

**MOBILE SPACES AFTER NATURAL DISASTERS: INTERIOR ARCHITECTURE
STUDIO EXPERIENCE**

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Abstract

In Türkiye, post-earthquake spatial improvement efforts predominantly focus on temporary shelter units, while studies addressing mobile units that respond to critical non-shelter needs—such as healthcare, education, psychosocial support, and animal welfare—remain highly limited. This gap not only reduces the quality of life for disaster-affected communities but also restricts design education from developing holistic and socially responsive approaches. The insufficient integration of disaster-oriented design practices in interior architecture education, particularly regarding “non-shelter mobile spaces,” was identified as the main problem of this study. Accordingly, the aim of the research is to develop mobile unit designs addressing the multifaceted needs emerging after earthquakes—covering healthcare, education, social support, and veterinary services—through a 15-week process-based studio conducted with second-year interior architecture students, and to examine students’ decision-making, analytical thinking, and spatial problem-solving competencies throughout this process. Unlike existing literature, which largely centers on shelter-based approaches, this study provides a unique contribution by simultaneously addressing eight thematic mobile units—mobile pharmacy, mobile dialysis center, mobile blood collection unit, child psychotherapy–physiotherapy unit, mobile library, mobile study unit, and mobile veterinary clinic—within a single studio framework. The study analyzes both the spatial and technical requirements of these units and evaluates the entire process within the context of interior architecture education. The research was structured in five phases: problem identification, literature review, design development, application, and evaluation. Findings indicate that students addressed multidimensional design criteria—including modular construction, sterilization and hygiene requirements, accessibility, technical infrastructure, psychosocial needs, and spatial ergonomics—in a holistic manner. Overall, the study presents a comprehensive model for integrating mobility-based design approaches into interior architecture education in the context of post-disaster services. It offers an original contribution by enhancing disaster awareness, advancing the pedagogy of mobile space design, and expanding the existing literature with non-shelter mobile solutions.

Keywords: Natural disaster, Earthquake, Mobile spaces, Interior architecture education.

Doğal Afet Sonrası Mobil Mekanlar: İç Mimari Stüdyo Deneyimi

Öz

Türkiye’de deprem sonrası mekânsal iyileştirme çalışmaları ağırlıklı olarak geçici barınma birimleri üzerinden tartışılmakta; sağlık, eğitim, psikososyal destek ve hayvan refahı gibi barınma dışı kritik ihtiyaçlara yönelik mobil birimlerin tasarlanmasına ilişkin çalışmalar son derece sınırlı kalmaktadır. Bu eksiklik, hem afet sonrası yaşam kalitesini düşürmekte hem de tasarım eğitiminin toplumsal sorunlara bütüncül yaklaşım geliştirmesini zorlaştırmaktadır. İç mimarlık eğitiminde afet odaklı tasarım pratiklerinin yetersiz oluşu ve özellikle “barınma dışı mobil mekânlar” konusunda öğrencilere yeterli deneyim sunulamaması çalışma problemi olarak belirlenmiştir. Bu kapsamda çalışmanın amacı, ikinci sınıf iç mimarlık öğrencileriyle yürütülen 15 haftalık süreç temelli bir stüdyo aracılığıyla; deprem sonrası ortaya çıkan çok yönlü gereksinimlere yönelik sağlık, eğitim, sosyal destek ve veterinerlik hizmetlerini kapsayan mobil birim tasarımlarını geliştirmek, bu süreçte öğrencilerin karar alma, analiz etme ve mekânsal problem çözme becerilerini incelemektir. Mevcut literatürdeki barınma odaklı yaklaşımlardan farklı olarak; mobil eczane, mobil diyaliz merkezi, mobil kan alma aracı, çocuk psikoterapi–fizyoterapi birimi, mobil kütüphane, mobil etüt merkezi ve mobil veteriner kliniği olmak üzere sekiz farklı tematik mobil birimi aynı stüdyo çerçevesinde ele alması, bu birimlerin hem mekânsal hem de teknik gereksinimlerini analiz etmesi ve tüm süreci iç mimarlık eğitimi bağlamında değerlendirmesi bilimsel alanda önemli katkı

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sağlamaktadır. Çalışma problem belirleme, literatür taraması, tasarım geliştirme, uygulama ve değerlendirme olmak üzere beş aşamada gerçekleşmiştir. Bulgular, öğrencilerin modüler kurgu, sterilizasyon ve hijyen gereklilikleri, erişilebilirlik, teknik altyapı, psikososyal ihtiyaçlar ve mekânsal ergonomi gibi çok boyutlu kriterleri bütüncül olarak ele aldığını göstermektedir. Sonuç olarak çalışma, deprem sonrası hizmetlere yönelik mobil temelli bir tasarım yaklaşımının iç mimarlık eğitime nasıl entegre edilebileceğine dair bütüncül bir model sunmakta; afet farkındalığının artırılması, mobil mekân tasarımı pedagojisinin geliştirilmesi ve literatürdeki barınma dışı mobil çözümlere katkı sağlanması açısından özgün bir değer ortaya koymaktadır.

Anahtar Kelimeler: Doğal afet, Deprem, Mobil mekanlar, İç mimarlık eğitimi.

1. Introduction

Natural disasters have long been defined as phenomena that profoundly affect societies throughout human history, often occurring unpredictably and resulting in significant loss of life and property (Şahin & Sipahioğlu, 2002). Since the occurrence, magnitude, geographical impact, and nature of disasters are largely unforeseeable, disaster management—including the planning, execution, and coordination of pre- and post-disaster processes—holds critical importance, particularly in countries like Türkiye where large-scale disasters occur frequently (Gökçe & Tetik, 2012).

At the core of disaster management are individuals and communities affected by disasters. All phases—from pre-disaster risk management to crisis management during and after the event—require the coordinated handling of social, economic, health-related, and security-based needs (Tercan, 2023). The literature emphasizes the necessity of preparedness in key areas such as healthcare, communication, transportation, shelter, and security to mitigate potential damages caused by disasters (Ergünay, 2002). In this regard, effective planning before a disaster enables the rapid restoration of communication and transportation networks, the efficient execution of search-and-rescue operations, the protection of life and property, and the timely response to essential needs (Gökçe & Tetik, 2012).

The primary goal of post-disaster recovery is to restore individuals to their pre-disaster living conditions as quickly as possible (Gülkan et al., 2003). This process requires not only the provision of shelter but also the reconstruction of safe, social, and sustainable living environments, addressing physical, psychological, economic, and social needs in a holistic manner. The February 6, 2023 Kahramanmaraş-centered earthquakes once again made visible the multifaceted nature of these needs. Çınar and Noraslı (2024) highlight that individuals require support across multiple domains after a disaster—including shelter, social life, economic resilience, transportation, healthcare, education, production, and employment—while emphasizing the potential of architecture and interior architecture disciplines to develop innovative and sustainable spatial solutions for these diverse needs. Similarly, Boehm and Kopec (2016) criticize the insufficient use of interior designers' expertise in human-centered design within temporary post-disaster spaces, advocating for greater visibility and involvement of the discipline. Şenocak and Onaran (2023) likewise emphasize that the inclusion of interior architects in emergency shelter design teams is essential for achieving effectiveness and scalability.

In this context, the aim of the present study is to raise disaster awareness among interior architecture students and to support their ability to develop innovative, sustainable, and portable spatial solutions addressing multifaceted post-disaster needs. The study focuses particularly on mobile spaces that can be rapidly produced, economically implemented, transported to different regions, and used to provide diverse services such as healthcare, education, social support, production, or veterinary care.

The “Post-Earthquake Mobile Space” studio project—conducted within the Interior Architecture Project II course during the Spring 2022–2023 semester—was carried out online in accordance with the Council of Higher Education's directive following the February 6, 2023 earthquakes. Although the literature includes significant studies focusing on the need for post-disaster

shelter (Hart et al., 2018; Kennedy et al., 2008), research addressing mobile units that respond to urgent non-shelter needs remains limited (Holmquist et al., 2021; Ministry of Health of Türkiye, 2016; Yanardağ, 2024). This gap shaped the problem definition of the study. Students were therefore asked to identify one or more urgent non-shelter needs and to develop an original mobile space design addressing these needs.

The studio process was conducted in five stages, guided by Salama's (2015) "Process-Based Studio Model." The initial stage focused on defining the problem: determining which types of mobile units could meet urgent needs related to healthcare, education, psychosocial support, and animal welfare. Students then examined global examples, spatial requirements, and technical criteria relevant to their selected themes through a structured literature review. With support from experts participating in the online course, students (n=39) developed alternative spatial approaches to the problem they identified. Among the alternatives, the most appropriate solution was selected and transformed into a finalized design proposal.

Within the scope of the study, eight projects were examined under three thematic categories: healthcare-oriented mobile units, educational and psychosocial support units, and animal health units. The selection was based on thematic diversity, spatial coherence, and technical adequacy, and the selected projects were evaluated using content analysis.

Ultimately, considering the documented lack of disaster management and post-disaster design courses in architecture and interior architecture programs in Türkiye (Acar & Yalçınkaya, 2016), raising awareness and strengthening students' problem-solving capacity in this area is regarded as an educational necessity. This study aims to address this need and contribute to developing awareness of post-disaster spatial requirements within interior architecture education.

1.1. The Role of Disaster Awareness in Architecture and Interior Architecture Education: A Conceptual Framework

1.1.1. Disasters and Spatial Needs

Disasters—whether natural, technological, or human-induced—are events that paralyze social life and simultaneously generate fundamental needs such as shelter, healthcare, social support, education, and security (Afet ve Acil Durum [AFAD], 2024; Carter, 2008; World Health Organization [WHO], 2002). These events exceed the coping capacity of affected communities and result in physical, economic, and psychological losses, requiring both physical and psychosocial recovery to be addressed promptly (Arslankoç et al., 2024; Kadioğlu, 2011).

Earthquakes represent the most destructive type of disaster in Türkiye. Events such as the February 6, 2023 Kahramanmaraş earthquakes have highlighted the necessity for temporary spaces that address not only shelter but also healthcare, education, social support, animal welfare, and production-related needs (AFAD, 2021; İstanbul Teknik Üniversitesi [İTÜ], 2023; Özer, 2023). The literature emphasizes that post-disaster temporary living environments must be rapidly deployable, cost-effective, transportable, and sustainable, and that such spaces should ensure the continuity of essential services beyond sheltering alone (Ayanoğlu & Erbaş, 2023).

1.1.2. Healthcare Services and Mobile Healthcare Units

Disasters significantly damage healthcare systems, leading to increased mortality, injury, disability, infectious disease risks, and disruptions in access to medical services (Esin et al., 2010). Disaster healthcare is therefore structured around principles of rapid intervention, accurate triage, and service continuity (Erkal & Değerliyurt, 2009).

1.1.2.1. Mobile Pharmacy Units

Pharmacists play a critical role in medicine distribution during emergencies. However, analyses of past disasters reveal significant organizational challenges among state institutions and pharmacists in disaster zones (Arslan et al., 2016). For this reason, the Emergency Pharmacists Commission was established, emphasizing the necessity of mobile pharmacy services (Demir, 2014). The main functions of mobile pharmacies include:

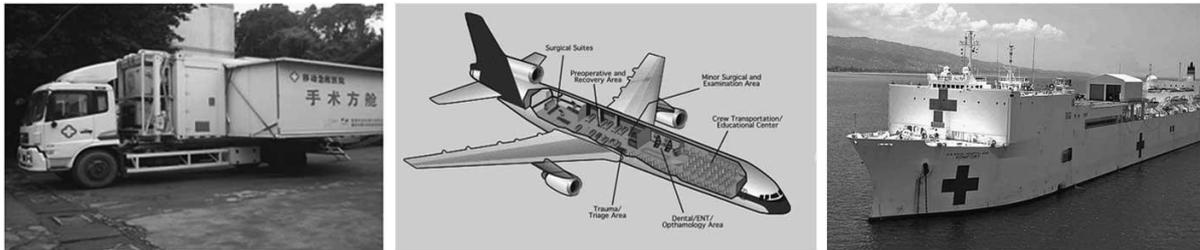
- supplying emergency medicines and medical equipment,
- reaching rural and hard-to-access areas,
- preventing deterioration of medicines during transport,
- supporting damaged or non-functional local pharmacies.

1.1.2.2. Mobile Clinic Units

The World Health Organization (WHO, 2008) notes that disasters severely disrupt access to healthcare, making temporary facilities essential. Since hospitals often prioritize emergency cases, mobile clinics become vital for addressing the medical needs of non-emergency patients (Maghfiroh & Hanaoka, 2022). Bitterman and Zimmer (2018) classify temporary healthcare facilities into four groups: tent-based clinics, mobile clinics, flying hospitals (airplanes), floating hospitals (ships). Mobile clinics serve as critical units for diagnosis, referral, treatment continuity, and public health monitoring (Malone et al., 2020) (Figure 1).

Figure 1

Mobile clinics, flying hospitals, and floating hospitals (Bitterman & Zimmer, 2018)

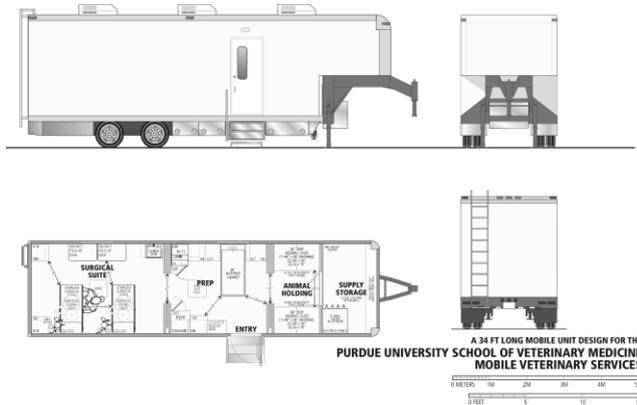


1.1.2.3. Mobile Dialysis Units

Dialysis patients constitute one of the most vulnerable groups in disaster settings. Their treatment is disrupted due to electricity and water outages, damaged dialysis centers, and shortages in medications or supplies (Aksoy & Pehlivan, 2023; Kleinpeter, 2011; Smith et al., 2020;). Accordingly, the literature emphasizes the necessity of mobile dialysis units that are: portable, equipped with independent water and electricity systems, fully standardized for safe and continuous dialysis delivery.

1.1.2.4. Animal Health and Mobile Veterinary Services

Disasters also impose severe consequences on animals, including injury, displacement, hunger, illness, and loss of shelter (Çetingül et al., 2018; Mert, 2019). Research highlights the need for search, rescue, sheltering, treatment, feeding, and rehabilitation services for animals in disaster zones (Erdoğan, 2023). Mobile veterinary clinics should include the following units (Freeman et al., 2013): surgical area, intensive care and treatment space, pharmaceutical and supply zone, medical records system, water and wastewater infrastructure, generator and climate control systems. These mobile hospitals are essential for rural livestock, companion animals, and wildlife (Figure 2).

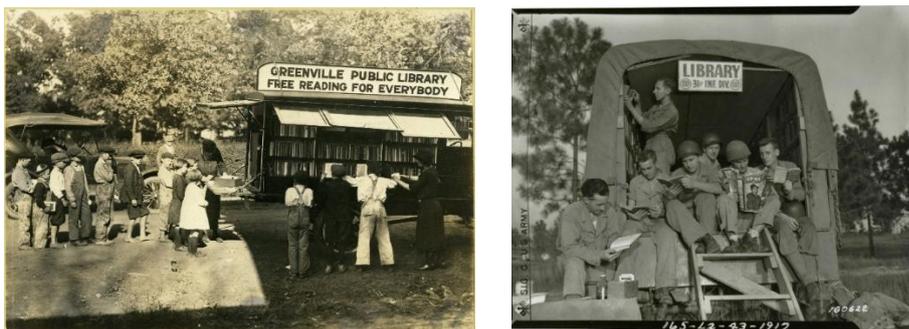
Figure 2*Floor plan of mobile surgery unit (Freeman et al., 2013)*

1.1.3. Education, Psychosocial Support, and Social Spaces

Disasters have profound psychosocial impacts—especially on children—causing stress, anxiety, depression, post-traumatic stress disorder, and social isolation (Alipour & Ahmadi, 2020; Liang et al., 2019; Soliman, 2000). Studies show that children and adolescents living in container cities experience dissatisfaction due to limited cultural and artistic activities and monotony in their daily routines (Yanardağ, 2024). For this reason, temporary educational and social spaces are recommended (Aral, 2023; Yılmaz, 2021), including: mobile study centers, mobile libraries, social and art workshops, play and activity areas.

1.1.3.1. Mobile Libraries

The origin of mobile libraries dates back to the 19th century, serving as an essential tool that removes physical barriers to accessing information (Mobile Libraries: Culture on the Go, 2020) (Figure 3).

Figure 3*The first examples of mobile libraries (Mobile Libraries: Culture on the Go, 2020)*

Different mobile library types include: van-type libraries, bus-type mobile libraries, trailer-based units, bendy-bus (articulated) models. Following the 2023 earthquakes, 38 mobile libraries were deployed to the region, offering film screenings, art workshops, reading sessions, and psychosocial support for children (Karaaslan, 2023).

1.1.4. Disaster Awareness in Architecture and Interior Architecture Education

Architecture and interior architecture education obligates designers to create safe and healthy environments that address societal needs in the face of both natural and human-made threats. This

responsibility requires developing informed, effective design responses to earthquakes, floods, epidemics, and economic crises (Ayyıldız Potur & Metin, 2021). Given Türkiye's location on active seismic zones, integrating disaster awareness into design curricula has become essential.

Charleson (2018) stresses that students in earthquake-prone regions must develop earthquake-resistant design knowledge through applied, project-based studio work. Similarly, Küçük (2006) asserts that architecture programs must include coursework that raises awareness of disaster risks and provides essential technical and theoretical insights. In the field of interior architecture, Zhang and Huang (2017) highlight the discipline's critical role in reducing earthquake-related hazards through interior planning, noting that such awareness can only be achieved through rigorous education. Ertaş Beşir and Dereci (2021) further state that the precautionary measures interior architects can take during earthquakes depend on the breadth and quality of their educational training.

However, current architecture and interior architecture programs across Türkiye reveal that coursework related to earthquakes and disaster management is extremely limited, and in many institutions entirely absent (Dereci Dalbastı, 2023). Scholars argue that such courses must be mandatory to cultivate disaster awareness and a culture of risk reduction. They particularly emphasize that project studios should integrate applied design tasks addressing post-disaster spatial needs.

Existing literature focuses primarily on themes such as children's play/learning spaces after earthquakes (Çınar & Norashı, 2024), awareness-building assignments (Ertaş Beşir & Dereci, 2021), analyses of the scope of earthquake education (Ayyıldız Potur & Metin, 2021), and post-disaster shelter design (Özmen et al., 2024). However, studies addressing *mobile spaces* for non-shelter needs—such as healthcare, education, social interaction, and animal welfare—remain scarce. This study addresses this gap by examining mobile space designs—developed through a studio experience with interior architecture students—that respond to urgent post-disaster spatial needs beyond shelter. It thus contributes both to integrating disaster awareness into educational processes and to revealing the multidimensional role the design disciplines can play in post-disaster recovery.

2. Methodology

2.1. Research Design

This study is based on a qualitative research model in which the design outputs produced within a process-based interior architecture studio are evaluated as qualitative data. The research is built upon the content analysis of projects developed in the design studio. The study adopts Salama's (2015) Process-Based Model in Studio Teaching and comprises the stages of problem identification, literature review, design development, implementation, and evaluation.

2.2. Study Group and Sample

The study group consists of 39 second-year students enrolled in the Interior Architecture Project II course during the 2022–2023 Spring semester, working on the theme of “Post-Earthquake Mobile Space.” The designs were developed throughout the semester in an online studio environment. For the presentation of the findings, eight sample projects representing thematic diversity were selected based on content adequacy, technical accuracy, and thematic variety.

2.3. Research Process

This study was conducted in accordance with a five-stage model based on a process-oriented studio approach:

Problem Identification: In this stage, non-shelter needs that emerged after the February 6, 2023 Kahramanmaraş earthquakes were analyzed, and it was determined that critical services such as

healthcare, education–psychosocial support, and animal health were severely disrupted in disaster areas. The scarcity of studies on mobile spaces addressing these areas in the literature constituted the main problem of the research.

Literature Review: National and international studies on disaster management, mobile healthcare services, mobile educational and social support units, and mobile veterinary services were examined. Existing gaps, needs, technical requirements, and user profiles were identified. The information obtained provided a conceptual and technical basis for students to formulate their design problems.

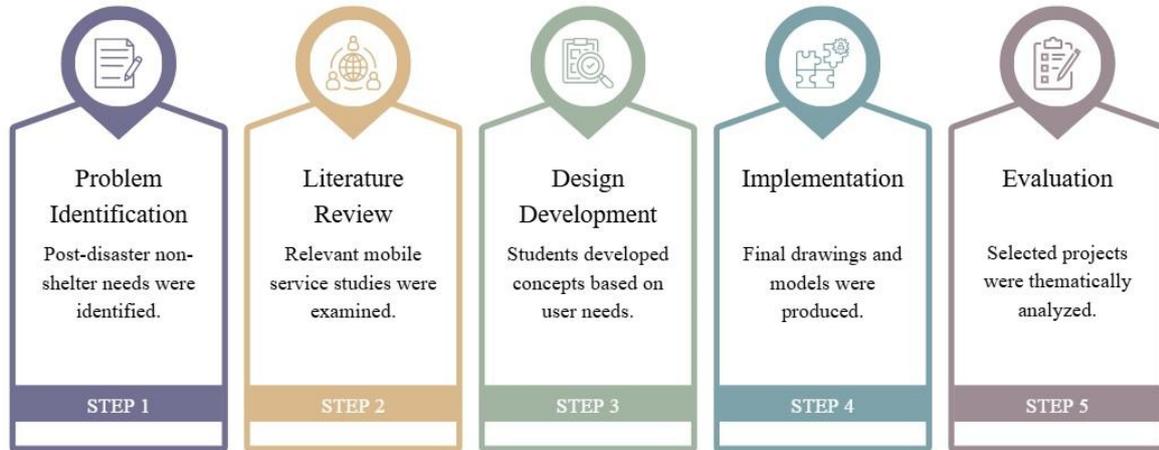
Design Development: In line with the themes they selected, students analyzed user needs and developed concepts by focusing on criteria such as spatial program, functional diagram, circulation scheme, modularity, portability, hygiene, ergonomics, and technical infrastructure. Projects were progressively developed through weekly online studio critiques.

Implementation: At this stage, students prepared the final outputs of their projects, including plans, sections, elevations, technical drawings, 3D models, and graphic presentation boards. The spatial arrangement of functional units, material selections, interior organization, and technical equipment were detailed.

Evaluation: At the end of the semester, eight projects were selected from among 39 designs based on thematic diversity, functional coherence, technical adequacy, and design quality. These projects were evaluated through content analysis, examining how each mobile unit responded to post-disaster needs, and the findings were categorized under thematic headings (Figure 4).

Figure 4

Study Methodology (Created by the Author)



2.4. Research Ethics

The data for this study were collected with the approval of the Selçuk University Faculty of Architecture and Design Ethics Evaluation Board and in compliance with national and international research ethics principles. All personal data were anonymized to ensure confidentiality and data security. The study was conducted in accordance with research ethics standards to ensure the accuracy, impartiality, and transparency of the findings.

3. Findings

Within the scope of this study, the designs developed by the students were examined under three main themes focusing on non-shelter post-disaster needs: (1) healthcare services, (2) education and

Mobile Pharmacy Unit: The pharmacy unit designed by students illustrates a user-centered approach addressing medication accessibility in post-disaster scenarios. The double-container modular structure, accessible ramp system, and dual-phase circulation (self-service + controlled dispensing) respond to the high-density conditions of emergency environments. Interior design choices—warm wood textures, light color tones, and rounded furniture—reflect an effort to reduce anxiety and support psychological well-being. The project highlights students' capacity to integrate modularity and user needs while also revealing the need for further development in technical detailing such as cold chain storage and energy–ventilation systems.

Mobile Pharmacy Unit (II): The design proposes a dual-container mobile pharmacy that incorporates medication distribution, first-aid care, and staff accommodation. Foldable side panels, user-centered circulation, and a calm interior palette reflect an awareness of rapid deployment and psychological needs in disaster contexts. Technical drawings and details support the project's constructability.

Mobile Blood Donation Unit: The design integrates medical examination, blood collection, and donor recovery within a modular, rapidly deployable structure. User flow, hygiene-focused materials, and a psychologically supportive interior layout reinforce the project's suitability for post-disaster health service continuity.

Mobile Child Psychotherapy and Physiotherapy Unit: The design combines physiotherapy equipment, child therapy spaces, and an outdoor play area within a dual-module V-shaped configuration. The calm color palette and modular structural details support both emotional and physical recovery for children in post-disaster settings.

Common design tendencies in the health-oriented projects include hygiene, one-way circulation, modular storage, portability, independent energy–water systems, and the use of sterile surfaces. The study translates the literature findings on the necessity of mobile healthcare services into design pedagogy, offering concrete examples of how such units can be addressed within interior architecture education.

3.2. Theme 2: Education and Psychosocial Support Units

Intense psychosocial effects observed among children and young people after disasters—such as stress, anxiety, depression, and social isolation—are extensively documented in the literature (Alipour & Ahmadi, 2020; Soliman, 2000; Yanardağ, 2024). Therefore, the need for educational and social interaction spaces in temporary living environments is considered a priority. Within this theme, students designed the following units:

Mobile Learning Center: This design proposes a modular mobile library offering individual study booths, a classroom, group study zones, and a central reading area. The material palette and spatial organization support cognitive focus and psychosocial well-being, providing a comprehensive educational environment for disaster-affected communities.

Mobile Study Center: The project includes individual work booths, computer stations, group study areas, and an outdoor learning zone. Its modular structure, educational functionality, and calming material palette support continuity of learning in disaster-affected regions.

Psychosocial Support Unit (Workshop – Social Space): A flexible plan layout was created that includes an art workshop, group therapy area, and children's play zone. Movable furniture allows the space to be rearranged according to different activity types.

These projects offer innovative spatial proposals for post-disaster social recovery, continuity of education, and moral support processes. The portability of the units, their ability to serve different age groups, and their spatial configurations that promote social interaction constitute strong findings that align with the literature.

3.3.Theme 3: Animal-Oriented Health Units

Animals are affected by disasters as severely as humans, requiring support in feeding, treatment, shelter, and rescue (Çetingül et al., 2018; Erdoğan, 2023). The literature stresses the critical role of mobile veterinary clinics within disaster logistics (Freeman et al., 2013). The projects developed by students directly support these findings:

Mobile Veterinary Clinic Unit: A five-part plan layout was created, consisting of an operating room, examination area, medicine and supply storage, quarantine unit, and animal care area.

Key design components include:

- separation of clean and contaminated areas,
- washable interior surfaces,
- adequate ventilation and climate control,
- water and wastewater infrastructure. This project includes a temporary care area for injured animals, a resting room, and a reunification point for animals and their owners. Educational workshop areas were also added to support awareness activities on animal feeding and care.

Animal-oriented projects offer creative solutions that address the limited access to veterinary services highlighted in the literature. Their plan schemes are functional, responsive to technical requirements, and logistically applicable within disaster contexts.

4. Discussion

This study provides original contributions to the literature by demonstrating how mobile space design for critical non-shelter needs in post-disaster contexts can be integrated into interior architecture education. Guided by Salama's (2015) process-based studio model, the design process enabled students not only to engage with conceptual frameworks but also to develop feasible spatial solutions that respond to real-world needs.

First, the health-oriented mobile units developed by the students align with the requirements for mobile healthcare services emphasized in the literature (Aksoy & Pehlivan, 2023; Esin et al., 2010; Maghfiroh & Hanaoka, 2022). In mobile pharmacy, clinic, blood collection, and dialysis units, criteria such as hygiene, sterility, one-way circulation, independent energy–water systems, and logistical accessibility were clearly reflected in design decisions. This indicates that students were able to effectively integrate literature-based findings as design inputs.

Designs focusing on education and psychosocial support correspond with studies highlighting the need for social and educational spaces that facilitate psychological recovery after disasters (Soliman, 2000; Yanardağ, 2024; Yılmaz, 2021). The development of flexible, accessible, and user-responsive spatial arrangements in mobile libraries, study units, and social workshops demonstrates that students understood the spatial dimension of post-disaster social recovery.

Animal-oriented health units introduce a creative approach that responds to the growing need for veterinary services in post-disaster environments (Erdoğan, 2023; Freeman et al., 2013). Student projects—including surgical rooms, quarantine areas, care units, and storage zones—show that the

spatial requirements of such services were accurately analyzed and appropriately integrated into design solutions.

Taken together, the thematic outputs reveal that students' awareness of post-disaster spatial needs increased significantly, and that they were able to produce user-centered, functional, and feasible solutions when confronted with real problems. These findings support the effectiveness of structured studio processes in cultivating disaster awareness within design education.

Moreover, by expanding the largely shelter-focused discussions in the existing literature, this study provides pedagogical and design-based evidence that critical services such as healthcare, education, social support, and animal welfare can be addressed through mobile units. In this respect, the research stands as one of the rare academic studies focusing on non-shelter mobile space design and offers a meaningful contribution to filling this gap in the literature.

4.1. Conclusion and Recommendations

This study demonstrates how mobile space design addressing non-shelter needs in post-disaster settings can be integrated into interior architecture education. The February 6, 2023 Kahramanmaraş-centered earthquakes made visible the importance of ensuring the continuity of critical services—such as healthcare, education—psychosocial support, and animal welfare—under disaster conditions, thereby expanding the scope of responsibility within design disciplines.

Within the process-based studio model, students developed their analyses, research, and design phases based on real post-disaster scenarios and produced functional, modular, and portable mobile units that could be implemented in disaster-affected areas. The findings indicate that students not only acquired theoretical knowledge but also generated applicable spatial solutions for the continuity of post-disaster services. Mobile pharmacies, clinics, blood collection and dialysis units; mobile libraries, social workshops, and study centers; and mobile veterinary clinics exemplify students' capacity to design responsively across different service domains.

This study demonstrates that interior architecture education can play a significant role in fostering disaster awareness and strengthening students' abilities to address real-world problems through design. One of the study's major contributions is its expansion of post-disaster spatial requirements—commonly limited to shelter in the literature—by providing an academic and pedagogical framework showing how health, education, social support, and animal welfare services can be delivered through mobile units. In this respect, the study serves as an original example that fills a gap in the literature on non-shelter mobile space design.

Future research may build upon this study by supporting mobile unit designs through prototype production, user testing, ergonomic performance analysis, or field implementation. Furthermore, integrating disaster management and post-disaster design courses more systematically into architecture and interior architecture curricula will contribute significantly to students' professional awareness and sense of social responsibility.

In summary, the recommendations obtained from the study are listed below:

- Raising societal awareness regarding disasters can be effectively achieved through educational initiatives. Therefore, awareness of disasters such as earthquakes should be included at different levels of education.
- To ensure preparedness before a disaster occurs, meticulous spatial planning must be carried out, with an accurate assessment of the requirements within architecture and interior architecture.
- The integration of mobile spaces should be incorporated to facilitate the swift delivery of essential resources to regions impacted by disasters.

- It is crucial to facilitate interdisciplinary collaboration through the educational development of various professionals, including architects and interior designers, to effectively address diverse needs that may emerge in disaster-affected areas.
- Expanding scientific research focused on spatial designs that respond to potential disaster-related needs can significantly contribute to the development of disaster awareness and preparedness strategies.

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