

Interrelations, transitions, and experiential outcomes are the main domains to lay the foundation and maximum learning in Architectural Design Studio

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Abstract

Learning experiences of the students of Architecture for the Design Studio from first year of Architecture Education to fifth-year, students learning experiences as interrelational, perceive the experiences as transitional, and understand that their learning experiences aid in the production of outcomes. Studio culture is generated partially by a student culture that encompasses interaction, which affect learning experiences. This study explores the meaning students make their learning experiences in the design studio, which are affected by interaction.

A studio is a workspace where students explore a set of skills with or without the presence of an instructor. The instructor works with students during the designated class time and then students continue to work on their own to develop their core subject and the key activity of Architecture Education. Therefore, the Design studio is the most important piece in the set of subjects. It is the essential activity offering the main chance for the future architect to become a good designer

To lay the foundation and to help accomplish the task of understanding the architectural design studio and student perceptions, the culture of architectural education and the architectural design studio culture need to be defined and described and a body of literature on learning needs to be understood, specifically focusing on how students learn and experience learning in learning environment.

The participants in the design studio found that their learning experiences through interrelations, perceived their learning experiences through transitions, and also described the experiential outcomes of their learning experiences. How students interact with one another, both academically and socially, is an example of a theme that can be categorized under interrelations. An example of a transition, which is moving from one perception to another, is moving from a perception of confusion to clarity. Interrelations, transitions, and experiential outcomes are, therefore, the domains that overarch the categories and themes that emerge from the data.

Introduction

The origins of the design studio are attributed to two art movements: the École des Beaux-Arts and the Bauhaus. Before the establishment of the design studio environment, design was learned through an apprenticeship model or a pupilage model, and the design professions were organized in guilds. This type of education ensured that the master had control over the student. To provide a more structured education, deeming artists more credible through the development of art exhibitions, different academies were created. Students later rose up against the École system because of the emergence of the modern movement. The modern era's educational principles were geared toward training students as craftsmen, combining art with the modern technology of the time, and the modern era itself was characterized by the use of steel as a building material and the use of art and architecture to serve people's special needs. The modern-era teaching methods ranged from lecture courses to workshops where students would learn how to build from the day they stepped into the workshop

while the Bauhaus workshop pedagogy, established for hands-on, interactive, and integrative learning, reinforced the design studio model as a place for all student activities to occur.

Architectural education has a long history – as long as the profession itself – which has developed from an apprenticeship model of education, it is still a requirement in most countries that a student or recent graduate be employed by a practicing architect for a period of two years before being eligible to become a registered architect. This historic relationship of student and teacher bears heavily on the way in which contemporary architectural education has developed.

The study focused on the instructors' teaching styles and interaction in the design studio and observations were made of different teaching styles and different types of interactions that occurred in the studied studio. The different types of architectural design studio interactions (peer-to-peer, instructor-to-student, interaction with the project, and environmental interaction) are discussed.

In the design studio, interactions are cyclical and there are multiple interpretations occurring at the same time, by the same or different individuals, in the several psychological and physical contexts. The importance of the project described five different ways the project in the architectural design studio influences learning:

- i. How well professional practice and education are connected because only certain things are taught in academics, which may not correlate to practice.
- ii. How well the student reaches the objective of the class because there might be confusion about the meaning of the assignment.
- iii. Provides reasons as to why a student “stands up” to do their own project.
- iv. The instructor is the main contributor to the design of the syllabus, so can steer how learning occurs.
- v. Expectations of production.

The problem in the architectural design studio is embedded in the project and the project can be interpreted in several different ways depending on the parties involved. Social constructivism and constructionism are important in grasping how “the project” played a role in student perceptions of their design studio learning experiences. Having a problem embedded in the project, where students interact, can create shared knowledge and a shared language that aids in the students' completion of the project or solving of the problem.

Domains of Learning in Architecture Design Studio

The domains framed the participants' views in architecture design studio. The first domain was interrelations, which framed the idea of collaboration or non-collaboration in the design studio. The second domain, transitions, framed the series of learning experiences that occurred from year to year, facilitating the participants' thought processes about their learning experiences. The third domain was experiential outcomes. These experiential outcomes framed how participants' learning affected them, what their thought processes were, and how they felt and conclusions to which they came, due to their learning experiences. The “experiential outcomes” is the phenomena that occurred as a result of interrelations and transitions. A study of experiential outcomes of learning experiences in a design studio setting would be a very useful inquiry in itself.

Interrelations

When students were asked to describe what their learning experiences were from their first year to fourth year, the two major categories that emerged were learning as self-driven and learning as interdependent. The design studio learning were composed of

- a) The completion of tasks.
- b) Thinking through the framing and organization of their work.
- c) Learning various design and communication skills.
- d) How to do design work.

Interdependent Learning Experiences- Participants spent a great deal of time talking about themes that fell under the category of interdependent learning. In the descriptions of their learning experiences, interdependency can be likened to the idea of constructionism, where knowledge and meaning are individually created.

- i. The first way that participants described their interdependency on each other was by discussing the importance of their academic interdependency through group projects. The group dynamic is exemplified in the idea of problem-based learning (PBL) where students rely on each other to solve problems.
- ii. The second way that participants described their learning experiences was through the social aspect of interdependency.
- iii. The third area of their interdependency was focused on their academic activity. The participants in this study showed that their academic activity was highly influenced by the other participants of their studio. Students relied on each other for individual and group critiques. Additionally, students specifically referred to their “best friends” or people that they knew well as the people who they might rely on, sit next to or across from, and, in turn, give and receive critiques.
- iv. The fourth prevalent interdependency theme addressed the understanding of how the participants were emotionally and physically affected by their group and studio members, in the completion of projects and production of work in studio.
- v. Student to student Interaction- The students’ interdependence on each other and their professors played a major role in their learning experiences.

Transitions

Students in the study found that they experienced various progressions of learning as they went through their first through fourth years. The students from their first to fourth year, discussed the learning experiences in terms of overlapping progressions instead linear Progression. So, regardless of the linearity of the design studios completed, participants’ learning experiences overlapped between the years.

- First and second year: Confusing/frustrating

The participants consistently considered their learning experiences in first year and second year as confusing and frustrating. Just the fact that now that as you evolve you become a lot quicker at making models, doing drawings, but early years it was like a learning process. Everything came a lot slower—work, all-nighters. Professor asking, “Why did you choose this iron?” lack of direction, saying the following and was one of those teachers that wanted us to learn on their own and nobody ever giving direction and actually telling. All of a sudden overwhelmed with how much work expected to be doing. And for first project, the whole thing done in one night and then after that had realized that staying up at night was not going to work anymore. If did badly in design studio, this would also assure bad grade in other classes. In fact, feelings of fear were confirmed through the interaction with second-year professor: Second year was, like, a bad year. When professor tried to explain what having a design concept is and pulling things together from stuff and relating things to the outside environment and, like, being site specific and find friends to be dropouts. And sure whether it was the workload, or they decided that they didn’t like it.

- Third year: Challenging/frustrating and clarity:

Participants always weighted everything on studio and how the year went was how studio went for. That’s because that was something that could put work into and make a product out of, rather than studying and getting grades, things like that. And don’t know whether it was just a bad chemistry between instructor and Participant. Only Ate and slept and then in studio the rest of the time. And so, that’s when studio just became everything that college education right there. I would say that third year is when people started realizing kind of what they were doing and what they were really interested in and just kind of learning more about like the field in general, why we are doing what we are doing. Everything becomes a little more... real. Stuff becomes a lot less about theory and a lot more about actual projects. Third year is when people started realizing kind of what they were doing and what they were really interested in and just kind of learning more about like the field in general, why we are doing what we are doing. Everything becomes a little more... real. Stuff becomes a lot less about theory and a lot more about actual projects That was when I figured out how to work for myself. I don’t think that I had learned to do that yet, but then in that studio I figured out how to kind of get into the swing of things, how to do this whole studio thing. It took me until third year to learn how to do that but... at least it wasn’t fifth year. Professor got us thinking about sustainability and what that means, and that studio started defining Participant as a designer.”

- **Fourth year: Clarity/Transitional**

In this fourth year, determined how to approach projects and made the transition to actually applying concepts that had learned in projects.

Transition learning experiences: In summary, three main themes were uncovered during data analysis. The first was that participants experienced a linear but overlapping progression in their learning experiences. For example, within their first and second years, participants perceived that their learning experiences were confusing and frustrating, and when they got to third year, they still had some feelings of frustration, but they also moved toward understanding and clarity. Transitions from year to year were illustrated in phrases, such as “It clicked,” “point of clarity,” “I realized,” “I got the most serious,” and “I started to figure out” that show a move from confusion to understanding, from cloudiness to clarity, from unawareness to realization, and from being flippant to being serious. The domain that emerged was transitions, and the categories were, 1) confusing/frustrating that occurred in the first year and second years, 2) frustrating/clarity that occurred in the second year and third years, and 3) clarity/transition that occurred in the fourth year.

Experiential Outcomes

Although the outcomes of learning experiences in the participants design studios can be physical and social, this study leaned toward understanding the social outcomes of learning experiences. The themes that emerged under this domain included

- i. The collective process.
- ii. Learning through critical reflection.
- iii. The creation of a vision.
- iv. Honing a way of working.

Summary of Experiential Outcomes

The outcomes domain included the collective process, learning through critical reflection, the creation of a vision, and honing a way of working. Students were able to point out the result of their learning experiences. In this study constructivism and social constructivism became theories that helped understand these learning experience outcomes. The new things that students learn are their focus. The theory of constructivism rests on the tenant that knowledge is built upon. Learning through critical reflection can also be interpreted through the eyes of constructivism, because to reflect critically, one needs to be able to look at what they know and reason through that knowledge. Through this reasoning, participants were then able to think about how the work that they learned in their design studio could be applied to current situations and also future situations when they started working after graduation. The participants, therefore, perceived the all-nighter as a way to complete work or as part of their learning process in understanding who they were.

Summary of Domains and Categories

Progression in the Interrelational of Learning:

The participants experienced learning as being self-driven, where they felt they were forced to make decisions on how to work and what to do to accomplish a project. This self drive came about from their point of view because of the lack of guidance from the instructors, and that type of experience of learning was mainly in the first three years of their design studios. In the upper-level studios, participants experienced learning as an opportunity purposely given by the instructor, allowing them to have more of a say of what the projects would look like and how they would approach the problem. Participants were, therefore, did not feel forced to be self-driven at this stage; instead they felt they were given the opportunity to be self driven.

The second way that the participants described their learning experiences was in their reliance on their peers and instructors for guidance, critique, working techniques, and creation of an environment that was conducive to working. The participants relied on their peers more than they relied on their instructors because they communicated more and had more contact with their peers. The prevalent peer-to-peer interaction meant that students were able to help each other in a variety of ways, such as emotionally, socially, and academically. Help from professors was limited to the academic sense.

Progression in the Experience of Learning: Transition

The categories that emerged under the domains included thoughts and feelings of confusion and frustration in the first and second years, frustration and clarity in the third year, and clarity and transition in the fourth year. Because of the lack of knowledge about project requirements and assignments and the student perceptions of the lack of direction from the instructors, the participants felt that first and second year were filled with confusion and frustration. Students also lacked knowledge about each other, which may have caused group combinations that were not project oriented but oriented towards how well the students knew each other. Participants were also frustrated about understanding the project and the reason for being told to approach a project in a certain way. Frustrations also stemmed from the fact that some of the design-studio professors were not clear about their expectations of the participants. In third year, frustrations resulted from professors' teaching styles, and from participants' questions about putting themselves through a challenging program. Third year was a year of realizations about the meaning of projects and about the reasons for approaches to a project. Fourth year was a transitional year because students seemed to find their niche. Students were making decisions on their own on whether they wanted to work independently, whether they could actually do a project, and how they were going to approach it.

The Outcomes and Incorporation of Learning Experiences

Students described four major impacts of their learning experiences: (a) the collective process, (b) learning through critical reflection, (c) creation of a vision for their lives, and (d) honing of their way of working. The participants reflected on the cumulative process of design, which requires one to learn through critical reflection of their design work and that one become more aware of his or her way of working. Participants also further reflected on how their learning experiences in the design studio had helped them develop a vision for their future. In the collective process the understanding of the participants' cumulative understanding of their learning experiences, where the information that they learned each semester was pertinent to the next semester. This cumulative process encouraged students to document and think about what and why they did what they did every semester. In Learning through critical reflection the participants understood the importance of looking back, thinking about new ways of doing things, and reflecting on how they could have improved on a particular project. They used their reflective skills to help mold their current projects. Third, when students talked about their learning experiences in their design studios, they came to the conclusion that the studios had helped them think about what they wanted to do in the future. Participants' learning experiences had made them more focused on a vision for life, conscious about changing or affecting other peoples' lives, and determined to use the skills that they had learned. Last, the fourth area of emphasis was participants' way of working. The purpose of this study was to develop an understanding of how students in their fifth year of architecture understand their learning experiences from their first-year to their fourth-year design studios. The participants' descriptions and perceptions of their learning experiences were examined, taking into consideration the interaction that occurred in the design studios.

Implications and Recommendation for further Research

The findings of study have implications for architectural or design students, architectural educators and administrators, and higher education researchers. The findings demonstrated a strong relationship among the participants in study and how they construct knowledge. It showed that the experiences that students had in their design studios affected their thought process regarding the design process, life issues, life goals and visions, their way of working, and emotional stresses. The students described their learning experiences as being affected by the instructor, who played a big role in encouraging, discouraging, teaching, facilitating, coaching, and so on. Study did not include information from instructors on their teaching backgrounds, training or teaching methods, instructors may need to more strategically plan to learn about the nature of the student population.

The findings showed that students came into their first year with previous thoughts on learning. As several scholars have realized, students, especially in their first year, come from a K-12 system that advocates certain methods of teaching, learning and thinking. These methods of teaching include the

students as blank slates, making students think of the teacher as the guru of all knowledge. Also, what students know and how they think about what they know about learning in the design studio could be crucial to their development and growth. So regardless of the year that students are in, exercises like a discussion on their thoughts about design, their knowledge on skills, how they use those skills, and what they would like to accomplish by being in a particular studio, would be beneficial to their academic, social and emotional growth. Student development occurred throughout participants' learning experiences in the design studios.

The department should consider adding a field trip component to the first-year curriculum. It may not be as feasible to take first-year students on field trips out of state or out of the city; therefore, learning outside of the armory space may include going across the streets or across campus. The physical nature of the learning environment included the placement of participants in various studios. For the sake of collaboration, students would benefit from a conscious placement of students in open and shared spaces. One of the goals of the administration should be to strive for the maximum academic and social interaction of students, across physical studio spaces, which, according to the findings, are factors that enhance the students' learning experiences.

The third implication is the purposeful and conscious application of learner-centered, problem-based, and constructivist principles. Student confusion and frustration can be reduced if there was a simplification of design studio goals. This simplification would help students clearly understand what they should be learning academically throughout the semester. Clarity can be met by discussing goals not only at the beginning of the semester, but during the semester, by integrating the discussion into the teaching strategy of the instructor. Grading should not only be based on what the instructor thinks might be "good design work" or how review went, but also on the accomplishment of the goals of the design studio course. One participant mentioned that the all-nighter to her meant staying up and getting work done, whereas, according to her statement, she perceived that other people who boast about the all-nighter did not really get work done, but slept through some of their all nighter time. On the contrary, the students chose to pick a Architecture design studio with a professor that they viewed as different. Although this could constitute interdisciplinary work in the students' eyes, it causes isolation of students from different disciplines, not only within the College of design but also outside the College. This might mean that the curriculum should be designed to allow students to experience this interdisciplinary nature of the design studio before they graduate, and discourage isolation.

Personal Reflection

After doing research on the teaching styles of the instructors in the design studio setting, I was satisfied, but I had not achieved my goal of understanding students. That is why I decided to focus on architecture students for this study. Research has confirmed some of my beliefs about design studio education that include the instructor positively influencing the design students' development, the use of students' cumulative knowledge, and the importance of teaching and learning by getting to know students. The design studio is not a prototype for other learning environments, but it can be improved based upon the information being learned. I believe that the design studio, although not intentionally designed as learner-centered, problem-based, and constructivist, has certain aspects of these types of environments that have proven to be successful in other learning settings.

Guidelines and methods of instruction that are successful will allow instructors to intentionally apply methods of teaching that are more understandable to students. These methods could also be made accessible to other fields in education, just like existing methods of instruction are accessible to design educators. This is a recurring theme: instructors not being able to convey what they require of students. The problem is that several instructors are not willing to change. I need to stay focused on the students. Having said this: The first is a challenge to myself—to be an agent of change—and the second thought is to other design educators—to be open to change, especially when it comes to improving and enriching the learning experiences of the architect.

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