

Variants of Design Studio: A Phenomenographic Research on Students' Conceptions of Design Studio Environment

Onen Gunoz 

*Istanbul Technical University, Graduate School, Architectural Design Doctorate Program, Istanbul, Turkey
(Corresponding Author)*

Belkis Uluoglu 

Istanbul Technical University, Department of Architecture, Istanbul, Turkey

Received: January 15th 2023, Revised: January 27th 2023, Accepted: January 29th 2023

Refer: Gunoz, O., Uluoglu, B., (2023), Variants of Design Studio: A Phenomenographic Research on Students' Conceptions of Design Studio Environment, Journal of Design Studio, V.5, N.1, pp 5-20,

O. Gunoz ORCID: 0000-0001-6595-1075 (gunoz@itu.edu.tr) , B.Uluoglu ORCID: 0000-0001-9773-2977 (uluoglu@itu.edu.tr)

DOI: 10.46474/jds.1234644 <https://doi.org/10.46474/jds.1234644>

© JDS

This work is licensed under a Creative Commons Attribution 4.0 International License.



Abstract: Especially in the last two decades, there has been a call for change in design studio education. Today, a growing body of unconventional studio teaching approaches is challenging the traditional design studio setting. Given the central role of the instructor in the design studio, each instructor adopts an approach according to their disposition on design and architecture, as well as to their view on education, and to some extent, they reflect their view in the design of their studio course. This also enables students to explore different approaches to design and architecture while exposing them to different pedagogical positions. This scenario, viewed from the students' perspectives, raises two intriguing questions concerning studio education and the range of studio environments: (1) What is the range of studio teaching approaches embodied in design studios? (2) In what dimensions do they differ regarding students' learning experiences? This paper is a phenomenographic research aiming to map the range of current studio environments from a pedagogical standpoint through students' conceptions. For this purpose, we interviewed ten graduates from three architectural schools about their studio experiences. Through a phenomenographic analysis, we elicited four qualitatively different conceptions of studio environments. Further cross-category analysis revealed that the conceptions varied in several dimensional themes. The results provide insight from the student's perspective on how studio environments are experienced. This information may contribute to our understanding of the studio environment, its underlying pedagogy, and how students experience learning.

Keywords: Architectural design studio education, Design studio pedagogy, Design studio experience, Student perspective, Phenomenography.

1. Introduction

Teaching design is not a simple task, nor is there a given approach to how to teach design or design pedagogy, but rather a perpetual search and continuous readjustment. Especially in the last two decades, among scholars of architectural design education, there has been a rising state of restlessness about the future of

the design studio and a call for change. The question of 'in what direction is the change needed' gets various replies from design education practitioners within design education literature, but perhaps more importantly, within their studio practice. Design studio today is –as it has always been– also heavily dependent on the instructor's decisions. It is primarily the

instructor who creates the studio environment. Each instructor adopts an approach according to their disposition on design and architecture, as well as to their view on education. To some extent, they reflect their view in the design of their studio course. In this sense, the studio environment and its underlying pedagogy are bound together.

Today, in many architectural schools, each student is generally exposed to a different instructor almost every semester. They find themselves in different studio settings, engage with diverse design philosophies, and experience alternative design methods, but also a different pedagogic approach altogether. This scenario, viewed from the students' perspectives, raises two intriguing questions concerning studio learning experiences and the range of studio environments with an emphasis on their underlying pedagogy: (1) What is the range of studio teaching approaches embodied in design studios? (2) In what dimensions do they differ in terms of students' learning experiences?

This paper reports phenomenographic research aiming to examine architectural design studio education through students' conceptions of different studio environments. For this purpose, we interviewed ten graduates from three architecture schools in Turkey. Our ulterior motive, however, is to examine the pedagogical structure of the design studio from the students' perspective addressing its key dimensions, such as power relations, epistemic beliefs, and delivery system. The contribution of this study is considered in two ways. First, it will inform us about the topography of current studio teaching practices and approaches. Secondly, this information may provide a better understanding of the studio environment, its underlying pedagogy, and how students experience learning.

2. Background of the Study

2.1. Studio Practices Today: A Multi-polarized Field

Since the early 70s, different design methodologies have been adapted to architectural design education. Each adopted

methodology entailed a distinct set of rules that govern the design process and studio practices as they provide "legitimacy to a set of techniques and tools for design activities in the design studio or the learning setting" (Salama, 2017, p.119). For decades, until the late 90s, these studio models were a major impact on studio instruction. Even though different studio models have been practiced in architectural design studios for more than half a century, the pedagogic domain of design education was relatively in a "homogeneous 'naturalized' form" (Webster, 2008, p.64), which relied on the long-established tacit assumptions on studio education such as "knowledge and application are learned separately... studio assumes the mastery of the design instructor... the student has to believe in the power of design instructor... the studio is ruled by the unquestioned authority of the instructor and the critic... the current studio culture rewards students with the 'best looking' projects" (Salama, 2017, pp.75-79).

Especially in the last two decades, however, there has been a shift within the studio approaches towards practical ends and action-oriented tendencies. These action-oriented, 'hands-on' approaches constitute a new trend within studio teaching practices. Within this trend, many novel approaches became valid, including exploiting cross-domain tools and techniques, exploring emerging representational possibilities, utilizing virtual technologies, integrating informal design activities, incorporating interdisciplinary learning, and encouraging participation and collaboration in studio organization. Even the most common and *traditional* studio activities, such as juries, can be performed in a *non-traditional* fashion (Brindley et al., 2000). At one end, juries can be held in a most formal way where jurors sit in the front row, students in the back, and the presenter stands in front of their project, and as the jury comments on each work publicly, each student 'defends' their project. At the other end, in an informal setting where all students stand beside their presentation posters and models, a larger group of jurors visit students individually or in small groups to give feedback, or the student calls them from whom

they want feedback. The setup alters the learning environment (especially in the affective and emotional domain) and, thus, the learning experience.

While these emerging studio practices are a result of a shift in our design paradigm—from a positivist, simplistic, linear, fragmented, and object-oriented view to a situated, more complex, non-linear, holistic, and process-oriented view—a similar shift has occurred in our view on teaching and learning, which we believe, is also foremost influential on contemporary studio education. Today, an educator's responsibility is not described as 'passing their knowledge to students, but rather as *creating a learning environment* that facilitates learning (Seidel & Shavelson, 2007). In this sense, each studio instructor is organizing their studio as a learning environment not only according to their design approach but also their view on teaching and learning.

While these new and emerging approaches constitute a significant amount of studio practice, the traditional setting of the studio holds to exist, preserving its norms, which are based on the master-apprentice mode of teaching, with little or no change (Webster, 2008; Goldschmidt et al., 2010; Salama, 2017). Current design studio models exhibit extreme poles of studio approaches in many aspects of design education, not only in the means of studio content and design process but also in their pedagogic approach. Simultaneously looking at these poles will give us a more accurate picture of design education today and provide a more solid and truthful ground to investigate the pedagogy of the design studio.

2.2. Research on Studio Education

It is widely acknowledged that there needs to be more research on architectural education and design studio teaching practices, and given the complexity of the studio setting, there is much for exploration. Since the 1980s, a substantial body of literature on studio education has subjected the instructor as the main exponent in the design studio and the crits (desk-crits and juries) as the primary form of communication

and assessment focusing on different aspects of communication. Most of the research in this field is instructor-oriented, meaning they focus on what the instructors are doing to understand 'how things work' in the studio. In other words, they investigate 'the parallels of shared practice'. A large number of topics have been objected to investigation: studio style and format (e.g., Webster, 2008; Wang, 2010; Salama, 2017); teaching strategies (e.g., Quayle, 1985); formal reviews (e.g., Anthony, 1991/2012; Brindley et al., 2000; Webster, 2007); knowledge communication in desc-crits (e.g., Uluoğlu, 2000; Goldschmidt, 2002; Goldschmidt et al., 2010), instructor's roles (e.g., Quayle, 1985; Dinham, 1987; Attoe & Mugerauer, 1991; Goldschmidt, 2002; Webster, 2004), and examples of 'good practice' (e.g., Attoe & Mugerauer, 1991; Cho, 2009; McLaughlan & Chatterjee, 2020).

In recent decades, a current line of investigation adopts a more hands-on approach and focuses on 'the peculiarities of individual practice'. These experience-based studies centralize studio activities and offer critical analyses based on experiencing specific design tasks or a studio setting in a particular context. The importance of these studies is that they can be catalysts for re-thinking studio education and pedagogy as they are trialing new studio practices with a wide spectrum of pedagogical orientations and tendencies. In this sense, some key issues and practices that gain traction can be categorized as: adopting new models of teaching and learning (e.g., constructivist learning: Kandemir & Uçar, 2011; dialogic learning: Hou & Kang, 2006; blended learning; Yurtsever & Polatoğlu, 2018); focusing on different modes of thinking skills fostering design thinking such as critical thinking (e.g., Bose et al., 2006), creative thinking (e.g., Gordon, 2018), and parametric thinking (e.g., Cenani & Aksoy, 2020); integrating group work and collaboration within (e.g., Hill, 2016) and across studios (e.g., Qureshi, 2019) and with other disciplines (e.g., Kim et al., 2015); adopting non-design activities (e.g., play as a model for design: Farivarsadri & Alsaç, 2006), methods (e.g., storytelling: Khalili, 2023), and mediums (e.g., poetry: Liddicoat, 2017;

cinema: Cairns, 2012) for designing; and altering studio organization by incorporating informal studies (e.g., Almaç, 2018; Turgut & Cantürk, 2015).

Beyond the pivotal role of the instructor, the significance of the juries and desk-crits, and the centrality of the design tasks and their context, there is still a lot more going on in the design studio. Immanent aspects or ‘the unseens of practice’, such as hidden agendas, emotions, and social and power relations, are largely ignored by researchers. In this regard, Dutton's (1987) adoption of the notion of *hidden curriculum* from educational studies and the study by Austerlitz et al. (2002) are significant additions to architectural education literature as they expand the examination of studio pedagogy by bringing into focus questions concerning the ideology of knowledge and the discipline, orientation of education, and power relations and social practices which shape the experiences of students and teachers. There is little research focusing on the unseen aspects of the studio; however, their implications can be seen in other studies by Schön (1985, 1987), Dinham (1987), Anthony (1991/2012), Koch et al. (2002), and Webster (2007) among many others.

The unseen parts of the studio practice, as implicit assumptions and unmeasured structures connecting components of education, have an overall effect on the educational environment operating at the unconscious levels of learning.

2.3. Pedagogic Dimensions of the Studio Environment

Pedagogy, in design literature, is a term that is often misused in narrowing its extent to refer to the techniques and strategies deployed in teaching or the very act of teaching itself. In that sense, the pedagogy of the design studio remains, to a large extent, under-theorized. Most of the literature on studio education describes its pedagogy either about Schön's (1983, 1985, 1987) notion of reflective practice and associated cognitive mechanisms (namely *knowing-in-action*, *reflection-in-action*, and *reflection-on-action*) or about contemporary instructional theories (such as

learning-by-doing, problem-based instruction, experiential learning) without further examination of their philosophical stance on learning. This issue has also drawn the attention of a few educational researchers.

De la Harpe and Peterson (2008) analyzed 119 art, design, and architectural journal publications over the recent decade. Most architectural articles are about ‘studio reform’, followed by ‘instruction approaches’. In none of the publications in architecture, academics arguing for a ‘studio education reform’ use learning and teaching theory from educational sciences to position or explain their perspective on studio education, and their “underpinning theory appeared intuitive and coincidental, with ideas not yet crystallized or coherently synthesized into a whole” (de la Harpe & Peterson, 2008, p.143).

Pedagogy is the study of both how to teach and why to teach. Therefore, it affects both; how a teacher sees the act of teaching and why teaching (and learning) and education are important in society (Sandri, 2002). According to Trigwell, Prosser, and Waterhouse (1999), pedagogy encompasses an educator's construction, philosophy, and beliefs about their practice. It is an educator's worldview or ‘lens’ that shapes the way they see their practice, the function of education, and the methods and goals of learning. Individual values of academics influence the content, instructional strategies, and pedagogy used in practice (Olafson & Shaw, 2006). Pedagogy is better understood as a theoretical framework to outline the act of teaching underpinned with a learning theory encapsulating philosophical, political, cultural, social, cognitive, and affective aspects.

Different frameworks have been developed to examine the pedagogy-in-use (Seidel & Shavelson, 2007; Weimer, 2013). Although they have different orientations, they highlight social, ontological, and epistemic levels of pedagogy in learning environments. For the objectives of this study, as a framework to investigate the design studio as a learning environment, we consolidate the dimensions of

the pedagogic structure into three broad areas – *power relations*, *epistemic assumptions*, and *theories on learning*– (Figure 1) allowing them to expand through students’ conceptions and focus on their attributes.

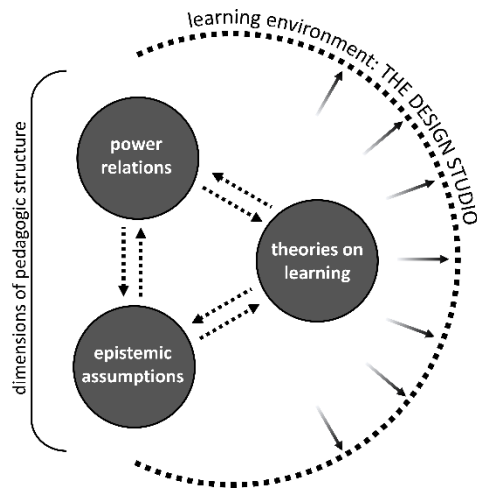


Figure 1: Framework of the study: Pedagogic dimensions of the studio environment

Power relations (authority):

Power relations mainly encompass issues with authority. Given the central role of the instructor in the design studio, authority is one of the central concerns of studio pedagogy. Educational literature distinguishes two sorts of authority: being *an authority* and being *in authority* (Winch & Gingell, 2008). To be *an authority* is to have knowledge and expertise that can be relied upon, which is also a necessary condition for education. Being *in authority*, on the other hand, is to have the entitlement to have one’s wishes acceded to. Recently, there has been rising opposition to the latter, arguing that authoritative instruction entails indoctrination by presenting the material as unquestionably true and uncontroversial, undermining students’ autonomy. Hence the role of teachers should be changed to non-authoritarian models, such as facilitators (Winch & Gingell, 2008).

In the same vein, instructors’ position regarding their authority has been investigated by Quayle (1985), Dinham (1987), Attoe and Mugerauer (1991), and Goldschmidt (2002), showing that instructors adopt different profiles in different

situations. Different situations can refer to different stages of design, the diverse needs of individual students, or a preference for personal style. Each researcher has elicited a set of profiles according to the instructors’ approach. Even though the profile sets vary, each set forms a continuum from the instructor acting as an ‘expert/master’ to acting as a ‘coach/facilitator’; in other words, from authoritarian to less-authoritarian roles.

Epistemic assumptions:

Epistemic beliefs relate to implicit assumptions individuals hold regarding the nature of knowledge and the process of knowing. According to Hofer (2000), epistemological beliefs operate on four mutually independent and polarized dimensions: *certainty* (fixed, static – evolving, dynamic); *simplicity* (compartmentalized – contextual); *sources* (transmission from external authority – construction through interaction); and *justification* (through an expert source – inquired evaluation). Despite its intrapersonal virtue, epistemic beliefs are also social and disciplinary constructs (Olafson & Shaw, 2006). On a disciplinary level, they constitute a shared set of explicit and implicit assumptions that collectively elucidate one’s dispositions on and attitudes toward the acquisition, structure, representation, development, and application of knowledge. Thus, to an extent, epistemic beliefs translate into one’s pedagogical orientations (Olafson & Shaw, 2006).

In architectural design studio education, disciplinary epistemic dispositions have implications on many related issues as controversies on foci and objectives of teaching practices involving different bodies of knowledge, skills, and cultures: defining architecture as a *discipline* of design vs. *professional practice* of designing; *artistic* vs. *socio-cultural* perspectives; *skill-based* vs. *knowledge-based* studio practices; *real-world* vs. *hypothetical* design situations; presenting *bodies of facts and theories* vs. *methods of exploration* (Teymur, 1992; Koch et al., 2002; Wang, 2010; Salama, 2017).

Theories on learning (and teaching):

Learning theories develop hypotheses that describe what learning is and how its processes take place; thus, there is a conceptual connection between learning and the act of teaching. In terms of defining our educational practice, there are three threshold learning theories: behaviorism, cognitivism, and constructivism. These theories are often discussed in opposition regarding how they define learning processes, as they present a shift from a receptive-accrual view of learning to a cognitive-situated view (Whitcomb, 2003).

The Behaviorist view characterizes learning in terms of skill acquisition through knowledge transmission. It relies on mimetic activities, such as explanation and demonstration by the teacher, followed by student practice and continual feedback that reinforces learning, and thus has a product-focused orientation (Shunk, 2009; Wilson & Myers, 2000). Conversely, the constructivist view defines learning in terms of meaning construction through effective participation in practices of inquiry and discourse, including exertions of skills, and thus has a process-focused orientation (Shunk, 2009).

Given the complexity of design learning, it is only natural to assume that different situations will call for different approaches –tools, models, methods, etc. (Wilson & Myers, 2000); hence, both types of activities, skill-based and inquiry-based, are necessary. However, it is the dominance of the activities that shape the studio environment. As mimetic activities lay at the core of traditional studio teaching and learning models, behaviorist principles operate almost by default, for they are explicitly or implicitly introduced by the instructor or adopted by students. During the flow of the studio, methods of conditional endorsement kick in, sometimes due to their ease and convenience or due to personal limitations related to communication.

Also, the main concern about the mimetic model is that it entails a more simplistic view of learning and eases surface learning strategies (Marton & Säljö, 1976), such as mimicking the instructor's demonstration without reflecting

upon it or blindly following the instructor's critiques without considering how they want to develop (Oh et al., 2013). The success of the design is limited to the language and the frames of reference of the instructor (Koch et al., 2002). It should be noted that these three dimensions do not operate independently but consistently. Just as an authoritarian position implies the dominance of the instructor's epistemic view and congruous delivery methods, certain delivery methods and epistemic positions require or deny certain authority levels. In other words, these three dimensions align as they consolidate into a whole as a learning environment in a studio setting.

3. Methodology of the Study

The focus of this paper now turns to key pedagogical features of different studio environments in architectural education. It will proceed with an outline of the methodology used.

Phenomenography

For the pursuits of the study and the nature of the research questions, it was crucial to adopt an approach that grants an understanding from an insider's perspective, those who experience it. On that account, this study adopts a phenomenographic approach to investigate conceptions of diverse design studio teaching approaches embedded in the various studio environments. As a research method, phenomenography has been suggested "for the study of the different understandings or conceptions of phenomena in the world" (Marton & Booth, 1997, p. 136). Thus, phenomenography focuses on people's varying conceptions of a given phenomenon and not on the phenomenon itself.

The central concern of phenomenography is to make sense of how people handle situations or phenomena by understanding and describing how they experience them. This approach rests on a primary assumption that individuals vary in how they experience, understand, and conceptualize reality in the surrounding world in a "limited number of qualitatively different ways" (Marton & Booth, 1997, p.112). In phenomenography, the qualitatively different

ways are known as the ‘variation’ of experience. The main interest of phenomenographic research is to surface the range of these variations in a qualitatively relational perspective as a collective experience of phenomena rather than focusing on individual experiences (Bowden, 2000). Hence phenomenography search for qualitatively different but logically interconnected conceptions; the focus of the research has been on key aspects of the collective experience of variation, as opposed to the richness of singular descriptions of individual experience. Put another way, the general goal of phenomenographic research is to develop and reveal the qualitatively different ways in which something is experienced and to describe the inter-relations between these variations.

Data collection and analysis

For this study, we interviewed ten graduates from three different architectural schools in Turkey. Interviews were conducted with participants whose graduation dates did not exceed ten years. We approached graduates as ‘former students’ and not as professionals. Concordantly, the focus of the interview questions was on their studio experiences as students and not how their design education relates to their practice. Of the ten participants, five were from Istanbul Technical University, three from Mimar Sinan Fine Arts University, and two were from Yıldız Technical University. In the results section, we will refer to the participants by numbers to maintain their anonymity. Also, this study aims to investigate the range of studio approaches and environments from an insider’s perspective (those who experienced it as students), not across institutions. To prevent any conjectures on the educational status of these respected institutions, any indicators that might associate participants or categories of descriptions with institutions were also redacted from the extracts and replaced with appropriate phrasing in box brackets.

The data collection was carried out via semi-structured, in-depth interviews conducted by the first author. Each interview lasted between 59-123 minutes, totaling 648 minutes. During

the interviews, participants shared their experiences as students from a total of 63 architectural design studio courses in varying depths and details, which provided sufficient data for phenomenographic analysis. The domains of inquiry were the divergent studio experiences and features of those studio environments that shape these experiences.

Each interview started with preliminary questions on their design education background, which helped them quickly browse through and reflect on their past studio experiences. Next, the participants were asked to classify their studio courses freely according to their chosen criteria. This question was asked purposefully prior to mentioning any keywords or concepts related to the aim of the study. Therefore, it is assumed that the answers to this question are highly related to participants’ conceptions of how they have conceived the studio environment they have been exposed to. The following questions were structured depending on participants’ classifications of exposed studio settings and aimed to get a more detailed description of each category with concrete examples.

The analysis of the transcripts requires several readings. The initial phase of the analysis is *familiarization*. Here, individual descriptions were loosely grouped regarding the responses to the first question. For each transcript, *condensed versions* of preliminary statements were constructed, prioritizing completeness and representativeness. Condensed descriptions were pooled and *compared* to identify the distinct characteristics of each studio experience and grouped into *draft categories*. This grouping was performed repeatedly to ensure no overlapping across groups, which resulted in four empirically based *final categories*. Final categories have been derived from collective data; therefore, no category derives from a single transcript. In the results section that follows, participant quotes are used to offer an illustration of each category. Finally, the categories were objected to a meta-analysis to identify cross-category themes to elaborate the framework giving rise to possible

dimensional characteristics of studio experiences.

4. Conceptions of the Design Studio Environment

In this study, participants appeared to conceptualize the design studio environment in four qualitatively different ways: *A: Studio as an instructor-centric environment*, *B: Studio as a dialogic & discursive environment*, *C: Studio as an environment of inquiry & discovery*, and *D: Studio as a cooperated environment*. The descriptions below show what makes the categories of conception different. The focus is on pedagogic aspects that differentiate the studio as a learning environment. Later, we articulate the internal relations between these variations. The categories are defined with a name and then presented with excerpts. Index codes in parentheses following the excerpts represent each participant.

We will continue with detailed descriptions of variants of studio environments:

A: Studio as an instructor-centric environment

The main character of this conception of the studio environment is that it evolves around the instructor and their administration; thus, the descriptions mostly pivot on the instructor's approaches and attitudes. The instructor is both *in* and *an* authority. While as *an* authority, the instructor holds the necessary knowledge and skill sets. This is also appreciated and admired by the students:

“[*The instructor*] approached rather from a technical point and provided all the necessary data... That appealed to me. His comprehensive knowledge and the way he introduced and communicated with them made me feel like, ‘right, with technical competence and detailing, this job can be truly accomplished’. He provided that.” (P09)

Being *in* authority, however, becomes problematic as it puts them in an arbiter position making their approach uncontroversial, and, to that extent, is also illustrated by the students

with disapproval. Still, except in a few cases, these two attributes go hand-in-hand and result in a “felt hierarchy” (P07) between the student and the instructor. However, being in authority reveals itself most apparently during routine-crits as indoctrination or, as described, as “pushing the student towards an end” (P08).

The nature of studio critiquing is unidirectional, adopting a transmission model of learning and mainly involving the instructor simulating and drawing the right way of handling the current situation by “correcting the work with their red pen” (P06).

“You wait nervously for your turn as you will soon present your study to the instructor, and he will tell you okay or not okay, accept it, or strike it out... [*The instructor*] had solid opinions like ‘you need to do it this way; why are you pushing this; you need to put this over there; this needs to be like that’ and such.” (P04)

The impression by the student is, however, passivity: “giving you no space, where you remain in a doer position” (P09). The routine-crits are held one-on-one, individually with each student, or as a group with others remaining as audiences. Peer critiquing is not likely, if at all. The main scope of the crits is aimed at the immediate solution of the design problem at hand. To that end, that a student develops an authentic approach is mainly disregarded: “that your design meets the technical requirements is more important than that you are progressing with your design research, or that your design being novel” (P06).

Regarding knowledge content, the subject matter is limited to those of the profession of architecture, usually excluding the alternative discourses in the field of architecture. “[*In our school*] a building is a building. And these other things are not of relevance” (P06). Finally, in the overall studio environment, students’ active involvement is rather limited, and the studio experience is recurrently described with adjectives such as ‘uninspired’, ‘dry’, ‘boring’, and ‘depleting’.

B: Studio as a dialogic and discursive environment

The main character of this conception is the dialogic approach of the instructor. Here, the focus of the descriptions shifts to the reciprocal character of the instructor-student communication and the transformative nature of this interaction. The structure of studio critiquing is dialogic, as a two-way event. The instructor's style and attitude reflect an appreciation of the students' authenticity regarding their tendencies, interests, and conceptualizations. This accord between the parties has a motivational effect and feels 'right': "A good instructor, though, guides to look at the right things" (P03), or "I felt like we were truly speaking the same language" (P05).

The knowledge content of the studio extends to other domains exceeding professional knowledge. The cross-domain knowledge is introduced mainly by the instructor. However, sometimes when it coincides with the common interest, the instructor incorporates the concepts brought up by students into the studio context. The design instructor models their intellectual and professional versatility by introducing adaptable cross-domain concepts and strategies to help students develop their ideas and appreciate the value of these intellectual tools:

"[*The instructor*] implied that you can find your answer not only within the limits of architecture but also from other domains... and reflected that attitude within the studio... That there might be something an architect can also learn from a scientific documentary; this is what I have gained from her" (P05).

The students feel encouraged to develop their approaches and conceptions not only about the design problem at hand but also about design and architecture in general through the current design situation by "approaching the [*current design*] situation in a broad spectrum of issues" (P03). This results in two ways; the emergence of variety among design approaches in the studio and a transformative effect on student's approach:

"The project theme was an office building... And I was studying working habits and how these are changing over time. That was something outside of the professional domain, but [*the instructor*] guided me and encouraged me to look that way and think differently, which I also wanted... In that studio, I learned that as an architect, you need to look from different perspectives and work in different scales when you design" (P05).

There is less reliance on an 'expert' and confirmation was sought from more than one source; also, the ideas of peer critique and self-reliance emerge: "There were times when you take the studio assistant's critique as a reference before the instructor's, or sometimes even a peer's critique can be as influential" (P05). To that extent, the instructor "lets the students be" (P05), which in return has a motivational effect: "In a way, it was like action and reaction, and that felt right. The more you do something that produces an impulse, the more response you will get from the instructor. Accordingly, to get more response, you bring out more" (P05). Finally, the overall studio environment and experience are recurrently described with adjectives such as 'interesting', 'enlightening', 'mind-opening', and 'exciting'.

C: Studio as an environment of inquiry & discovery:

In this description, there is an explicit focus on the studio process and increased active involvement and self-reliance. The scope of the studio focuses mainly on two interrelated activities: problem-framing by questioning and meaning production by establishing connections through research: "At that semester, there was no design problem; there was a design question. You were expected to develop a problem out of it and suggest a solution" (P02).

Compared to the previous category, the content and objectives of the studio broadened. Regarding content, besides current issues such as migration and social and economic transformations, abstract or hypothetical issues, as well as extreme situations, become topics of

the studio. The focus of how students see the content is exploratory -tasks or discussion topics that go beyond the design situation at hand in order to illustrate a concept to be understood:

“There was this topic, ‘building underwater’, where classical gravitation does not work, and another force is also pushing from the bottom. It was like investigating the effects of some invisible forces or transformations. They were like social and economic transformations, and it was about how you would integrate them into your design” (P04).

The communication in the studio is multi-directional. Besides one-on-one desk crits, discussions are held collectively with the whole studio or in small groups. To foster group discussions and exploratory content, the instructor tries to arouse inquiry and curiosity by prompting provoking questions and acting as an “exciter” (P09). Besides group discussions, informal peer interaction becomes inherent in the studio flow. So that the studio becomes more of “a place for discussions rather than a workplace”. “It was an environment to discuss with people, first with the instructor, but also with peers” (P4).

As in the previous category, there is no ‘felt hierarchy’ in the studio, and the level of the instructor’s involvement is perceived similarly, as “minimal guidance” (P04) and “mild suggestions” (P09). However, here as a difference, the instructor is mainly viewed as an ‘experienced companion’ (P09) who presents possibilities to move on or a “controller” who prevents the student from “entering dangerous grounds” (P08).

Different from previous categories, the exploration of different representation tools, techniques, and mediums also becomes a subject matter, such as drawing with oil paint, collaging, modeling with different materials, digital animation, etc. The introduction of different representation methods comes with different scenarios; either the instructor expects them as studio tasks or suggests during crits as a possibility, or students themselves bring them

up. Finally, the overall studio environment and experience are mainly described in terms of non-confinement (such as ‘feeling free’ or ‘trying [*something*] freely’) and motivation (‘encouraging’, ‘enthusiasm’, and ‘excitement’).

D: Studio as a cooperated environment:

This description shares, to a large extent, the same features as the previous category. However, the main characteristic that distinguishes this category from the previous is the extent of student participation. The main character of this description is students’ active involvement as decision-makers, and its motivational effects.

Compared to the previous category, the active involvement of students extended. The studio is loosely structured, allowing students to spontaneously participate in the studio organization as decision-makers of the studio activities and process. Partaking in studio organization also has a significant motivational effect on the students, described in terms of self-actualization.

“I remember; we were manipulating the studio. We gathered and discussed, ‘[*the instructor*] wants to do this, but wouldn’t it be better if we have done that instead.’ And we pushed it; ‘let’s do this, go there or see that’ ... I did not feel like I was a student, but rather as a character, involved in creating the whole environment with other studio partners” (P09).

To that extent, experiencing design as a situation becomes an integral part of the studio process: “as a group of friends, we were shaping the studio towards the experience we want to live” (P09).

The direction of feedback is multi-directional. Regarding routine-crits, peer input becomes almost as important. Active peer input is also prompted by the instructor rather than being spontaneous, as opposed to previous categories.

“[*The instructor*] oriented us towards that end... In the studio, we were a close friend

group... We were assisting each other by our own, acting as jurors. We gathered as a collective consistently since we were few in numbers in the studio... and many of us already had the intentions for such roles” (P09).

Relations between categories: Dimensions of the studio environment

The category descriptions derived from the data provide evidence that the learning experiences in the studio environment are conceptualized in qualitatively and significantly different ways. A cross-category analysis of the descriptions reveals several dimensional themes where the differentiation is most apparent: ‘positions in the studio’ –positions regarding the balance of power between the instructor and the student, per the instructor’s role; ‘direction of feedback’ – the status of communication regarding the person or source from which the feedback (as a generalized form of knowledge communication) is originated; ‘orientation and focus of instruction’ –dispositions, tendencies, priorities, and emphasis that emerges in the process of studio instruction, (primarily but not limited to studio crits, also including broader horizon of expectations); ‘studio content and

knowledge domain’ – content and scope of the issues in the design studio included in the design process and studio crits; and ‘active agents of the studio environment’ –people who are seen to have responsibility for the creation of the studio environment, and the role of the student (Table 1).

While these dimensional characteristics define the differences across studio settings, they also affect the studio learning experience in various ways. In this sense, *positions in the studio* determine not only the roles of the instructor and the power relations but also the level of dependency during the learning processes. In the same vein, *direction of feedback* also signifies the source of knowledge and how knowledge is generated in the studio; *orientation and focus of instruction* and *studio content and knowledge domain* imply how learning is framed; and *active agents of the studio* is a reflection of the level of student's responsibility of learning. The differences in dimensional characteristics in how studio learning has been experienced can be seen in a continuum. This continuum ranges from dependence to self-reliance and autonomy, expert-sourced to self-generated and socially

Table 1: Summary of dimensional characteristics across categories

	A: Studio as an instructor-centric environment	B: Studio as a dialogic and discursive environment	C: Studio as an environment of inquiry and discovery	D: Studio as a cooperative environment
Positions in the studio	Instructor is <i>an-</i> and <i>in</i> authority; expert; felt hierarchy	Instructor as guide or mentor; authority out of respect; no felt hierarchy	Instructor as experienced companion or controller	Minimal guidance; instructor as facilitator
Direction of feedback	Unidirectional; transmission	Dialogic; response is encouraged; some peer input	Multi-directional; informal peer interaction	Multi-directional; peer crit sessions
Orientation and focus of instruction	Task-oriented; immediate solution of design problem at hand	Situating architecture in a broader scope; conceptual transformation	Understanding concepts through research and discovery; meaning production	Facilitating experience
Studio content and knowledge domain	Disciplinary knowledge and professional domain	Interdisciplinary knowledge; broader scope of academic and intellectual world (inclusive of personal interests and conceptions)	Transdisciplinary knowledge; broader scope of practice	View on learning extending to experiencing a design situation
Active agents of the studio environment	Active instructor; no student input	Mainly active instructor; emergence of student input	Active instructor and active student	Collective agency; students as decision-makers

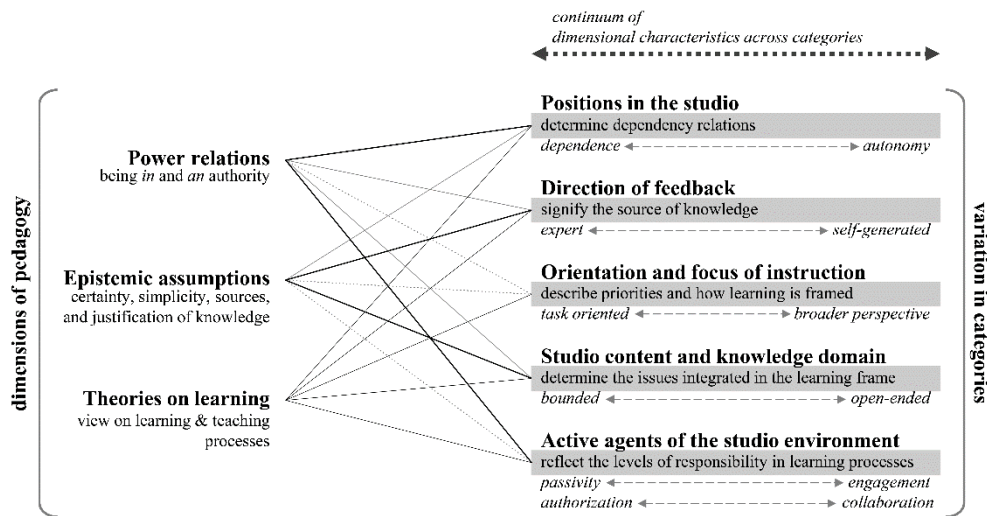


Figure 2: Relevance of framework to variation in categories

constructed, task-oriented to situated in a broader perspective, bounded to open-ended, passivity to active engagement, and authorization to collaboration. In this way, the dimensional attributes illustrate a relationship across the conceptions; this relationship is one of increasing integration, participation, and situatedness with decreasing authorization. These distinct yet inseparable features operate together in shaping the studio environment.

These characteristics are parallel to the dimensions of pedagogy as the framework of this study. However, the relevance of their components is not homogenous all around. While some pedagogic dimensions have a more direct and robust relation, some have a more subtle effect on variations of studio experiences (Figure 2). For example, regarding the level of participation, the continuum formed from authorization to collaboration or from dependence to self-reliance is bounded to the pedagogic dimension of authority more directly than the other two dimensions or, in terms of the content and context of the studio, the shift from being bounded to open-ended has a more robust relationship with epistemic beliefs as opposed to others.

Regarding the interconnection of components that shapes the studio environment, the description of category A resembles the

traditional setting of the design studio the most, as described by Webster (2008), Salama (2017), and Ward (1996), while other descriptions illustrate the directions of non-conventional models of studio teaching with different pedagogical structures. In this sense, we must note that while each cross-category dimension forms a continuum, the same is not valid for the categories themselves, implying that a category is holding an advanced or progressive position than the previous one. Just as ‘the whole being different from the sum of its parts’, these variants of studio environments do not progress towards an end, but instead, they have different orientations. In this sense, this study does not imply any appraisal regarding their educational value and contribution to the education of future architects. Instead, it draws attention to differences in their pedagogic structures.

With its emphasis on categories and not individuals, phenomenographic analysis results do not generally include quantitative data. However, it is interesting to note that category A: Studio as an instructor-centric environment, constituted most of all studio experiences described during interviews, followed by categories B: Studio as a dialogic and discursive environment, and C: Studio as an environment of inquiry & discovery, and most of the ideas for D: Studio as a cooperated environment came from one participant, with occasional

contributions from other participants' experiences. Also, regarding the distribution of the categories, it was only the descriptions of Category A which came from all participants. Meaning all participants in this study had an experience of the design studio as an instructor-centric environment. Moreover, three out of ten have only provided descriptions of this category. Which means they have experienced the studio as an instructor-centric environment only. We do not have quantitative data to further investigate the distribution of different studio environments, and such analysis is also outside the scope of this paper. However, we believe this information is significant as it illustrates the general topography of current studio teaching approaches in our schools of architecture.

5. Conclusion

The re-design of the design studio is an ongoing debate among scholars of architectural education. In this debate, pedagogic dimensions of studio education need to catch up to design-related issues within the professional domain. Given that the design studio has a distinct pedagogic structure, this gap gains more importance. Regarding this gap, we suggest studio educators engage with educational research as it will provide valuable insight to reflect on their own teaching practices. To that extent, this study provides a research-informed perspective from which the pedagogical structure of the design studio can be further explored.

By identifying students' conceptions of studio learning environments, this study takes a broader look at their underlying pedagogic structure and the way students experience architectural design learning. The results reveal a more holistic view of studio teaching practices, one that is grounded in the students' context. The findings reveal critical aspects of variation in how different studio teaching practices alter the overall studio environment and students' experience of studio learning. To that extent, it should also be noted that investigation through students' perspectives is a valuable approach to discussing studio pedagogy since student-centered research

approaches will provide further insight into what happens in the studio.

The results also reveal that the topography of current studio teaching practices relies, for the most part, on traditional norms. The challenge before us as studio educators is to make more effort to re-think and re-design the design studio education and, while doing so, to pay attention to the pedagogic implications of our practice.

Acknowledgment: This paper is part of doctoral research conducted by the first author and supervised by the second author.
Conflict of Interest: The author stated that there are no conflicts of interest regarding the publication of this article.

Ethics Committee Approval: N/A

Author Contributions: The authors confirm sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

Financial Disclosure: The author declared that this study has received no financial support.

References

Almaç, B. (2018). The factory: An experimental studio for discovering the other. *International Journal of Art & Design Education*, 37(2), 300–311. doi:10.1111/jade.12119

Anthony, K. H. (2012). *Design juries on trial. 20th-anniversary edition: The renaissance of the design studio*. Kathryn H. Anthony.

Attoe, W., & Mugerauer, R. (1991). Excellent studio teaching in architecture. *Studies in Higher Education*, 16(1), 41–50. doi:10.1080/03075079112331383081

Austerlitz, N., Aravot, I., & Ben-Ze'ev, A. (2002). Emotional phenomena and the student–instructor relationships. *Landscape and Urban Planning*, 60(2), 105–115. doi:10.1016/s0169-2046(02)00063-4

Bose, M., Pennypacker, E., & Yahner, T. (2006). Enhancing critical thinking through “independent design decision making” in the studio. *Open House International*, 31(3), 33–42. doi:10.1108/ohi-03-2006-b0005

Bowden, J. A. (2000). The nature of phenomenographic research. In J. A. Bowden &

E. Walsh (Eds.), *Phenomenography* (pp. 1–18). Melbourne: RMIT University Press.

Brindley, T., Doidge, C., & Willmott, R. (2000). Introducing alternative formats for the design project review: A case study. In D. Nicol & S. Pilling (Eds.), *Changing Architectural Education: Towards a new professionalism* (pp. 108–115). London, England: Spon Press.

Cairns, G. (2012). Crossing the boundaries of film and architectural pedagogy. *Journal of Pedagogic Development*, 2(2). Retrieved from <https://www.beds.ac.uk/jpd/volume-2-issue-2/crossing-the-boundaries-of-film-and-architectural-pedagogy/>

Cenani, S., & Aksoy, Y. (2020). An Introduction to design studio experience: The process, challenges and opportunities. *Journal of Design Studio*, 57–69. [doi:10.46474/jds.813689](https://doi.org/10.46474/jds.813689)

Cho, J. Y. (2009). Pedagogical examination of an award-winning instructor's studio teaching. *Design Principles and Practices An International Journal—Annual Review*, 3(3), 387–406. [doi:10.18848/1833-1874/cgp/v03i03/37699](https://doi.org/10.18848/1833-1874/cgp/v03i03/37699)

Dinham, S.M. (1987). An ongoing qualitative study of architecture studio teaching: analyzing teacher-student exchanges. *Proceeding of the ASHE Annual Meeting*, Baltimore, MD, November 21–24.

Dutton, T. A. (1987). Design and Studio Pedagogy. *Journal of Architectural Education*, 41(1), 16–25. [doi:10.1080/10464883.1987.10758461](https://doi.org/10.1080/10464883.1987.10758461)

Farivarsadri, G., & Alsaç, Ü. (2006). Let's play design. *Open House International*, 31(3), 43–50. [doi:10.1108/ohi-03-2006-b0006](https://doi.org/10.1108/ohi-03-2006-b0006)

Goldschmidt, G. (2002) 'One-on-One': a pedagogic base for design instruction in the studio. In Durling, D. and Shackleton, J. (eds.), *Common Ground - DRS International Conference 2002*, 5-7 September, London, United Kingdom.

<https://dl.designresearchsociety.org/drs-conference-papers/drs2002/researchpapers/30>

Goldschmidt, G., Hochman, H., & Dafni, I. (2010). The design studio “crit”: Teacher-student communication. *Artificial Intelligence for Engineering Design, Analysis and Manufacturing: AI EDAM*, 24(3), 285–302. [doi:10.1017/s089006041000020x](https://doi.org/10.1017/s089006041000020x)

Gordon, J. O. (2018). In the Making: Creative Thinking in the Architectural Design Studio. In S. Temple (Ed.), *Developing Creative Thinking in Beginning Design* (pp. 199–212). New York: Routledge.

de la Harpe, B., Peterson, J. F., Frankham, N., Zehner, R., Neale, D., Musgrave, E., & McDermott, R. (2009). Assessment focus in studio: What is most prominent in architecture, art and design? *International Journal of Art & Design Education*, 28(1), 37–51. [doi:10.1111/j.1476-8070.2009.01591.x](https://doi.org/10.1111/j.1476-8070.2009.01591.x)

Hill, G. (2016). Drawn together: Student views of group work in the design studio. *Journal of Architectural and Planning Research*, 33(4), 293–308. Retrieved from <http://www.jstor.org/stable/44987207>

Hofer, B. K. (2000). Dimensionality and disciplinary differences in personal epistemology. *Contemporary Educational Psychology*, 25(4), 378–405. [doi:10.1006/ceps.1999.1026](https://doi.org/10.1006/ceps.1999.1026)

Hou, J., & Kang, M.-J. (2006). Differences and dialogic learning in a collaborative virtual design studio. *Open House International*, 31(3), 85–94. [doi:10.1108/ohi-03-2006-b0011](https://doi.org/10.1108/ohi-03-2006-b0011)

Kandemir, O., & Ucar, O. (2011). A Constructivist Studio Environment for Interior Design Education. *Design Principles and Practices An International Journal—Annual Review*, 5(6), 65–80. [doi:10.18848/1833-1874/cgp/v05i06/38225](https://doi.org/10.18848/1833-1874/cgp/v05i06/38225)

Khalili, H. (2023). A design studio experiment: Pedagogy, digital storytelling, and atmosphere

in architectural education. *The International Journal of Design Education*, 17(1), 213–232. doi:10.18848/2325-128x/cgp/v17i01/213-232

Kim, M. J., Ju, S. R., & Lee, L. (2015). A cross-cultural and interdisciplinary collaboration in a joint design studio. *International Journal of Art & Design Education*, 34(1), 102–120. doi:10.1111/jade.12019

Koch, A., Schwensen, K., Dutton, T. A., & Smith, D. (2002). *The Redesign of Studio Culture: A Report of the AIAS Studio Culture Task Force*. The American Institute of Architecture Students.

Liddicoat, S. (2017). The role of poetry in teaching architectural design. *Axon: Creative Explorations*, 7(2). Retrieved from <https://www.axonjournal.com.au/issue-13/role-poetry-teaching-architectural-design>

Marton, F., & Booth, S. (1997). *Learning and Awareness*. London, England: Routledge.

Marton, F., & Säljö, R. (1976). On qualitative differences in learning: I-outcome and process. *The British Journal of Educational Psychology*, 46(1), 4–11. doi:10.1111/j.2044-8279.1976.tb02980.x

McLaughlan, R., & Chatterjee, I. (2020). What works in the architecture studio? Five strategies for optimising student learning. *International Journal of Art & Design Education*, 39(3), 550–564. doi:10.1111/jade.12303

Oh, Y., Ishizaki, S., Gross, M. D., & Yi-Luen Do, E. (2013). A theoretical framework of design critiquing in architecture studios. *Design Studies*, 34(3), 302–325. doi:10.1016/j.destud.2012.08.004

Olafson, L., & Schraw, G. (2006). Teachers' beliefs and practices within and across domains. *International Journal of Educational Research*, 45(1–2), 71–84. doi:10.1016/j.ijer.2006.08.005

Quayle, M. (1985). *Idea Book for Teaching Design*. Mesa, AZ: PDA Publisher Corporation.

Qureshi, H. (2019). Collaborative architectural design studio environment: An experiment in the studio of Architectural Design-I. *Archnet-IJAR: International Journal of Architectural Research*, 14(2), 303–324. doi:10.1108/arch-12-2018-0049

Salama, A. M. (2017). *Spatial design education: New directions for pedagogy in architecture and beyond*. London, England: Routledge.

Sandri, O. (2022). What do we mean by 'pedagogy' in sustainability education? *Teaching in Higher Education*, 27(1), 114–129. doi:10.1080/13562517.2019.1699528

Schön, D. A. (1983). *Reflective practitioner: How professionals think in action*. Basic Books.

Schön, D. A. (1985). *Design studio: An exploration of its traditions and potential*. London, England: RIBA Publications.

Schön, D. A. (1987). *Educating the reflective practitioner: Toward a New Design for teaching and learning in the professions*. London, England: Jossey-Bass.

Schunk, D. (2019). *Learning theories: An educational perspective* (8th ed.). Philadelphia, PA: Pearson Education.

Seidel, T., & Shavelson, R. J. (2007). Teaching effectiveness research in the past decade: The role of theory and research design in disentangling meta-analysis results. *Review of Educational Research*, 77(4), 454–499. doi:10.3102/0034654307310317

Teymur, N. (1992). *Architectural education: Issues in educational practice and policy*. London, England: Question Press.

Trigwell, K., Prosser, M., & Waterhouse, F. (1999). Relations Between Teachers' Approaches to Teaching and Students' Approaches to Learning. *Higher Education*, 37, 57–70. doi:10.1023/a:1003548313194

Turgut, H., & Cantürk, E. (2015). Design workshops as a tool for informal architectural education. *Open House International*, 40(2), 88–95. [doi:10.1108/ohi-02-2015-b0012](https://doi.org/10.1108/ohi-02-2015-b0012)

Uluoğlu, B. (2000). Design knowledge communicated in studio critiques. *Design Studies*, 21(1), 33–58. [doi:10.1016/s0142-694x\(99\)00002-2](https://doi.org/10.1016/s0142-694x(99)00002-2)

Wang, T. (2010). A new paradigm for design studio education. *International Journal of Art & Design Education*, 29(2), 173–183. [doi:10.1111/j.1476-8070.2010.01647.x](https://doi.org/10.1111/j.1476-8070.2010.01647.x)

Ward, A. (1996). The Suppression of the Social in Design: Architecture as War. In T. A. Dutton & L. H. Mann (Eds.), *Reconstructing architecture: Critical discourses and social practices* (pp. 27–70). Minneapolis, MN: University of Minnesota Press.

Webster, H. (2004). Facilitating critically reflective learning: excavating the role of the design tutor in architectural education. *Art Design & Communication in Higher Education*, 2(3), 101–111. [doi:10.1386/adch.2.3.101/0](https://doi.org/10.1386/adch.2.3.101/0)

Webster, H. (2007). The analytics of power: Representing the design jury. *Journal of Architectural Education*, 60(3), 21–27. [doi:10.1111/j.1531-314x.2007.00092.x](https://doi.org/10.1111/j.1531-314x.2007.00092.x)

Webster, H. (2008). Architectural education after Schön: Cracks, blurs, boundaries and beyond. *Journal for Education in the Built Environment*, 3(2), 63–74. [doi:10.11120/jebe.2008.03020063](https://doi.org/10.11120/jebe.2008.03020063)

Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2nd ed.). Nashville, TN: John Wiley & Sons.

Whitcomb, J. A. (2003). Learning and Pedagogy in Initial Teacher Preparation. In W. M. Reynolds & G. J. Miller (Eds.), *Handbook of psychology: Educational psychology v. 7: Volume 7: Educational psychology* (pp. 533–556). Nashville, TN: John Wiley & Sons.

Wilson, B. G., & Myers, K. M. (2000). Situated Cognition in Theoretical and Practical Context. In D. H. Jonassen & S. M. Land (Eds.), *Theoretical foundations of learning environments* (pp. 57–88). Mahwah, NJ: Lawrence Erlbaum Associates.

Winch, C., & Gingell, J. (2008). *Philosophy of education: The key concepts* (2nd ed.). London, England: Routledge.

Yurtsever, B., & Polatoğlu, Ç. (2018). A secret component in architectural design studio: The “filtering” concept. *Open House International*, 43(2), 60–68. [doi:10.1108/ohi-02-2018-b0009](https://doi.org/10.1108/ohi-02-2018-b0009)