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# Interior Architecture Project Approach with Design-oriented Thinking Model: Clinic Designs

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**Abstract**

*Interior architecture can be described as the activity of a designated space to produce solutions that are appropriate to its purpose and to solve existing problems in accordance with the decisions made. However, sometimes using conventional learning techniques to comprehend and solve real-world problems is insufficient. Therefore, through the integration of many disciplines, educational models are being developed to produce new solutions that will influence the knowledge and thinking acquired. Design-oriented thinking is also becoming more and more important in the design education process, as creativity, problem-solving and innovation are indispensable. As part of a 14-week studio study for the Interior Architecture Project-V course, the study was conducted with fourth-grade students from Selçuk University's Faculty of Architecture and Design in the fall semester of 2022–2023. The study is based on a design-oriented thinking method. The objective of the four-stage study is to enable the student to produce original and innovative projects specific to the identified problems by staying attached to a method. This will enable the student to identify the learning outcomes in the process of creative thinking and transforming thinking into an idea when designing the current clinical premises.*

***Keywords:*** *Clinic design, design-oriented thinking model, design, interior architecture, problem-oriented solution.*

# Tasarım Odaklı Düşünme Modeli ile İç Mimari Proje Yaklaşımı: Klinik Tasarımları

**Öz**

*İç mimarlık; tasarlanan mekânın verilen kararlar doğrultusunda amacına uygun çözümler üretmesi ve var olan problemi çözme faaliyeti olarak adlandırılabilir. Fakat geleneksel öğrenme metotları ile gerçek dünya sorunlarını anlamak ve çözmek zaman zaman yeterli olamamaktadır. Bu nedenle birçok disiplinin entegrasyonu ile edinilen bilgi ve düşünme biçimini etkileyecek yeni çözümler üretebilmek üzere oluşturulan eğitim modelleri geliştirilmektedir. Tasarım odaklı düşünme modeli de yaratıcılığın, problem çözmenin ve yenilikçiliğin vazgeçilmezi olduğundan tasarım eğitim sürecinde giderek daha önemli hale gelmektedir. Çalışma; Selçuk Üniversitesi, Mimarlık ve Tasarım Fakültesi İç Mimarlık Bölümü 2022-2023 güz yarıyılı 4.sınıf öğrencileri ile İç Mimari Proje-V dersi kapsamında 14 haftalık stüdyo çalışması kapsamında gerçekleştirilmiştir. Çalışma tasarım odaklı düşünme metodu üzerine kurgulanmıştır. Dört aşamadan oluşan çalışmanın amacı; öğrencinin bir metoda bağlı kalarak belirlenen problemler özelinde özgün ve yenilikçi projeler üretmesini sağlamaktır. Bu sayede güncel klinik mekânlarını tasarlarken yaratıcı düşünme ve düşündüğünü fikre dönüştürme sürecinde öğrenciye kazandırılan öğrenim çıktıları belirlenebilecektir.*

***Anahtar kelimeler:*** *Klinik tasarımı, tasarım odaklı düşünme modeli, tasarım, iç mimari, problem odaklı çözüm.*

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## 1. Introduction

We witness innovation in all facets of our lives, including those resulting from technological advancements, which has necessitated certain transformations. As a result of shifting demands and dynamics, design-oriented education programs have started to take a fresh look at established design education techniques in an effort to produce innovative and creative learning outcomes while also keeping up with the time and market competition. Transferred by (Akdemir, 2017)*;* "Design is multi-variable, multi-data, multi-faceted, multi-subjective, and therefore multi-disciplinary and multi-environmental". According to Teymur's 1998 statement, several design-oriented models have been introduced as a result of the design's adaptability. All design disciplines can now collaborate to create new programs and conduct new searches in the pursuit of knowledge and solutions to problems (Öztürk, 2016). Throughout the interior architecture education process, a variety of techniques are employed to demonstrate a student's capacity for design. The implementation of studio experiences that will support students' versatile development and their impact on their design proficiency is assessed as a result of the integration of various disciplines in design education. Design education is a set of procedures that takes into account current theoretical and applied courses in an integrated way. These procedures include the unity of perception, concept, creative thinking, research, discussion, and practice. By integrating the formal, spatial and structural knowledge learned in other courses, design education seeks to reveal creativity and produce design solutions (Çınar & Sungur, 2022). Students create designs in a methodical and sophisticated manner. Within this framework, it is rather important to support students' observations and creativity while also attempting to give them problem-solving skills. The foundation of design and creativity is intimately tied to a student's capacity for independent thought and mental work. By disclosing this viewpoint, this is made possible (Acici, 2017). Contends that design education ought to deviate from conventional learning paradigms and equip students with background knowledge and critical thinking skills. Design is seen as a holistic idea for cognitive learning, and design styles that communicate the designers' thought processes rather than the things they make, bolstering constructive changes, are what designers believe (Razali et al., 2022).

Students in the interior architecture department are shown the design process through a series of patterns in this study, which is based on the design-oriented thinking method to create a new learning strategy. Design-oriented thinking is used as a tool to develop people who ask questions and come up with solutions because it is basically the process of putting ideas into practice. The study's objective is to apply design-oriented thinking to the processes of empathy, definition, idea generation, prototype development, and testing. Thus, it is expected that students will be able to produce original and creative projects by reflecting on the design acquisition obtained during the theoretical and practical education process and space organizations on design. They will also be expected to think creatively, concentrate, create human-centred designs, and produce correct and innovative solutions to problems. The fact that the space has been experienced will allow the perception of the space and the observation of all the details. In this way, a sense of belonging will develop (Argan & Atabeyoğlu, 2023).

Private clinics housed within medical facilities were particularly used for this study. The impact of applying the design-oriented thinking method's processes within the Interior Architecture Project-V course to the design skills of fourth-year interior architecture students and the course learning outcomes will be assessed after the four-stage studio study.

### 1.1. Design-Oriented Thinking in Interior Architecture

One could argue that design is an activity of human consciousness, guided by the demands of both the material and spiritual realms. Creativity is, on the other hand, the intellectual process of viewing problems from a fresh angle. By identifying opportunities in the rapidly evolving market and technology, creativity allows for the generation of novel concepts and methods (Akdemir, 2017). Creative thinking is the foundation of design. Thinking creatively means taking every aspect of a process or event into account. Cen & Ma (2013) state that the ability to think creatively, take initiative, and disclose the nature of objective reality are all components of innovative thinking. Innovative thinking, according to (Wong, 1972), is a way of thinking that influences designers' analysis, intuition, rationality, and sensitivity rather than an outcome. This is the origin of design and inspires individuals

to investigate and reorganize their issues. According to (Noraslı, 2023), the innovation process in Design-oriented thinking is an approach that does not represent the systematic method in which design concepts are developed, the individual discovers herself, and moves towards abstraction by breaking the learned assumptions. Broadly speaking, it can also mean visualizing a phenomenon as a whole in the mind, organizing it schematically, illustrating it as a pattern or model, and beginning to formulate an action plan (Ünügür, 1989). Beyond just forming an object, design is an abstract idea. In essence, design is an idea, a solution to a problem, a thought, a behavior, or an essence. Meanwhile, the designer employs experts from related fields and the inductive method—a method of reasoning that moves from the particular to the overall or from the parts to the whole—to solve problems. An individual who can create solutions for issues in both his or her field and other fields is called a designer (Demiraslan & Demiraslan, 2020).

The term "design-oriented thinking method" refers to a process that generates various solutions for issues involving human-centered thought processes. (Arifin & Mahmud, 2021) state that creativity, innovation and problem-solving all depend on design and design-oriented thinking. Design thinking is a human-centered innovation process that prioritizes observation, teamwork, idea generation and visualization, according to (Lockwood, 2010). (Gruber et al., 2015) express that the design thinking process is an application of an integrative approach that emphasizes the need for a deeper examination of a problem to develop a contextual understanding. (Pruneau et al., 2019) define design thinking as an all-encompassing approach to problem-solving that centers on comprehending the objectives, realities, and limitations of those impacted by a particular issue. Design-oriented thinking's primary goal is to offer a viewpoint for approaching issues and generate various solution recommendations. (Wong, 1972). "*The profession of interior architecture creates solutions to give users the best possible design within an architectural space based on structural, functional and aesthetic criteria.*". Human-oriented design principles have emerged as a result of the requirement for multi-dimensional consideration of interior architecture, which essentially focuses on people and human needs (Yurtgün & Çınar, 2023). Individual learning habits, space perception and interpretation skills, and the ability to express various expression techniques through solution-based design are all goals of the interior architecture design process (Akçaova & Doğan, 2019). As the definitions make clear, both ideas—which essentially center on human needs—are predicated on treating the issue from a designer's point of view and emphasizing the problem over the solution in contrast to traditional research methods. The design-oriented thinking method was first introduced by (Brown, 2008). Brown applied design thinking as a methodical approach to problem-solving, putting people and human needs at its core. According to this definition, design thinking is related to both the process (method) and the personal trait (sensitivity) of design. The five fundamental steps of the design-oriented thinking process are empathy, definition, idea generation, prototype development, and testing (Figure 1).

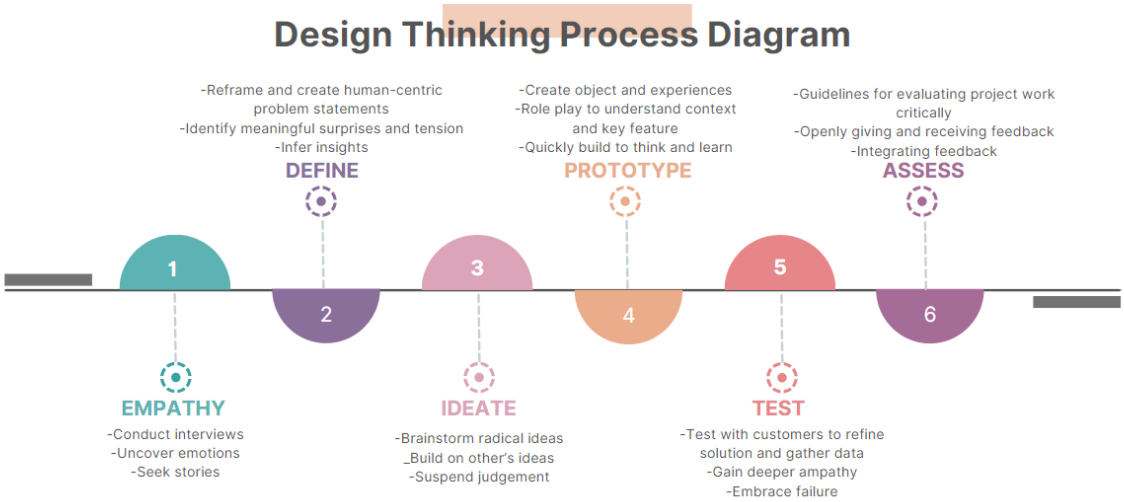



**Figure 1.** Design-oriented thinking method diagram

The cornerstone of a human-based design process is "*empathizing*" the first step in the design thinking process. The work done as part of the design process to understand people, their physical and emotional needs, their perspectives on the world, and the things that hold significance for them is known as empathy. The designer concentrates on the problem to solve during the design process; these are problems that pertain to a particular set of people. The only way to design for this group is to develop empathy for their values and identity. You can infer a lot about this group of users' thoughts and emotions by watching what they do and how they interact with their surroundings, as well as what they need. "*Defining*" in the context of the design thinking methodology refers to giving the design field focus and clarity. Making sense of data gathered in light of the user and context is what a designer does. Making a significant and workable problem statement is the aim. The "*Idea Generation"* stage is employed to come up with creative solutions by visualizing the advancement of the process in terms of opinions and outcomes. Coming up with ideas entails coming up with suggestions for fixing issues and designing user-friendly areas. "*Prototype development"* is a process that offers answers to issues that will move the designer closer to the ultimate solution in the design-oriented thinking method. This iterative stage facilitates error prevention by anticipating issues that may arise during the design phase. The "*testing*" phase involves reassessing, refining, and reshaping the project in response to user feedback regarding the user prototypes produced using the design-oriented thinking methodology. Designers can employ design thinking as a strategy to find innovative and long-lasting solutions to environmental issues because they frequently employ both creative and analytical types of reasoning (Liedtka, 2015). Design thinking has a positive impact on learning, motivation, participation and creativity. It can offer rich learning opportunities in a collaborative, efficient and accessible setting. Identifying the instructional strategies that apply design thinking and coming up with multidisciplinary solutions can spark students' interest and promote active learning.

## 2. Material and Method

The study was conducted as part of Interior Architecture Project-V, a 14-week studio course offered by Selçuk University's Faculty of Architecture and Design, Department of Interior Architecture, for the fall semester of 2022–2023. The design-oriented thinking methodology forms the basis of the study. The design-oriented thinking approach seeks to identify user needs, generate new approaches to traditional viewpoints, identify issues and generate creative solutions for the end product. Design thinking, according to Brown (2008), is a methodology that fills a human-centered design ethos throughout the whole range of innovation activities. To put it simply, it's a discipline that matches people's needs with what is technically feasible and that a viable strategy can turn into a user opportunity. It does this by utilizing the sensibility and methods of the designer.

There are four stages to the studio work, which was created using the design-oriented thinking methodology. According to the study's methodology, a working diagram defined each step of the studio work, and the process was controlled based on the diagram's inputs (Figure 2).

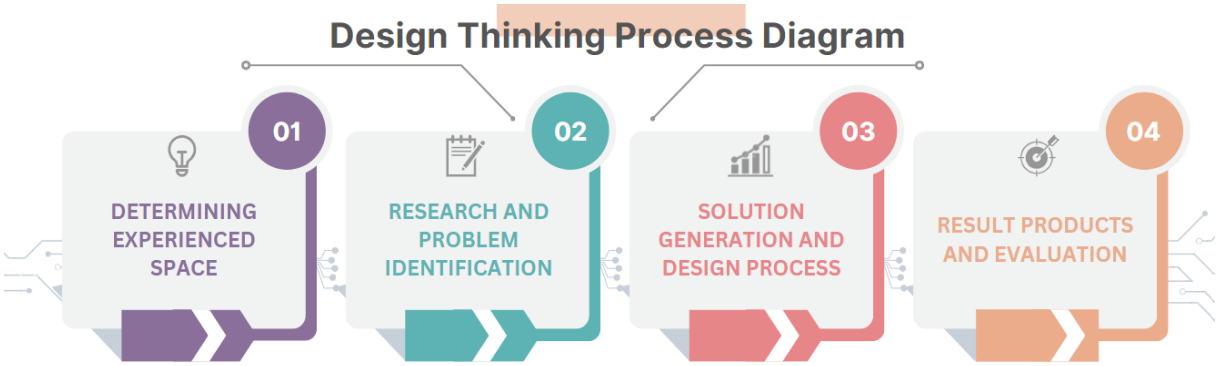



**Figure 2.** Interior architecture project-v process diagram

The students were asked to select a clinical setting they had visited in the first round. Establishing empathy, understanding the user, and ascertaining their requirements and expectations are the goals of the experience process. In the second phase, they had to identify the issues with the clinic spaces'

design by studying and observing them. Then, they developed a needs assessment regarding the shortcomings and issues that they had found. In the third stage, the study's outlines were completed. By coming up with solution suggestions for empathy, definition, idea generation, prototype development, and testing on the fundamental elements of the design-oriented thinking method appropriate for the user of the space created in accordance with the needs program, they were asked to produce creative and unique designs. The students' designs were examined for suitability to the design-oriented thinking method during the 14-week research and critique phase. Appropriate assessments and critiques were provided. Students' projects and learning objectives in the design education program were assessed in a jury setting by interior architecture faculty members using design-oriented thinking and experiential learning approaches. In this manner, while designing the current clinic spaces, learning outcomes were established by jury evaluation in the process of creative thinking and turning thoughts into ideas.

## 3. Findings and Discussion

The students were given the same plan scheme as a working area in the studio process, which was created using the design-oriented thinking method, so they could come up with unique designs while having equal constraints. The *1095 m²* project area, which was worked on in groups, includes the *377 m²* basement, *377 m²* ground floor, and *341 m²* first floor. During the studio study's "*Experienced Space Determining*" phase, the students were required to name various clinical spaces with distinct functions that they had personally used. Consequently, the project subject was determined to be clinical spaces serving seven distinct functions: an eye clinic, a center for adult and pediatric psychotherapy, a nutrition and dietician, an oral and dental health center, an aesthetics clinic, and a center for complementary medicine.

### 3.1. Project Implementation Process

Students were required to conduct scientific research and gather data on space organizations appropriate for the functions of clinic spaces in accordance with the Turkish Health Buildings Minimum Design Standards (T.C. Sağlık Bakanlığı, 2010) during the two-step *"Research and problem definition"* phase. The spaces' need programs have been identified and classified based on the minimal design standards and function organizations. The students were required to visit clinical locations within the borders of Konya province that were appropriate for the determined function during the "*Problem Identification*" phase. They were also required to conduct examinations and analyses, take pictures of the problems they saw and write a report (Figure 3).


**Figure 3.** Research and observation images of private clinical locations (Author's archive).

The design-oriented thinking method's stages of empathy, definition, idea generation, prototype development, and testing were applied within the "*Solution Generation and Design Process*" (Brown, 2008).

- ✓ Building empathy: It was stressed that for each function, groups must have previously experienced the space they will design or a relative must have witnessed the treatment process. For instance, it helps to see the space from the user's point of view, identify needs and desires, and empathize during the design process that the project group creating an oral and dental health center has previously received care in a clinic serving this purpose. Additionally, to view the clinic from the viewpoint of a different user during their research trips, the students were asked to have brief conversations with

the physicians, staff and patients who used the spaces. In addition, they were requested to report any inadequacies in the way the space was organized, as well as any inconsistencies related to color, light, form, texture and size of the design elements that influence how space is perceived, in accordance with the requirements program. By developing empathy, one can see the environment from the viewpoint of the user and understand their beliefs, experiences and actions. Having these visions will make abstract concepts concrete and enable the design formation process to produce a user-friendly final product. Creative solutions that meet human needs will be created in this way.

- ✓ The characteristics, preferences and insights of the various user groups were taken into consideration during the definition phase. Through in-class report presentations, the clinical spaces that were to be designed with various functions were assessed from the user's point of view. There were talks and oral presentations about the suggested solutions that the groups were to come up with. Students were now instructed to respond to the solutions to the identified problems with a "Why" question. The "why" question is essential to integrating a well-defined solution into a coherent system.
- ✓ During the idea generation phase, students' evolving concepts and viewpoints about the user and the issues become apparent. The degree of subject focus is directly correlated with an appropriate perspective. Only by accurately focusing on the problem will creative and accurate solutions be achievable. At this point, students were encouraged to come up with ideas because they had received feedback and assessments from the professors in the classroom. Weekly suggestions were reviewed, students' missing or incorrect aspects were assessed, and new constructs regarding problem's evaluation direction were suggested to be developed. Several proposals for solutions have been made in an effort to find the best one.
- ✓ The prototype development phase is known to be the process of turning proposed concepts into a design with some modifications or additions. At this point, the students used two-dimensional, sketch, and three-dimensional design software to create models for the clinical areas that matched the proposed concept scenario. Through prototype development, students were able to define the variables they identified, concentrate on several ideas while leading their projects and make decisions by fusing their design and creative aspects at the problem's applicability stage. To produce the most accurate design possible, they generated several ideas throughout the design process that attempted to address the issues of what the user wanted and how he or she behaved. When it came time to make a decision, the students who worked together to create multiple design proposals came up with the most accurate solution. The table in table 1. presents the project process, which followed the design-oriented thinking method, along with the subject, problem, concept, final products and learning outcomes.
- ✓ The final studio study step, testing, was completed by presenting the completed projects to the course instructors in a jury-style setting, in line with the design-oriented thinking methodology. The project groups' work is displayed online along with presentation videos that walk viewers through each step of the procedure. The jury members assessed the projects based on whether the clinical spaces with various functions were planned using the established methodology, rather than on personal preference. The questions used in the evaluation were relevant to the methodology.

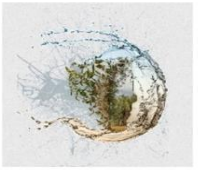
  -Did the student manage to identify the appropriate user profile in the empathy stage?

  -Did the student use the information that was provided to define the problem accurately?

  -Did the student provide suggestions for solutions that are appropriate for the issues and observations?

  -Did the student properly convey the requirements, issues, and suggested solutions into design?

**Table 1.** Project process; topic, problem, concept, result products and learning outcomes

| SUBJECT | QUESTİON | CONCEPT | RESULT PRODUCTS | LEARNING OUTCOMES |
|---|---|---|---|---|
| Eye Clinic | -The requirement to provide solution recommendations in the context of form, color, texture, light color temperature, and other design elements that influence how space is perceived,<br>- Evaluating the space in terms of design for everyone. |  |  | -Describing<br>-Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Expression And Communication<br>-Criticism<br>-Color-space Relationship<br>-Texture-space Relationship<br>-Form-space Relationship<br>-Abstract Thinking<br>-Creating Solutions |
| Child Psychotherapy Center | -The requirement to identify the child as a type of user,<br>-The requirement to address the space design at a level that will reduce the child's anxiety and fear,<br>-Evaluating the space design for all users,<br>- Requirement of producing space solutions that suit the needs of children in the context of color, light, texture and size, which are among the design components that affect the perception of space. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Criticism<br>-Visual Ability<br>-Form-space Relationship<br>-Color-space Relationship<br>-Light Color Temperature-space Relationship<br>-Concept Creation-<br>-Solution-oriented Approach |
| Adult Psychotherapy Center | - Evaluating the space in terms of design for everyone,<br>- Requirement of producing appropriate solutions for individuals with psychological disorders in the context of color, form and size, which are among the design components that affect the perception of space. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Form-space Relationship<br>-Color-space Relationship<br>-Size-space Relationship<br>-Concept Determination<br>-Material Recognition<br>-Design Development |
| Nutrition and Dietician | - Requirement of producing solutions applicable to the emotional states of patients with obesity or anorexia, which are psychological disorders, in the context of color, one of the design components that influence the perception of space.<br>- Evaluating the space in terms of design for everyone. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Experiential Learning<br>-Design Thinking<br>-Transforming The Idea Into Design<br>-Color-space Relationship<br>-Functional, Structural And Spatial Design<br>-Multidimensional Evaluation |
| Oral and Dental Health Clinic | -Requirement of sufficient daylight and ventilation levels<br>-Requirement of the space width be at least 12 m²,<br>-Requirement of sound insulation for the compressor,<br>-Requirement of clean wastewater installation<br>-Requirement of heating and cooling air conditioning systems,<br>-Requirement of floor and wall covering materials be antibacterial materials. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Concept Determination<br>-Prototype Development<br>-Functional, Structural And Spatial Design<br>-Multidimensional Evaluation |
| Center for Complementary Medicine | -Requirement of producing suitable solutions for people with disabilities,<br>-Requirement of ensuring privacy in application rooms,<br>-Requirement of appropriate lighting and ventilation systems in examination rooms,<br>-Requirement of disinfectant and storage areas for the treatment equipment. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Idea Generation<br>-Describing<br>-Design For Everyone<br>-Functional, Structural And Spatial Design<br>-Use Of Appropriate Materials |
| Aesthetic Clinic | -Requirement of ensuring privacy in application rooms<br>-Requirement of appropriate air conditioning, heating and cooling systems,<br>-Requirement of appropriate ventilation of all areas used by patients and staff,<br>-Requirement of providing adequate natural and artificial lighting,<br>-Requirement of floor and wall covering materials be antibacterial materials. |  |  | -Observation<br>-Research<br>-Discovery<br>-Establishing Empathy<br>-Awareness<br>-Functional, Structural And Spatial Design<br>-Use Of Appropriate Materials<br>-Multidimensional Evaluation<br>-Design Thinking |

When the final products of the studio work completed in accordance with the design-oriented thinking method are evaluated following the above-mentioned stages;

Eye Clinic; The snake figure—a symbol of medicine—was taken into consideration during the design concept phase. According to Greek belief, the snake was employed in healing rites dedicated to Asclepius and the snake's venom had curative qualities. The notion that the project was designed with the snake as a symbol of rebirth and renewal served as the foundation for the design concepts. The work is named Optusa after the mythical big-eyed creature from Greek mythology. Optusa is believed to have been used as a talisman and protective force in sarcophagi, and her eye is honored by being placed in the center of the vertical circulation space in the shape of an eye. The floor plans utilized "organic form" to refer to the snake form, and the project's colors and textures were chosen based on the concept and the healing properties of the color blue as documented in the literature (Figure 4).

**Figure 4.** Eye clinic; Project result products.

In the problem identification stage, the students' information and analyses from their technical visits to the eye clinic centers were used to develop project solution suggestions that aligned with the problems they observed. In light of the fact that color, texture, light color temperature, and form are some of the design elements that influence how space is perceived, appropriate solution recommendations for eye clinics were generated, and the area was assessed in terms of the inclusive design dimension. The learning outcomes for the Project V were identified as observation, research, discovery, empathy, expression and communication, criticism, color-space relationships, texture-space relationships, form-space relationships, light color temperature-space relationships, abstract thinking, and problem-solving in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the eye clinic project.

Child Psychotherapy Center; Art provides the means for the person, who has grown monotonous in the robotized world, to move from the real world into the realm of dreams. The person will be able to more readily communicate his sentiments through art if he is unable to do so verbally. It is evident that throughout history, art has been employed as a therapeutic technique. A person suffering from a psychological disorder may experience physical and psychological damage, but art can help them find a healthy balance between their dream and the real world. In this instance, the project concept was based on the term "vitriol." Vitriol is an alchemical expression that denotes enlightenment and the

idea that one should travel within oneself and ponder the cosmos in great detail. Enlightenment brings man back to his true nature and helps him discover who he is. In the project's concept, psychology and going back to oneself are combined. In this way, play—the most fundamental need for kids in the 5–6 age range—is integrated into the environment with art in an attempt to assist kids in discovering their essence. Thus, the child's cognitive development needs will be satisfied, including decision-making regarding games, teamwork, or leadership, and contemplating shapes and forms in the surroundings and the urge to reshape. In the phase of problem identification, the students developed solution suggestions for the project based on the data and analysis they had gathered from technical visits to child psychotherapy centers, taking into account the problems they had observed (Figure 5).

**Figure 5.** Child psychotherapy center; Project result products.

The need to identify the child as a user type, create a treatment center with color, form, and size appropriate to the child's needs, create space design solutions that will reduce the child's fear and anxiety, evaluate the space in terms of design for everyone, consider color and light as design elements that affect the perception of space, and create space solutions suitable for children's needs in the context of texture and size have all resulted in appropriate solution suggestions. The learning outcomes for the Project V were identified as observation, research, discovery, establishing empathy, awareness, criticism, visual ability, form-space relationship, color-space relationship, light color temperature-space relationship, concept creation-solution-oriented approach in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the child psychotherapy center project.

Adult Psychotherapy Center; The human body's systems have to cooperate. A breakdown in any of these systems also impairs the body's overall ability to function. Treatment must therefore be approached from multiple angles. This highlights the significance of what is commonly referred to as holistic physiotherapy. The design concept incorporates natural breezes and their balance, bringing the human body's equilibrium with that of the environment into harmony. In holistic physiotherapy, manual therapy is at the forefront. These treatments have a profound impact on human psychology. The project 'Sense' because the treatment provided by touch focuses primarily on feelings and sensations. The project's design language was determined by the organic forms that were produced by stylizing the pebbles used in the tactile therapy phase in Zen philosophy. Once more, the project

incorporated natural colors while incorporating the Zen philosophy's belief about the healing properties of color (Figure 6).

**Figure 6.** Adult psychotherapy center; Project result products.

In the problem identification phase, the students developed project solution suggestions based on the data and analysis they had collected from their technical visits to adult psychotherapy centers. The need to assess the space in terms of design for everyone, the requirement to provide suitable solutions for people with psychological disorders in the context of color, form, and size—three design elements that influence how people perceive space—as well as the adaptation of the design idea for everyone to the space have all been addressed accordingly. The learning outcomes for the Project V were identified as observation, research, discovery, establishing empathy, awareness, form-space relationship, color-space relationship, size-space relationship, concept determination, material recognition, design development in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the adult psychotherapy center project.

Nutrition and Dietician; The process of nutrition is what allows the human body to get the nutrients it needs to survive and stay healthy. Relevant nutrients give the body the energy it needs to grow, support tissue regeneration, and ensure that bodily processes operate as intended. Promoting healthy living, the rosemary plant served as the inspiration for the project concept. Due to the rosemary plant's antiseptic qualities throughout history, it is known to have numerous positive effects on human health, including immune system stimulation, mouth and throat irritation, digestive nutritional support, and wound healing support. Rosemary has additionally been linked to people with nutritional disorders like obesity or anorexia being able to handle the stress they will encounter when on a diet, based on its ability to balance stress in an individual's life (Figure 7).

**Figure 7.** Nutrition and dietician; Project result products.

'Overlap' was chosen as the project name in this context because it denotes transcending cognition, passing beyond the conscious mind, and confusion. The organic shapes and textured surfaces, along with the color and form of the plant, were reflected in the space's design language. In the phase of problem identification, the students developed project solution suggestions based on the data and analysis they had gathered from technical visits to nutrition and dietitian centers, taking into account the problems they had observed. Because color is one of the design elements that influence how space is perceived, appropriate solution suggestions have been generated regarding the need to assess the space in terms of design for everyone as well as to provide solutions appropriate for the emotional states of patients with obesity or anorexia, which are essentially psychological disorders. The learning outcomes for the Project V were identified as observation, research, discovery, establishing empathy, awareness, experiential learning, design thinking, transforming the idea into design, color-space relationship, functional, structural snd spatial design, multidimensional evaluation in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the nutrition and dietician project.

Oral and Dental Health Clinic and in Orthodontic Clinics; Since wheat is the primary food source for humans and the foundation of nutrition, it was chosen for the project concept. DentIconium derives its name from Iconium, Konya's previous name. Iconiumikon means symbols. The shape and arrangement of teeth has been likened to that of wheat. Reconciling the necessity of teeth for human life and wheat for life was the way the project's scenario was handled. The sequential repetition principle used for the order was emphasized with the materials used, and the floor plans were created with reference to this linear arrangement in mind (Figure 8).

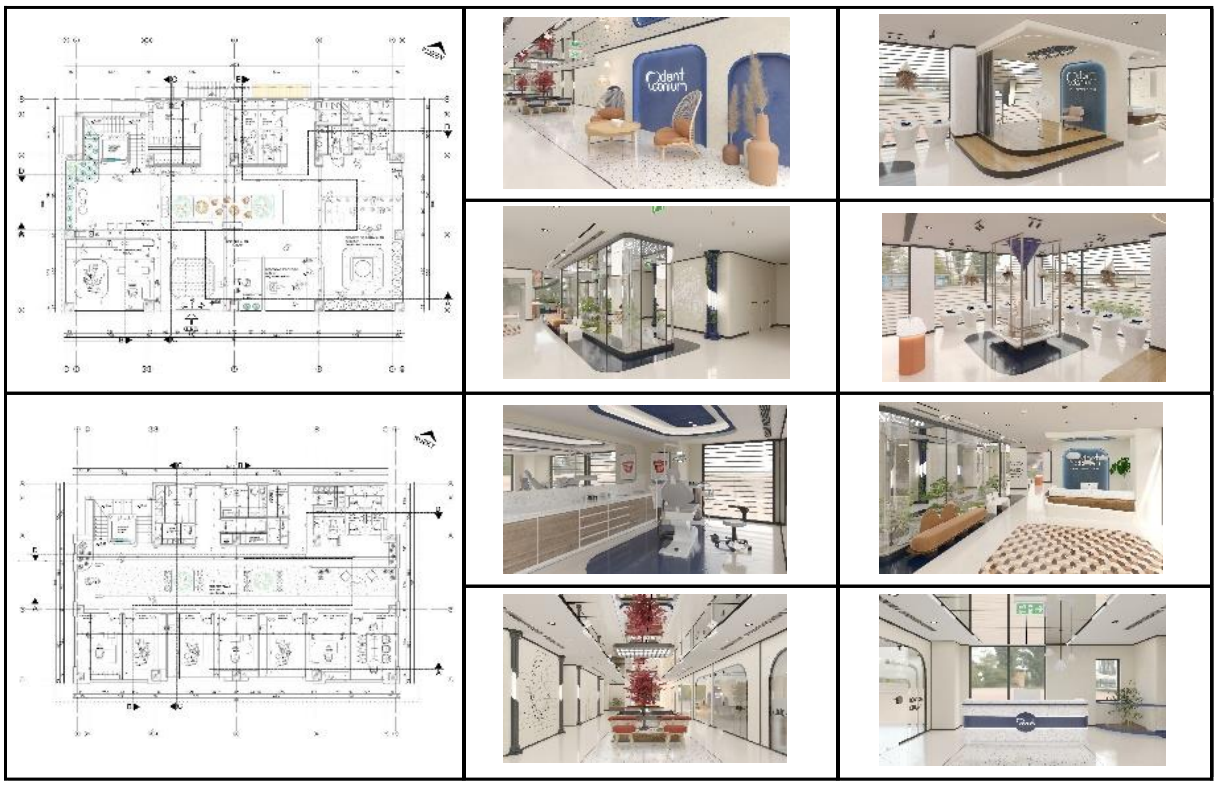


**Figure 8.** Oral and dental health clinic and in orthodontic clinics; Project result products.

In the phase of problem identification, the students developed solution suggestions for the project based on the data and analyses they had acquired from their technical visits to oral and dental health and orthodontic clinics, taking into account the problems they had observed. Oral and dental health centers must therefore have adequate natural light and ventilation, and their width must be at least 12 $m^2$. Appropriate solution recommendations have also been generated based on the requirements for antibacterial wall covering materials, compressor and sound insulation, the requirement for clean wastewater installation, and air conditioning systems with features like odor control, heating, and cooling. The learning outcomes for the Project V were identified as observation, research, discovery, establishing empathy, awareness, concept determination, prototype development, functional, structural and spatial design, multidimensional evaluation in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the oral and dental health clinic and in orthodontic clinics project.

Center for Complementary Medicine; A method used to prevent, diagnose, and treat physical and mental illnesses as well as to maintain overall health is called complementary and traditional medicine. It is a collection of customs founded on culturally specific theories, beliefs, and experiences. The olive tree was chosen as the focal point of the Center for Complementary Medicine initiative. The olive tree is prized for its endurance and longevity despite its slow and laborious growth. The tree was referred to as 'vivax oliva', which means seven living creatures, in the time of the ancient Romans. Known as the immortal tree in mythology and botany, it also refers to healthy life and longevity in the project setup. The space's design line was inspired by the circular shape of the olive tree and the olive pit. Throughout the room, there are amorphous lines and shades of green and brown that are modeled after the patterns and hues found in natüre (Figure 9).

**Figure 9.** Center for complementary medicine; Project result products.

During the problem identification phase, the students' information and analyses from their technical visits to clinics for complementary and alternative medicine were used to develop project solution suggestions that addressed the problems they had observed. As a result, appropriate solution suggestions for the disabled have been generated. These include the need for storage and disinfection areas for the treatment equipment used, as well as the assurance of privacy in treatment and therapy application rooms, the use of lighting elements in examination rooms based on appropriate Kelvin values, and the design of ventilation systems at a level appropriate for treatment spaces. The learning outcomes for the Project V were identified as observation, research, discovery, establishing empathy, awareness, idea generation, describing, design for everyone, functional, structural and spatial design, use of appropriate materials in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the center for complementary medicine project.

Aesthetic Clinic; The golden ratio was identified as the project concept. The ratio of the larger to the smaller is the basic definition of the golden ratio in mathematics, but it can be found in all facets of life. Since ancient times, the golden ratio has been used to express the finest and most beautiful things, particularly in architecture and art. It is the cornerstone of harmony and beauty in all of art. In this instance, the aesthetic clinic's design concept was identified as achieving beauty since the idea of beauty—perceived as perfection in the project setup—matched the golden ratio. The linear golden ratio was utilized to design floor plans with symmetry and harmony in mind. Proportion balance was also maintained in the selection of furnishings and materials, and color preferences were ascertained using the golden ratio (Figure 10).

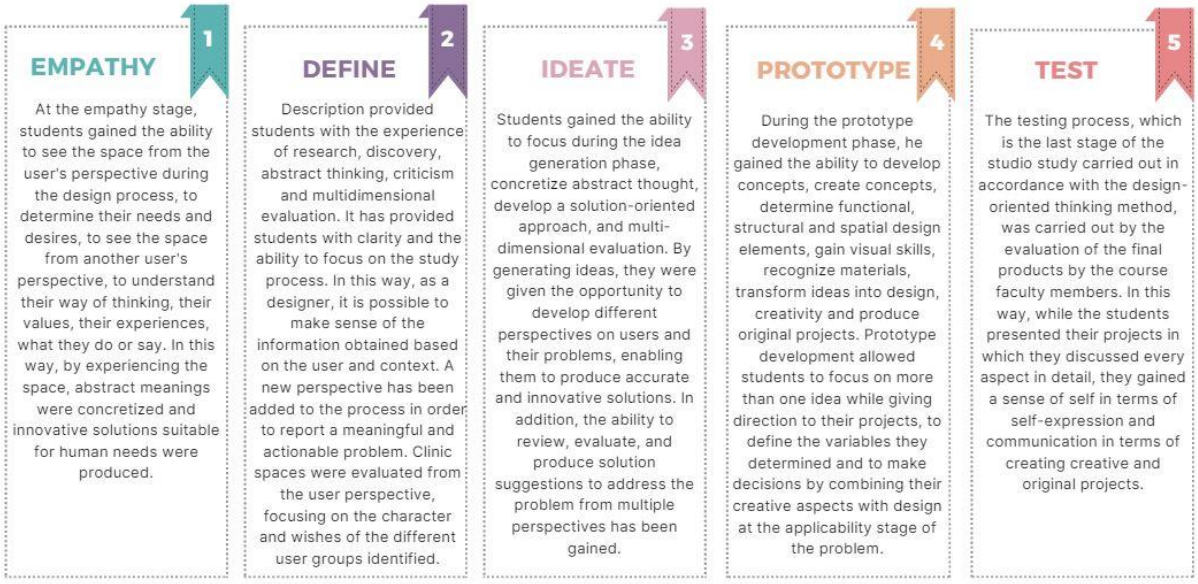
**Figure 10.** Aesthetic clinic; Project result products.

During the problem determination phase, in line with the information and analyses obtained by the students as a result of technical visits to aesthetic clinics, solution suggestions have been developed following the observed problems such as the need for antibacterial materials for floor and wall covering materials, the necessity of ensuring privacy in the application rooms of aesthetic clinics, the necessity of appropriate air conditioning, heating and cooling systems, the appropriate ventilation of all areas used by patients and staff, and the provision of adequate natural and artificial lighting. The learning outcomes for Project V were identified as observation, research, discovery, establishing empathy, awareness, functional, structural and spatial design, use of appropriate materials, multidimensional evaluation, design thinking in the project study conducted using the design-oriented thinking method, which all came from the jury's evaluation of the aesthetic clinic project.

## 4. Conclusion and Suggestions

Students learned the design creation process by experiencing the space through empathy, seeing the spaces to be designed in the interior design process from the user's perspective, as per the learning outcomes obtained through the jury evaluation of the final products of the studio work carried out in accordance with the design-oriented thinking method. Students' awareness of the need to create designs for everyone has increased as a result of this. Students gained experience in research, discovery, abstract thinking, criticism and multidimensional evaluation during the definition phase. During the idea generation phase, students developed the ability to focus, concretize abstract thought, develop a solution-oriented approach and evaluate multidimensionally. Students learned how to generate concepts, identify functional, structural and spatial design elements, acquire visual skills, identify materials, transform ideas into designs, be creative, and produce original projects during the prototype development phase. They developed self-confidence in their ability to communicate and express themselves when presenting their projects, which covered every detail during the testing phase, and in coming up with unique and creative projects (Table 2).

**Table 2.** Learning outcomes with design thinking method




Experimenting with novel and alternative instructional approaches in the field of design education can enhance students' awareness of design, foster their capacity for abstract thought, and give them hands-on experience in managing events from various perspectives.

The studio study provides a framework that attempts to teach students design through hands-on experience, which was created using the design-oriented thinking method. Students will learn the value of the human-centered design principle in interior architecture project studios when this model is positioned at the center of design education. The inadequacies of the design techniques that students must learn in conventional studio settings will be addressed in this way, leading to the production of qualified and unique projects.

The study holds significance in fostering the capacity to cultivate empathy, concentrate on issues, and propose alternative resolutions. Students will be able to create project scenarios that are well-informed and grounded in reality by living in the space, observing it, asking questions and learning from experience, which will elevate their design skills. The problems' content and the variety of suggested solutions will grow as a result of the jury's in-class evaluation of the prototype stage proposals, which should provide students with a foundation for multifaceted thinking.

Students create designs in a methodical and sophisticated manner. Under the right guidance from educators, they can acquire the necessary skills for this process. Students will be guided by the design-oriented thinking method, which comprises a flexible set of processes, in determining which idea to focus on and which steps to take. The present study appears to be a fitting instrument for the instruction and learning of the design-oriented thinking approach in interior architecture education.

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**Author Contribution and Conflict of Interest Declaration Information**

All authors contributed equally to the article. There is no conflict of interest.

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