour Research and the Teaching of Architecture in the Design Studio: An Experiment in Bahrain. *Procedia-Social and Behavioral Sciences, 10*5, 314-324.

Jorgensen, B., S., & Stedman R.C. (2006). A comparative analysis of predictors of SOP dimension attachment to, dependence on, and identification with Lakeshore properties. *Journal of Environmental Management, 79*, 316-327 (Elsevier)

Kooti, J., Dawn, V., & Randall, V. (2011). Perceptions of a family-based community: Predictors from a rural community, *Insights Journal, 77*, 1.

Lawrence (1989). Houses and people in context: A conceptual model. *Architecture Australia*, 44-50.

Moore, G., T. (2006). *Environment, Behaviour and Society: A Brief Look at the Field and Some Current EBS Research at the University of Sydney*. McGraw-Hill. Sydney.

Salama, A., M. (2012). Knowledge and Design: People-Environment Research for Responsive Pedagogy and Practice. *Procedia-Social and Behavioral Sciences, 49*, 8-27.

Sri Nammuni, V. (1991). Teaching of architectural design: A moratuwa experiment part 1 in The Sri Lanka Architect. 1007.

Sri Nammuni, V. (1991). Christopher Jones and design methodology. Teaching of architectural design: A Moratuwa experiment part 2, in The Sri Lanka Architect . 1008.

Sri Nammuni, V. (1991c). From learning to teaching architecture. Teaching of architectural design: A Moratuwa experiment part 3, in The Sri Lanka Architect. 1009.

Sri Nammuni, V. (1991d). Design teaching at moratuwa. Teaching of architectural design: A Moratuwa experiment part 4, in The Sri Lanka Architect, 100 10.