Learning in architecture: Students' perceptions of the architecture studio

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Introduction

In architecture education, the design studio has long been regarded as the centre of teaching and learning. As a learning environment, the studio is the physical site for learning and teaching, where active interaction between students as well as with faculty takes place. The studio is where the enculturation of students into the profession occurs, and where students undergo a transformation that influences the way they relate to the built environment, to their peers, and to their tutors.

While the studio environment has been promoted as an ideal educational setting (Boyer & Mitgang, 1996; Schon, 1987), few studies touch on the physical environment of the studio and the associated social dynamics that result from the point of view of architecture students. (Ahrentzen & Anthony, 1993; Groat & Ahrentzen, 1996; Boyer & Mitgang, 1996; Wallis et.al, 2010.)

This paper reports on a qualitative study undertaken on the nature of the design studio in two architecture schools in Uganda. The study was carried out to gain students' perspectives and opinions about their experiences of the studio as a learning environment and its impact on their learning in architecture education.
The significance of the study is based on the discourse about newly defined educational expectations of learning environments that has resulted from a global transition towards the design of more effective learning spaces. This is further illustrated by the (a) learning outcomes needed to meet the changing roles and responsibilities of architects; (b) features of the physical environment that enhance learning processes; (c) the rarity of writings about architectural education and learning environments in East Africa.

The Ugandan Context

In Uganda, the first school of architecture was started in 1989 at the Department of Architecture and Physical Planning, Makerere University. The second school was started in 2000 at the Faculty of the Built Environment, Uganda Martyrs University. The studio spaces in both schools are made up of dedicated workspaces, generic classrooms and computer laboratories with pin-up space.

Figure 1: Dedicated workspaces at Makerere University. Area 150 sq.m

Figure 2: Computer lab used as studio at Uganda Martyrs University. Area 70 sq.m

Background

Shannon (1995) describes the studio as "a physical space as a site for teaching and learning experiences, and to an interactive culture between the students and staff developed within this physical space."

Cuff (1991), describes the studio as the combination of *home* and *work place*. Not only does the studio provide students with a physical work environment, it places them in extended one-on-one contact with faculty and in daily (and nightly) contact with student peers. Because of the extensive periods of occupation of the studio, its social dynamics are likely to have a substantial

impact on students' university experience. (Groat and Ahrentzen 1984). Student experience of studio pedagogy is central to understanding their interpretations of architectural education. The large amounts of time that are spent in the studio create certain patterns of behaviour that might affect their perceptions of the space around them. (Koch, 2002). However despite the studio's centrality to architectural education, there is a gap in the literature concerning students' relation to and use of this physical space as a learning environment in centres of higher education.

Learning takes place in a physical environment with quantifiable and perceptible physical characteristics. The richness of a learning environment is predicated upon its ability to preserve a sense of awareness within the students. (Ream & Ream, 2005: 594). According to Kolb & Kolb (2005: 194), learning is best conceived as a process, not in terms of outcomes. The process of creating knowledge that results from a synergetic transaction between person and environment. Whereas educators and architects inscribe themselves onto environments such as schools, these environments respond by inscribing themselves onto the students who dwell in them. (Ream & Ream, 2005: 592) Learning spaces mediate the relationship and social practices of teaching and learning, and are only one factor among many in the complex relationships of teaching that inform learning outcomes (Oblinger 2006).

The concept of the hidden curriculum can be used to understand this complex relationship. Dutton (1987) describes the hidden curriculum as those unstated values, attitudes, and norms which stem tacitly from the social relations of the school and classroom as well as the content of the course. The concepts of the hidden curriculum brings into focus questions concerning the ideology of such knowledge, and the social practices, which structure the experiences of students- physical or otherwise. (Dutton, 1987).One school of thought related to the hidden curriculum is that which is expressed in the school environment. Gordon (1982) categorises the school environment as the: cognitive environment, and the physical and social environment. With regards to the physical and social environment, the learning spaces contain hidden messages about the physical setting and social relations that contribute to a student's learning process.

Social practices, formal instruction, and informal social interactions change the nature, use and experience of space. How children relate to the built environment is, and remains in adulthood, is informed by their own experiences. However, for the aspiring student architects entering higher education, they undergo a distinct transformation in how they relate to the built environment, a process continued in professional life. (Brown & Yates, 2000:49). Experiential learning theory describes this process as the knowledge created through the transformation of experience.

The architecture studio by its nature provides students with opportunities to construct and determine their own learning styles. This is the case for project and problem- based learning. However the importance of the physical aspects of learning environments in this type of learning is not clear. (Wallis et.al, 2010). To elaborate the formation of learning styles, Kolb & Kolb (2005) use the concept of *learning space*. Learning space uses a number of ideas such as position, region, locomotion, equilibrium of forces, conflict and goal. In order to develop these ideas further, literature on the more extensively researched learning environments of pre- university education is reviewed (Blackmore, 2011; Department of Education and Early Childhood Development, 2009; Fisher, 2004). The research studies highlight some of the aspects of the physical environment that underpin better learning outcomes. These could be summarised as climate and thermal control, ventilation, light and air quality are the most important individual elements for student engagement, achievement and wellbeing. Other factors include: acoustics of the space, colour (in relation to student morale and efficiency), flexibility of the space, furnishings, and privacy.

Design studio and studio culture have both been lauded and questioned in regard to their educational benefits. (Wallis, Williams & Ostwald, 2009: 4). The architectural studio model has its own culture and values that are as influential in a student's education as the actual projects they complete. (Abdullah et al 2011). To this end, design studios play a sizable role in reinforcing ways of life while making others invisible. Schools and classrooms can be more than a place to inhabit: they can also acquire an emotional significance. Austerlitz & Aravot, (2007) state that emotions also have a significant influence on many aspects of the learning experience such as motivation, values, goals, actions and student-tutor relationships.

Research Method

This study employed the grounded theory and interpretive ethnography to identify and describe students' perceptions of their learning spaces. The advantage of the grounded theory approach in this regard is that because the theory is drawn from data, it is more likely to offer insight and enhance understanding, and provide a meaningful guide to action. (Groat & Wang 2002: 181). An ethnographic approach was also employed as it is intended to capture and understand lived experiences. (Denzin, 1997).

A two-stage method was adopted; the first stage involved a pilot study of architecture studios in Uganda and the second a series of interviews and focus groups with students in the two schools. In order to engage with the biggest number of students, the pilot study comprising six questions was developed and tested. The content of the study was formulated through a combination of issues raised in a literature review of learning environments. The second stage of the process was initiated with an analysis of the survey findings. These results were used to develop a set of open-ended questions that formed the basis of a series of semi-structured interviews and focus group discussions. Students were invited to participate in the interviews and focus groups where a total of 40 students from both schools volunteered. Patton (1990) states that sampling a modest group of participants, provides rich and in-depth data than the superficial responses of many. The questions were split into three parts, each part asking the students to consider the different aspects of the architecture studio. Part one sought to determine the experiential perceptions of students about the studio as a learning environment in architectural education. Part two aimed at investigating the students' perceptions of the social setting of their studio spaces in relation to the activities that take place. Finally, part three examined the effects of the physical and social settings of the studio on the students' learning styles and how it could possibly be improved.

Results and Discussion

The students' experiential perceptions of the studio were varied. Most of the students agreed that it was more than just a classroom; it was a flexible space for most types of activities. A space that facilitates several activities creates an awareness of aspects of the physical environment such as light, form, proportion, scale, colour and texture. One student states:

> Of course in 1st year you don't really understand when your lecturer comes to class, gives you an example of maybe 3 metres is this long or high, by the end of the sem. (or year) you know how the length of your class,...

There was a consistency in the responses to the physical attributes mentioned above signifying an overall user satisfaction of the spaces in terms of light, scale and colour. There was a marked dissatisfaction with the acoustics of the studio spaces in both schools.

> Sometimes you can be trying to concentrate on something and then next door there is a presentation going on and you hear a harsh comment and you hear who has given it, of course you become fearful when he/she is on your jury. I would rather not hear anything...

While the above comment led five students to recommend smaller compartments as opposed to larger classrooms, another student contradicted that by stating:

> But if you do that, then you end up with spaces that are so rigidly defined. I think one of the good things about our studio is that it has loose boundaries that can be changed with time. It also allows you to see what a bigger number of people are doing; sometimes you need that for motivation or even get to learn new stuff.

Students were also asked to consider the physical space in terms of sources for knowledge, motivation, and inspiration. A student states:

> Sometimes you are stuck with your work, so you stay in studio hoping to get inspiration but all you see around you is white walls...you look outside and no one is passing by. If I was allowed to, I would paint the walls bright in some places and dark in others.

The above responses highlight the difference in the needs of the students. The smaller spaces are seen as a need for privacy but also as a result of the new type of students, the mobile one, who does not need much in terms of (dedicated) workspace. Consider, for example, the following transcript in

which students discuss the issue of physical space, size of that space and privacy in terms of personal space.

> A: I can't imagine studio, the teaching method, being separate from the working area because in order to learn anything, you have to interact with your classmates, the lecturers in an actual space…
> C:…I don't really agree because I think it can be anywhere. It doesn't have to be that one place…
> H:…So what makes that one place different from 'anywhere?'
> I: I guess-um-the fact that a lot of stuff goes on in there…lectures, studio time, presentations, all nighters, modeling…a lot of stuff
> H: Why is that?
> K: Could be because of the size of the space. Nothing is fixed, you just move stuff around like furniture and it works.
> N: Talking about moving stuff around, it gives little room for personalizing space. Tomorrow an electrical engineering student can be using it. There is no attachment to the space, it is only yours for a couple of hours, and then someone else uses it. You can't leave your stuff lying around, you have to keep moving with it.
> O: That's why you end up putting signs like 'Stop! Architects only' on the 3rd year studio door.

The students noted the size of the studio space as being advantageous in terms of the multiplicity of activities it could allow. However, visits to the studios revealed that they remain largely unoccupied with the exception of timetabled lecture and tutorial time. Some of the students noted that the classes were oversized and this diminishes the efficiency of the space.

Figure 3: The oversized studio space. Many students take up seats along the edges of the room leaving most of it unused.

The unoccupied classrooms can be attributed to two factors as stated by the students: poorly equipped spaces and lack of student commitment. A student explains:

> I feel inconvenienced when I have to go to studio just for a lecture and then go back home. It is not a place that I look forward to going to especially to spend most of the day like some of my classmates.There is no furniture, not even a stable internet connection. Sometimes when my classmates are not going for the lecture, I also don't attend it. Maybe I also have another job to do.

With regard to learning styles and how the studio space facilitates this, several students noted that the visual interaction between peers, student and space were most helpful in terms of learning new concepts.

> Sometimes you are just observing what people are doing around you and you actually learn something. You don't have to get up from your seat and walk around because you can easily see every corner of the space.

The students' responses showed an overall appreciation for the level of visual interaction with other students in the class. The level of interaction was viewed by some as a source of motivation, thus making them more eager to learn. This was further elaborated by positive responses to the size of the space in relation to the number of people with whom they related. It was noted that students in the bigger studio spaces related to a smaller number of people who they related to most. For that reason, some usually sat in groups of about 4-6 people. This is in contrast to the students in smaller studio spaces who claimed to relate to all or most of their peers.

The students' responses illustrate that the studio environment is very much a physical environment as it is a social one.

> At the end of the day, the amount of time I spend in the studio is directly related to the people who are around. Sometimes it is the number of people, other times it is the kind of people around...as in my friends...

Another student's response to the nature of the social environment is:

> You have to understand people's strengths within the class because that can help you when you are stuck or whatever. So you sit next to someone and you can help each other learn.

In order to enhance student learning, the students' responses were geared toward having more hours spent in the studio to improve student motivation and commitment. Several students felt that the most efficient way to do this is to equip the studios with basic requirements. Some still felt that it was time to engage in other versions of the studio such as a virtual studio that was not limited by the location or size of space. By making the studio environment more engaging by use of texture and colour, other students felt that this was one way of enhancing student learning.

Conclusion

This study focused on students' perceptions of their physical and social learning environments. The findings have shown that the studio has a very active social environment which in turn affects the way students experience this space. This paper speculates that the nature of the learning environment of the studio has as much an effect on the students' enculturation into studio culture as the curriculum, and engagement in the learning process as formal instruction. Some aspects of the type of interaction that goes on within this space can be an avenue for future research.

Notes

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