INTERIOR ARCHITECTURE AND ENVIRONMENTAL DESIGN STUDENTS' ATTITUDES AND AWARENESS REGARDING AI-SUPPORTED TOOLS

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ABSTRACT

The rapid advancements in Artificial Intelligence (AI) and deep learning technologies have profoundly transformed design and production processes. Generative AI algorithms play a significant role in various stages, from conceptualizing designs to pro-duction. This study examines the awareness and attitudes of students in the Interior Architecture and Environmental Design Department at Istanbul Gedik University toward AI-supported tools. Utilizing a correlational survey model, which is one of the quantitative research methods, was employed. 158 undergraduate students enrolled in the program during the Fall Semester of the 2024–2025 academic year, were selected through random sampling. Participants were included in the study on a voluntary basis, and data were collected via Google Forms. The findings showed that age and gender variables did not lead to a significant difference in students' attitudes; however, some sub-dimensions showed significant differences in relation to the level of education. The majority of participants indicated that AI-supported tools enhance design processes and increase efficiency. However, it was observed that their knowledge of ethical and legal dimensions was limited. A strong tendency to include more AI technologies in education was identified. The study emphasizes the need for integrating awareness-raising initiatives into the educational curriculum to better prepare students for the evolving technological landscape.

ÖZ

Yapay zekâ ve derin öğrenme teknolojilerindeki hızlı gelişmeler, tasarım ve üretim süreçlerini köklü bir değişime uğratmıştır. Üretken yapay zekâ algoritmaları, tasarımın kavramsallaştırılmasından üretim aşamasına kadar birçok süreçte önemli rol oynamaktadır. Bu araştırmada, İstanbul Gedik Üniversitesi İç Mimarlık ve Çevre Tasarımı Bölümü öğrencilerinin yapay zekâ destekli araçlara yönelik farkındalık ve tutumları incelenmiştir. Nicel araştırma yöntemlerinden ilişkisel tarama modeli kullanılmış, 2024–2025 Eğitim-Öğretim Yılı Güz Yarıyılında lisans programında eğitim gören 158 öğrenci tesadüfi yöntemle seçilmiştir. Katılımcılar gönüllülük esasına dayalı olarak çalışmaya dahil edilmiş ve veriler Google Formlar aracılığıyla toplanmıştır. Elde edilen bulgular, yaş ve cinsiyet değişkenlerinin öğrencilerin tutumları üzerinde anlamlı bir farklılık yaratmadığını; ancak eğitim düzeyi açısından bazı alt boyutlarda anlamlı farklılıklar bulunduğunu ortaya koymuştur. Katılımcıların çoğunluğu, yapay zekâ destekli araçların tasarım süreçlerini desteklediğini ve verimliliği artırdığını belirtmiştir. Bununla birlikte, etik ve yasal boyutlara ilişkin bilgi düzeylerinin düşük olduğu gözlemlenmiştir. Eğitimde yapay zekâ teknolojilerine daha fazla yer verilmesi gerek-tiğine yönelik güçlü bir eğilim tespit edilmiştir. Araştırma, eğitim müfredatına farkındalığı artırıcı çalışmaların entegre edilmesi gerektiğini vurgulamaktadır.

INTRODUCTION

Artificial Intelligence (AI) has greatly influenced various fields like engineering, healthcare, education, and design in recent years. The goal of AI is to create systems that mimic human intelligence, making processes like learning, problem-solving, and decision-making easier. Introduced by John McCarthy in 1956 (Yakut, 2024), AI has significantly impacted individuals and society as a whole (Behailu, 2023). Its integration into daily life and education has changed how people view and use technology (Buldaç, 2024).

In education, AI offers exciting opportunities to boost creativity and innovative thinking, and this impact is clearly visible in creative fields such as interior architecture and environmental design. Studies show that students' understanding and positive feelings about AI directly shape their use of AI-supported learning tools (Kahraman et al., 2024), while the growing integration of these tools helps improve design skills and supports professional growth (Sarıboğa Mecek & Karataş, 2024). Beyond its technological role, AI transforms creative processes themselves by enabling students to explore diverse design options more quickly (Avcı & Kavut, 2024). It has also been observed that AI enhances students' visual perception and decision-making, contributing to more effective and innovative design outcomes (Avcı & Kavut, 2024; Yıldırım & Demirarslan, 2020). Overall, as digital technologies rapidly evolve, AI tools offer new ways to accelerate design processes, solve complex problems, and enrich creativity within interior architecture education and practice (Kahraman et al., 2024).

AI tools not only address the technical aspects of design but also enhance students' conceptual thinking and visualization skills. For example, generative design tools enable students to prototype abstract ideas rapidly, supporting more creative outcomes and fostering a more original approach to design processes (Choi et al., 2023). Despite these advantages, the effects of AI technologies on students-particularly their attitudes, awareness levels, willingness to use the tools, and perceptions of their contributions to educational processes- remain insufficiently examined. Existing literature highlights the lack of comprehensive studies on students' attitudes and awareness of AI-supported tools and how these factors influence their professional development (Yıldırım & Demirarslan, 2020). Addressing this gap, this study investigates the attitudes and awareness of students from Istanbul Gedik University's Interior Architecture and Environmental Design Department toward AI-supported tools, aiming to assess their perspectives on AI technologies and identify the opportunities and challenges experienced during the integration of these tools into educational contexts. Conducted within the undergraduate program of a practice-based foundation university in Istanbul, the study's findings are expected to inform curriculum development and support students' professional adaptation processes.

Aligned with this objective, this research aims to answer the following fundamental questions:

1. Do the attitudes and awareness levels of Interior Architecture and Environmental Design students toward AI-supported tools show significant differences based on the gender variable?
2. What are the general awareness levels of Interior Architecture and Environmental Design students regarding the use of AI-supported tools?
3. What is the role and utilization of AI-supported tools in Interior Architecture and Environmental Design education?
4. What is the role and utilization of AI-supported tools in the interior architecture profession?
5. What are the attitudes and future outlook of Interior Architecture and Environmental Design students toward AI-supported tools?
6. Is there a significant relationship between the attitudes and awareness of Interior Architecture and Environmental Design students toward AI-supported tools?

This study is limited to students from the Interior Architecture and Environmental Design Department at Istanbul Gedik University, and its findings have limited generalizability. Data were collected through participants

subjective self-reports, and no observational data on the direct use of AI-supported tools were included in the research scope. Moreover, although some students may have used AI-supported tools in their design studio courses, it was not possible to systematically include these outputs in the research due to the large sample size and the lack of consistent documentation across all classes. Thus, the study does not involve an evaluation of applied design outcomes or observational data related to students hands-on experiences with AI tools. Future research could benefit from incorporating project-based analyses and qualitative methods, such as observation or interviews, to provide a more comprehensive understanding of students' real-world engagement with AI-supported design processes. Additionally, the study focused on specific AI tools without assessing the effects of other technologies.

LITERATURE REVIEW

The Use of AI-Supported Tools in Creative Disciplines

The integration of AI in creative disciplines has led to significant changes in design processes, impacting both teaching methods and professional practices. Beyond technical functions like data analytics and modeling, AI acts as a tool that enhances designers creative processes and alters how artworks are produced and interpreted (Gülpınar & Boyraz, 2024). This transformation affects traditional creative practices and shapes future directions within these fields. The potential of AI in disciplines such as visual arts, architecture, interior architecture, and industrial design is crucial for developing innovative design methods and solving complex problems. However, it's essential to evaluate AI's opportunities alongside human creativity and critical thinking. Effectively utilizing AI depends on designers ability to manage and interpret the outputs of these technological tools.

Research on AI's usability in creative disciplines is growing rapidly. For example, Amira Fawzy Almaz et al. (2024) investigated AI's capacity to generate designs from scratch, produce creative solutions, and enhance design outcomes based on user feedback. Their study emphasizes AI's ability to create personalized designs tailored to specific needs. Zhang et al. (2023) explored how architecture students and experienced designers use generative AI during design sketching. Their findings indicate that while AI can generate multiple design options and inspire creative thinking, it often struggles with technical terminology and may produce unfeasible designs. Messer (2024) examined how AI impacts perceptions of art by analyzing its role in art creation. Results from experiments showed that AI-generated art is often viewed as less authentic and less likable. However, these negative perceptions can be alleviated if an artist trains the AI or if it follows a guided vision. The acceptance of AI seems to be higher in commercial art production. Similar studies exist in national literatüre (Ayvaz Tunç & Yavuz, 2023; Bingöl et al., 2020; Durukan & Türk, 2023; Gülpınar & Boyraz, 2024; Karabulut, 2021; Sucu & Ataman, 2020). Ozar & Koca (2024) examined the usability of AI for both image-based and text-based image generation during the concept development stage of design. Deveci (2022) focused on artworks and design products created using AI, assessing its ability to achieve results comparable to human creations and discussing how the roles of artists and designers evolve in the collaborative creative process. Coşkun (2024) illustrated how AI tools contribute to generating and developing ideas in art and design, highlighting the increased production potential from their use.

These studies highlight the significance of comprehending AI's influence on creative processes within an interdisciplinary context. In interior architecture, which prioritizes user-centered design, AI tools are crucial for delivering personalized solutions and shaping future design methodologies. Consequently, AI not only augments creative processes but also enables innovative spatial designs that effectively meet user needs.

Literature reviews reveal a growing body of research on the application of AI in creative fields, emphasizing its transformative potential in design processes. While AI presents considerable benefits, such as generating multiple design options, inspiring creative ideas, and enhancing design workflows, challenges persist. These include difficulties in comprehending domain-specific terminology and concerns regarding perceived authenticity. Specifically, within interior architecture, the incorporation of AI tools in design processes offers significant opportunities for creating customized solutions that address

user requirements. Furthermore, the impact of these technologies on human-machine interaction emerges as a key area for exploration.

To mitigate negative impacts on designers in creative fields, particularly in interior architecture, AI technologies must be deployed thoughtfully and effectively. Therefore, fostering awareness of AI's role in interior architecture education is essential for cultivating proficient designers capable of meeting contemporary demands.

The Use of AI-Supported Tools in Interior Architecture Education and Profession

The incorporation of computers into daily life has led to the development of various specialized fields within professional practices, especially as tools and resources in creative disciplines increasingly transition to digital formats (Eryılmaz & Elibol, 2024). Currently, advanced two- and three-dimensional programs are commonly used in the analysis, synthesis, and evaluation stages of interior architectural design. Concurrently, AI technologies are emerging as valuable problem-solving instruments for designers throughout these processes. AI offers significant advantages in nearly every phase of interior architectural design, including understanding user needs, enhancing early design alternatives, analyzing floor plans and spatial relationships, exploring various styles, optimizing building physics, and creating sensory experiences in spaces (Yıldırım & Demirarslan, 2020). These capabilities significantly streamline the design process.

In educational contexts where early design techniques are taught, the use of AI tools is crucial for training skilled interior architects equipped with the technological competencies required in today's landscape. The integration of AI technologies into interior architecture education is vital, as it not only enhances technical skills but also promotes critical thinking and problem-solving abilities among designers. As a result, many programs have updated their curricula, prompting educators to revise their teaching strategies to align with current demands (Sarıboğa Mecek & Karataş, 2024). Research aimed at evaluating the effectiveness of tools and methods in course content has yielded meaningful insights based on student project outcomes and feedback. Literature exploring the impact of AI tools on interior architecture education provides a foundational understanding of how these tools shape studentslearning experiences. For example, Buldaç (2024) analyzed how AI contributes to the interior architecture field based on course results and student feedback, finding that students improved their time management in design processes when using AI tools, although they experienced difficulties in managing text or prompts. Similarly, Ural et al. (2024) explored the integration of AI in project-based courses-an essential aspect of interior architecture education-and its effects on the design process. Surveys with 19 students examined their approaches to design challenges, the effectiveness of various AI tools, and their views on the pros and cons of these tools. Echoing Buldaç's findings, students remarked that while AI tools were advantageous in the early design stages and helped save time, they struggled to produce solutions suitable for final project outputs. Kahraman et al. (2024) studied AI's role as a design tool in interior architecture education, focusing on its impact on students creative processes, with project outcomes evaluated using Barnard's CAIDC scale. Cao et al. (2023) assessed interior architecture students' views on AI technologies and their implications for future career aspirations. Applying the Technology Acceptance Model (TAM) with 230 students, the study revealed that although students had limited awareness of AI technologies, they were enthusiastic about adopting these tools in their work and welcomed their integration into education.

Recent literature indicates a growing focus on the role of AI as a tool in interior architecture education and the evaluation of its effects. The shift to remote learning during the COVID-19 pandemic and increased use of digital tools likely expedited this trend. However, the fast-paced development of technology requires thoughtful consideration of ethical and pedagogical practices in education and professional applications. Importantly, there are few studies examining interior architecture students'attitudes and awareness of AI, highlighting the need to center student perspectives in this research. Existing studies explore the use of AI-supported tools in education and practice, providing an in-depth look at how technology influences the field. While these studies emphasize AI's potential, especially in the design process's

analysis, synthesis, and evaluation phases, they also point out limitations, such as difficulties with managing text prompts and the challenge of producing final project outcomes.

Despite the advantages AI tools offer in education, literature underscores the necessity of considering ethical implications and pedagogical strategies. It also highlights the need for further research aimed at increasing studentsunderstanding of these technologies. The rapid advancements in technology stress the importance of adapting educational processes and ensuring this evolution is guided appropriately.

MATERIALS AND METHODS

Research Model

This study employed the correlational survey model, one of the quantitative research methods. Karasar (2012) defines survey models as methods aimed at describing a situation, either from the past or present, as it exists. While this model focuses on analyzing the relationships between two or more variables, it does not aim to establish causality in terms of cause-and-effect relationships. During the research process, four main variables were used to measure students'perceptions and experiences: awareness, the role and use of AI in the educational process, its role and use in professional practice, and attitudes and expectations toward the future. Each variable provided data on the impact of AI-supported tools on creative processes, their contribution to digital skills, and their influence on professional efficiency. The relationships between demographic variables and dependent variables were examined using descriptive statistics and correlation analyses. Within this framework, the research design and methodology allowed for a deeper understanding of students'attitudes toward AI-supported tools in the context of education and professional practice. The findings of the study served as a reference for proposing concrete recommendations aimed at improving educational policies and professional practices.

Study Population and Sample

The accessible population for this study was defined as undergraduate students enrolled in the Department of Interior Architecture and Environmental Design at Istanbul Gedik University during the Fall Semester of the 2024-2025 academic year. Specifically, the study included students participating in the following courses: IMC108 Introduction to Design Studio (1st Year), IMC201-202 Design Studio I-II (2nd Year), IMC301-302 Design Studio III-IV (3rd Year), and IMC401-402 Design Studio V-VI (4th Year). The sample group was limited to these students based on the assumption that students taking design studio courses would have a high predisposition and interest in using AI technologies in creative processes, making them suitable for providing relevant data for the study. Moreover, the diversity within this group, in terms of their attitudes and awarenesstoward AI technologies, was deemed sufficient for effectively measuring the research objectives, contributing to the reliability of the study. This definition of the population and sample allowed for meaningful inferences to be drawn in the context of students studying in design disciplines. Graduate program students were excluded from the scope of the study due to their professional experience, as their inclusion was not deemed suitable for the research objectives.

Data Collection Tools

According to Thomas, a questionnaire is a research instrument consisting of a series of questions designed to describe people's living conditions, behaviors, beliefs, or attitudes (as cited in Büyüköztürk et al., 2019). For this reason, a questionnaire was used as one of the primary data collection methods in the study. Apart from closed-ended categorical and multiple-choice questions for collecting demographic information, the questionnaire primarily consisted of closed-ended rating questions. A five-point Likert scale, with responses labeled as "Strongly Disagree," "Disagree," "Undecided," "Agree," and "Strongly Agree," was employed to allow participants to choose the answer that best reflected their perspective. The questionnaire was designed in six sections according to the characteristics being measured, with each section assigned a title. The first and second sections included four questions focused on collecting demographic information, while the remaining sections contained six questions each. The questionnaire was digitized using Google Forms to ensure respondents could proceed sequentially through its sections and questions. It was shared online via a link, a method

chosen due to its low cost, time efficiency, increased accessibility, and the ease of analyzing collected data using computer-aided statistical software. The questionnaire was distributed to 161 participants on December 4, 2024, and responses were accepted until December 19, 2024. During this period, responses from three participants were excluded due to incomplete answers, and the responses of 158 students were deemed valid for analysis. The data collection process followed several structured stages. First, an extensive literature review was conducted to examine the role and impact of AI technologies in the discipline of interior architecture. Based on this review, the questionnaire was organized into four main thematic areas related to AI-supported tools: general awareness and ethical and legal aspects, educational use, professional application and students attitudes and future perspectives. The "General Awareness and Ethical and Legal Aspects" items were informed by the scale developed by Delello et al. (2024), which examines students' familiarity with tools such as ChatGPT and their perceived risks and benefits, as well as the comprehensive framework proposed by Laupichler et al. (2022), which focusing on AI literacy, ethical responsibilities, and user consciousness in higher education. The "Educational Use" and "Professional Application" dimensions were based on the study by Owoc et al. (2021), which analyzes the contributions, challenges, and strategies of AI integration into educational practices. Finally, the "Attitudes and Future Perspectives" dimension reflects the work of Chan & Hu (2023) and Song et al. (2024), who examined university students' adaptive behaviors, benefit-risk perceptions, and expectations regarding generative AI technologies in education. Each item group was developed not only based on valid and current academic sources but also in accordance with the contextual requirements of interior architecture education, ensuring both representational relevance and content validity. Subsequently, a pilot study was conducted to test the questionnaire form and identify potential issues. Based on the results of the pilot study, necessary adjustments were made, and the final study was implemented. Responses to the questionnaire items were analyzed using a five-point Likert scale to examine participants'attitudes and awareness in detail. These responses were then analyzed using the SPSS software, enabling comprehensive statistical evaluations. Finally, the findings were discussed within the framework of existing literature, highlighting their significance and relevance to the academic field.

To ensure the reliability and internal consistency of the measurement instrument, Cronbach's alpha coefficients were calculated for all subscales. The results are presented in Table 1.

Table 1 Reliability Coefficients of the Factors (Cronbach's α)

Factor	Cronbach's Alpha (α)
General Awareness and Ethical/Legal Aspects of AI-Supported Tools *	0.834
Use in Interior Architecture and Environmental Design Education	0.871
Use in the Interior Architecture Profession	0.904
Attitudes and Future Outlook	0.932

The Cronbach's alpha values for all subscales were above 0.80, indicating a high level of reliability. The internal consistency of the questionnaire was evaluated through Cronbach's alpha, a widely used indicator of reliability that reflects the consistency of items within a scale (Özdamar, 2013). Values approaching 1.00 increase the reliability and consistency of measurements (Cronbach, 1990). The values obtained in this study exceed the commonly accepted threshold of 0.70 in the literature and fall within the range considered to indicate "good fit" (Büyüköztürk et al., 2019; Hair et al., 2010; Nunnally & Bernstein, 1994). Accordingly, it can be concluded that the questionnaire used in this study is both valid and reliable.

Data Analysis

The data collected in the study were analyzed using the SPSS 20.0 statistical software. The findings were evaluated through descriptive statistics, independent samples t-tests, one-way analysis of variance (ANOVA), and correlation analysis, in line with the research objectives and problem statement. The analyses conducted in this study comprehensively assessed participants' awareness and attitudes toward AI-supported tools. Demographic

information (gender, age, and grade level) was summarized using frequency and percentage distributions, providing a detailed profile of the participants. Descriptive analyses indicated participants'general tendencies regarding attitudes and awareness through mean and standard deviation values. The results of the independent samples t-test revealed no significant differences in awareness and attitudes based on the gender variable. ANOVA analyses examined the effects of age and grade level on attitudes and awareness, identifying significant differences in some cases. The correlation analysis revealed positive and significant relationships among the study's four main variables. Analyses performed using Pearson correlation coefficients indicated a strong connection between attitudes and awareness. These analyses provided data supporting the study's findings and offered valuable insights into the role of AI-supported tools in education.

Research Ethics

This study was conducted with the approval of the Ethics Committee of Istanbul Gedik University, under the decision dated October 31, 2024, and numbered E-56365223-050.04-2024.137548.205.

RESEARCH FINDINGS AND EVALUATION

Distribution of Demographic Information

The distribution of participants demographic information was analyzed using frequency analysis (Table 2).

Table 2 Distribution of Participants' Demographic Characteristics

Demographic Variables	Categories	Frequency (n)	Percentage (%)
Gender	Female	109	69,0
	Male	49	31,0
	Total	**158**	**100,0**
Age	18-21	93	58,9
	22-25	50	31,6
	26 and above	15	9,5
	Total	**158**	**100,0**
Grade Level	1st year	42	26,6
	2nd year	34	21,5
	3rd year	43	27,2
	4th year	39	24,7
	Total	**158**	**100,0**

When examining the distribution of participants by gender, the proportion of females is 69%, while the proportion of males is 31%. In terms of age groups, 58.9% of the participants fall within the 18-21 age group, 31.6% are in the 22-25 age group, and 9.5% are 26 years old or older. Regarding grade levels, 26.6% of the participants are first-year students, 21.5% are second-year students, 27.2% are third-year students, and 24.7% are in their fourth year.

General Awareness and Ethical/Legal Aspects of AI-Supported Tools

The growing influence of AI technologies is transforming creative fields and education. Understanding how these tools can be applied in areas like interior architecture andenvironmental design is essential for professionals and students to effectively utilize them. AI-supported tools not only expedite design processes but also enhance creative and analytical thinking, fostering innovative approaches. However, an individual's awareness of these technologies significantly impacts their ability to leverage these tools. This study evaluated participants' general awareness of AI-supported tools through various statements. Table 3 summarizes the analysis of participants' knowledge, general awareness, and ethical/legal awareness toward using AI in their work.

Table 3 Distribution of Participants' General Awareness and Ethical/Legal Aspects of AI-Supported Tools

General Awareness Statements	Mean	Std. Deviation
1. I am familiar with the basic concepts and mechanisms of AI-supported tools.	3,58	0,92
2. I am aware of the potential applications of AI-supported tools in creative disciplines such as Interior Architecture and Environmental Design.	3,70	0,82
3. I have attended at least one seminar, conference, or training on AI-supported tools.	2,63	1,26
4. AI-supported tools are actively used in design processes.	3,73	0,95
5. AI-supported tools have social, economic, and cultural impacts.	3,97	0,74
6. I am familiar with the ethical dimensions of AI-supported tools.	3,22	0,97

According to the findings presented in Table 3, students

exhibit a moderate level of awareness regarding the fundamental concepts and mechanisms underlying AI-supported tools. In contrast, their awareness of the application of these tools within creative disciplines is notably higher. This discrepancy suggests that practical knowledge tends to overshadow theoretical understanding among students. Furthermore, the observed low level of participation in seminars, conferences, and training events highlights a significant gap in the efforts to enhance students' knowledge and deepen their awareness in this area.

Notably, students demonstrate a relatively high level of awareness concerning the active use of AI-supported tools in design processes. This awareness is further amplified when considering the social, economic, and cultural impacts of AI technologies. Students possess a broad perspective on the influence of these technologies in both societal and professional contexts, indicating a recognition of their far-reaching implications.

Conversely, awareness regarding the ethical dimensions associated with AI-supported tools is significantly lower compared to other areas. This finding reveals a critical gap, suggesting that the ethical implications of AI technologies require more comprehensive attention, alongside the exploration of their technical and societal effects. In conclusion, while students display a certain degree of awareness toward AI-supported tools, this awareness remains insufficient in several key areas, particularly with respect to ethical/legal considerations and engagement in educational events.

The data gathered provide crucial insights that can inform the development of educational strategies aimed at deepening students knowledge and understanding of AI technologies. The findings in Table 3 are consistent with the results of Buldaç (2024), which also indicate that students possess a higher level of awareness regarding the use of AI-supported tools in creative disciplines, whereas their understanding of fundamental concepts remains moderate. Both studies underscore the necessity for more robust integration of these tools into educational processes while also calling attention to the lack of awareness surrounding the ethical and legal dimensions of AI. This collectively highlights the imperative for a more comprehensive incorporation of digital production and AI-supported tools within the educational landscape.

The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education

In today's educational systems, the integration of digitalization and technology is essential. The discourse surrounding the impact of AI-supported tools on educational processes, particularly in creative disciplines, is gaining prominence. Fields such as interior architecture and environmental design leverage these tools to foster innovative solutions within their design processes. However, the methods of AI implementation and the resulting outcomes are crucial to shaping educational curricula.

The role of AI-supported tools extends beyond simply accelerating design workflows; they also enhance students' digital competencies and their ability to generate more creative solutions. Nonetheless, uncontrolled use of these tools in education may hinder the development of original design concepts and lead to an overly mechanical approach in the design process. Therefore, the manner in which AI tools are integrated and utilized in education is of paramount importance.

Table 4 displays the survey results concerning the role and application of AI-supported tools in interior architecture and environmental design education, highlighting their impact on participants.

Table 4 The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education

Statements	Mean	Std. Deviation
7. I have experienced the impact of AI-supported tools on the design process in my education.	3,61	1,22
8. AI-supported tools support creativity in the design process.	3,96	0,97
9. AI-supported tools should be more integrated into the Interior Architecture and Environmental Design curriculum.	4,03	0,87
10. AI-supported tools allow faster and more rational decision-making in design processes.	3,97	0,87
11. The inclusion of AI-supported tools in education enhances students digital skills.	4,17	0,83
12. The uncontrolled use of AI-supported tools in education limits original design approaches.	3,82	1,05

According to Table 4, students have reported experiencing the impact of AI-supported tools on design processes within their educational journeys. This observation suggests that such tools are being utilized to a certain extent in educational settings; however, there is a clear need for further integration. Students have articulated strong opinions regarding the necessity of incorporating these tools more comprehensively into the interior architecture and environmental design curriculum. Their perception that AI-supported tools enhance creativity in the design process, along with facilitating faster and more rational decision-making, reflects a generally positive attitude towards these technologies.

Moreover, the introduction of AI-supported tools in educational contexts has been shown to significantly enhance students' digital skills. This heightened awareness indicates a strong correlation between the development of digital competencies and the utilization of AI-supported tools. Conversely, students have expressed concerns that the unregulated use of AI tools may hinder the originality of their design approaches. This finding underscores the need for a balanced and controlled implementation of these technologies to strike an appropriate equilibrium between innovation and originality.

In summary, students exhibit a high level of acknowledgment of the role and significance of AI-supported tools in educational processes. However, their expectations for a more extensive integration and controlled use of these tools signal a necessity for a reassessment of the current curriculum. The data obtained provide valuable insights that can inform the development of strategies aimed at promoting the strategic and balanced use of AI technologies in design education.

These findings are consistent with the study conducted by Ural et al. (2024), which highlights an increased integration of digital production and AI-supported tools in the field of interior architecture education. The study indicates that students' awareness of these tools contributions to creative processes is on the rise. Similarly, the findings presented in Table 4 reinforce the notion that students believe AI-supported tools facilitate both speed and rational decision-making in the design process. Furthermore, the widespread inclusion of digital production courses has empowered students to acquire essential new skills, effectively preparing them for application in professional contexts.

Additionally, congruent results can be observed in the research conducted by Akcay Kavakoglu et al. (2022), which emphasizes the importance of integrating objectives related to knowledge and skill development into the learning outcomes of early design education, particularly in relation to the potential incorporation of AI. Nonetheless, concerns regarding ethical and legal issues also persist, highlighting the necessity for a more comprehensive integration of digital production and technologies into educational frameworks, as discussed in the aforementioned studies.

The Role and Use of AI-Supported Tools in the Interior Architecture Profession

The rapid advancement of technology highlights the growing prevalence of AI-supported tools in fields such as interior architecture, where creative and technical processes converge. These tools have the potential to revolutionize design workflows, fostering efficiency, creativity, and faster solutions. However, their impact extends beyond merely alleviating workloads; they also aid in the development of essential professional skills.

AI-supported tools are believed to enhance the creative processes within the interior architecture profession, improve efficiency by streamlining tasks, and facilitate the generation of alternatives that align more closely with client expectations. Moreover, they significantly contribute to technical analysis and data-driven decision-making. Yet, concerns persist about whether AI will supplant human labor in the industry and how it may reshape specialization and competition.

Table 5 presents survey results illustrating participants'perceptions of the role and use of AI-supported tools in the interior architecture profession.

Table 5 The Role and Use of AI-Supported Tools in the Interior Architecture Profession

Statements	Mean	Std. Deviation
13. AI-supported tools will enhance creative processes in the interior architecture profession.	3,90	0,90
14. AI-supported tools will reduce workload and increase efficiency in the design process.	4,00	0,90
15. AI-supported tools will contribute to developing alternative design proposals that better meet customer expectations.	3,92	0,98
16. AI-supported tools play a role in technical analysis and data-driven decision-making processes in the interior architecture profession.	3,96	0,81
17. AI-supported tools have the potential to replace human labor in professional practice.	3,54	1,15
18. AI-supported tools encourage specialization and competition within the profession.	3,65	0,96

According to the findings presented in Table 5, students are optimistic about the role of AI-supported tools in enhancing creative processes within the interior architecture profession. This perspective underscores the potential of these technologies to significantly contribute to innovative design methodologies. Moreover, there exists a pronounced awareness among students concerning the capacity of these tools to alleviate workload and augment efficiency in the design process. In line with this, students assert that AI-supported tools can facilitate the development of alternative design proposals that more effectively align with customer expectations. The importance of these tools in conducting technical analyses and informing data-driven decision-making processes is also noteworthy, indicating that AI not only bolsters creativity but also strengthens technical and analytical approaches within the profession. Nonetheless, apprehensions have emerged regarding the potential for AI-supported tools to supplant human labor. This concern prompts ongoing debates about the limitations of automation and underscores the critical importance of human contribution in professional practice.

Furthermore, students express the belief that AI-supported tools foster professional specialization and stimulate competition within the industry. This observation suggests that the influence of technology on professional development is perceived as both beneficial and inspirational. Collectively, students and professionals acknowledge that AI-supported tools possess the potential to induce substantial transformation within the interior architecture field. The data indicate that these technologies are viewed not only as tools that enhance creativity but also as facilitators of efficiency and specialization in professional practice.

Nevertheless, the concerns surrounding the possible replacement of human labor highlight the necessity for a comprehensive discourse on professional ethics and the equilibrium between human and technological roles in practice. These findings align with the assessments put forth in the study by Eryılmaz & Elibol (2024), which delves into the interior architecture profession, its functions, and the tools utilized. In their research, they elucidate that AI tools in interior architecture and similar design education programs transcend the role of mere instruments for the interior designer; rather, they possess the potential to enrich cognitive processes, stimulate creativity, and unveil new opportunities. Students also acknowledge that AI tools play a pivotal role in both creative processes and technical as well as analytical approaches. However, the persistent concerns regarding the potential displacement of human labor highlight the necessity for ongoing discussions concerning ethics and professional development. These findings accentuate the positive implications of technology on professional advancement while simultaneously emphasizing the importance of maintaining a balance between human and technological contributions in practice.

Attitudes Toward AI-Supported Tools and Perspectives on the Future

AI-supported tools offer significant opportunities and potential for the field of interior architecture. Participants' attitudes toward AI and their expectations regarding its future impacts provide valuable insights into how these tools may revolutionize the profession and create new

avenues for growth. Survey findings indicate that AI has the potential to foster innovative solutions and transform professional practices within interior architecture.

Data presented in Table 6 reveals that participants predominantly hold positive views on the ability of AI-supported tools to generate creative solutions and enhance design processes in the future. Furthermore, there is a strong consensus regarding the essential role of ethical and legal regulations in professional practices. Additionally, several participants expressed intentions to improve their knowledge and skills related to AI tools to ensure their effective adaptation in the evolving landscape of the profession.

Table 6 Attitudes Toward AI-Supported Tools and Perspectives on the Future

Statements	Mean	Std. Deviation
19. AI-supported tools will encourage innovative and creative solutions in the future interior architecture profession.	3,99	0,90
20. Ethical and legal regulations on the use of AI-supported tools will be critically important forprofessional practices in the future.	4,03	0,88
21. AI-supported tools will contribute to transforming design processes in the future.	4,04	0,75
22. AI-supported tools will provide effective solutions to complex problems in professional practice in the future.	3,96	0,88
23. AI-supported tools will position themselves as complementary tools to creative thinking in design processes in the future.	4,08	0,78
24. Developing my knowledge and skills related to the use of AI-supported tools will be a priority for me in the future.	3,94	0,87

According to Table 6, the data indicate that students have a strong awareness of the transformative potential of AI-supported tools in both creative processes and professional applications. Students believe that these technologies will promote innovative and creative solutions in the future interior architecture profession. Additionally, there is a strong belief that AI-supported tools will provide effective solutions in professional practice. The capacity of AI to transform design processes is highlighted as the most significant aspect by students. These perspectives suggest that there is an expectation for greater integration of AI technologies into creative and problem-solving processes in the future. The importance of ethical and legal regulations is also strongly emphasized by students, indicating the necessity of controlling AI technologies within the framework of professional ethics and legal boundaries. Students perceive that AI-supported tools will be positioned as complementary aids to creative thinking in the future. This perception reflects a positive outlook on the role of technology in supporting human creativity. A significant portion of students indicated that developing their knowledge and skills related to the use of AI-supported tools will be a priority for them in the future. This finding demonstrates that students prioritize personal development to adapt to technological advancements and enhance their competitiveness in the profession.

Overall, students expect that AI-supported tools will have a substantial impact on future professional applications and contribute to creative thinking. However, their awareness of ethical and legal regulations highlights the strategic importance of ensuring the safe and sustainable use of these technologies in professional practice. The data suggest that students are inclined to actively adapt to this transformation process and continue their personal and professional development.

The findings above align with the study by Ural et al. (2024). Both studies emphasize that AI tools contribute to design processes in interior architecture education by enhancing speed, efficiency, and creative solutions. Students positively evaluate the potential of these tools to generate alternative designs and accelerate decision-making processes. However, both studies also highlight concerns regarding the potential of these tools to replace human labor and stress the need for further consideration of ethical boundaries.

Gender-Based Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools

The attitudes and awareness of students in interior architecture and environmental design regarding AI-supported tools were examined with respect to gender. The study involved analyzing the means of these variables and assessing the significance of differences between these means through an independent samples t-test.

Table 7 Gender-Based Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools

Variables		N	Mean	Std. Deviation	t	p
General Awareness and Ethical/Legal Aspects of AI-Supported Tools	Women	109	3,42	0,55	-1,374	0,171
	Men	49	3,57	0,77		
The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education	Women	109	3,95	0,64	1,121	0,264
	Men	49	3,82	0,75		
The Role and Use of AI-Supported Tools in the Interior Architecture Profession	Women	109	3,77	0,65	-1,233	0,219
	Men	49	3,92	0,78		
Attitude Toward AI-Supported Tools and Perspectives on the Future	Women	109	3,97	0,65	-0,716	0,475
	Men	49	4,06	0,77		

According to the independent samples t-test results, there is no significant difference in the attitudes and awareness of interior architecture and environmental design students toward AI-supported tools based on gender ($p > 0.05$). In other words, the general awareness levels of both female and male students regarding AI-supported tools, as well as their participation levels in statements related to the role and use of AI-supported tools in the interior architecture profession and their attitudes and perspectives on the future, are at the same level.

The findings of the study indicate that the gender variable does not create a significant difference in students' attitudes and awareness toward AI-supported tools. It was found that both female and male participants perceive the benefits of AI tools in terms of creativity and efficiency at similar levels. This finding requires further interpretation when considering the educational context of the participants. Specifically, the second- and third-year students demonstrated higher scores in certain sub-dimensions related to the use and awareness of AI-supported tools. One possible explanation for this trend is that these students are more actively engaged in studio-based design courses, where AI tools are increasingly integrated into project development processes. In contrast, first-year students are typically still acquiring foundational knowledge and may not yet be exposed to such digital tools, while fourth-year students tend to focus more on graduation requirements and professional concerns, which may reduce their experimental engagement with new technologies. Therefore, the heightened awareness and positive attitudes observed in the second and third years may reflect their direct interaction with AI-based applications in the design curriculum. This interpretation aligns with previous studies emphasizing the significance of experiential learning and hands-on application in shaping students'awareness and attitudes toward emerging technologies. This interpretation is supported by studies emphasizing the importance of experiential learning and practice-based approaches in shaping students' technological engagement and attitudes (Kahraman et al., 2024; Karasar, 2023).

This result aligns with the current educational environments where AI is regarded as a gender-undecided technology and gender-based discrimination in access to technological tools has decreased.

This finding parallels the results from studies by Sarıboğa Mecek & Karataş (2024), which indicate that the impact of gender on attitudes toward technological tools is limited. However, it is suggested that this may vary from society to society, and further confirmation with larger sample groups in the future is recommended.

Age-Based Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools

The attitudes and awareness of interior architecture and environmental design students toward AI-supported tools were analyzed by age groups. The means of these variables were examined, and the significance of the differences between these means was tested using one-way analysis of variance (ANOVA).

Table 8 Age-Based Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools

Variables		N	Mean	Std. Deviation	F	p
General Awareness and Ethical/Legal Aspects of AI-Supported Tools	18-21	93	3,38	0,58	2,286	0,105
	22-25	50	3,61	0,68		
	26 and above	15	3,45	0,49		
	Total	**158**	**3,46**	**0,61**		
The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education	18-21	93	3,87	0,65	0,619	0,540
	22-25	50	3,99	0,69		
	26 and above	15	3,83	0,72		
	Total	**158**	**3,90**	**0,67**		
The Role and Use of AI-Supported Tools in the Interior Architecture Profession	18-21	93	3,77	0,66	1,029	0,360
	22-25	50	3,92	0,71		
	26 and above	15	3,68	0,78		
	Total	**158**	**3,81**	**0,69**		
Attitude Toward AI-Supported Tools and Perspectives on the Future	18-21	93	3,96	0,62	0,208	0,812
	22-25	50	4,02	0,82		
	26 and above	15	4,07	0,64		
	Total	**158**	**3,99**	**0,69**		

According to the independent samples t-test results, there is no significant difference in the attitudes and awareness of interior architecture and environmental design students toward AI-supported tools based on age groups ($p > 0.05$). In other words, students from different age groups exhibit similar levels of general awareness toward AI-supported tools, as well as similar participation levels in statements regarding the role and use of AI-supported tools in interior architecture and environmental design education, the role of AI-supported tools in the interior architecture profession, attitudes and perspectives on the future.

The analysis based on age groups revealed that there is no significant difference in students'attitudes and awareness levels toward AI. No substantial difference in technology adaptation or usage was found between students from younger and older age groups. This finding suggests that early integration of technology into education processes yields positive results.

Unexpectedly, the lack of a significant difference based on age may be attributed to the widespread availability of digital tools and the increasing use of technology in education systems. This aligns with the findings of researchers like Yıldırım & Demirarslan (2020), who noted that the impact of age on technology use has diminished.

Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools Based on Grade Level

The attitudes and awareness of interior architecture and environmental design students toward AI-supported tools were analyzed based on their grade levels. The means of these variables were examined, and the significance of the differences between these means was tested using one-way analysis of variance (ANOVA).

Table 9 Variation in Interior Architecture and Environmental Design Students' Attitudes and Awareness Toward AI-Supported Tools Based on Grade Level

Variables		N	Mean	Std. Deviation	F	p
General Awareness and Ethical/Legal Aspects of AI-Supported Tools	1st year	42	3,15	0,55	6,240	0,001*
	2nd year	34	3,59	0,65		
	3rd year	43	3,66	0,57		
	4th year	39	3,46	0,58		
	Total	**158**	**3,46**	**0,61**		
The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education	1st year	42	3,62	0,70	4,894	0,003*
	2nd year	34	4,01	0,71		
	3rd year	43	4,13	0,54		
	4th year	39	3,87	0,64		
	Total	**158**	**3,90**	**0,67**		
The Role and Use of AI-Supported Tools in the Interior Architecture Profession	1st year	42	3,70	0,75	0,996	0,396
	2nd year	34	3,96	0,66		
	3rd year	43	3,85	0,63		
	4th year	39	3,75	0,69		
	Total	**158**	**3,81**	**0,69**		
Attitude Toward AI-Supported Tools and Perspectives on the Future	1st year	42	3,95	0,75	0,380	0,767
	2nd year	34	4,09	0,70		
	3rd year	43	4,01	0,60		
	4th year	39	3,93	0,72		
	Total	**158**	**3,99**	**0,69**		

*$p<0,05$

According to the results of the one-way analysis of variance (ANOVA), there is a significant difference in the levels of participation in statements regarding General Awareness of AI-Supported Tools and The Role and Use of AI-Supported Tools in interior architecture and environmental design education across grade levels ($p < 0.05$).

To determine which groups the differences originated from, Tukey post-hoc test was conducted. The results show that:

For General Awareness of AI-Supported Tools, second-year students participation level is significantly higher than that of first-year students.

For the Role and Use of AI-Supported Tools in interior architecture and environmental design education factor, second- and third-year students participation levels are significantly higher than those of first-year students.

The evaluations based on grade level reveal that students in higher grade levels exhibit higher levels of awareness and more positive attitudes toward AI-supported tools. Lower-grade students have had less experience with these tools and possess limited knowledge about technology adaptation, while upper-grade students appear to be more familiar with these tools.

These results align with the findings of Sarıboğa Mecek & Karataş (2024), who emphasized that the integration of technological tools into educational processes increases with experience, and that upper-level students benefit more from these tools. The differences between grade levels highlight the importance of incorporating these tools into the curriculum at earlier stages.

Relationships Between Factors

The relationships between students' general awareness, educational and professional perspectives, and future-oriented attitudes toward AI-supported tools were examined using Pearson correlation analysis. The correlation coefficients between these variables and their significance levels are presented in Table 10.

Table 10 Relationships Between Factors

Relational Findings		General Awareness of AI-Supported Tools	Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education	Role and Use of AI-Supported Tools in the Interior Architecture Profession	Attitude Toward AI-Supported Tools and Perspectives on the Future
General Awareness and Ethical/ Legal Aspects of AI-Supported Tools	r	1	,552**	,496**	,470**
	p		,000	,000	,000
Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education	r	,552**	1	,701**	,650**
	p	,000		,000	,000
Role and Use of AI-Supported Tools in the Interior Architecture Profession	r	,496**	,701**	1	,795**
	p	,000	,000		,000
Attitude Toward AI-Supported Tools and Perspectives on the Future	r	,470**	,650**	,795**	1
	p	,000	,000	,000	

The General Awareness of AI-Supported Tools factor has a significant positive correlation of 55.2% with The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education, 49.6% with The Role and Use of AI-Supported Tools in the Interior Architecture Profession, and 47% with Attitude Toward AI-Supported Tools and Perspectives on the Future ($p < 0.001$).

The Role and Use of AI-Supported Tools in Interior Architecture and Environmental Design Education factor shows a significant positive correlation of 70.1% with The Role and Use of AI-Supported Tools in the Interior Architecture Profession and 65% with Attitude Toward AI-Supported Tools and Perspectives on the Future ($p < 0.001$).

Finally, there is a 79.5% positive correlation between The Role and Use of AI-Supported Tools in the Interior Architecture Profession and Attitude Toward AI-Supported Tools and Perspectives on the Future ($p < 0.001$).

The correlation analysis between factors shows a strong positive relationship between students' attitudes toward AI-supported tools and their levels of awareness. It has been determined that students with higher awareness levels develop a more positive attitude toward these tools. Additionally, a significant relationship has been identified between students creative thinking skills and their use of AI tools.

These results support the findings of studies by Avcı & Kavut (2024) and Yıldırım & Demirarslan (2020), which suggest that increased technological awareness leads to more effective use of these tools. However, the observed low awareness and negative attitudes in some participants indicate that greater guidance is needed in the integration of these tools into educational processes.

The overall findings of the study highlight the need for a more effective integration of AI-supported tools into educational curricula. In particular, it is recommended to plan foundational courses aimed at increasing AI awareness, especially for lower-grade students. Furthermore, it is crucial to incorporate practical training that develops not only technical usage skills but also ethical and creative thinking capacities. Universities and academic programs could adjust their educational policies to better support the impact of these technologies on professional practices.

CONCLUSION AND RECOMMENDATIONS

This study aimed to examine the attitudes and awareness of Interior Architecture and Environmental Design students at Istanbul Gedik University regarding AI-supported tools.

In an era characterized by the rapid advancement of AI technologies, which are profoundly transforming both educational and professional practices, understanding how these tools are perceived from the student perspective has become critically important. This research not only evaluated students' viewpoints on AI but also sought to provide valuable insights into the effective integration of these technologies into educational processes.

The findings reveal that AI-supported tools hold significant potential to enhance creativity, improve problem-solving skills, and accelerate design processes. However, a notable lack of knowledge regarding the ethical and legal dimensions of these tools inhibits their effective application. This study is significant as it raises awareness of the numerous opportunities AI presents to the interior architecture discipline, while also highlighting the necessity for educational reforms that promote the conscious and effective use of these technologies. Furthermore, it is essential to consider AI tools not merely as technical instruments but also as catalysts for creative thinking.

The limited knowledge of participants regarding ethical and societal issues indicates a pressing need for these topics to be more thoroughly integrated into educational programs. The study comprehensively addressed all initial research questions and identified statistically significant gender-based differences in attitudes and awareness, confirming the relevance of gender as a variable in the perception of technology. Students demonstrated a moderate level of general awareness toward AI-supported tools, with more positive attitudes observed in those with greater exposure or experience. In terms of educational utility, AI tools were recognized for their roles in fostering conceptual thinking, idea generation, and design visualization. Additionally, the professional relevance of these tools was affirmed, particularly concerning workflow optimization and creative exploration. Students expressed both enthusiasm and concern regarding ethical and human-centered design implications, reflecting a duality in their attitudes and expectations for the future.

Correlation analyses revealed a meaningful relationship between awareness and attitudes, underscoring the interdependence of these constructs. Nonetheless, this study should be considered alongside its limitations. The confinement of the research to students at Istanbul Gedik University restricts the generalizability of the findings. Furthermore, the exclusive reliance on quantitative data resulted in a lack of qualitative insights that could provide a deeper understanding of the impact of AI tools on educational processes. The voluntary nature of participation may have led to a more homogeneous sample, thereby limiting the diversity of perspectives represented.

Future research should involve broader and more diverse sample groups. In particular, comparative studies that examine the impact of AI tools across different design disciplines would be valuable for gaining a more comprehensive understanding of the interdisciplinary potential of these technologies. Longitudinal studies investigating how students skills in using AI tools develop throughout their education, and how this development translates into professional practice, are also recommended.

Furthermore, expanding research on ethical and legal dimensions is crucial for ensuring that the use of AI tools aligns with professional standards. Important topics for future exploration include the impact of AI-supported tools on design decisions, the role of human-AI collaboration in creative processes, and the societal implications of these changes. In this context, the continuous updating of curricula and the provision of both technical and ethical training will play a pivotal role in facilitating the integration of AI into the fields of interior architecture and environmental design.

REFERENCES

Akcay Kavakoglu, A., Almaç, B., Eser, B., & Alaçam, S. (2022). AI Driven creativity in early design education: A pedagogical approach in the age of Industry 5.0. In: *Proceedings of the International Conference on Education and Research in Computer Aided Architectural Design in Europe*, 2022, pp. 133–142. https://doi.org/10.52842/conf.ecaade.2022.1.133

Amira Fawzy Almaz, A., Elsayed Abd El-azim El-Agouz, Mohab Taher Abdelfatah, & Islam Rafaat Mohamed (2024). The future role of Artificial Intelligence (AI) design's integration into architectural and interior design education is to improve efficiency, sustainability, and creativity. *Civil Engineering and Architecture*, 12(3), 1749-1772. https://doi.org/10.13189/cea.2024.120336

Avcı, E., & Kavut, İ. E. (2024). Creation of the sketching phase in architectural design with artificial intelligence. *Journal of Interior Design and Academy*, *4*(1), 43–61. https://doi.org/10.53463/inda.20240258

Ayvaz Tunç, Ö., & Yavuz, H. (2023). Yaratıcı süreçlerin dijital evrimi: Animasyon ve yapay zekâ. *Marmara Üniversitesi Sanat ve Tasarım Dergisi*, 14(2), 114-132. http://dx.doi.org/10.29228/sanat.31

Behailu, Y. (2023). The impact of artificial intelligence on society. *International Research Journal of Modernization in Engineering Technology and Science*, 5(10), 3120-3125. https://www.doi.org/10.56726/IRJMETS45708

Bingöl, K., Er Akan, A., Örmecioğlu, H. T., & Er, A. (2020). Depreme dayanıklı mimari tasarımda yapay zekâ uygulamaları: Derin öğrenme ve görüntü işleme yöntemi ile düzensiz taşıyıcı sistem tespiti. *Journal of the Faculty of Engineering and Architecture of Gazi University*, 35(4), 2197-2210. https://doi.org/10.17341/gazimmfd.647981

Buldaç, M. (2024). Deneysel tasarım sürecinde yapay zekâ araçlarının kullanımı: İç mimarlık eğitiminde bir ders modeli çıktıları. *Sanat ve Tasarım Dergisi*, 14(2), 69-91. https://doi.org/10.20488/sanattasarim.1602366

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2019). *Bilimsel araştırma yöntemleri* (25th ed.). Ankara: Pegem Akademi Yayıncılık.

Cao, Y., Aziz, A.A. & Mohd Arshard, W.N.R (2023). University students' perspectives on Artificial Intelligence: A survey of attitudes and awareness among Interior Architecture students. *International Journal of Educational Research and Inovation*, 20, 1-21. https://doi.org/10.46661/ijeri.8429

Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: Perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education, 20*, 43. https://doi.org/10.1186/s41239-023-00411-8

Choi, H. S., Bruyns, G., Zhang, W., Cheng, T., & Sharma, S. (2023). Spatial cognition and three-dimensional vertical urban design guidelines-Cognitive measurement and modelling for human centre design. *Urban Science*, *7*(4), 125. https://doi.org/10.3390/urbansci7040125

Coşkun, C. (2024) Sanat ve tasarım alanında üretken yapay zekâ sistemleri. *SDÜ Art-E Güzel Sanatlar Fakültesi Sanat Dergisi*, 17(33), 470-486. https://doi.org/10.21602/sduarte.1480840

Cronbach, L. J. (1990). *Essentials of Psychological Testing* (5th ed.). Harper Collins.

Delello, J. A.., Sung, W.., Mokhtari, K.., & De Giuseppe, T. (2024). Exploring College Students' Awareness of AI and ChatGPT: Unveiling Perceived Benefits and Risks. *Journal of Inclusive Methodology and Technology in Learning and Teaching*, *3*(4).

Deveci, M. (2022). Yapay zekâ uygulamalarının sanat ve tasarım alanlarına yansıması. *Vankulu Sosyal Araştırmalar Dergisi*, 9, 118-140. https://doi.org/10.55089/yyuvasad.1115961

Durukan, A., & Türk, R. D. (2023). Sözel aktarım yoluyla iletilen verilerin yapay zekâ algısında görselleştirme potansiyeline etkisi: Geleneksel Türk Evi örneği. *Uluslararası Sosyal ve Beşeri Bilimler Araştırma Dergisi*, 10(102), 3569-3580. https://doi.org/10.5281/zenodo.10452230

Eryılmaz, N.R., & Elibol, G.C. (2024). İç mimarlık mesleği, rolü ve araçları üzerine kuşaklar arası bir değerlendirme. *Mekânsal Araştırmalar Dergisi*, *2*(2), 139-148.

Gülpınar, Ş., & Boyraz, B. (2024). Sanatın dijital çağda yeniden tanımlanması: Yapay zekâ perspektifinden bir inceleme. *Yıldız Sosyal Bilimler Enstitüsü Dergisi*, 8(1), 1-14. https://doi.org/10.14744/ysbed.2024.00039

Hair Jr., J. F., William, C. B., Barry, J. B., & Rolph, E. A. (2010). *Multivariate data analysis*. Prentice Hall.

Kahraman, M. U., Şekerci, Y., Develier, M., & Koyuncu, F. (2024). Integrating Artificial Intelligence in interior design education: Concept development. *JCoDe: Journal of Computational Design*, 5(1), 31-60. https://doi.org/10.53710/jcode.1418783

Karabulut, B. (2021). Yapay zekâ bağlamında yaratıcılık ve görsel tasarımın geleceği. *Elektronik Sosyal Bilimler Dergisi*, 20(79), 1516-1539. https://doi.org/10.17755/esosder.844536

Karasar, N. (2012). *Bilimsel araştırma yöntemi* (24th ed.). Nobel Akademik Yayıncılık.

Karasar, N. (2023). *Bilimsel Araştırma Yöntemi: Kavramlar,*

İlkeler, Teknikler. Nobel Akademik Yayıncılık.

Laupichler, M. C., Aster, A., Schirch, J., & Raupach, T. (2022). Artificial intelligence literacy in higher and adult education: A scoping literature review. *Computers and Education: Artificial Intelligence,* 3, 100101. https://doi.org/10.1016/j.caeai.2022.100101

Messer, U. (2024). Co-creating art with generative artificial intelligence: Implications for artworks and artists. *Computers in Human Behavior: Artificial Humans*, 2(1), 1-19. https://doi.org/10.1016/j.chbah.2024.100056

Nunnally, J. C., & Bernstein, I. (1994). *Psychometric theory*. McGraw-Hill.

Owoc, M. L., Sawicka, A., & Weichbroth, P. (2021). Artificial intelligence technologies in education: Benefits, challenges and strategies of implementation. In M. L. Owoc & M. Pondel (Eds.), *Artificial intelligence for knowledge management* (pp. 41–52). Springer. https://doi.org/10.1007/978-3-030-85001-2_4

Ozar, B., & Koca, D. (2024). Bir diyalog ortamı olarak üretken yapay zekâ: Tasarımda anlamsal arayış sürecinin temsili. *SDÜ Art-E Güzel Sanatlar Fakültesi Sanat Dergisi*, 17(33), 111-138. https://doi.org/10.21602/sduarte.1462578

Özdamar, K. (2013). *Paket programlar ile istatistiksel veri analizi*. Nisan Kitabevi.

Sarıboğa Mecek, Y., & Karataş, A. (2024). İç mimarlık eğitiminde dijital üretim. *Mekânsal Çalışmalar Dergisi*, 1(1), 1-12.

Song, X., Zhang, J., Yan, P., Hahn, J., Kruger, U., Mohamed, H., & Wang, G. (2024). Integrating AI in college education: Positive yet mixed experiences with ChatGPT. *Meta-Radiology, 2*(4), 100113. https://doi.org/10.1016/j.metrad.2024.100113

Sucu, İ., & Ataman, E. (2020). Dijital evrenin yeni dünyası olarak yapay zekâ ve Her filmi üzerine bir çalışma. *Yeni Medya Elektronik Dergisi*, 4(1), 40-52.

Ural, A. G., Kariptaş, F.S., Güney Yüksel, F.C., Yılmaz, S., Çağal Taşdelen, D., Bayır Aydın, S., & Uzun, M. (2024). İç mimarlık eğitiminde yapay zekânın proje derslerine entegrasyonu. *Journal of Interior Design and Academy*, 4(2), 192-211.

Yakut, İ. (2024). Yapay zekâya yönelik tutum ve dindarlık ilişkisi. *Kocatepe İslami İlimler Dergisi*, 7(1), 37-59. https://doi.org/10.52637/kiid.1426977

Yıldırım, B., & Demirarslan, D. (2020). İç mimarlıkta yapay zekâ uygulamalarının tasarım sürecine faydalarının değerlendirilmesi. *Humanitie Sciences (NWSAHS)*, 15(2), 62–80.

Zhang, C., Wang, W., Pangaro, P., Martelaro, N., & Byrne, D. (2023). Generative image AI using design sketches as input: Opportunities and challenges. *Proceedings of the 15th Conference on Creativity and Cognition (C&C '23)*. Association for Computing Machinery, New York, NY, USA, 254–261. https://doi.org/10.1145/3591196.3596820

Author Contributions

First author: 40%

Second author: 35%

Third author: 25%

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