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'PARTICIPATION' AS A STRATEGIC AND CONSTRUCTIVIST PEDAGOGICAL APPROACH IN DESIGN EDUCATION

TASARIM EĞİTİMİNDE STRATEJİK VE YAPILANDIRMACI BİR PEDAGOJİK YAKLAŞIM OLARAK "KATILIM"

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Abstract
This study discusses that enhanced participation have the potential to enhance learning by establishing a more grounded dialogue between instructors and students in the design studio. It draws upon the constructivist view of project-based design learning and the concept of participation, defined as a mutual and continuous learning process. First, a workshop was conducted with instructors and students to set a foundation for the main discussion through participants' views. Then, the outcomes were implemented in a second-year undergraduate industrial design course. A semi-structured interview was conducted with a focus group in addition to an interview with the course coordinator. The results show that participation helps students make sense of both design and learning processes, despite diverse motivations and preferences in learning and participation.

Keywords: Constructivism, Design Education, Participatory Approach, Project-Based Design Learning.

Öz
Bu çalışma, artırılmış katılım fırsatlarının tasarım stüdyosunda eğitmenler ve öğrenciler arasında daha gerçekçi bir diyalog kurarak öğrenmeyi geliştirme potansiyeline sahip olduğu konusunu tartışmakta ve proje tabanlı tasarım öğreniminin yapılandırmacı görüşüne ve karşılıklı ve sürekli bir öğrenme süreci olarak tanımlanan katılım kavramına dayanmaktadır. İlk olarak, katılımcıların görüşleri aracılığıyla ana tartışmaya bir temel oluşturmak için eğitmenler ve öğrencilerle bir atölye çalışması gerçekleştirilmiştir. Ardından, elde edilen çıktılar bir ikinci sınıf endüstriyel tasarım dersinde uygulanmıştır. Ders koordinatörü ile yapılan bir görüşmeye ek olarak öğrenciler ile yarı yapılandırılmış bir odak grup çalışması gerçekleştirilmiştir. Sonuçlar, öğrenme ve katılım konusundaki farklı motivasyon ve tercihlere rağmen, katılımın öğrencilerin hem tasarım hem de öğrenme süreçlerini anlamlandırmalarına yardımcı olduğunu göstermektedir.

Anahtar Kelimeler: Yapılandırmacılık, Tasarım Eğitimi, Katılımcı Yaklaşım, Proje Tabanlı Tasarım Öğrenme.

INTRODUCTION

This study explores a fully participatory approach to enhance learning in design education through a constructivist lens. It aims to enhance students' awareness of their own learning processes and foster a more equitable and transparent student-instructor dialogue by promoting active student participation in pedagogical planning within the design studio. The constructivist approach emphasizes active knowledge construction by learners and values the social, cultural, and creative diversity they bring to the learning environment. When effectively guided and integrated in an objective and structured manner, this diversity can enrich the learning experience, facilitating the creation and acquisition of design knowledge and skills. From a participatory design perspective, providing inclusive environments with participatory opportunities allows for the effective utilization of diversity, contributing to stronger pedagogical structures and addressing individual learning needs. Since learning is an individual process, participatory design serves as a strategic tool for instructors to foster a more meaningful dialogue with students, refine instructional methods, and adapt teaching models to diverse needs by systematically incorporating students into pedagogical decision-making. Considering the experiential nature of the design studio and the effectiveness of student participation, this study investigates the utilization of participatory design as a strategic and constructivist pedagogical approach in design education.

DESIGN LEARNING AND STUDENT PARTICIPATION

First, the constructivist approach in design learning, the concept of participation, and the participatory approach are discussed, followed by the examination of the participatory approach with learning through recent studies in the literature. Student participation and project-based learning in design education are also examined within this context.

The Constructivist Approach in Design Learning

The constructivist approach views learning as an active, self-directed process where learners shape their own understanding rather than passively receiving knowledge (Fernando & Marikar, 2017; Sjoberg, 2007). Instructors must recognize this dynamic, balancing their roles as facilitators who support learning and as transmitters of academic knowledge (Gül et al., 2012). This perspective is central to project-based learning, where students set goals, reflect on decisions, and take responsibility for their progress (Barr & Tagg, 1995; Donnelly & Fitzmaurice, 2005; Fleischmann, 2010; Kee & Lai, 2022; Kemp, 2013; Langan et al., 2009). In design education, the design studio fosters this approach through reflection-in-action, aligning with Schön's interpretation of Dewey's experimentalist learning (Schön, 1983; Waks, 2001). The design studio provides an ideal setting for participatory, interactive learning, mirroring the uncertainty and complexity of real-world design. By integrating constructivist pedagogy, it enhances both theoretical credibility and the advancement of disciplinary knowledge (Powers, 2001).

The design learning process is a dynamic, mutual process between instructor and student, where learners actively engage in reflection, becoming co-facilitators rather than passive recipients (Schön, 1983, 1987). The instructor's role evolves from a transmitter to an active collaborator, using participation as a teaching strategy. This engagement fosters motivation, critical thinking, and knowledge ownership, making learning more meaningful (Eigbeonan, 2013). The interaction among design studio actors creates diverse learning opportunities, from problem definition to assessment. Students not only analyze topics from multiple perspectives but also design their own learning challenges, deepening their understanding. Peer learning is key, allowing knowledge co-construction, strategy development, and collaborative problem-solving (Forman & Cazden, 1985). Engaging with peers' work enhances learning, while instructors can refine course content based on student input. The constructivist approach encourages students to contribute their own insights, fostering independent thought and deeper comprehension.

Active engagement in the learning process may initiate an intellectually participatory learning experience. The constructivist approach, emphasizing interaction and student involvement, aligns well with design disciplines that encompass diverse theories. In this view, design learning emerges from the collaborative participation of both students and instructors, beginning with structured pedagogical planning that integrates both parties within the design studio environment. Since students can set their own learning objectives and negotiation is fundamental to learning (Eigbeonan, 2013; Powers, 2001),

instructors should create opportunities for meaningful negotiation. This ensures student empowerment while meeting pedagogical goals by leveraging their abilities to plan, set goals, reflect, evaluate progress, and manage project timelines in project-based design learning.

Project-Based Design Learning

Although curricula and pedagogical approaches vary across different geographies and cultures (Cunningham, 2005; Heskett, 1980; Whitford, 1984), design education shares fundamental characteristics that extend beyond national and disciplinary boundaries (Crowther, 2013; Lawson, 2005; Lawson & Dorst, 2009). The design studio serves as the foundation of design education, providing a project-based, student-driven learning environment that differs significantly from traditional classrooms in its physical, social, and pedagogical structure. It fosters process-oriented teaching and learning through open discussions, collaboration, and experiential learning, allowing students to develop personal design approaches (Green & Bonollo, 2003; Lawson, 2005; Crowther, 2013; Lawson & Dorst, 2009; Schön in Goldhoorn, 1991). Project-based design learning not only shapes the learning environment but also simulates professional practice through interconnected projects of varying complexity, preparing students for the industry (Dorst & Reymen, 2004; Lawson, 2005; Rowe & Wong Kwok-Kei, 2011; Tovey, 2015). It equips them with skills to navigate design processes, address ill-defined problems, manage uncertainty, and integrate into the design community (Cross, 1982; Crowther, 2013; Tovey, 2015; Tovey & Osmond, 2014). As reflective practitioners, students develop their own design strategies, define real-world problems, and bridge practical and theoretical aspects of the profession (Demirbas & Demirkan, 2003; Schön, 1983; Teymur, 1993; Uluoğlu, 1990).

Design projects are usually planned by instructors, based on their experiences, predictions about students, and various pedagogical, institutional, and professional considerations (Cross, 1982; Green & Bonollo, 2003; Khorshidifard, 2011; Lawson, 2004; van Dooren et al., 2014). The difficulty of a design project is the nonlinearity and inseparability of these phases (van Dooren et al., 2014). The sequence of and interrelation among different elements may differ for every individual and in every project. Given the personal aspect of the design process despite its general principles, project-based design learning is a learner-centered process by nature (Demirbaş, 2018). However, the conventional university teaching is criticized for risking the integrity and subjectivity of the design process and reducing it to a more didactic one due to the limitations of academic structures in higher education institutions (Loy & Canning, 2013; Tovey, 2015; Wang, 2010). Given the subjective nature of both the design process and learning, it is crucial to recognize individual differences, needs, and perspectives when developing instructional methods or models in design education. In this context, participatory methods and tools are well-suited for gaining insight into students' learning processes (DiSalvo et al., 2017), aligning with the principles of contemporary design approaches. Consequently, shifting from a didactic to a more democratic and participatory approach offers a meaningful way to embrace diversity in pedagogical planning in project-based design learning.

Participation

In the participatory design literature, which has recently expanded into the learning sciences (DiSalvo et al., 2017), "participation" is a constant, mutual learning process involving both the designer and non-designers in collective activities. This process is inherently social and empowering, extending beyond the designer's role to incorporate diverse perspectives. By doing so, it facilitates the identification of needs and desires, highlights potential challenges, and uncovers possible solutions (Björgvinsson et al., 2012; Muller & Druin, 2012; Sanoff, 2007). Participatory practices establish a democratic foundation where individuals are regarded as equals and recognized as the primary sources of knowledge and insight regarding both current conditions and future possibilities. These practices foster a continuous process of knowledge generation by actively involving participants, particularly in the early stages of design (Luck, 2003). As an inclusive and pluralistic approach, it ensures that individuals' values and perspectives are reflected, thereby enhancing the effectiveness of decision-making (Sanoff, 2000). Consequently, incorporating diverse contributions offers expert decision-makers with more relevant and current information, making diversity an invaluable asset in the decision-making process.

There are exemplary practices in design studios that integrate participatory methods and involve users and other non-designers as co-designers, especially in early phases (Merter & Hasırcı, 2016; Turhan & Doğan, 2016; Yalman & Guclu Yavuzcan, 2015). While these examples are valuable for fostering students' awareness and understanding of democratic approaches and methods, they do not directly address student participation in pedagogical planning. There are also studies that explore students' perspectives to improve learning, focusing on co-developing an online design brief for millennial learners (Demirbaş, 2018), undergraduate curriculum with graduates (Rutgers, 2015), and tools for curriculum design (Rutgers et al., 2018). These examples support that student participation in structuring the learning process can potentially enhance the learning experience as a strategy, aligning with the constructivist understanding of design learning.

Student Participation in Learning

DiSalvo and DesPortes (2017) highlight that, in learning sciences, participatory design extends traditional methods by promoting engagement and democratic values to build sustainable learning infrastructures. It emphasizes collaborative goal-setting, inclusive participation, and transferable outcomes (DiSalvo & DiSalvo, 2014). Beyond instruction, it integrates student perspectives into decision-making (Jagersma & Parsons, 2011; Mitra & Gross, 2009), redefining student roles while helping instructors develop more relevant, sustainable pedagogy, and stronger connection between students and curriculum/course objectives. Thus, active student participation is critical for academic success, as it enriches learning processes and outcomes by fostering meaningful engagement, reshaping student-staff power relations, and providing opportunities to become critical thinkers (Bovill et al., 2011; Kuh, 2008). It empowers students to be more active and become the co-creators of learning, influencing teaching approaches, course design, and curriculum development (Davis & Sumara, 2002; McCulloch, 2009). In this context, student participation, particularly in pedagogical planning, positively correlates with higher education learning outcomes, as it fosters meta-cognitive awareness of what, why, and how they learn (Carini et al., 2006).

To effectively integrate a participatory approach into pedagogical planning and development, students should be engaged as partners in the process. This involvement helps challenge traditional hierarchies, promote meaningful dialogue, encourage collaboration, and establish new relationships that enrich both teaching and learning (Bovill et al., 2011). Effective student participation depends on factors such as context, timing, and sufficient institutional support (Delpish et al., 2010). It is also needed to set a boundary for students, who may ignore the instructor's involvement, and for instructors, who may resist sharing the authority and power with students (Mann, 2001; Mitra & Gross, 2009). Without careful implementation, artificially imposed student participation could disrupt learning environments rather than enhance them (Jagersma & Parsons, 2011). If participation is a novel experience, students and instructors may initially feel discomfort or resist change unless they are adequately prepared and supported. Therefore, participants may need time to develop the necessary language, confidence, and comfort for meaningful participation (Bovill et al., 2011).

In the context of participatory design, student participation, and design education, participatory design holds significant potential as a strategic and constructivist pedagogical approach. It enhances learning and improves the adaptability of design education to evolving professional and educational demands (Bovill & Bulley, 2011; Bovill et al., 2011; Demirbaş, 2018; DiSalvo & DiSalvo, 2014; Rutgers, 2015; Rutgers et al., 2018). From a constructivist perspective, this approach begins with the systematic inclusion of students in learning and pedagogical decision-making processes. To facilitate this inclusion, design instructors should adopt participatory methods rather than relying solely on personal experience, expertise, or assumptions about students (Cross, 1982; Green & Bonollo, 2003; Khorshidifard, 2011; Lawson, 2004; van Dooren et al., 2014).

METHODOLOGY AND FINDINGS

An exploratory approach was adopted in the study. Its two-phase structure (workshop and design studio implementation) aligns with the constructivist framework. It directly addresses the inquiry into pedagogical enhancement through participatory strategies to understand in what ways this integration influences the students-instructors dynamics in the design studio.

The first phase included a workshop to collect qualitative data through critical discussions about the design studio. It was structured using stages adapted from the design thinking process (empathize, define, ideate, prototype). Then, the workshop outcomes were adapted into the second-year undergraduate industrial design studio. In the second phase, semi-structured online interviews were conducted first with the course coordinator and then with a focus group in order to gain insights into the course experience. All subjects participated in the study have provided consent for the anonymous use of obtained data.

Workshop

As part of *Good Design Izmir/İyi Tasarım İzmir*, which is a national design event, in 2018, a two-day workshop, *Studio Chit-Chats/Stüdyo Geyikleri*, was organized to explore the experiences and expectations of students and instructors regarding the design studio and active participation. The workshop was structured using stages adapted from the design thinking process (empathize, define, ideate, prototype). It was aimed to facilitate collaboration among the facilitators and participants, promoting equal engagement and shared responsibility. Each participant was regarded as an active contributor, with rotating roles and distributed responsibilities. To ensure flexibility and reduce facilitator bias, the framework remained loosely defined, allowing the process to adapt and evolve based on participants' interactions and involvement. The duration of the workshop was fourteen hours in total, yet the phases were flexibly structured in terms of duration. Figure 1 shows the workshop timeline.

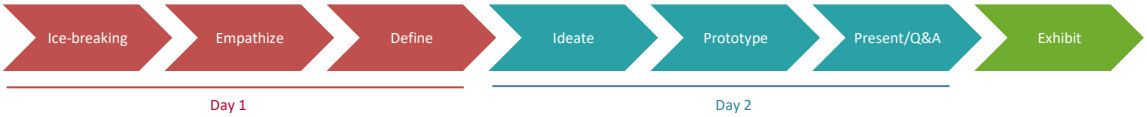

Figure 1. Workshop timeline.

The workshop was led by six volunteered instructors, teaching the design studio at different levels in the Department of Industrial Design at Yaşar University in Turkey. The facilitators, who had different design expertise and levels of experience in design education, included one assistant professor, three full-time lecturers, and two research assistants. Through an open call, eight second-year and three third-year students from two universities, and a recently graduated industrial designer attended the workshop. The primary data collection methods during the workshop included observations, photographic documentation, and reflective notes recorded by the facilitators to make a thematic analysis.

Workshop Procedure

Day 1 started with a brief introduction and meeting with the participants in the *Ice-breaking* phase. In the *Empathize* phase, the workshop centered on story exchange and role-playing to foster empathy among participants. Sitting in circle and taking turns, the participants were asked to share a commonly used verbal statement of instructors and students in the design studio. It was followed by discussions where participants expressed their personal expectations for change, along with any negative feelings and thoughts they had experienced in the design studio. Then, in the *Define* phase, the participants identified and clustered the key problems, and brainstormed for potential solutions.

On Day 2, the participants reflected on Day 1 before moving forward. In the *Ideate* phase, they shared ideas on the "dream design studio", and in the *Prototype* phase, they created a presentation board, illustrating these ideas. Presenting the concepts was followed by a Q&A session to foster discussion on the shared concepts and ideas between facilitators and participants. The questions were mostly centered around the feasibility and implementation of their ideas. Then, the participants decided to create a visual manifesto to showcase at *Good Design Izmir*.

Through discussions, the participants built consensus on how they might categorize their expectations from the design studio to create the visual manifesto. Speech bubbles were prepared and categorized around relevant issues, which were:

- Choose your own project!

- Work with different disciplines
- Think creatively
- Keeping quiet is not allowed!
- Ask designers and users
- Manage the process yourself, determine the method yourself
- Go out and see
- Don't assess quantitatively!
- Manage the time
- Examine, hold, touch, and feel what exists!

Each speech bubble included design students' verbal expressions or negative thoughts, placed around the ideas for solutions (Figure 3). Also, a *Pop-Up Idea Board* was provided for people to write their ideas.

Figure 3. Visual manifesto of the workshop participants.

Workshop Outcomes

The visual manifesto, presented in the exhibition, and the workshop process itself were the main outcomes of the workshop to be analyzed thematically. The organizing local agency, *Izmir Mediterranean Academy*, also published an interview with the facilitators after the event ended.

The main themes emerged in the analysis were:

- individual differences and decision-making, and
- motivations and feelings towards participation.

Individual Differences and Decision-Making

The workshop required making collective decisions to advance, such as determining what to prioritize, when to start or conclude a phase, and structuring activities. The consensus-building and decision-making took primarily three forms, influenced by the participants' characteristics, based on:

- the majority of participants' opinions,
- the opinions of more dominant individuals and/or those who had taken a more active role, and
- the guidance provided by the facilitators.

Observations revealed that each participant approached the subject matter from unique perspectives. While working as a group, they naturally assumed roles that aligned with their abilities and personal characteristics, often without realizing it. Their level of participation in decision-making, as well as their willingness and interest in engaging, was largely influenced by their individual traits.

The visual manifesto supported the positive implications of the participatory approach as the

participants' categorizations highlighted the significance of transparency and active participation in decision-making and emphasized the need to incorporate diverse perspectives to create a common ground that accommodates everyone involved.

Motivations and Feelings Towards Participation

Analysis of workshop data revealed that participants' motivation was strongly linked to the structure of shared responsibility and the inclusive facilitation style. The *Empathize* phase, structured around story exchange and role-playing, was particularly effective in promoting participation. Facilitators' intentional use of non-hierarchical language and their willingness to share personal experiences created a psychologically safe environment. This approach reduced perceived authority barriers and enabled participants to engage more openly in discussions.

During this phase, participants became more responsive and confident in contributing, recognizing that their experiences and concerns were not unique but shared across roles. This shift in perspective, acknowledging common ground rather than institutional roles, facilitated greater openness and participation. A key procedural decision emerged from this dynamic: participants collectively agreed to drop academic titles (e.g., "professor") to neutralize hierarchical perceptions, which helped maintain a flat organizational structure and allowed more inclusive dialogue. Although efforts were made to sustain this balance, the later stages (*Ideate* and *Prototype*) saw varied levels of engagement. While some participants became more proactive, others contributed less, indicating a divergence in comfort and confidence levels over time. Facilitators, despite initial intentions, gradually resumed more directive roles, especially in guiding project presentations. Nevertheless, participants who had gained confidence early in the workshop occasionally intervened to reassert the participatory framework, illustrating the emergence of self-regulation among the group.

On the second day, participants independently structured the day's activities, including time allocation and presentation planning. This transition from guided facilitation to participant-led organization demonstrated the gradual internalization of participatory principles. However, in the Q&A session following the final presentation, only a subset of participants responded to questions, suggesting that while the structure supported inclusion, participation outcomes still varied by individual preference and capacity.

The shared institutional background of most participants facilitated mutual understanding and enabled the discussions to focus on locally relevant design studio practices. While this familiarity occasionally narrowed the scope of critique, it also enabled the group to articulate a collective vision for institutional change. Second-year students, in particular, requested that elements of the workshop be integrated into formal coursework. In response, two facilitators committed to implementing aspects of the workshop process into their upcoming design studio curriculum. This decision marked a procedural shift from temporary workshop activity to long-term pedagogical experimentation, emphasizing participants' sustained motivation and commitment.

Experimentation in the Design Studio

Following the positive outcomes of the workshops and the participants' request, it was decided to further explore their implementation in the design studio. Since the workshop participants were mainly second-year students and the outcomes primarily reflected the perceptions and modes of participation specific to this experience level, it was decided to integrated the workshop outcomes into the second-year industrial design studio at Yaşar University as a case during the 2018-2019 fall semester by two facilitators who also served as instructors for the course.

To assess this experience, a semi-structured one-hour interview via Zoom was conducted with one of the instructors, who was also the course coordinator. The interview focused on the course experience, was audio-recorded, and later transcribed for content analysis. Additionally, a focus group session was held with four industrial design students, two of whom had participated in the workshop. These students were selected by the researcher based on previous observations and experience with them. Their diverse

characteristics, verbal communication skills, and design abilities were considered during the selection process. They were invited to participate in the study via e-mail to share their insights into the implementation of workshop outcomes in the design studio.

Design Studio Procedure

The design studio was an eight-hour course, spread over two days per week during a fourteen-week semester. It followed a non-hierarchical approach, co-planned and executed by both students and instructors, who collaborated as a "project team" with shared responsibilities. The course coordinator designed a broad framework, which was less structured compared to previous ones used in the second-year. The framework was structured so as to meet academic requirements, covering course content, learning outcomes, and the academic calendar and within this structure, the course experience was shaped collaboratively by both instructors and students. The instructors defined the duration of the three projects within the semester, as well as the structure, deadlines, deliverables, and evaluation criteria for each.

The students' contributions, on the other hand, can categorized into structural, pedagogical, and evaluative dimensions:

- Regarding the course structure, the students participated in collaborative discussions to determine the themes of the three projects. These discussions involved evaluating alternative options that aligned with the course's expected learning outcomes. The design brief was refined by the instructors to ensure it met academic standards and was adjusted throughout the semester. The students also took part in co-planning daily activities, including defining the agenda through group discussions at the beginning of each session. They assumed rotating roles, such as moderator and timekeeper, to organize and facilitate the flow of studio activities, enhancing their leadership and organizational engagement.
- The students' pedagogical contributions included the collaborative framing of the design studio experience. Although the course coordinators provided a basic framework, the detailed progression and day-to-day pedagogical decisions were shaped jointly by instructors and students. The students also engaged in critiques and jury reviews alongside instructors, participating as equals in evaluating and discussing project development.
- Regarding the students' evaluative contributions, students were invited to co-assess the project outcomes, sharing responsibility in the evaluation process, which not only contributed to their critical thinking but also enhanced transparency and mutual accountability.

These contributions played a central role in shaping the pedagogical structure, the learning environment, and the learning experience.

Results

In the focus group interview, there was one particular discussion about participation that was centered around their feelings towards taking more responsibility in pedagogical planning. One student shared that if a project was interesting and engaging for him, it would definitely excite him. The others had varying views; one student mentioned that taking on more responsibility would excite her, even if the project was not particularly interesting, while another student expressed that he would feel nervous about taking more responsibility.

The interviews with the course coordinator and the focus group also highlighted that a participatory process in a course may be perceived differently by various design studio participants. One student, who had participated in the workshop, answered the question, "Have you ever participated in project planning in a course before?" with "No," while another student responded, "Yes," but referred to her experience in a different course, not that second-year design studio. Two other participants mentioned their experiences in that particular course, yet emphasizing different forms of participation. One of them did not provide any detail about the process, rather than mentioning group discussions, whereas the other provided more details, involving group discussions, instructors' interference, and voting. It was observed that the participants who did not mention any prior participation experience perceived their experience as non-participatory. They felt the process was largely controlled by a group of students who

shared similar perspectives with the instructors, leading them to believe their contributions were not valued or considered. In contrast, the students who felt more satisfied with the process were more engaged. These students provided fewer details than the course coordinator in the interview and did not rate the level of participation within the design studio as highly as she did. The differences in the students' evaluations highlighted the importance of ensuring that all students feel involved, heard, and valued in the process.

Despite varying viewpoints, integrating the workshop outcomes into the design studio confirmed the value of student participation in pedagogical planning. It boosted engagement and motivation, empowering students and fostering clarity around academic considerations through transparent planning. The process highlighted students' struggles in understanding academic and pedagogical aspects, which could be addressed through active involvement. Though new to co-planning, they felt more connected to the process compared to their past experiences. Instructor guidance further supported understanding of project objectives, the design process, and grading.

The instructor-student relationship improved significantly, fostering genuine communication and increased interaction. Students became more open in expressing their feelings, thoughts, and needs. Those who had attended the workshop showed greater confidence in participation, while others took more time to adjust to the less hierarchical structure. Most students responded positively to the process, showing a willingness to actively shape their learning, reinforcing the assumption that active participation benefits students. Notably, the course coordinator expressed interest in further developing this framework by involving students before the semester begins, allowing them to discuss academic requirements and collaboratively shape the syllabus and design brief.

Discussion

The workshop and design studio experimentation supported the researcher's perspective by indicating that students' active involvement in shaping the course structure and learning process fostered their sense of ownership, motivation, and engagement. These outcomes, as perceived by both students and the instructor, contrasted with their prior experiences in more instructor-led and hierarchical studio settings, where such opportunities for participation were limited. Despite the experiment's success compared to previous practices, the need for a sustainable infrastructure to support ongoing student participation became evident. The study also revealed that students and instructors share similar expectations for the design studio in terms of fostering a collaborative and inclusive environment, enabling student autonomy in decision-making, prioritizing experiential and reflective learning, and minimizing hierarchical structures to support mutual engagement and transparent planning. However, a mismatch exists between instructors' intentions, actual course implementation, and student perceptions, likely due to a lack of communication or misalignment between course planning and student needs. Students' academic concerns, grade anxiety, and performance pressure may also contribute to their hesitancy in participating as fully as they did in the workshop. Similarly, these concerns may shape instructors' approach to the process. Although the design studio achieved a more collaborative environment than traditional methods, it remained more hierarchical than the workshop, likely because this participatory approach was still unconventional in a formal course setting. Moreover, the design process was fragmented unintentionally due to the academic structure (Loy & Canning, 2013; Tovey, 2015; van Dooren et al., 2014; Wang, 2010), which could have hindered students' motivation and engagement, preventing them from fully immersing in the process as they did during the workshop, despite the instructors' efforts.

This study also highlighted the subjective perceptions of participants, reflecting the diversity in the type, intensity, degree, and frequency of individual participation (Sanoff, 2000). A key realization was that, despite efforts to encourage equal participation, both facilitators/instructors and participants/students naturally engaged at different levels and assumed distinct roles based on their skills and personal characteristics. This underscores the importance of recognizing individual differences and exploring how they can be leveraged in pedagogical decision-making. The findings further support the idea that incorporating both students’ and instructors’ perspectives enhances learning by establishing a common ground through participation. From a constructivist perspective, student involvement in pedagogical planning and decision-making is essential, as planning directly influences how the design studio process

is structured and conducted. In this context, participatory design emerges as a strategic and constructivist pedagogical approach, offering the mindset, methods, and tools to systematically engage both instructors and students in pedagogical planning. By utilizing their differences, abilities, and capacities, participatory design enables a more dynamic and inclusive learning environment where knowledge is both acquired and constructed collaboratively.

CONCLUSION

The constructivist view of design learning suggests that students have the ability and capacity to set their own learning goals, reflect on their choices and decisions, and take responsible action for positive changes for their own and others, which becomes the most explicit in project-based learning as learners take on an active role in this process (Barr & Tagg, 1995; Donnelly & Fitzmaurice, 2005; Fleischmann, 2010; Kee & Lai, 2022; Kemp, 2013). Within this context, this study specifically examines participatory design as a strategic and constructivist pedagogical approach in design education, aiming to explore its potential contributions to learning sciences. It emphasizes the active participation of students, recognizing their innate ability to negotiate, structure learning experiences, and make decisions in the design studio – an ideal constructivist learning environment that effectively accommodates the uncertainties and irregularities inherent in the design process (Eigbeonan, 2013; Gül et al., 2012; Powers, 2001; Schön, 1983). Regarding the learner-centered, student-led, semi-structured, experiential, and reflective nature of the design studio (Crowther, 2013; Demirbaş, 2018; Green & Bonollo, 2003; Lawson, 2005; Lawson & Dorst, 2009; Schön, 1983), this study concerns with both students' and instructors' experiences and expectations in order to understand the inconsistencies between what is being done in the design studio and how it is perceived by different individuals. The utilization of participatory design might help overcome such inconsistencies, establish a more grounded dialogue among the design studio actors, and enhance learning by making sense of the experience through students' systematic involvement in creating learning experiences with a participatory mindset (DiSalvo and DesPortes, 2017), building more effective pedagogical content and structure, and engaging in collective and democratic research and implementation processes (Luck, 2003). Learning is a unique process for each individual, the diverse contributions that students bring to the design studio are invaluable resources for learning (Bovill et al., 2011). Participatory design, as a strategic and constructivist pedagogical approach, can help recognize and utilize this diversity, rather than relying solely on instructors' experiences, predictions, and subjective interpretations in the learning process (Cross, 1982; Green & Bonollo, 2003; Khorshidifard, 2011; Lawson, 2004; van Dooren et al., 2014).

Integrating design studio actors into participatory pedagogical planning holds significant potential for both the acquisition and construction of disciplinary knowledge. As an exploratory case, this study offers valuable insights into this potential, paving the way for further applications across various design disciplines in higher education. However, additional research is needed to cultivate a participatory mindset within educational contexts and to better understand its impact on learning effectiveness. The study is also subject to several other limitations that should be acknowledged. First, the research was conducted within a single institutional context, involving instructors and students primarily from the same university. This limits the generalizability of the findings, as institutional culture, pedagogical practices, and student profiles may vary significantly across different settings. Second, the participants of the workshop and the follow-up design studio experimentation were primarily second-year undergraduate students. Their level of experience and familiarity with participatory pedagogical practices may have influenced both their engagement and their interpretations of the process. Third, although the workshop utilized a structured yet flexible design thinking framework, the procedures, activities, and selection criteria for integration into the design studio were not systematically delineated or comparatively analyzed. Finally, the findings rely heavily on qualitative data, such as reflective notes, interviews, and student expressions, which, while valuable for exploring perceptions and experiences, may not fully capture the effectiveness of the participatory approach in measurable learning outcomes. Future studies could expand the sample, include control groups, apply mixed-methods approaches, and investigate long-term impacts on learning and pedagogical transformation.

Despite its limitations, this study highlights the potential of participatory design as a strategic and constructivist pedagogical approach in design education. By fostering students' active role in shaping

their own learning, promoting inclusive decision-making, and cultivating reflective learning environments, participatory practices can bridge the gap between pedagogical intentions and learner experiences. As the complexity of design education continues to evolve, integrating such approaches may not only enhance educational effectiveness but also contribute to shaping more democratic, responsive, and learner-centered studio cultures.

REFERENCES

Barr, R. B., & Tagg, J. (1995). From Teaching to Learning: A New Paradigm for Undergraduate Education. *Change: The Magazine of Higher Learning*, 27(6), 12-26.

Björgvinsson, E., Ehn, P., & Hillgren, P.-A. (2012). Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues*, 28(3), 101-116.

Bovill, C., & Bulley, C. J. (2011). A Model of Active Student Participation in Curriculum Design: Exploring Desirability and Possibility. In C. Rust (Ed.), *Incorporating the 18th Improving Student Learning Symposium – Global Theories and Local Practices: Institutional, Disciplinary and Cultural Variations* (pp. 176-188). The Oxford Centre for Staff and Educational Development.

Bovill, C., Cook-Sather, A., & Felten, P. (2011). Students as Co-Creators of Teaching Approaches, Course Design and Curricula: Implications for Academic Developers. *International Journal for Academic Development*, 16(2), 133-145.

Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student Engagement and Student Learning: Testing the Linkages. *Research in Higher Education*, 47(1), 1-33.

Crowther, P. (2013). Understanding the Signature Pedagogy of the Design Studio and the Opportunities for Its Technological Enhancement. *Journal of Learning Design*, 6(3), 18-28.

Cross, N. (1982). Designerly Ways of Knowing. *Design Studies*, 3(4), 221-227.

Cunningham, A. (2005). Notes on Education and Research Around Architecture. *The Journal of Architecture*, 10(4), 415-441.

Davis, B., & Sumara, D. (2002). Constructivist Discourses and the Field of Education. *Educational Theory*, 52(4), 409-428.

Delpish, A., Darby, A., Holmes, A., Knight-McKenna, M., Mihans, R., King, C., & Felten, P. (2010). Equalizing Voices: Student Faculty Partnership in Course Design. In C. Werder & M. Otis (Eds.), *Engaging Student Voices in the Study of Teaching and Learning* (pp. 96-114). Stylus.

Demirbas, O. O., & Demirkan, H. (2003). Focus on Architectural Design Process through Learning Styles. *Design Studies*, 24(5), 437-456.

Demirbaş, D. (2018). *Endüstriyel Tasarım Lisans Eğitiminde Tasarım Tanım Belgelerinin Yeni Nesil Öğrenen Özellikleri Çerçevesinde Değerlendirilmesi ve Yeni Bir Model Önerisi* [Unpublished doctoral dissertation]. İstanbul Teknik Üniversitesi.

DiSalvo, B., & DesPortes, K. (2017). *Participatory Design for Value-Driven Learning*. In B. DiSalvo, J. Yip, E. Bonsignore, E., & C. DiSalvo (Eds.), *Participatory Design for Learning: Perspectives from Practice and Research* (pp. 175-188). Routledge.

DiSalvo, B., & DiSalvo, C. (2014). Designing for Democracy in Education: Participatory Design and the Learning Sciences. In J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and Becoming in Practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 2* (pp. 793-799). International Society of the Learning Sciences.

DiSalvo, B., Yip, J., Bonsignore, E., & DiSalvo, C. (2017). Participatory Design for Learning. In B. DiSalvo, J. Yip, E. Bonsignore, E., & C. DiSalvo (Eds.), *Participatory Design for Learning: Perspectives from Practice and Research* (pp. 3-6). Routledge.

Donnelly, R., & Fitzmaurice, M. (2005). Collaborative Project-Based Learning and Problem-Based Learning in Higher Education: A Consideration of Tutor and Student Roles in Learner-Focused Strategies. In G. O'Neill, S. Moore, & B. McMullin (Eds.), *Emerging Issues in the Practice of University Learning and Teaching* (pp. 87-98). AISHE/HEA.

Dorst, K., & Reymen, I. (2004). Levels of Expertise in Design Education. In P. Lloyd, N. Roozenburg, C. McMahon, & L. Brodhurst (Eds.), *Proceedings of the 7th International Engineering and Product Design Education Conference* (pp. 159-166). Delft University of Technology.

Eigbeonan, A. B. (2013). Effective Constructivism for the Arch-Design Studio. *International Journal of Architecture and Urban Developmen*t, 3(4), 5-12.

Fernando, S. & Marikar, F. (2017). Constructivist Teaching/Learning Theory and Participatory Teaching Methods. *Journal of Combinatorial Theory*, 6(1), 110-122.

Fleischmann, K. (2010). The POOL Model: Foregrounding an Alternative Learning and Teaching Approach for Digital Media Design in Higher Education. *Art, Design & Communication in Higher Education*, 9(October), 57-73.

Forman, E. A., & Cazden, C. B. (1985). Exploring Vygotskian Perspectives in Education: The Cognitive Value of Peer Interaction. In James V. Wertsch (Ed.), *Culture, Communication, and Cognition: Vygotskian Perspectives* (pp. 182-203). Cambridge University Press.

Goldhoorn, B. (1991). Het Atelier, Analyse Van Een Onderwijsmethode. *Archis*, 3, 49-51.

Green, L. N., & Bonollo, E. (2003). Studio-Based Teaching: History and Advantages in the Teaching of Design. *World Transactions on Engineering and Technology Education*, 2(2), 269-272.

Gül, L. F., Williams, A., & Gu, N. (2012). Constructivist Learning Theory in Virtual Design Studios. In N. Gu, & X. Wang (Eds.), *Computational Design Methods and Technologies: Applications in CAD, CAM and CAE Education* (pp. 139-162). IGI Global.

Heskett, J. (1980). *Industrial Design* (1st ed.). Thames and Hudson.

Jagersma, J., & Parsons, J. (2011). Empowering Students as Active Participants in Curriculum Design and Implementation. *New Zealand Journal of Teachers' Work*, 8(2), 114-121.

Kee, T., & Lai, A. (2022). Learning Motivation and Psychological Empowerment of Socioeconomically Disadvantaged Learners – An Empirical Study on Inclusive Project-Based Learning During Covid-19. *International Journal of Inclusive Education,* 28(11), 2438-2457.

Kemp, S. J. (2013). Exploring the Use of Learner-Focused Teaching Approaches in Different Academic Disciplines. *Journal of Further and Higher Education*, 37(6), 804-818.

Khorshidifard, S. (2011). A Paradigm in Architectural Education: Kolb's Model and Learning Styles in Studio Pedagogy. In P. Plowright & B. Gamper (Eds.), *Proceedings of the ARCC 2011 Considering Research: Reflecting upon Current Themes in Architecture Research* (pp. 621-634). Lawrence Technological University.

Kuh, G. (2008). *High-Impact Educational Practices* (1st ed.). Association of American Colleges and Universities.

Langan, D., Sheese, R., & Davidson, D. (2009). Constructive Teaching and Learning: Collaboration in Sociology Classroom. In. J. Mezirow, E.W. Taylor & Associates (Eds.), *Transformative Learning in Practice* (pp. 46-56). Wiley.

Lawson, B. (2005). *How Designers Think: The Design Process Demystified* (4th ed.). Architectural Press.

Lawson, B., & Dorst, K. (2009). *Design Expertise* (1st ed.). Architectural Press.

Loy, J., & Canning, S. (2013). Rethinking Pedagogy for Iterative Design Process Learning and Teaching. In J. Reitan, P. Lloyd, E. Bohemia, L. Nielsen, I. Digranes, & E. Lutnæs (Eds.), *DRS Cumulus Oslo 2013 - Proceedings of the 2nd International Conference for Design Education Researchers, Vol.1: Design Education from Kindergarten to PhD – Design Learning for Tomorrow* (pp. 101-111). Oslo, Norway.

Luck, R. (2003). Dialogue in Participatory Design. *Design Studies*, 24(6), 523-535.

Mann, S. (2001). Alternative Perspectives on the Student Experience: Alienation and Engagement. *Studies in Higher Education*, 26(1), 7-19.

McCulloch, A. (2009). The Student as Co-Producer: Learning from Public Administration About the Student–University Relationship. *Studies in Higher Education*, 34(2), 171-183.

Merter, S., & Hasırcı, D. (2016). A Participatory product design process with children with autism spectrum disorder. *CoDesign*, 14(3), 170-187.

Mitra, D. L., & Gross, S. J. (2009). Increasing Student Voice in High School Reform: Building Partnerships, Improving Outcomes. *Educational Management Administration & Leadership*, 37(4), 522-543.

Muller, M. J., & Druin, A. (2012). Participatory design: The third space in Human-Computer Interaction. In J. A. Jacko (Ed.), *Human Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications* (3rd ed.) (pp. 1125-1154). CRC Press.

Powers, M. (2001). *Applying a Constructivist Pedagogy to Design Studio Education* [Paper presentation]. ARCC Spring Research Conference, Virginia Technique.

Rowe, A., & Wong Kwok-Kei, A. (2011). *Design Pedagogy Competencies: Cross-Cultural Collaboration for a Changing Future* [Paper presentation]. DesignEd Asia 2011 Conference, Hong Kong, China.

Rutgers, J. (2015). *Design Thinking in Making* (1st ed.). OCAD University.

Rutgers, J., Fass, J., & Chu, M. L. (2018). Using Share Language 'Tool' in Curriculum Co-Design. In Césaap & C. Brunet [Eds.], *To Get There: Designing Together – Cumulus Conference Proceedings* (pp. 282-299).

Sanoff, H. (2000). *Community Participation Methods in Design and Planning* (1st ed.). John Wiley & Sons.

Sanoff, H. (2007). Editorial: Special Issue on Participatory Design. *Design Studies*, 28(3), 213-215.

Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.

Schön, D. A. (1987) *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (1st ed.). Jossey-Bass.

Sjoberg, S. (2007). Constructivism and Learning. In E. Baker, B. McGaw and P. Peterson, (Eds.), *International Encyclopedia of Education* (3rd edition.). Oxford, Elsevier.

Teymur, N. (1993). Learning Housing Designing: The Home-less Design Education. In M. Bulos & N. Teymur (Eds.), *Housing: Design, research, education* (pp. 3-29). Ashgate.

Tovey, M., & Osmond, J. (2014). Design Pedagogy and the Threshold of Uncertainty. In E. Bohemia, A. Eger, W. Eggink, A. Kovacevic, B. Parkinson & W. Wits (Eds.), *Proceedings of E&PDE 2008, the 16th International Conference on Engineering and Product Design Education* (pp. 8-13). University of Twente.

Tovey, M. (2015, August 19). *Developments in Design Pedagogy*. http://design-cu.jp/iasdr2013 /papers/1909-1b.pdf

Turhan, S., & Doğan, Ç. (2016). Experience Reflection Modelling (ERM): A Reflective Medium Encouraging Dialogue Between Users and Design Students. *CoDesign*, 13(1), 32-48.

Uluoğlu, B. (1990). *Mimari Tasarım Eğitimi: Tasarım Bilgisi Bağlamında Stüdyo Eleştirileri* [Unpublished doctoral dissertation]. İstanbul Teknik Üniversitesi.

van Dooren, E., Boshuizen, E., van Merriënboer, J., Asselbergs, T., & van Dorst, M. (2014). Making Explicit in Design Education: Generic Elements in the Design Process. *International Journal of Technology and Design Education*, 24(1), 53-71.

VonGlaserfeld, E. (1989). Constructivism in Education. In T. Husen and T.N. Postlethwaite (Eds.), *The International Encyclopedia of Education, Supplement*. Pergamon Press.

Waks, L. J. (2001). Donald Schon's Philosophy of Design and Design Education. *International Journal of Technology and Design Education*, 11, 37-51.

Wang, T. (2010). A New Paradigm for Design Studio Education. *JADE*, 29(2), 173-183.

Whitford, F. (1984). *Bauhaus (World of Art)* (1st ed.). Thames and Hudson.

Yalman, Z., & Guclu Yavuzcan, H. (2015). Co-Design Practice in Industrial Design Education in Turkey: A Participatory Design Project. *Procedia – Social and Behavioral Sciences*, 197(2015), 2244-2250.