Toplum ve Sosyal Hizmet
ISSN: 2147-3374 / E-ISSN: 2602-280X

Olgu Sunumu /Case Report

Enhancing Environmental Awareness Through Interactive Education: Design and Implementation of a Mobile Urban Module

İnteraktif Eğitim Yoluyla Çevre Bilincinin Geliştirilmesi: Mobil Kent Modülünün Tasarımı ve Uygulanması

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Başvuru: 03.09.2024

Kabul: 06.08.2025

Atıf:

Kan, D. & Albayrak-Kutlay, Y., (2026). Enhancing environmental awareness through interactive education: Design and implementation of a mobile urban module. *Toplum ve Sosyal Hizmet, 37*(1), 369-396. DOI: 10.33417/tsh.1542732

ÖZ

Bu sosyal sorumluluk projesi, olumlu sosyal ve çevresel dönüşümü desteklemeye yönelik tasarım odaklı çözümler geliştirmektedir. Ekolojik sosyal hizmet ve sosyal adalet perspektiflerine dayanan çalışma, İzmir'de dezavantajlı mahallelerde yaşayan çocuklar ile kamusal alanlarda, özellikle okullarda geri dönüşüm ve daha geniş çevre sorunlarına ilişkin farkındalığı artırmayı amaçlamaktadır. Proje, tasarım sürecine disiplinler arası bir bakış açısı sunarak, dezavantajlı mahallelerdeki topluluğun ihtiyaçlarını belirlemek ve içgörü toplamak için ortak tasarım yaklaşımını kullanmıştır. Çocuklardan oluşan bir odak grupla gerçekleştirilen atölye çalışması bulgularına dayanarak, şehir içinde dolaşacak ve topluluğun ihtiyaç ve hayallerine göre etkinliklere ev sahipliği yapacak mobil bir kentsel modül tasarlanmıştır. "OYUN" konsepti bu sosyal sorumluluk projesinin merkezi yönünü oluşturdu; bu nedenle İzmir Ekonomi Üniversitesi (İEÜ) öğrencileri, çocuklar ve paydaşlarla -İzmir Büyükşehir Belediyesi (İBB) ve İzmir Ticaret Odası (İZTO)- mobil kent modülünün grafik kimlik, hizmet-sistem stratejisi, iç tasarım ve ürün tasarımı gibi çeşitli yönlerini tasarlamak için işbirliği yaptı. Çocukların kendi eğitim hayatlarında birincil aktör olmaları ve kendilerini etkileyen durum ve kararlarda seslerini yükseltmeleri gerektiğine inanıyoruz.

Anahtar kelimeler: *İşbirlikçi Tasarım, Mobil Kentsel Modül, Yerel Toplum, İnteraktif Eğitim, Mekânsal-Hizmet Tasarımı, Ekolojik Sosyal Hizmet*

ABSTRACT

This social responsibility project develops design-oriented solutions to promote positive social and environmental change. Grounded in ecological social work and social justice perspectives, it seeks to foster awareness of recycling and broader environmental issues among children in disadvantaged neighbourhoods, as well as in public spaces, particularly schools in İzmir, Turkey. The project used a co-design approach to gather insights and determine the needs of the community in disadvantaged neighborhoods, offering an interdisciplinary perspective to the design process. Based on the findings from workshop session conducted with a focus group of children, a mobile urban module is designed to circulate within the city and host activities according to the needs and dreams of the community. The "PLAY" concept was the central concept of this social responsibility project; therefore, students from the İzmir University of Economics (IUE) collaborated with children and stakeholders -including the İzmir Metropolitan Municipality (IMM) and Izmir Chamber of Commerce (ICC)- to design various aspects of the mobile urban module, such as its graphic identity, service-system strategy, interior design, and product design. We believe that children should be primary actors in their own education experiences and have their voices in the decisions that affect them.

Keywords: Co-design, Mobile Urban Module, Local Community, Interactive Education, Spatial-Service Design, Ecological Social Work

INTRODUCTION

People encounter challenges in all aspect of life and often need to make decisions that have a lasting impacts not only on themselves but also on others within society. Being aware of these implications requires individuals to consider diverse perspectives before making decisions. Making decisions and behaving irrespective of the needs and desires of all the people who will live in, use, and enjoy space presents multiple drawbacks and turns a designer's efforts completely meaningless, particularly when designing an environment.

Co-design, also known as collaborative design has its foundations in participatory and user-centred design (Manzini 2017; Antonini 2021). Itoffers long-term advantages for society by integrating community members in to the design process . This approach actively involves all members of the community; stakeholders, such as employees, partners, customers, citizens, and end users, in order to guarantee that the final product corresponds to the needs of all (Kang, Choo, & Watters, 2015).

In the present project, children's collaboration is examined not in the context of the co-design approach, but of the respect for children's participation and creativity in a design process, and consequently their involvement with/as designers. As a co-design initiative, this project aligns with social work imperatives by fostering environmental awareness, participatory empowerment, and social responsibility. With stakeholders bridging academia, government, professional bodies, and children as co-designers, it adopts a collaborative framework aimed at positive community impact. Recent research highlights how co-design and participatory innovation support social justice, collective agency, and inclusive participation in social work education and practice (Martin et al., 2023; Villanueva-Paredes et al., 2024).

We should keep in mind that children are considered sensitive group when all members of a community are mentioned above. As stated in the European Convention on Human Rights - Article 12 (Lansdown, 2001), children need to be actors in their own lives and raise their voices in the situations and decisions that affect them. Children need to have a say in design decisions that affect their lives, and they should have a right to be heard. Younger children, according to Hansen (2017, p.4), have an unrestricted capacity for seeing an object or an idea from unique and creative perspectives, and as a result, they significantly contribute to the design process from which "designers and researchers have something to learn."

The unique perspective of the children has to be taken into consideration while designing in order to uphold their right to be heard, which has been acknowledged for the first time in international law (Lansdown, 2001). As a result, their contributions to designers and stakeholders as well as to the design process are investigated in this study by taking into account their creativity. The learning environment needs to be taken into consideration as the main concern since it is where children spend the majority of their time. They spend an adequate amount of time in their classrooms to have a sufficient understanding of the positive and negative aspects of their learning environment.

As children are the main actors of this project, the central design question is “How we can provide an interactive education method to raise awareness about recycling, and environmental issues inspired by children’s creative perspective?’’. Children contribute by expressing their ideas, concerns, and wishes to a design process and provide new perspectives to the designers. Through collaboration with children and comprehending their needs and wishes from their surroundings, designers are required to be capable of working with children. It is important for this project to provide the children -the main users and the actors of the project- an opportunity to take control of their surroundings and collaborate with designers in the design process. Additionally, this project is significant for the community we target to answer the question of “How we can bring all the stakeholders together to make this project real in a short time with a limited budget?”.

Children’s innate curiosity and imagination should not be overlooked in terms of design. We give so much importance to the contribution of children through collaborating in the design process and believe in their promising creative abilities. We have been looking for a way to demonstrate the importance of their involvement and contributions to a design process by utilizing their unbound and natural talent for creativity. Their voices, in our opinion, are essential and have the power to shape decision-maker’s perspectives and can positively influence all of the actors and the design process. A number of scholars encourage collaborative projects with children that concentrate on the mutual change that can take place for both adults and children through dialogue (Blanchet-Cohen & Rainbow, 2006; Day, Sutton & Jenkins 2011). From this perspective, design is a situated social activity rather than a purely instrumental one (McDonnell 2012; (Birch, Parnell, Patsarika, & Šorn, 2017). When designing for and with communities, designers have been assigned to present an answer in an effort to assist communities in resolving their problems and concerns (Halse, Brandt, Clarke, & Binder, 2010). In this project co-design approach is adopted to trigger children’s interest in recycling, environmental issues and their environment, understand their motivations, needs, and dreams and empower their capabilities through the act of play.

As design challenges become increasingly complex, , the practice of designers evolves, new approaches, responsibilities, and networks for collaboration are needed (Kimbell, 2011). Design procedures now involve a network of many stakeholders rather than just the direct customers of designers (Sleeswijk Visser, 2018). Rygh (2018) proposes new roles for designers such as connectors between varied stakeholders, facilitators of co-creation, and concept execution. Their role is to facilitate co-design by providing events and coordinating participation, in addition to offering tools to generate experiences and explore appropriate subjects, ideas, and solutions (Mattelmäki & Sleeswijk Visser, 2011). Therefore, the collaboration between the İzmir University of Economics (IUE), İzmir Metropolitan Municipality (IMM) and Izmir Chamber of Commerce (ICC) is the main strength of this project. We believe that design-led innovations like co-design enable all actors from different backgrounds to collaborate together to create positive community change.

THEORETICAL FRAMEWORK

Contemporary definitions of “PLAY” emphasize its essential role in children’s development. Play helps children develop their creativity and imagination while also teaching them problem-solving skills and social connections, as stated by Chia (2007). There are in fact many different ways to describe play. It has been widely believed that a child's most essential job is to play. Play, according to progressive educator Dewey (1997), represents what one loves while doing it, whereas a job, on the other hand, symbolizes what one loves after doing it. Johnson and Ershler (1982, p. 3) claim that play is a “behavior that is intrinsically motivated, freely chosen, process-oriented, and pleasurable”. Play is more than simply a physical or biological activity; it is a fundamental human experience and it is described as participating in an activity for enjoyment and fulfillment, and it is essential for the development of children. A child's connection to the community, relationships with others, and physical and mental activity are all enhanced through play. Playing helps one become more independent and self-sufficient (Smedley & Hoskins, 2020). Additionally, it serves as an opportunity for children to acquire basic knowledge about the world. We also think that play, which is an essential component of daily life, fosters interaction among kids. As stated by Eberle (2012), children learn to interact with one another, manage their surroundings, compete, and have fun through play. As a way to interact and involve children, this project adopted a co-design approach which is gaining more interest every day for designers who aim to collaborate with communities and form a series of networks between actors from different fields of life to offer bottom-up, well-rounded relevant design solutions for complex societal issues. Designers have transformed throughout time from professionals who create solutions for people to collaborators who create with people, enabling people to design by and for themselves (Brown, 2009). Adopting a co-design approach fosters innovation, encourages creativity, and improves the efficacy of design processes (Antonini, 2021). Co-design refers to the collaborative creativity of designers or the collaboration of designers and non-designers in the design creation process (Sanders & Stappers, 2008). In this project, designers refer to IUE; while non-designers encompass children and stakeholders, such as IMM and ICC. It is a design approach that involves users and other parties of interest in the creative process of design (Sanders & Stappers, 2008). Co-designing begins with the premise by including stakeholders in issue-solving, the produced solutions are more likely to address the relevant issues and the participants have the authority to execute solutions (Mattelmäki & Sleeswijk Visser, 2011). Since learning environments have a significant impact on children’s well-being, children's active participation in design processes ensures that their voices are heard and their needs addressed (UNICEF, 2004).

In this sense, the project can be conceptualised as a community-based social work intervention that uses environmental education and design as vehicles for social change. From an empowerment perspective, the project treats children not as passive recipients of services but as active co-creators of knowledge and solutions. The project’s approach is closely aligned with "Ecological Social Work" which emphasizes the interdependence between human well-being and the physical environment

(Gray, 2012; Dominelli, 2012). The Mobile Urban Module acts as a microsystem intervention designed to impact the macrosystem of the city, fostering environmental justice by ensuring that children in disadvantaged areas have the tools to advocate for their own ecological futures. Furthermore, the design process serves as a tool for child advocacy, amplifying the voices of a demographic often ignored in urban planning policy (Lansdown, 2001). This ecological orientation echoes with contemporary social work approaches that emphasise the interplay between individuals and their physical or/and social environments and call for interventions that simultaneously target micro (children), meso (schools and families), and macro (local governance and policy) levels. This project, aims to generate a positive change in İzmir for the children from disadvantageous neighborhoods and provide them an interactive education method with a well-rounded design of a mobile urban module as a learning environment.

METHODOLOGY

As outlined, the mobile urban module was conceived as an interactive learning environment through the collaboration of children, the İzmir University of Economics (IUE), the İzmir Metropolitan Municipality (IMM), and the İzmir Chamber of Commerce (ICC). The creative approach in this project was shaped by the contributions of 11 children, who participated as the primary focus group living in disadvantaged neighbourhoods. Treating them as experts is a core ideology of empowerment practice, allowing them to move from passive beneficiaries to active agents of change (Martin et al., 2023). We believe that children are experts in what they do; they are innovators in their own environment already. To build or take part in collaborative solutions we have facilitated the process for further collaboration with designers and other stakeholders to enhance and encourage ideas through collaboration and commitment. Therefore, we conducted a co-design workshop called “Imagine your mobile learning environment” with these 11 children. Following this workshop, we collaborated with the Izmir Metropolitan Municipality's Climate Change and Zero Waste Department. They have provided an inactive city bus to transform into a mobile urban module for children to host activities that will raise awareness among children about recycling and environmental issues in a creative way in public spaces and create a positive change. They needed a complete spatial service design strategy to reach as many children as possible in public places particularly the disadvantaged parts of the city and schools. Therefore, data collected during the workshop to complete the conceptual phase of the mobile urban module. In addition, ICC is involved in the process of implementing the project with its networks of professional chambers as potential suppliers of the materials that may have been needed for the project and with their support. Each phase of the project involved varying levels of stakeholder participation, depending on their roles in the design, information, and materials that are used.

PROJECT

Actors

A multidisciplinary design team consisting of six designers from various fields -interior design, product and service system design, architecture, and visual communication design at IUE- prepared and facilitated the co-design workshop. Prior to the session, the designers received training from a child psychologist and consultant on workshop facilitation techniques and effective communication strategies with disadvantaged children. This ensured a sensitive and supportive approach throughout the process. In line with established best practices in co-design with children, the training emphasized the importance of adopting empathetic and non-directive communication methods, minimizing adult authority in creative processes, and fostering an atmosphere of trust and psychological safety (Bergmark & Westman, 2016; Druin, 2002). The workshop's primary participants were 11 children, who participated as the primary focus group living in disadvantaged neighbourhoods. Only children whose parents gave consent took part in the workshop. Other key actors in the project included Izmir Metropolitan Municipality's Climate Change and Zero Waste Department, and ICC. Finally, the project outcomes were presented to a group of citizens living in İzmir during a design event to collect public feedback.

Procedure

Workshop

Figure 1: Co-design workshop with children

Source: Authors 2023

Within the scope of the project, a one-day workshop was conducted with 11 children, who participated as the primary focus group (Figure 1). The workshop sessions took place in a designated activity area and focused on engaging the children in interactive and creative activities. During this workshop, children were asked to draw and describe the mobile learning environment of their dreams, aiming to incorporate their dreams, insights and desires into the project design. All necessary two- and three-dimensional materials were provided by the designers. This workshop

aimed to design a mobile education module that would leave a mark on children's daily education life, including sustainable, ecological activities and games.

Figure 2: 2D and 3D workshop outputs of children

Source: Authors 2023

The designed mobile urban module aims to encourage PLAY-full learning experiences and be part of an interactive education. For designing the identity of the project, the design team started with the possible names of the module. They were offered different names/combinations and the children decided on the name of the module as “Dobidob” like a tinkle that is easy to remember, say and fun. Video and audio recordings were taken during the workshop for data analysis and consent forms were obtained from the participating children's families (Figure 2).

Conceptual

The verbal feedback and graphic works resulting from the workshop conducted with 11 children guided in the conceptual design of the mobile urban module. Verbal and visual data collected during the co-design workshop were analyzed using thematic analysis, following Braun and Clarke's six-phase model (2006). Drawings and verbal expressions were coded into four main recurring themes, particularly around color, patterns-, subjects-, and activity (Figure 3). Designers analyzed the verbal description and graphics from the children, obtaining input from IMM. This data guided the conceptual phase's keywords and identity design, including the bus facade, patterns, souvenirs, and stationery made from recycled materials given to participating children.The drawings that were obtained during the workshop from the children show the colors as vibrant colors, rainbow colors, and colorful. In terms of patterns, stripes, plant textures, eye patterns, and organic forms have become prominent. While we tried to analyze the complete data set, the subject, and activities appeared more intricate than expected. Therefore, subjects are defined in five categories according to the drawings and the verbal descriptions of the children as the following; the adventure of the

matter, sustainability, renewable energy resources, the story of the plastic, and ecology. Moreover, activities included concerts, theater, digital games, travel, stargazing, and basketball.

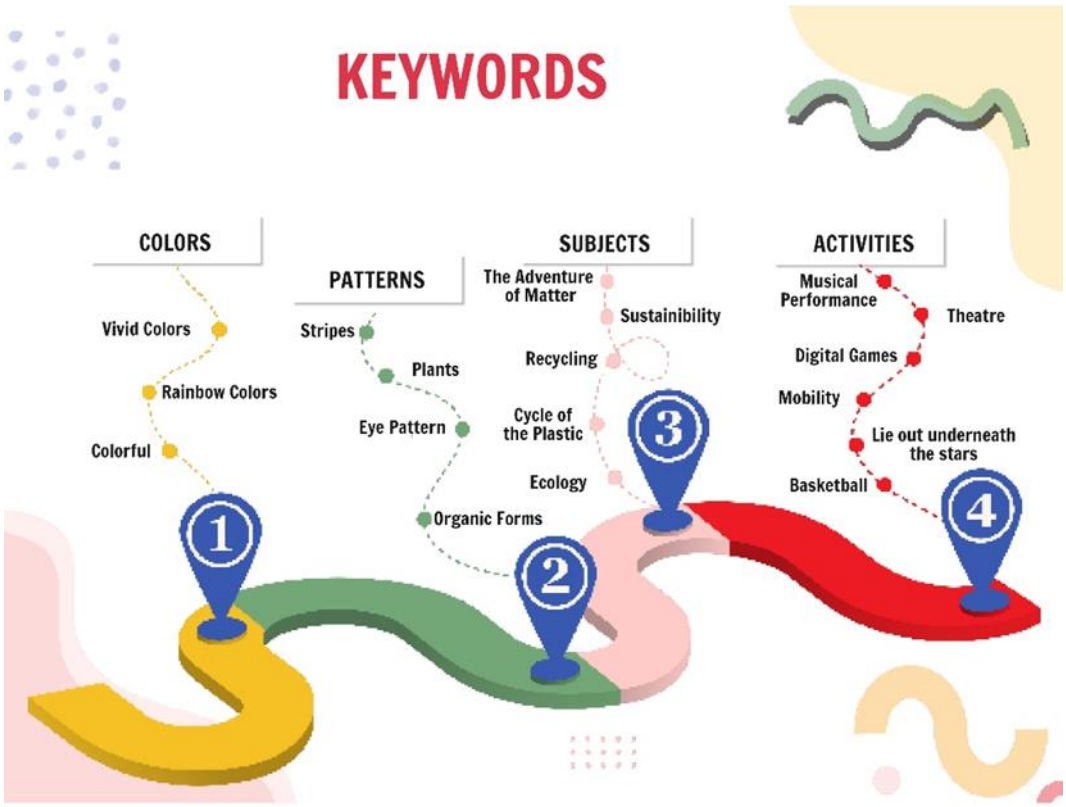

Figure 3: Keywords from Co-design workshop

Source: Authors 2023

Following the data collection and analysis, the main concept for the bus evolved into a mobile urban module emphasizing recycling and waste cycling. Consecuently, all interior furniture, identity products (such as hats, bags, stationary, toys), andtextile products were designed using recycled materials. In addition, the bus generates its energy from solar panels. It sets off to convey the consciousness of recycling and waste recycling to children in disadvantaged neighborhoods within the borders of İzmir province in a PLAY-full manner. For this purpose, the service system of the project was designed, offering a strategy with an expected objectives illustrating material and communication flows between actors, user scenarios and bus route calendar were prepared.

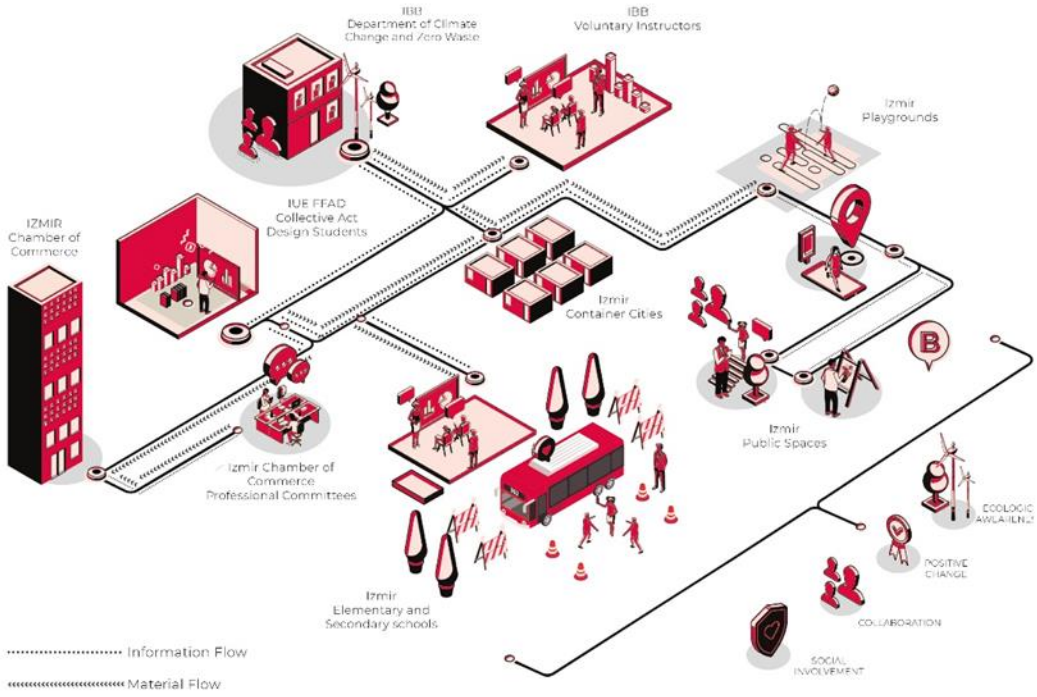

Figure 4: Service Map for Dobidob

Source: Authors 2023

As above, the service map illustrates the relationship between actors and stakeholders, their material, communication and knowledge flows (Figure 4). The stakeholders in this project can be listed as IUE, IMM, and ICC. A strong network of collaboration has been set and they regularly meet to share their knowledge about the design subject and the needs of the community. Following the stakeholders, volunteers -professional committees, volunteer design students and voluntary instructors- had joined to the system of the flows as the next step to implement the project. They have contributed to the process with their networks, time and knowledge in each phase, even after the implementation. As it is illustrated in the map, the mobile urban module is designed to visit and stay in different public areas of İzmir at different times of the month to come together with the community.

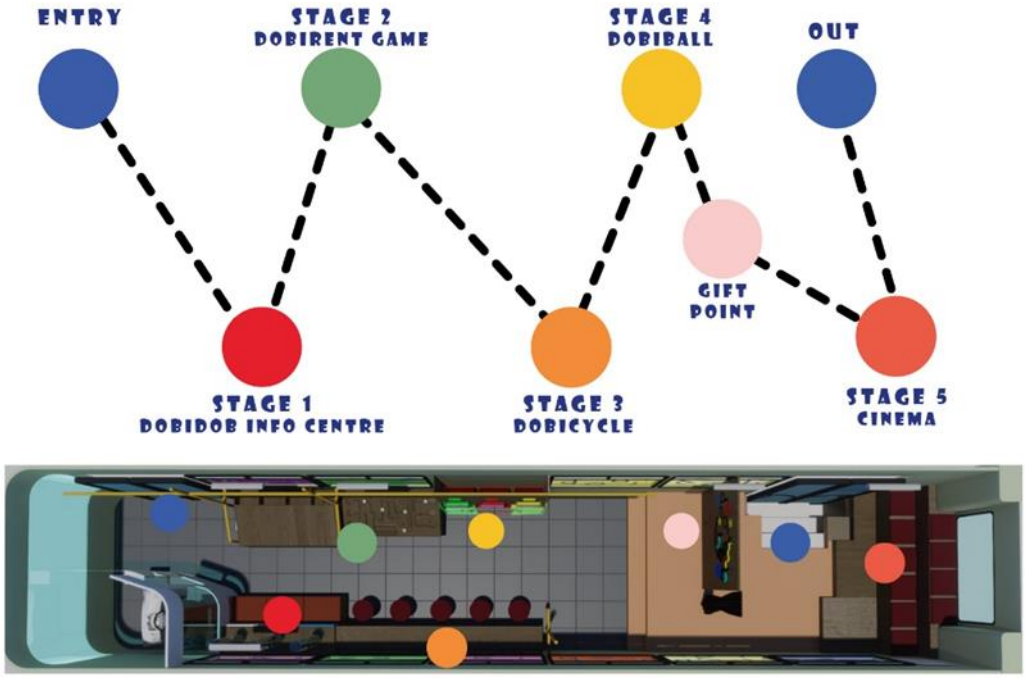

Figure 5: User Scenario

Source: Authors 2023

A user scenario involving the different stages of the urban module that is shown in the map is prepared to illustrate the usage of the module by children (Figure 5). In the first stage, the user scenario about the bus is conveyed to the participant through the map. Information about the bus and recycling is provided to the students by the instructors in the “Dobidob Information Centre”. They are also provided to understand this information visually at the same place. In order to reinforce these acquisitions, the game “Dobirent” is played, which is aimed at the participant to learn both visually and interactively. In the third stage, students create a new identity for the recyclable products they bring with them in “Dobi-Cycle”, a kind of "workshop area", as a result of the responsibility and knowledge they have acquired, and ensure that they are sustainable. In the fourth stage, called “Dobiball” in order to further reinforce this acquisition, they throw the recyclables they brought with them into the mechanism and watch them go through a process. In the end, they win a ball. This is a gain at the end of their transformation and plays an important pedagogical role, contributing to this adventure. Before arriving at the “Cinema” area, the last stage of the bus, participants are given a bag. This bag contains various gifts. This gives the students a meaning that will remind them of this day and adventure, and remind them of the knowledge they have acquired. In the last stage, just before exiting the bus, they watch the videos prepared by IMM and enrich their education by reinforcing it through sensory means

Figure 6: Exterior of the mobile urban module

Source: Authors 2023

The interesting exterior of the bus arouses the interest of the children/students and arouses curiosity about the interior (Figure 6). In order to keep this curiosity alive inside, multiple activities are planned in the interior.

Figure 7: Information Centre

Source: Authors 2023

In the first stage of the scenario, the designers intended to foster children's curiosity about recycling upon entering the bus, students engaged in activities. The children, admitted in groups of five are welcomed to the "Information Center" where they learn about the mobile urban module and principles

of recycling. It offers students an opportunity to raise awareness and further their interest in this issue. Here, three wooden seating areas specially designed for students are provided. They welcome the children and invite them into a comfortable learning environment. Integrated into seating units are three cylindrical installations that illustrate the recycling process. Each cylinder is specially designed to visually explain the recycling process step by step. By looking inside these cylinders, students are able to learn how recycling works, while at the same time raising awareness about environmental awareness. Each step helps students better understand the value of recycling (Figure 7).

Figure 8: Dobirent

Source: Authors 2023

After getting the information about the usage and aim of the mobile urban module, a labyrinth game is offered to the children to provide more detailed knowledge about recycling in the second phase (Figure 8). The aim is to reinforce children's knowledge of recycling by matching recycling objects with the correct colors. Inside the labyrinth, there is a variety of recycling objects (e.g. plastic bottles, glass bottles, paper, etc.) and each must be matched with the correct recycling color. This stage represents an approach that will allow children to consolidate their knowledge about recycling through a practical experience and have fun at the same time. It will be more memorable as they try to transfer it through a game.

Figure 9: Dobicycle

Source: Authors 2023

The next stage was established to create decorative objects and toys from plastic waste found in our homes and schools. A small workshop area is set up for children as they develop their hand skills they develop awareness and responsibility towards recycling at the same time. They will reinforce the knowledge of recycling they have gained in the information center here, by acting creatively and perhaps collectively with other students (Figure 9).

Figure 10: Dobiball

Source: Authors 2023

In this stage, participants are asked to bring waste materials, which they then sort and place into in the appropriate recycling bins (Figure 10). This stage emphasizes the basic principles of recycling and raises awareness among the participants about why recycling is important. They then turn the lever on the mechanism to make a ball fall. This ball is presented to the participant after passing through a certain mechanism. The aim here is to reinforce the recycling mentality and raise awareness. This activity provides both a fun and educational experience while emphasizing the importance of sustainable lifestyles. Such interactive activities are an effective way to learn about recycling and strengthen the sense of environmental responsibility. After the whole experience, participants will receive a bag filled with contents from the “Gift Point” (Figure 11).

Figure 11: Gift Point and Cinema

Source: Authors 2023

Above, where the exit of the module and the gift point are located. There is also an area where a 4-dimensional video will be shown about the recycling and environmental issues on a closed screen with visualizations prepared within IMM. This area also emphasizes recycling and environmental awareness, inspiring viewers to think about the future. IMM continues its mission to raise public awareness and leave a more sustainable world for future generations by using the power of art and technology (Figure 11).

Figure 12: The content of the gift bag

Source: Authors 2023

The bag given to the children before entering the cinema area becomes not only a means of transportation but also a symbol of an unforgettable adventure and consciousness-raising. As seen above (Figure 12) this bag contains a hat, notebook, sticker set, and keychain. The hat reflects the colorful world of the mobile urban module, while the notebook offers a blank page for new thoughts and experiences. The sticker set allows participants to unleash their creativity and personalize the experience, while the keychain serves as a practical keepsake that they can carry with them every day.

After finalizing the conceptual phase, designers began to work on the technical issues for the implementation phase.

Technical

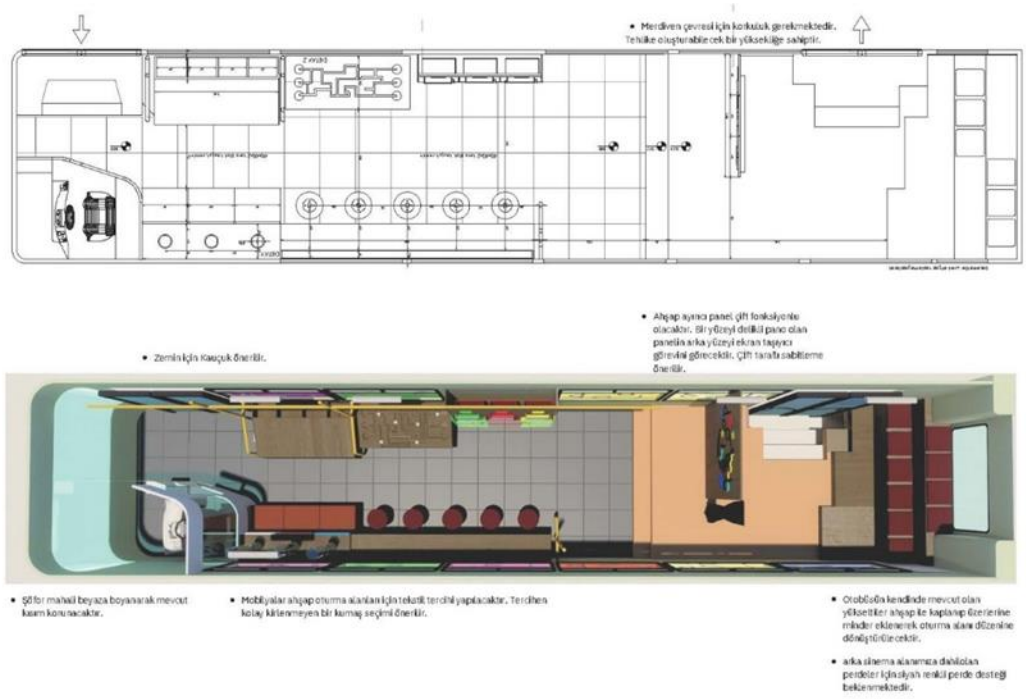

Figure 13: Technical Documents

Source: Authors 2023

The list of the needed materials is prepared and has been confirmed by IMM and ICC while facade peeling and seat removal processes were completed by the Climate Change and Zero Waste Department. The interior elevation of the bus, which has dimensions of 12 x 2,5 x 2,5 mt was taken by the designers, and application drawings were prepared (Figure 13).

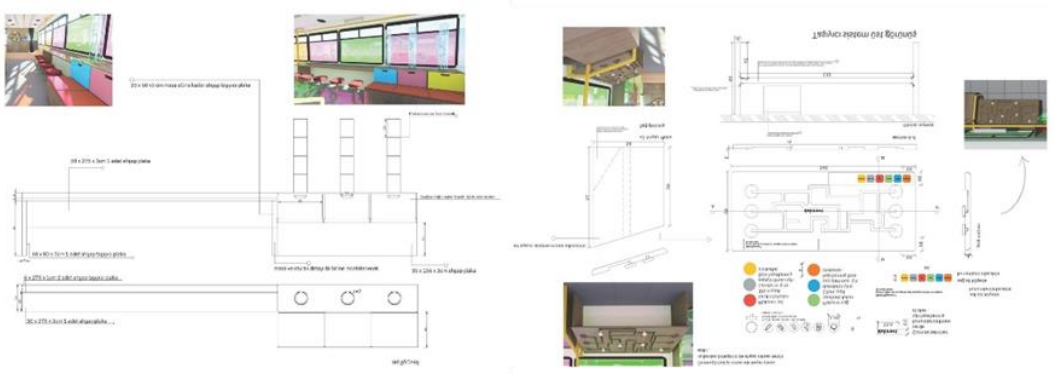

Figure 14: Technical Documents

Source: Authors 2023

When the technical drawings were completed, the following steps - furniture application, electrical, and equipment application were completed (Figure 14a-14b).

Later on, the textile application and graphic printing applications needed further collaboration with professional committees as suppliers of materials and craftsmanship. All the technical documents and designed product projects were prepared for the ICC Professional Committees -fabric professional committee; garment materials, and machinery professional committee; carpet, floor and wall coverings professional committee; furniture professional committee; electrical equipment and installation professional committee; advertising and organization professional committee; architecture professional committee; plastic professional committee- as the meetings are being held for the mobile urban module collectively.

Application Phase

The application drawings were submitted to the Architecture Professional Committee of the ICC. In the meantime, regular meetings were held with other committees, and discussions were made based on requests and needs and they have provided all the necessary materials and workmanship. Following the procurement of materials, a workflow plan was prepared and submitted to the 70th Architecture Professional Committee. The implementation process is being monitored by the committees and the designers. IMM, ICC, and IUE regularly met and developed a projection to complete and implement the project.

Figure 15 illustrates the key stages of the project, including the design process, on-site construction, and the completed co-designed mobile urban module. The visual sequence shows the full project journey, from the initial design phase through construction to the final realization. Each stage demonstrates the collaborative process, where design ideas developed with children and stakeholders were translated into a built, functional space. The completed module stands as a tangible outcome of participatory design in action.

Design Renderings **Construction** **Final Implementation**

Figure 15: Design, construction, and final implementation phases of the co-designed mobile urban unit

Source: Authors, April 2023, 2024, 2025

DISCUSSION

Since the project was only recently been completed in April, 2025, the next phase of the study will focus on post-implementation data collection (Figure 16). This forthcoming stage aims to evaluate the long-term impacts of the project outcomes through follow-up assessments and feedback mechanisms.

Figure 16: Opening of the mobile urban unit with children, designers, and stakeholders, highlighting collaborative and participatory engagement.

Source: Authors, April 2025

Through this project, the design team is expected to understand the importance of social responsibility and its role within the communities. This project enhanced the designers' critical perspectives on designing for social impact demonstrated how collaboration with the communities can create positive change through the power of design. This study also examines how the design for social needs might be implemented while reporting on the Mobile Urban Education Module as a social responsibility project, believing that the success of social responsibility projects should be in harmony with the needs of the community. Therefore, this project has both functional and aesthetic appeal that meets the needs of the community and the stakeholders. The design aims to create a social impact rather than targeting people's desires. Through the power of design, we intend to create a positive change for children in need. In addition, with this project, we utilize users -children- expertise to develop a thorough vision for the future. Social design experiments and recent advancements in the study of learning, such as research-practice collaborations, have raised significant interest in the need for researchers and communities to develop strategies for a fairer social future (Gutierrez & Jurow, 2016). As Margolin and Margolin (2002), state, interdisciplinary collaboration among "architects, psychologists, social workers, can effectively address the intersection of psychological and spatial needs, increasing the feeling of pleasantness, excitement, and relaxation and decrease feelings of fear and stress".

Consistent with the ecological social work perspective discussed in the theoretical section, the Mobile Urban Module functions across micro, meso and macro levels. At the micro level, it works directly with children to strengthen environmental awareness and agency; at the meso level, it builds collaboration between schools, universities, municipal units and chambers of commerce; at the macro level, it feeds into local social and environmental policy debates on environmental justice and children's environmental rights. This project initiates a fresh discourse in for social impact design, through the innovative concept of the "Mobile Urban Module." For individuals to be able to envision their own collective futures, social design projects can be effective in both social and educational cultures and organizations (Gutierrez & Jurow, 2016). This project demonstrates a community-engaged design approach that intersects with fundamental aims of social work, including the promotion of environmental awareness, participatory empowerment, and social responsibility. By bringing together a diverse network of stakeholders, academic institutions, local government, professional organizations, and children as active co-designers, it demonstrates how collaborative processes can generate socially meaningful and context-responsive outcomes. Recent studies increasingly acknowledge the relevance of co-design and design thinking within social work practice, highlighting their capacity to enhance community engagement, foster inclusive participation, and support systemic, socially responsible change (Martin et al., 2023; Villanueva-Paredes et al., 2024). The collaboration of design-led methods with social work objectives reinforces the growing recognition of interdisciplinary collaboration in addressing complex social challenges and facilitating positive change.

The project also contributes to the understanding of social responsibility among design teams emphasizing designers' pivotal role in community development. Through engagement with local communities and stakeholders, this project endeavors to broaden designers' critical perspectives on crafting solutions that foster social impact. By harnessing the power of design, the Mobile Urban Module has demonstrated its capacity to drive positive change within communities. This study not only showcases the successful implementation of design interventions to address social needs but also provides valuable insights into the strategies employed to achieve these outcomes.

Designers are becoming more and more involved in the development of efforts to address problems. As a consequence, we believe that the university has an essential role to play in bringing this issue to light. This paper advocates for the active participation of universities, especially private institutions, in developing social responsibility projects. In today's fiercely competitive academic landscape, these initiatives not only serve as catalysts for positive change but are also seen as a reputational advantage and competitive edge, thereby enhancing collaborations with other academic institutions (Atakan & Eker, 2007). This article explores the strategic importance of social responsibility projects within the context of university environments, emphasizing their potential to drive meaningful societal impact while positioning universities as leaders in social innovation and responsibility.

Chile and Black (2015), referencingUNESCO's 1998 report (p.237), emphasize that universitiesmust extend their role beyond education to instill a sense of social justice and civic responsibility in students. UNESCO advocates for universities to not only impart knowledge to young individuals but also introduce in them a profound awareness of social justice and a sense of social responsibility. Quoting specific articles from the UNESCO report, the emphasis is on nurturing graduates who are not only highly skilled but also responsible citizens actively engaged in society. This paper delves into the implications of these UNESCO guidelines, exploring the imperative for universities to enhance their critical functions and empower students to think critically, analyze societal issues, propose solutions, and embrace social responsibilities. The analysis underscores the pivotal role of higher education institutions in shaping socially conscious, critically engaged citizens who contribute meaningfully to society.

Social responsibility initiatives also reflect universities' positions on environmental, social, and political issues, offering insight into their internal culture and values (Nejati, Shafaei, Salamzadeh, & Daraei, 2011). To put it another way, it entails reflection on the attitudes of the institution and how its constituents, including its faculty, staff, and organizational structures, might cultivate attitudes toward the effects that its actions have on the environment. By collaborating with other disciplines, designers in this project grow their relationship with the people in need. They also learned how to define objectives and work towards them, and they also learned how to address issues that arise during the design process. The ability to manage their time and resources enabled the designers to complete the design project. Ultimately, universities have a vital role to cultivate a sense of care and social responsibility among students while emphasizing the importance of meaningful community interaction. This highlights the essence of creativity in the design process balanced by the necessity for practicality and realism. Striking such a balance between innovation and feasibility is crucial to prevent high costs for stakeholders, aligning with Buxton's perspective that designs must be manufactured to hold significance (Buxton, 2007). We now need to outline its advantages for the neighborhoods and communities. The interaction between the community and the university is one of the key factors in identifying and addressing a society's needs. The management should promote social responsibility initiatives since universities play a significant role in spreading awareness of this issue.

CONCLUSION

This article examines the experiential insights of designers engaged in a social responsibility project in collaboration with communities, framed through an ecological social work perspective that engages micro, meso, and macro-level actors to generate tangible social impact. It highlights the collaborative efforts of stakeholders, including the IUE, IBB, and IZTO, in creating positive change for children. Drawing upon The Commission for Architecture and the Built Environment's assertion that well-designed learning environments foster enhanced learning experiences (DCMS 2000, p.1), the project underscores the importance of involving children in the design process to create the most

suited mobile learning environments tailored to their needs and desires. As Ghaziani (2008) notes, children perceive learning environment not only for learning but also for socializing, relaxing, and also for enjoyment. Additionally, the design of learning environments affects the activities and outcomes of teaching and learning. Therefore, a learning environment makes a positive contribution to the academic well-being of students, and promotes social interaction, a sense of community, and inclusiveness, it also needs to boost learning activity.

This article stresses the pivotal role of learning environment design in shaping educational outcomes and fostering positive impacts on raising children's awareness about recycling and environmental issues, their social interactions, community cohesion, inclusivity, and learning engagement. The study strongly emphasizes the significance of collaborating with children as the primary actors of the project and incorporating their perspectives into the design process to create the overall experience and the space. The research aligns with Budds' assertion (2017) that a collaborative approach involving policymakers, legislators, and project end users is essential for project success. In the context of co-design principles, the involvement of local administrations, such as the İzmir Metropolitan Municipality (IMM) and İzmir Chamber of Commerce (ICC), is considered crucial to enriching the interactive learning experiences. Ultimately, theproject extends beyond design practice to serve as a model for cultivating both social and environmental awareness. Given the context of the study, which focuses on children in disadvantaged neighborhoods, it emphasizes the need for local administrations to support enhanced educational opportunities and innovative solutions. Consequently, fostering collaboration between local administrations, communities, and educational institutions becomes a shared social responsibility, with universities playing a pivotal role in creating social awareness. Within this framework, the Mobile Urban Module offers a practice-based model for ecological social work, offering tangible input for social work policy on community-based environmental education, child participation, and environmentally oriented social responsibility projects. This article tries to make explicit the importance of such collaborative efforts in addressing multifaceted challenges within education and society.

ACKNOWLEDGMENT

The authors would like to thank İzmir Metropolitan Municipality (IMM) managerial staff, Municipality's Climate Change and Zero Waste Department; İzmir Chamber of Commerce (ICC) managerial staff, the following professional committees in ICC; fabric professional committee; garment materials, and machinery professional committee; carpet, floor and wall coverings professional committee; furniture professional committee; electrical equipment and installation professional committee; advertising and organization professional committee; architecture professional committee; plastic professional committee; Izmir University of Economics (IUE), Faculty of Fine Arts and Design managerial staff, designers and 11 children who took part in the design process.

INFORMED CONSENT

Since the project was designed in 2023, formal ethical board approval was not sought. However, in line with ethical research practices, informed consent was obtained from all participating children's legal guardians prior to participation. Consent forms were explained in detail, with children providing verbal assent and parents or guardians providing written consent. To ensure a safe and supportive environment, workshop activities were conducted in the presence of parents or guardians, and designers received preparatory training from a psychologist and pedagogical consultant to safeguard the well-being of child participants throughout the process.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

GENİŞLETİLMİŞ ÖZET

Bu çalışma, İzmir'de dezavantajlı mahallelerde çevre ve geri dönüşüm farkındalığını artırmaya yönelik tasarım odaklı çözümler geliştiren ve çocukları birincil aktör olarak konumlandıran Mobil Kentsel Modül sosyal sorumluluk projesini tanıtır. Proje, ekolojik sosyal hizmet ve sosyal adalet perspektiflerine dayanmakta; geri dönüşümün yanı sıra daha geniş çevresel sorunlara ilişkin farkındalığı güçlendirmeyi ve çevresel adalet odağında olumlu sosyal ve çevresel dönüşüm yaratmayı hedeflemektedir. İzmir Ekonomi Üniversitesi (İEÜ), İzmir Büyükşehir Belediyesi (İBB) ve İzmir Ticaret Odası (İZTO) ortaklığında yürütülen proje; oyun temelli öğrenmeyi, işbirlikçi tasarım (co-design) ve toplulukla etkileşimli tasarım düşüncesi yaklaşımlarıyla birleştirerek, yerel gereksinimlere duyarlı, taşınabilir bir öğrenme ve etkinlik altyapısı ortaya koyar. Amaç, estetik ve işlevi bütünleştiren, sosyal etki odaklı bir tasarım modeliyle çocukların çevresel okuryazarlığını güçlendirmek ve üniversite-toplum-yerel yönetim işbirliğini kurumsallaştırmaktır. Bu çerçevede "Oyun" kavramı, projenin hem kuramsal hem de mekânsal kurgusunda merkezi bir rol oynamakta; oyunu yalnızca eğlence değil, çocukların çevreyle, akranlarıyla ve öğrenme ortamlarıyla kurdukları ilişkiyi dönüştüren bir etkileşim ve güçlenme aracı olarak ele almaktadır. Çalışma, işbirlikçi tasarım yaklaşımını; çocukların katılım hakkını, yaratıcılığını ve gündelik mekânsal deneyimlerini odağa alan, tasarım ile ekolojik sosyal hizmetin kesiştiği bir pratik olarak yeniden yorumlamaktadır.

Süreç; ihtiyaç analizi ve bağlam haritalama, çocuklarla odak grup/atölyeler, hızlı prototipleme-geri bildirim döngüleri, hizmet-sistem-mekân senaryoları ve görsel kimlik ile iç mekân ve ürün bileşenlerinin bütünleşik tasarımından oluşmuştur. Bu süreçte ortak tasarım yaklaşımı, dezavantajlı mahallelerdeki çocukları "hizmet alan" konumundan çıkarıp bilgi ve çözüm üreten öznelere dönüştüren, katılımcı ve güçlendirme odaklı bir sosyal hizmet pratiği olarak kurgulanmıştır. Projede, dezavantajlı mahallelerde yaşayan 11 çocuktan oluşan bir odak grupla "Hayalindeki mobil öğrenme ortamını tasarla" başlıklı bir işbirlikçi tasarım atölyesi yürütülmüştür. Çocuklar, tasarımcılar tarafından sağlanan iki ve üç boyutlu malzemeler aracılığıyla hayallerindeki mobil öğrenme ortamını çizmiş, modellemiş ve sözel olarak anlatmış; bu üretimler daha sonra tematik analiz yoluyla renk, desen, konu ve etkinlik gibi tekrar eden temalar altında sınıflandırılmıştır. Elde edilen veriler, özellikle

canlı/“gökkuşağı” renk kullanımı, organik formlar, bitki dokuları, “maddenin yolculuğu”, “yenilenebilir enerji kaynakları”, “plastiğin hikâyesi” ve “ekoloji” gibi başlıklara işaret ederek, modülün kimliğini ve içerik senaryolarını belirlemiştir.

Atölye çıktıları doğrultusunda, İBB İklim Değişikliği ve Sıfır Atık Dairesi tarafından tahsis edilen atıl durumdaki bir şehir otobüsünün dönüştürülmesiyle Mobil Kentsel Modül tasarlanmıştır. Çocukların önerdiği isimler arasından seçilen “Dobidob”, modülün eğlenceli, akılda kalıcı ve çocuk odağını vurgulayan kimliğini simgelemektedir. Modülün iç mekânı ve hizmet-sistem kurgusu; “Dobidob Bilgi Merkezi”, “Dobirent” (labirent oyunu), “Dobicycle” (atölye alanı), “Dobiball” mekanizması ve çıkışta “Hediye Noktası ve Sinema” alanlarından oluşan ardışık bir öğrenme senaryosu etrafında kurgulanmıştır. Bilgi Merkezi’nde çocuklara geri dönüşüm ve Mobil Kentsel Modül’ün amacı anlatılmakta; Dobirent oyunuyla geri dönüştürülebilir nesneler doğru renkli kutularla eşleştirilmekte; Dobicycle bölümünde ev ve okuldan getirilen plastik atıklardan oyuncak ve dekoratif nesneler üretilmekte; Dobiball ile atıkların dönüşüm süreci eğlenceli bir mekanizma üzerinden deneyimlenmekte; son aşamada ise İBB tarafından hazırlanan dört boyutlu video gösterimiyle geri dönüşüm ve çevre temalı farkındalık pekiştirilmektedir. Modülden ayrılmadan önce çocuklara verilen çanta, şapka, defter, çıkartma seti ve anahtarlıktan oluşan “hediye çantası” ise deneyimin hem somut bir hatırlatıcısı hem de gündelik yaşamda çevre bilincini tetikleyen bir ara yüz işlevi görmektedir.

Hizmet-sistem haritası, İEÜ, İBB, İZTO, gönüllü profesyonel komiteler, gönüllü tasarım öğrencileri ve gönüllü eğitmenler arasındaki bilgi, malzeme ve iletişim akışlarını detaylandırmakta; modülün ay boyunca kentin farklı kamusal alanlarına ve özellikle dezavantajlı bölgelerdeki okullara düzenli aralıklarla ulaşmasını öngörmektedir. Teknik aşamada otobüsün iç mekân ölçümleri alınmış, uygulama projeleri hazırlanmış, gerekli malzeme listeleri İBB ve İZTO ile birlikte onaylanmış; cephe kaplamaları, mobilya sökümleri, mobilya imalatı, elektrik ve ekipman yerleşimi tamamlanmıştır. Tekstil ve grafik uygulamaları, İZTO’nun ilgili meslek komiteleriyle işbirliği içinde yürütülmüş ve tüm teknik dokümantasyon komitelere iletilerek kolektif bir uygulama süreci kurgulanmıştır. Nisan 2025’te modülün açılışı gerçekleştirilmiş; sonraki faz için uygulama sonrası veri toplama planlanmıştır. Bu fazda kısa anketler, yapılandırılmış gözlemler ve paydaş görüşleriyle uzun erimli etki (katılım, memnuniyet, tekrar kullanım, öğrenme kazanımları, topluluk etkileşimi, operasyonel sürdürülebilirlik) izlenecektir. Böylece Mobil Kentsel Modül, yalnızca tasarım sürecinin bir çıktısı değil, aynı zamanda etki değerlendirmesi yapılacak bir “sosyal tasarım deneyi” ve topluluk temelli çevre eğitimi aracı olarak konumlandırılmaktadır.

Amaç, modülün çocuklarda çevre temalı etkinliklere katılımı ve oyun yoluyla öğrenme motivasyonunu arttırması; akranlar arası sosyal etkileşimi ve aidiyet duygusunu güçlendirmesidir. Ekolojik sosyal hizmet bakış açısından bakıldığında proje; mikro düzeyde çocuklar ve aile-akran çevreleri, mezo düzeyde okullar, üniversiteler, belediye birimleri ve meslek odaları, makro düzeyde ise çevresel adalet ve çocukların çevresel haklarına ilişkin sosyal politika ve yönetişim mekanizmaları arasında bir köprü kurarak; çocukların çevresel haklarının görünür kılınmasına, yerel

topluluklarda çevre temelli kolektif farkındalığın ve toplumsal dayanışmanın güçlenmesine katkı sunmayı hedeflemektedir. Kuramsal çerçeve bölümünde tartışıldığı üzere proje, “Ecological Social Work” yaklaşımıyla uyumlu biçimde insan iyilik hâli ile fiziksel-sosyal çevre arasındaki karşılıklı etkileşimi temel almakta; çevresel bozulmayı ve sağlıklı çevreye erişimdeki eşitsizlikleri, dezavantajlı grupları orantısız biçimde etkileyen bir sosyal adalet meselesi olarak ele almaktadır. Çocukların bu süreçte “uzman kullanıcılar” olarak görülmesi, güçlendirme temelli uygulamanın ve çocuk hakları savunuculuğunun somut bir yansımasıdır. Çocuklar tasarım sürecine yalnızca veri sağlayan denekler olarak değil, bilgi ve çözümün eş üreticisi olarak dâhil edilmiştir.

Tasarım öğrencileri için ise, paydaşla müzakere, problem çözme ve zaman-kaynak yönetimi gibi mesleki yetkinliklerini geliştirmesiydi. Altı kişilik disiplinler arası tasarım ekibi (içmimarlık, endüstriyel tasarım, mimarlık ve görsel iletişim tasarımı), atölye öncesinde çocuk psikoloğu ve bir pedagogdan çocuklarla çalışma, zorlayıcı yaşam koşullarına sahip gruplarla iletişim ve atölye kolaylaştırıcılığı konularında eğitim almıştır. Bu hazırlık, dezavantajlı mahallelerde yaşayan çocuklarla çalışırken güvenli, destekleyici ve yargılayıcı olmayan bir atölye ortamı kurulmasını mümkün kılmıştır. Proje süreci, tasarım öğrencilerinin sosyal sorumluluk kavrayışını derinleştiren; tasarımı, toplumsal ihtiyaçlar ve ekolojik adalet bağlamında yeniden düşünmeye zorlayan bir öğrenme ortamı sunmuştur. Tasarım öğrencileri, tasarım sürecinde yalnızca form ve işlevle değil, aynı zamanda çocuk hakları, çevresel adalet, kurumsal sosyal sorumluluk ve toplulukla birlikte üretim gibi kavramlarla da yüzleşmiştir. Kurumsal ölçekte proje, üniversitenin toplumsal fayda üretme kapasitesini görünür kılarken, yerel yönetim ve meslek örgütleriyle sürdürülebilir işbirliği ağları oluşturmuştur. Üniversitelerin sosyal sorumluluk ve sosyal etki projelerine aktif katılımı, hem toplumsal yenilik hem de kurumsal itibar açısından kaldıraç etkisi yaratır. Bununla birlikte yaratıcılık ile uygulanabilirlik/gerçekçilik arasındaki denge, maliyet-işletme-ölçeklenebilirlik kriterlerinin baştan entegrasyonu ile sağlanmalıdır. Bu bağlamda, İBB ve İZTO ile kurulan işbirliği, tasarımın yalnızca kavramsal bir öneri olarak kalmayıp, gerçekten uygulanabilir, işletilebilir ve sürdürülebilir bir kamusal hizmete dönüşmesi için kritik önemdedir. Malzeme tedariki, işçilik desteği, bakım-onarım süreçleri ve modülün şehir içi rotasının planlanması gibi konular, meslek komiteleri ve belediye birimleriyle birlikte ele alınmış; böylece tasarımın sosyal etki hedefleri, operasyonel gerçekliklerle uyumlu hâle getirilmiştir.

Mobil Kentsel Modül, çocukların aktif katılımını merkezine alan, taşınabilir ve bağlama duyarlı bir öğrenme platformu olarak üniversite-toplum-yerel yönetim üçgeninde tekrarlanabilir bir model sunar. Bu yönüyle, topluluk temelli çevre eğitimi, çocuk katılımı ve çevresel adalet ekseninde sosyal hizmet politikalarının geliştirilmesine pratik bir örnek ve deneyim alanı sağlamaktadır. Proje; okullarda, mahalle parklarında, meydanlarda ve kentsel boşluklarda konumlanabilen, esnek bir “mobil öğrenme ortamı” modeli önererek, çocukların çevre ve geri dönüşüm temalı deneyimlere erişimini coğrafi ve sosyoekonomik sınırların ötesine taşımayı amaçlamaktadır. Tasarlanan hizmet-sistem stratejisi, İBB’nin iklim değişikliği ve sıfır atık politikalarıyla, İZTO’nun kurumsal sosyal sorumluluk hedefleri ve

üniversitenin sosyal sorumluluk vizyonunu ortak bir zeminde buluşturmakta; böylece sosyal tasarım, ekolojik sosyal hizmet ve yerel yönetişim arasında yeni bir ara yüz yaratmaktadır. İzleme bulgularına göre strateji yinelenecek, farklı mahalle ve temalara göre ölçekleme seçenekleri geliştirilecektir. Gelecek fazda, modülün farklı sosyo-kültürel bağlamlarda nasıl karşılandığı, çocukların uzun erimli çevresel davranışlarına ve çevresel hak algılarına nasıl yansıdığı, ayrıca tasarım öğrencilerinin sosyal sorumluluk ve mesleki kimlik gelişimi üzerindeki etkileri değerlendirilecek; elde edilecek bulgular, ekolojik sosyal hizmet pratiği ve çocuk odaklı çevre politikaları için öneriler şeklinde yapılandırılacaktır.

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