



## Megaron

<https://megaron.yildiz.edu.tr> - <https://megaronjournal.com>  
DOI: <https://doi.org/10.14744/MEGARON.2024.86658>

MEGARON

### Article

## An investigation of the self-construction experience in architect's education

Ömür KARARMAZ\*

*Department of Architecture, Yıldız Technical University, İstanbul, Türkiye*

### ARTICLE INFO

#### Article history

Received: 13 June 2024  
Revised: 05 November 2024  
Accepted: 02 January 2025

#### Key words:

Architectural design studio  
Architect's education; architectural design studio; self-construction experience; qualitative research methods.

### ABSTRACT

This research examines architectural education through the lens of architecture students' self-construction experiences within design studios. In the context of architectural education, “self-construction” refers to the process by which students establish their professional identity, develop their understanding of design, and shape their perspective within the discipline, alongside their personal perception and worldview. The study advocates that architectural design education significantly impacts students' personal development, framing it as a self-construction process. The aim of this research is to gather feedback on students' educational experiences within the studio environment. Accordingly, the focus is on “the architect's education,” placing the individual at the center of a lifelong learning journey rather than on architectural education. To explore students' self-construction and transformation experiences, a case study was conducted with 50 senior-year architecture students from Yıldız Technical University, who have more extensive and complex educational experiences compared to early-year students. Data were collected through in-depth interviews, with responses analyzed both contextually and thematically. The evaluated student statements suggest that studio environments offer students the potential to develop a range of abilities. While studio challenges may initially serve as hurdles, they can eventually positively influence both professional and personal growth. The findings indicate that architectural education, particularly studio experiences, plays a significant role in students' personal development, with students expressing an awareness of their own change and transformation. Highlighting students' self-construction experiences and their reflections on shifts in worldview and personal growth can provide valuable methodological insights for developing new approaches and tools in architectural design education.<sup>1</sup>

**Cite this article as:** Kararmaz, Ö. (2024). An investigation of the self-construction experience in architect's education. *Megaron* 2024, 19(4), 526–538.

### INTRODUCTION

Design education is a unique experiential process that restructures both the designer and the design. For this reason, many stages of education challenge taken-for-

granted facts and stereotyped ways of thinking, sometimes breaking them down and often reproducing them. In this context, it is possible to discuss a self-construction process in architectural education. Self-construction refers to the individual's personal, emotional, mental, and social

#### \*Corresponding author

\*E-mail adres: [omurkararmaz@gmail.com](mailto:omurkararmaz@gmail.com)



Published by Yıldız Technical University, İstanbul, Türkiye

This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).

development processes. This term encompasses individuals' own lives, values, beliefs, and the process of creating them. The term marks the entire period during which the individual shapes their personal identity, perception, and life perspective, as well as their professional skills, learning process stages, personal reflections, tradition patterns created by external factors, and pivotal events.

When used in the context of architectural education, the phrase "self-construction" refers to the process by which students establish their professional identity, develop their understanding of design, and figure out their role within the discipline during the process of architectural education (Webster, 2008; Till, 2009). It is also possible to relate this term as an evaluation process in which students shape their creativity, aesthetic understanding, and professional/ethical values, as well as the knowledge, skills, and experiences they gain while studying. Accordingly, the focus of this research is on "the architect's education" rather than architectural education. What distinguishes the concept of the architect's education from architectural education is that it positions the individual at the center of lifelong education (Flynn, 2005; Sgarbi, 2013; Yücel & Aydınli, 2015).

Besides, the term "architect's education" is speculative, carrying dual meanings. Recently, it has continued to be employed in discussions about architectural education, as its use brings forth multiple interpretations. For instance, the term is not limited to undergraduate education in architecture; it prioritizes the architect to question and understand the architectural environment he/she is in (Flynn, 2005) and to interpret and distill the information from this environment.

It is a fact that we are in a complex world where the rate of change is exponential. Yücel & Aydınli (2015) explain this exponential pace of change: "With the abandonment of the positivist paradigm based on a single truth, which tries to explain reality through reason and observation in science, a subject-centered, pluralistic approach has begun to dominate teaching methods. Accordingly, learning is the process of attributing meaning to what is happening around the individual. The truth is not the only one; everyone has truths that are patterned according to their own experience and values."

Learning to learn can be considered a prerequisite for the self-construction process of students who discover the ways and methods of producing knowledge. It is possible to read the process of self-construction in the education of the architect through the experiences of the students, one of the actors of the education. Especially in studio courses that include both theoretical discussions and design practices, the transformation of the designer's identity becomes visible during the design studio courses.

In architectural design studios, in addition to the fundamental learning outcomes, students are expected to

make propositions in which they question the given within the scope of the design subject/problem and develop new approaches to the facts (Salama, 1995). Although the design act is subjective, it is affected by the collective experience of the group. Therefore, architectural design studios and all the positive and negative 'events' that occur in the studio prepare the background for students' self-construction processes.

Numerous studies in the literature, situated at the intersection of educational sciences and design education—particularly those centered on cognitive research—discuss the impact of students' formal educational experiences on their personal development. These studies (Sweller et al., 1998; Bhatti, 1998; Roberts, 2006; Kurt, 2011; Wu & Weng, 2013; Acar, 2008; Becker, 2017) have substantiated that diverse educational experiences not only enhance cognitive skills but also foster students' personal development, aiding their ability to tackle complex social issues and make informed decisions.

For Becker (2017), digital design education introduces new cognitive demands on students as they transition from analog to digital mediums. It discusses the cognitive framework required to support this shift, stressing the importance of adapting traditional cognitive theories of design to fit the evolving digital context, which is critical for fostering adaptive and flexible cognitive skills in architectural students.

Meanwhile, Sweller et al. (1998) discuss architectural education within the framework of Instructional Design by adding Cognitive Load Theory (CLT) to architectural education. This addition is evaluated as improving schema acquisition. CLT's application to instructional design has been particularly influential in settings that require mastering complex information, as it enables students to build robust, accessible knowledge schemas that support future learning and problem-solving.

On the other hand, the article on "Personality Development in Architectural Education" (Bhatti, 1998) examines how personality traits and development play an essential role in architecture students' professional growth. Architectural education not only involves acquiring design skills but also emphasizes essential personal attributes like confidence, communication, and adaptability. Key aspects include dress, punctuality, clear communication, and proactive planning—traits that facilitate success in architectural practice by fostering professional interactions and project management skills. This focus on personality development helps students adapt to the collaborative and client-centered nature of architecture, promoting a well-rounded professional identity.

The correlation of distinct cognitive styles and students' performance is another research topic in architectural design education. The studies examine how distinct

cognitive styles influence students' performance in architectural design (Roberts, 2006), while also exploring how educational methods can enhance creativity and cognitive development in architecture students, addressing common creativity challenges within design education (Wu & Weng, 2013).

Specifically, Roberts (2006) compares two dimensions of cognitive style: Wholist-Analytic and Verbalizer-Imager. The result of the study underlines where "Analytic" learners tend to excel in detail-oriented tasks and "Wholist" learners focus on big-picture understanding. On the other hand, Wu & Weng (2013) focused on two main components: analogical learning and analogical reasoning. Within the frame of students' cognitive abilities, interactions with peers and instructors, and overall learning performance were assessed using pre- and post-course questionnaires. Results indicated significant improvement in student engagement and cognitive development, particularly in their ability to connect abstract concepts with practical design tasks. This suggests that analogical thinking can be a valuable tool in architecture education, potentially improving both academic outcomes and future career skills for students in creative fields.

Acar (2008) and Kurt (2011) also focus on improving architectural education by restructuring it with innovative educational methods. Kurt (2011) discusses studio-based learning, where students actively engage in hands-on design problems and construct their own understanding by integrating previous knowledge with new design challenges. The result of the research indicates that in architectural education, constructivist studios provide an interactive environment that encourages students to approach design challenges from multiple perspectives, fostering skills like critical thinking, problem-solving, and creativity.

In practice, constructivist studios emphasize student-centered learning. By working on real-world problems and receiving iterative feedback, students cultivate a reflective, process-oriented mindset essential for architecture, where adaptability and synthesis of diverse ideas are critical. Likewise, Acar (2008) discusses how developmental psychology principles, especially those from Piaget's cognitive development theory, can be applied to improve architectural design education. The result of the research emphasizes how design education can benefit from understanding the stages of cognitive development that individuals undergo as they grow. It examines how architectural students progress in spatial understanding, abstraction, and problem-solving skills, and how this knowledge can be used to tailor educational approaches. The study suggests that by aligning design education with students' cognitive stages, such as moving from concrete to more abstract spatial concepts, educators can better support skill acquisition. The offering educational approach bridges

developmental psychology with architectural pedagogy, promoting a learning process that is synchronized with students' cognitive growth stages, which can enhance both their learning outcomes and creative capabilities.

The studies summarized here seek educational methods and models within architectural education to cultivate students' lifelong learning skills. They also indicate a shift in design education from traditional problem-solving approaches to more nuanced, innovative methodologies. This shift emphasizes the idea that creativity in design is less about finding a single correct answer and more about exploring a range of possible solutions within complex, open-ended challenges. In this framework, innovative design education methods encourage students to engage with design problems by identifying patterns, asking critical questions, and experimenting with unconventional solutions, fostering a creative mindset that prepares them for real-world design challenges.

It is also possible to say that these methods not only develop students' lifelong learning skills but also contribute to students' personal development and identities as well as the process of self-construction.

## AIM, SCOPE AND METHODOLOGY

This article focuses on students' experiences and awareness of their cognitive development levels and self-construction processes, aspects that are highlighted as essential in educational literature. The way students, as key participants, interpret the transformative process they experience in design studios is relatively underexplored in the literature. Yet, examining and making visible students' awareness of the changes in their worldview and personal growth could offer a valuable methodological contribution to architectural design education.

The research advocates that architectural design education has an effect (both positive and negative) on students' personal development, as named in the article self-construction of the students. The aim of the research is to obtain feedback about the educational process taking place in the studios. Thus, it is aimed to make visible the similarities and differences regarding the students' subjective experience process in architectural design education, as well as the architecture student's identity and the uninterrupted experience process, which is constantly transforming in architectural education. The hypothesis of this research is that architectural education, especially design courses, contributes not only to students' disciplinary knowledge but also affects their personal development and self-construction processes.

In this context, two interrelated research questions reflect the focus of the study:

- a. Does the architectural design education process influence the self-construction of students' identities and worldviews?
- b. If so, which factor(s) within the educational and experiential processes contribute to the self-construction of students' personal identities and worldviews, beyond the development of professional competencies?

The study employed qualitative research methods and tools to analyze and interpret the data collected. To address the research questions, a case study was conducted with the participation of students from Yildiz Technical University. The data for the research were obtained through semi-structured, one-on-one, face-to-face, and online in-depth interviews framed by specific questions with the students. The study group of the research was determined to be Yildiz Technical University senior-year students (Diploma Project Groups).

In this research, the experiences of students selected as the study group and in-depth interviews are not limited to a specific term or single course; rather, the focus is on how their overall experiences in architectural education contribute to their self-construction processes. Thus, the main reason for selecting senior-year students is that their educational experiences are more extensive and complex compared to those of early-year architecture students. In this context, in-depth interviews were held with 50 participants, 29 women and 21 men. Volunteering was a prerequisite for participation in the study. Among the students interviewed, 47 were aged 18–25, while the remaining 3 were between 25–35. It was anticipated that participants being in the final stages of their architectural education would allow them to reflect on their competencies across various stages of the educational process.

The questions asked during the interviews centered on three main focuses:

1. Students' knowledge about architectural education before beginning their architectural studies
2. Issues and potentials of architectural design education based on student opinions
3. Students' awareness of personal development and shifts in worldview, with a focus on discussions around design studio experiences

The in-depth interview questions were semi-structured. Students' statements were used to create quantitative data sets, as well as to generate word weights, relational diagrams, and matrices. Student responses were examined both contextually and thematically via content analyses. Findings are derived, evaluated, and presented under the topic of Research and Findings consecutively.

At the end of the research, a discussion was conducted based on the views of the learning actor, and suggestions were made regarding the educational process and educational

environments for the future. The research process and methodology of the study are described and illustrated in Figure 1. To create a heterarchical environment for knowledge-sharing in this research, the researcher assumed the role of a participant and actively engaged in in-depth interviews as a member of the discussions. The open-ended nature of the questions allowed participants to freely express their views, facilitating a diverse range of responses. This approach, designed within the study's framework, fostered an informal and evaluative setting for reflecting on the educational experiences occurring in the studio environment.

## RESEARCH AND FINDINGS

### Educational Curriculum and Personal Development/ Professional Knowledge Correlation

Architecture schools in Turkey accept their students through a multiple-choice central placement exam in which students who have completed secondary education are evaluated. In the current system, students who begin their education by enrolling in architecture schools do not have formal preparation for the premises required by architectural education. Like all other students who start their vocational education with this system, students who are accepted to architecture schools do not have an educational background, but they obtain information about the content and educational environment of architecture schools through various secondary channels.

Considering this situation, the first questions asked to the participants within the scope of the research were designed to understand whether the students had information about the culture, curriculum, and content of architectural education before starting their education, and whether they chose the architecture department consciously and voluntarily. In this context, 38 of the 50 participating students stated that they chose architecture education willingly and that they had information about the profession/education content, while 12 of them stated that there was a profession group they wanted more than the architecture profession and that they did not have any information about architecture vocational education before starting the education.

The content of the architectural education curriculum varies among institutes, and courses can be categorized into main thematic groups for each institute differently. Yildiz Technical University Architecture Department's (as the participants' formal education institute) curriculum can be categorized under six main sections: architectural design and theory, conservation and restoration, construction systems and materials, computer-aided technology and visualization, architectural history, and university common courses. The curriculum and courses of the 2023–2024 educational academic year are presented under the five main themes in Figure 2.<sup>2</sup>

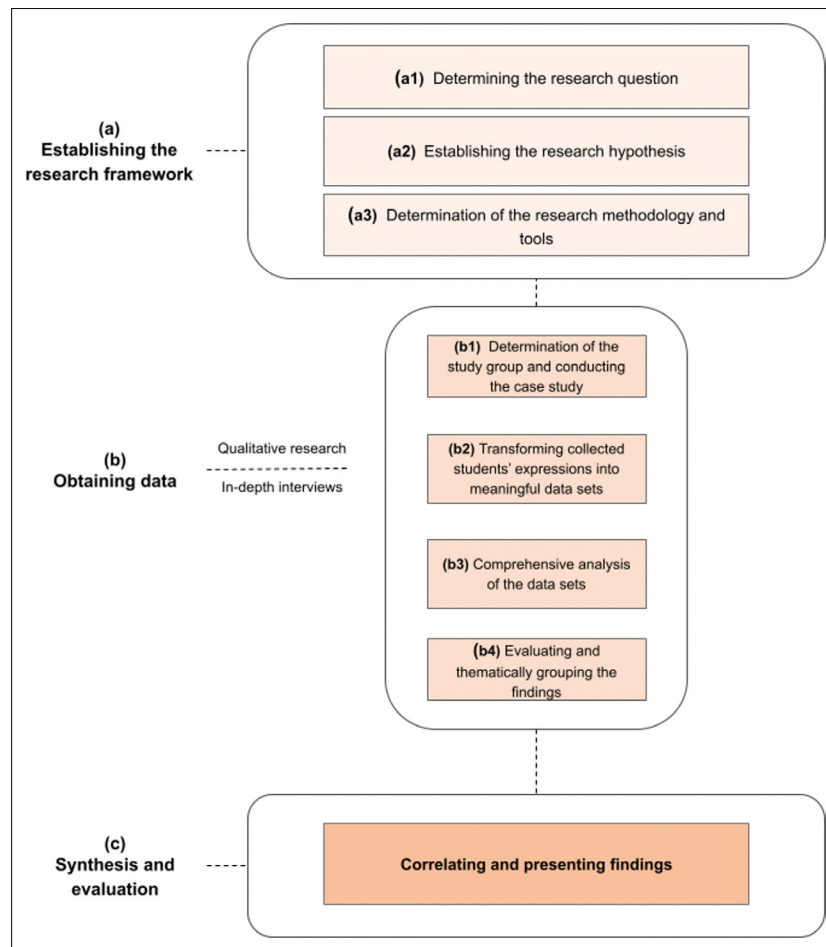


Figure 1. Research process and methodology.

This thematic grouping reflects core areas essential to developing a comprehensive architectural education, allowing students to gain expertise in both practical and theoretical aspects of the field. In line with this grouping, and considering the formal architectural education and training experiences of the participating students to date, they were asked, “Which group of courses in the curriculum do you feel contributes most to your personal development and/or professional development?”

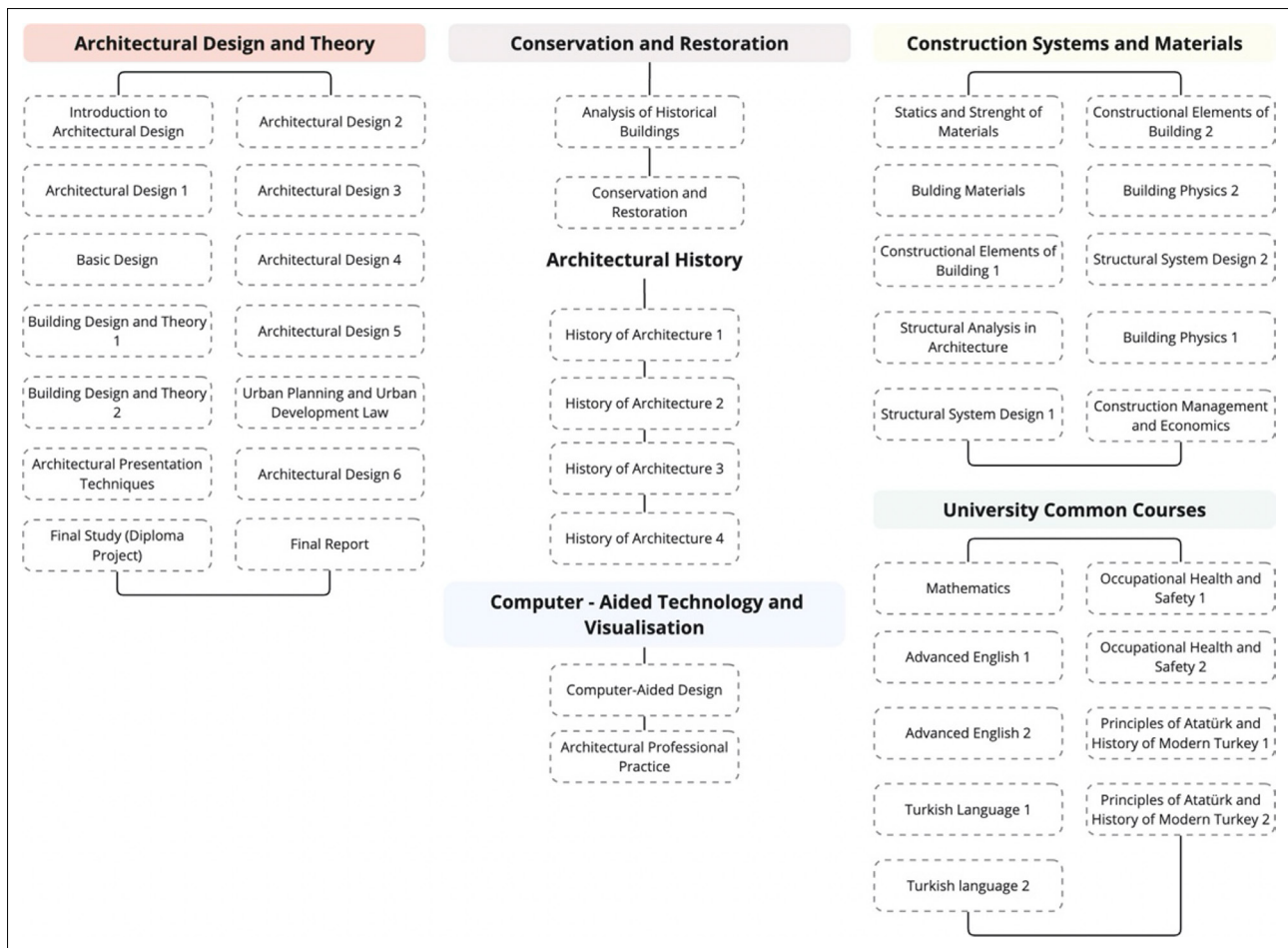
Among the course groups listed (Figure 2), 30 students indicated that architectural design courses contributed most to their professional development, while 8 selected computer-aided technology and visualization courses, another 8 chose construction systems and materials courses, and 4 highlighted conservation and restoration courses as the most beneficial. Similarly, when asked which course group had the greatest impact on their personal development, 35 students indicated architectural design courses, 5 selected architectural history courses, another 5 chose computer-aided technology and visualization courses, 4 cited construction systems and materials, and 1 cited conservation and restoration courses as the most influential course group.

This dual inquiry revealed that students viewed architectural design studios and the experiential processes within them as significant contributors to their personal development, as well as essential for enhancing their professional knowledge (Figure 3).

The students' emphasis on architectural design courses redirected the interview focus from the general curriculum to the specific context of architectural design studios. Subsequently, the in-depth interview content concentrated on questions, discussions, and exchanges crafted specifically for the studio environment. Building on this, the next phase of the research aims to investigate the self-construction process, viewing design studios as transformative spaces. This involves examining experiences and events within the studio setting and gathering students' insights into their interactions within these spaces.

#### Navigating the Architectural Design Studio: Issues and Potentials

The design studio holds a central position in the traditional and current structuring of architectural education. This



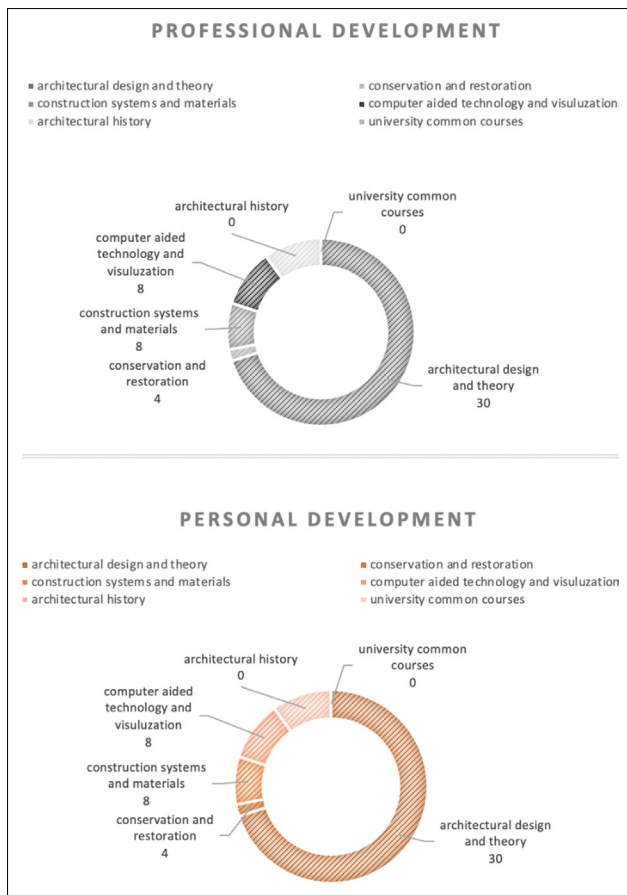
**Figure 2.** 2023-2024 Academic curriculum content for the Architecture Program at Yıldız Technical University's Faculty of Architecture.

central location is related to the fact that studios provide the necessary experimental environment to integrate the information learned in formal architectural education and offer environments that inherently allow for informality and flexibility. Since architectural project courses enable the use and testing of information obtained in all other courses, regardless of whether they are defined as studios or workshops, they are considered the unifying application area of all courses (Akansel et al., 2021).

Lackney (1999) defines the process in architectural design studios as an act of thinking that includes many elements, possibilities, limitations, and architectural knowledge, stating that the greatest contribution of the design process to the education of the architect is the gradual development of theoretical, practical, and artistic knowledge that students acquire in architectural education. Lackney emphasizes that the aim is to create an environment offering opportunities for collaboration. Similarly, Koester (2006) describes the studio's active learning environment as "an inspiring, creative, intensive experience that is passionately loved by students."

Architectural design, due to the dynamics that shape it, is an innovative/entrepreneurial, heuristic/experimental action that necessitates co-sense/sense sharing and a holistic perspective. In fact, in the 21<sup>st</sup> century, an architect often must search for solutions across different disciplines with blurred boundaries, involving more than one group. For this reason, architects must possess a broad spectrum of competencies (practitioner-expert, abstract-real, artistic-scientific, analytical-synthetic, individual-collective, and product-process) (Karamaz, 2017).

The studio, understood through the analogy of a "spine," stands out in this context (Aydınlı & Kürtüncü, 2014) and is interpreted as "an environment where the necessary knowledge and skills for developing creative thinking within the learning-to-learn paradigm are acquired." Similarly, the dynamic learning environment of the architectural design studio is described using the metaphor of "home," emphasizing the transformation of the educational process into the challenge of creating a meaningful environment. Aslan (2016) states, "The studio is now an environment of experiences rather than a lesson. The studio is the



**Figure 3.** The contribution of course groups in the architectural education curriculum to professional and personal development as reported by the participants.

student's home. It is not a place where information is simply transferred within the dialectic of those who know and those who do not know, but rather an environment where those with something to say can follow their words."

This environment, where those with a voice can act on their insights, is likely to involve natural metamorphoses and occasional reversals. In this context, it can be anticipated that such inversions in the studio will affect not only the designs but also the personal development of the participants.

Given the statements above, the architectural design studio holds a unique place in "the architect's education" and serves as a potential influence on the evolving thought process and worldview of architecture students. In this context, understanding how participating students define their architectural studios was considered significant, as it could reveal critical turning points in their self-construction experiences. During interviews, students were asked, "Could you define the architectural design studios by specifying three concepts that you associate with them?" The responses received were notably consistent. The relational network diagram in Table 1

**Table 1.** Concepts with which students identify the architectural design studio, their frequency of occurrence, and connectivity strengths

Studio concepts	Occurrences	Total link strength
Creativity	7	9
Critique	6	10
Design	5	7
Jury	4	5
Sketch	4	5
Board	4	4
Imagination	3	6
Context	3	5
Concept	3	4
Effort	3	3
Perspective	3	3
Production	3	3
Technical	2	4
Aesthetics	2	3
Discipline	2	3
Process	2	3
Idea	2	3
Development	2	2
Model	2	2
Solidarity	2	2

and Figure 4 was developed based on the frequency and connectivity of the concepts chosen by the students to describe the studios.

As the graphic indicates, students frequently use concepts like criticism, creativity, design, ideas, context, research, perspective, jury, imagination, and sketch to describe design studios. Additionally, students associate studios with relatively negative concepts such as difficulty, uncertainty, anxiety, stress, and inadequacy (Table 1 and Figure 4). This paradox arises because, while studios foster critical thinking in architectural education, they also become a test of endurance, pushing participants to their personal limits. In this regard, architectural design studios can be seen as transformative spaces that challenge and reshape the personal development of architecture students.

To understand the self-construction process, the research inquiry focused on students' studio experiences, specifically the 'events' occurring in the studio, as well as the issues and potentials of the studio environment, which were discussed in the interviews. At this point, another question aimed at making the participating students' studio experiences more visible was: "What are the issues you encounter in architectural design studios, and what are the potentials of architectural design studios?" The responses were analyzed

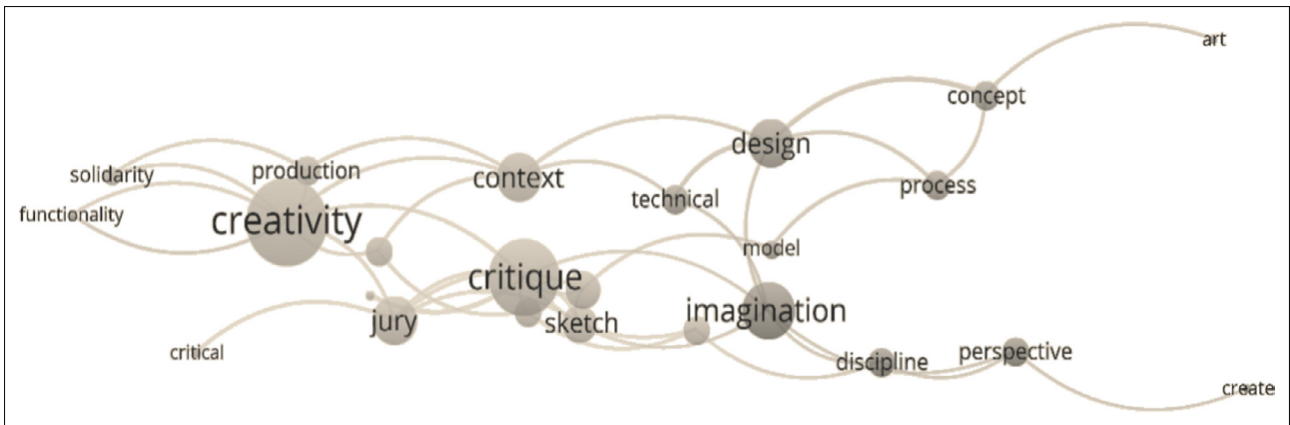


Figure 4. Frequency network map of concepts associated by students with the architectural design studio.

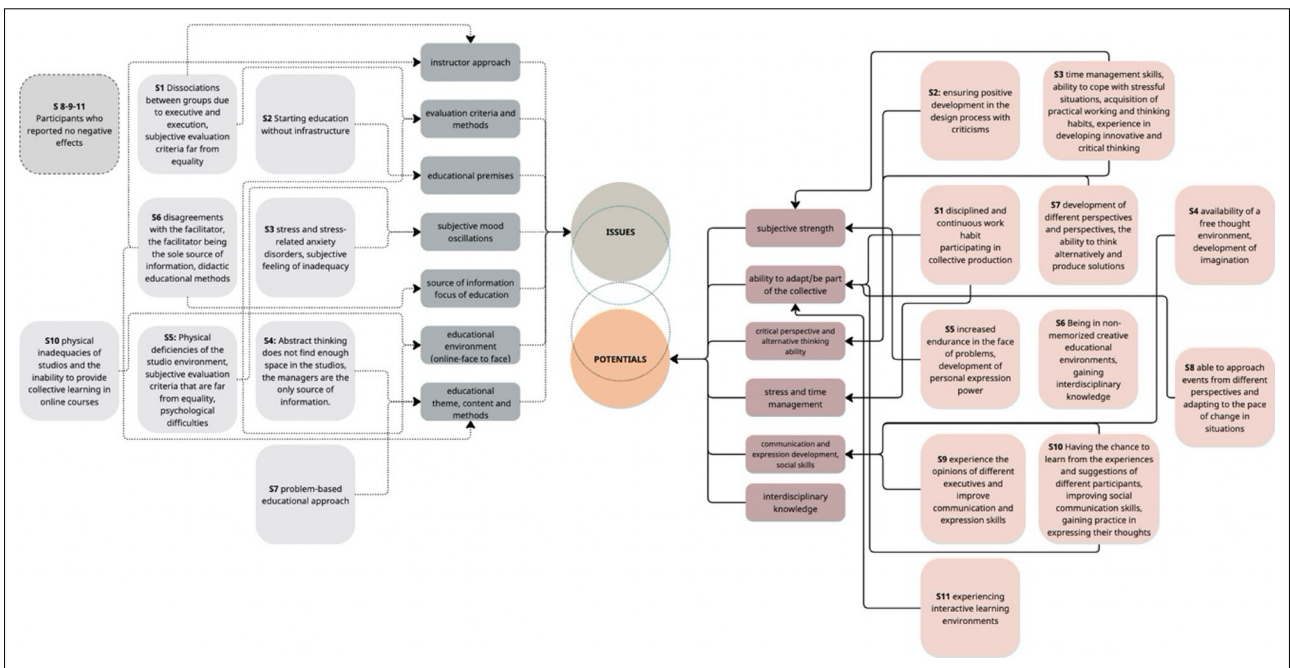


Figure 5. Correlation of issues encountered in architectural design studios and potentials.

to identify common themes and insights regarding challenges and achievements.

Some students emphasized the studio’s learning content and professional benefits, while others reflected on how the studio influenced their personal growth. This suggests that architectural design studios serve not only as spaces for professional education but also as environments for subjective, personal development (Figure 5).

Situations that the participating students identified as issues in architectural design studios include:

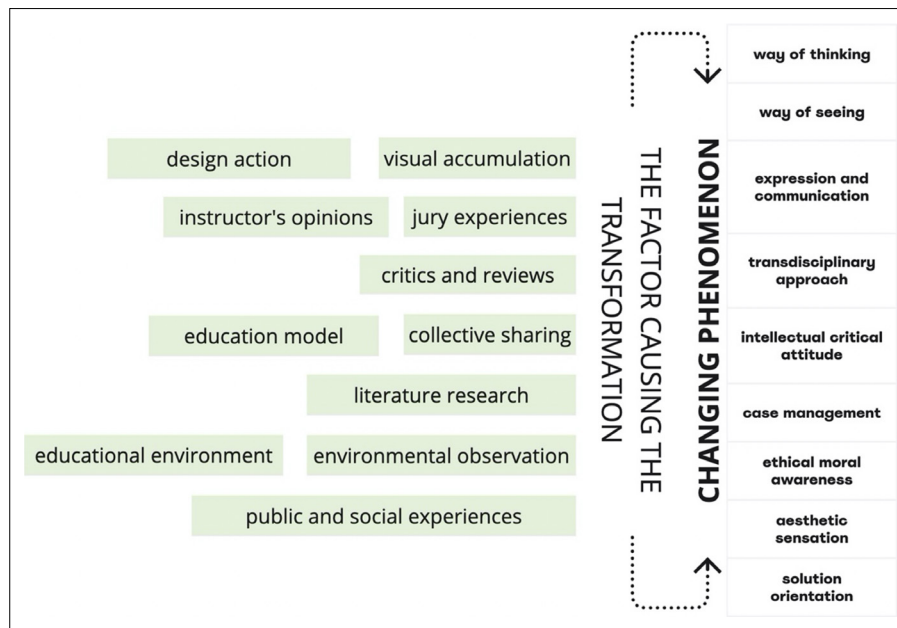
- carrying out an intense learning content in a relatively limited time,
- the subjective approaches of facilitators being different,
- difficulties in coordinating group work,

- lack of transparency in evaluations,
- stress and the challenging feeling of inadequacy,
- the facilitator being the only source of information,
- emotional-state control difficulty,
- physical inadequacies of the studio space,
- inability to express oneself,
- carrying out the design process with traditional/physical tools.

The achievements that students define as potential values are the following abilities they think they have developed during the design process:

- disciplined working ability,
- time management skills,





**Figure 6.** The factor that affects the self-construction process and the correlation of changing phenomena.

- critical thinking ability, ability to cope with stress and problems,
- fast and efficient working and thinking practice,
- the habit of approaching problems with different perspectives,
- creative and practical skills,
- development in using expression tools and communication skills,
- awareness of the environment and the user,
- the chance to experience flexible learning environments,
- collective production skills.

The students' responses are diagrammed in Figure 5. In creating the diagram, responses from 50 students were evaluated, and the responses of 11 students—those relevant to the topic, containing substantive content, and expressed clearly—were included. In the diagram, the label "S1" is a shortened form of "student number." The diagram is structured bidirectionally, establishing connections between issues and potentials as identified by the same students.

Although each student mentioned multiple issues and potentials, the responses included in Figure 5 represent the issues and potentials most emphasized by the students. The qualities identified as issues are largely connected to the instructor's approach, evaluation criteria and methods, educational premises, personal mood oscillations, focus of education, source of knowledge, educational environment, educational theme, content, and methods.

When considering the positive outcomes of studio experiences, students' views are associated with personal strength, the ability to adapt/be part of the collective, a critical perspective and alternative thinking, stress and time management, communication and expression development, social skills, and interdisciplinary knowledge.

A notable inference here is that the challenges and achievements in studios are, in essence, interdependent phenomena that mutually reinforce each other. While issues in the studio may initially act as hurdles for students, over time, they can become factors that positively influence both their professional and personal growth. In this context, students perceive certain conditions that push their limits as unique values inherent to the studio experience.

#### **Awareness of the Students' Self-Construction Process**

Students, whose former identities are transformed during their design experiences in the studios, must approach phenomena with new, shifting perspectives. What occurs here is a transformative experience that enhances the student's lifelong learning ability and architect's education. Within this framework, it is essential to understand how architecture students interpret their self-construction, as well as the breaking points and intellectual thresholds they encounter. While this experience is diverse and unique to each student, it holds the potential to produce collective knowledge from the shared process.

In addition to the process-oriented approach in design studios, Findeli (2001) advocates for a holistic, systemic, and complex perspective over traditional problem-based design education. What is distinctive in this approach is that

the designer is not viewed as a distant "solution machine" analyzing the problem from the outside but as an active participant embedded within the problem and the system. This perspective emphasizes understanding the system as a whole rather than isolating a singular problem. Therefore, instead of offering isolated solutions to encountered issues, the focus shifts toward proposals that transform the functioning of the system itself.

In contrast to the designer's role in traditional design studios, this approach envisions the designer as an integral part of both the design and the system—an active participant who experiences and interacts with the problem. For this reason, designers remain open to personal transformation throughout the design process, evolving alongside the design itself. Viewing the educational and experiential processes in architecture studios through this lens suggests that they hold the potential to reshape the designer's personal framework.

Examining students' personal development as an index in the architect's education reveals that each design practice introduces new "events." This series of interconnected events over time can be seen as building an index for the designer's own cumulative understanding. At this stage, the participating students were asked in the interviews: "Have you observed any significant changes or transformations in your personal identities and worldviews compared to before you began studying architecture?" They were encouraged to elaborate on these differences.

Student responses in Table 2 highlighted their personal development, in addition to bringing attention to the factors influencing the change. Within this framework, the final research question was posed to identify these influencing factors: "You mentioned a significant change in your personal identity and worldview. What do you think are the factors that have been effective in your transformation process?"

Student responses are summarized in Table 2 using a matrix diagram. In the matrix, original responses from 11 students are displayed horizontally, while the themes of these responses are listed vertically. The 11 students included here are those evaluated in the context of the previous question. While 96% of students (48 participants) reported noticing a change in their personal identity, 4% (2 participants) indicated that they did not observe any change.

Within this framework, students are linked to a set of competencies, including shifts in their personal structure, worldview, intellectual development, deep and comprehensive thinking, and the cultivation of critical thinking and expression skills. The factors driving this shift are associated with ways of thinking, ways of seeing, styles of expression and communication, interdisciplinary and cross-border working, intellectual and critical attitudes, case management, ethics and moral awareness, aesthetic sensations, and solution orientation.

In the interviews, students expressed that they view architectural design studios and the experiential processes within them as essential to both their professional and personal development. Participating students' responses categorized the challenges in architectural design studios into clusters, including learning duration and content, information sources, evaluation criteria, individual and group work dynamics, emotional-state management, and the physical attributes of the studio space.

The accomplishments students identified as valuable outcomes were associated with concepts such as work discipline, time management, critical perspectives, collective production experience, stress management, practical production, creativity, originality, and the development of expression, communication, interdisciplinary, and alternative thinking skills.

This situation reveals an interesting paradox within architectural design studios: although the challenges encountered in the studio initially present a threshold that students must overcome, over time, they become factors that positively influence both their professional and personal growth.

When students' awareness of their transformation and self-construction process was questioned, they described a changing phenomenon in how they perceive the world (ways of thinking and seeing, aesthetic sensations), develop intellectual knowledge (transdisciplinary approach, case management, solution orientation, ethical and moral awareness), engage in deep and comprehensive thinking (critical attitudes), and cultivate critical thinking and social skills (expression and communication).

Nearly all participants reported a noticeable change in their personal development, with only 2 out of 50 students stating they had not observed such a change. The factors contributing to this transformation include studio processes, design actions themselves, visual accumulation, instructors' opinions, jury experiences, critiques and reviews, collective sharing of knowledge among students, literature research, educational environment (including educational models, environment, and content), environmental observation, and public and social experiences.

Evaluating the responses from participating students reveals that they possess a high level of awareness regarding their own transformation. This finding suggests the need to move away from instructor-centered, traditional design studio methods—which can sometimes place students in a passive role regarding information flow—toward heterarchical learning environments. Such environments enable students with strong self-awareness to develop critical attitudes, recognize themselves as stakeholders, and engage in multidirectional information flow (Figure 6).



## CONCLUSIONS AND FURTHER RESEARCH PATHS

In today's context, architecture is no longer confined to the design and construction of buildings and built environments; the skills and competencies of architects now encompass a broad spectrum. Increasingly, researchers in the architectural field emphasize the importance of architects as intellectuals. It is argued that a critical goal today is to equip students with a "compass" for navigating vast amounts of information, enabling them to find their own direction. Viewing architectural design education from this perspective, it is believed that the primary aim should be to create educational processes that actively engage students, particularly in the thinking and production phases of learning, and to build knowledge collaboratively and participatively.

In this study, which aims to contribute to the literature on architectural design education, the challenges and potentials of contemporary architectural design education were explored through student perspectives via a case study. The changing phenomena that students become aware of while forming their personal identities and worldviews, along with the factors driving these shifts, were brought to light.

The evaluated responses in Figure 5 and Table 2 suggest that studio environments provide students with the potential to develop a range of abilities. Architectural design knowledge extends beyond buildings and the built environment, encompassing interdisciplinary areas and even crossing into undefined "gray" zones. In this context, it is essential for the design studio to enable students to internalize the knowledge they acquire and transform it into creative, innovative, and original outcomes. This process of interpretation and learning is inherently individual. To foster such original interpretation, a free and flexible learning environment is required. It can be anticipated that such adaptive environments, where critique comes not only from the instructor but also from student peers, will positively contribute to the evolving configurations of students' self-construction experiences.

Based on the discussions presented in the text derived from the research, the following inferences and recommendations were made for design environments and methods aimed at enhancing and modernizing the educational process within studios, in the frame of students' self-construction experiences:

- To support self-construction, regular opportunities for self-assessment and reflection should be integrated into the architectural curriculum. These practices help students gain insight into their learning processes, track progress, and identify strengths and areas for growth.
- Encouraging students to work on projects with social responsibility and community-centered designs can increase their social awareness as they develop

professionally. These projects allow students to shape their identities within a societal framework, contributing to both personal and professional growth.

- Mentor-guided learning models can provide students with professional insight and guidance to support their self-construction process. By working with experienced professionals, students gain a clearer sense of their architectural identity and development path.
- Projects that foster risk-taking and experimentation should be promoted to develop students' creative thinking. These initiatives allow students to push boundaries, learn from their mistakes, and deepen self-awareness through exploration.
- Modules that explore the philosophical and ethical dimensions of design help students examine their values, articulate their ideas, and infuse meaning into their work. This supports a more profound and reflective self-construction process.
- Establishing social learning groups encourages collective learning, where students can draw from diverse perspectives to enrich their self-construction process. Peer-to-peer interaction provides a collaborative environment that benefits personal and intellectual development.
- Creating open spaces where students can freely discuss and receive feedback on their designs from different perspectives promotes critical self-reflection. These environments allow students to critically evaluate each other's ideas and question their own development, contributing to a robust self-construction process.
- Interactive platforms where students can share ideas, sketches, and projects while receiving feedback should be established to support self-construction processes digitally. This creates a continuous learning cycle and helps students assess their progress.

Architecture students educated in environments designed with the contemporary approaches listed above are likely to become individuals and professionals who are open to updating their sense of self and worldview, possess strong critical thinking skills, and demonstrate high levels of intellectual depth and awareness.

In addition to designing these proposed educational environments, a future line of research in the field of architectural design education could focus on identifying which tools within these environments are most effective in increasing student awareness and supporting their personal development processes. Additionally, a comparative inquiry could examine the impact of curricula from various educational institutions on students' personal growth. The different roles assumed by the actors in the design studio could also be explored in terms of their effects on students' identity.

Innovative research along these dimensions could provide valuable insights into architecture students' processes of self-construction and their transformation experiences. Within this scope, the study of students' self-construction experiences during architectural education could support the creation of educational frameworks that foster high levels of self-awareness. Such frameworks would encourage students to learn how to learn, equipping them to develop original solutions to new challenges they will encounter continuously throughout both their professional and personal lives.

In this way, students who learn to learn and maintain heightened personal, social, and environmental awareness can develop the understanding that architecture is not solely about producing built environments; rather, it is often closely related to cultivating a flexible mindset that allows for self-construction.

## NOTES

<sup>1</sup>The draft of this research was presented at the “MSGSU 140 Yılım Mimarlığına Tanıklık Sempozyumu” in December 2022.

<sup>2</sup>Figure 2 presents the course contents of the 2023-2024 academic curriculum for the Architecture Program at Yıldız Technical University's Faculty of Architecture, thematically grouped and covering only the mandatory courses. Students at the institution may take elective courses not only from the Faculty of Architecture but also from other faculties. Therefore, elective courses were excluded from the scope of this study.

**ETHICS:** There are no ethical issues with the publication of this manuscript.

**PEER-REVIEW:** Externally peer-reviewed.

**CONFLICT OF INTEREST:** The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**FINANCIAL DISCLOSURE:** The authors declared that this study has received no financial support.

## REFERENCES

- Acar, A. (2008). A developmental perspective for architectural design education. *Edinburgh Architecture Res*, 31.
- Akansel, S., Özsoy, B. A., & Çubuk, G. (2021). Mimarlık öğrencisi nasıl öğrenir: yapılandırıcı paradigma yöntemi ile bir değerlendirme. *Yapı*, 463(Şubat).
- Aslan, D. (2016). Mimari stüdyo kültürü ve pratik üzerine. *Ege Mimarlık*, 2(93), 12–15.
- Aydınlı, S., & Kürtüncü, B. (2014). *Paralaks oda*. İstanbul: Cenkler Matbaacılık.
- Becker, E. (2017). Design cognition: Optimizing knowledge transfer in digital design pedagogy. *Architectural Res in Finland*, 1(1), 93–105.
- Bhatti, S. S. (1998). Personality development in architectural education. *Architecture Plus Design*, 15(1), 40.
- Findeli, A. (2001). Rethinking design education for the 21<sup>st</sup> century: Theoretical, methodological, and ethical discussion. *Design Issues*, 17(1), Winter 2001.
- Flynn, P. (2005). Critting the crit in the education of architects: From Bauhaus to Bolton Street.
- Kararmaz, Ö. (2017). *Mimari tasarım eğitimi ve güncel mimarlık tartışmalarının bir arayüzü olarak mekânsal yerleştirmeler* (Yayımlanmamış yüksek lisans tezi). Yıldız Teknik Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.
- Koester, R. J. (2006). Centers for regenerative studies: Graduate studio experiences in education for sustainable design. *Proc of PLEA2006 Geneva Switzerland*, 1, 659–664.
- Kurt, S. (2011). Use of constructivist approach in architectural education. *Procedia-Social and Behavioral Sci*, 15, 3980–3988.
- Lackney, J. (1999). A history of the studio-based learning model. Retrieved March, 8, 2012.
- Roberts, A. (2006). Cognitive styles and student progression in architectural design education. *Design Studies*, 27(2), 167–181.
- Salama, A. (1995). New trends in architectural education: Designing the design studio. *Arti-Arch*.
- Sgarbi, C. (2013). The education of the architects. *IN\_BO Ricerche e progetti per il territorio la città e l'architettura*, 4(1), 5–8.
- Sweller, J., Van Merriënboer, J. J., & Paas, F. G. (1998). Cognitive architecture and instructional design. *Educational Psychology Rev*, 10, 251–296.
- Till, J. (2009). *Architecture depends* (Vol 55). MIT Press.
- Wu, Y. W., & Weng, K. H. (2013). Using an analogical thinking model as an instructional tool to improve student cognitive ability in architecture design learning process. *International J of Technology and Design Educ*, 23, 1017–1035.
- Yücel, S., & Aydın, S. (2015). Mimarın eğitimi üzerine spekülâtif bir deneme. *Erciyes Üniversitesi Fen Bilimleri Enstitüsü Fen Bilimleri Derg*, 31(1), 17–23.
- Webster, H. (2008). Architectural education after Schon: Cracks, blurs, boundaries, and beyond. *J for Educ in the Built Environ*, 3(2), 63–74.