

ANALYSIS OF THE EDUCATIONAL SPACES AND UNIVERSAL DESIGN: THE CASE STUDY OF DUZCE UNIVERSITY FACULTY OF ART, DESIGN AND ARCHITECTURE CAMPUS

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Abstract: Education should be an equal distance with everyone, the educational environment as a second lecturer is responsible for supporting equality and should present inclusive characteristics. This study is carried out to evaluate Duzce University Art, Design and Architecture Faculty within the context of universal design principles. This study evaluates the existing condition of the campus facilities regarding universal design and searches for possible design interventions to improve inclusivity. At first, within this context, the relation between the physical environment and campus users is examined via video recording and observation studies. Analysis of the findings of the observation and video recordings revealed the interaction pattern between the physical environment and users. With the help of analysis, places requiring universal design solutions are identified and classified according to their priority. Within the classified problem areas, problem areas suitable for increasing inclusivity by small scale design interventions are determined, and initial design ideas are constituted for them. The capability of design interventions in increasing the inclusivity of educational environments is exposed, and the importance of a holistic approach in the educational system for inclusivity is emphasized. As a result, it is revealed that it is possible to improve equality and the participation level of diverse user groups in educational life only by actualizing small-scaled universal design

interventions. While showcasing the potency of the universal design applications in an educational setting, this study underlines the importance of conjoint actions of every actor in the educational system.

Keywords: Universal design, Disability, Inclusive design, Education, Architecture

Introduction

Education is a constitutional right, and it stands to everyone an equal distance. In that sense, by its very nature, inclusivity is the key characteristic of contemporary educational approaches, and educational spaces carry their marks. Since, in the contemporary world, educational actions are carried on in the built environment, the design of educational spaces plays a critical role in making education accessible for everyone. Educational space is a social place experienced by staff, students, and visitors of different ages and different physical capabilities. Therefore it should answer the needs of different user groups without bestowing any privilege on a specific one. Any arrangement in an educational space should not cause any barrier for people in accessing education. Questions arise here: In reality, how inclusive is an educational space, and in which ways does it affect the educational actions for different user groups? This article tries to find answers to these questions and aims to evaluate the effects of the physical environment on the educational actions of diverse users in Duzce University Faculty of Art, Design and Architecture Campus. The main objective of this study is to explore the potential of universal design solutions in improving the participation level of different user groups in educational life and search for equality in education through in terms of physical settings. Due to the indiscriminate nature of education, to understand the interaction between the physical environment and the widest range of users, the campus area has been examined within the framework of the universal design approach. In this study, the potential impacts of developing design solutions within the universal design perspective on inclusive education have been discussed through the case of Duzce University Faculty of Art, Design and Architecture Campus. Being recently

established, having a quota that specifically determined for disabled people, the egalitarian nature of art and design, and being flexible in terms of physical changes are the reasons that make the Faculty of Art, Design and Architecture worthwhile to investigate in terms of universal design. Within the scope of this study, the current physical environment of the campus have been analyzed by considering varying needs of diverse user groups, positive and negative effects of the physical environment on the educational and social life of users have been sketched, ways for more inclusive design solutions have been questioned. To set up a linkage between universally designed educational spaces and inclusive education, at first detailed information about universal design and similar studies have been explained.

Universal Design Concept

Universal design can be defined as a way of suggesting design solutions that fulfil the needs of a wide range of diverse user groups with different ages and different capabilities and does not label users (Story, 1998). In other words, in universal design, design solutions do not point to differences of users, it focuses on reaching the highest number of participants, and considers social values. However, as in the formation of other design approaches, the inclusive structure of universal design has not been suddenly popped up. After the paradigm shift on the disability concept from the medical approach to the human rights approach, the universal design concept has emerged (Lid, 2014). Depending on that, in order to cover universal design, developments and transformations in the design for the disability approach are needed to be examined. Following the formation process of design for disability is only possible by understanding the changes in the disability concept for societies. In the 18th and 19th centuries, due to the industrialization, materialistic point of view and production focus of that time, disabled people are seen as unfunctional and useless actors of society; however, especially after 2. World War, an increasing number of disabled veterans leads to more gentle attitudes to disabled people (Barnes, 2011). With the help of the positive changes to disabled people, the disability concept and its reflections have begun to be examined. First 80 years of the 20th century, the disability concept has been handled respectively as a bio-medical issue, an accessibility problem, and a

personal, problem; not as a social phenomenon (Rioux, 1994). In 1980 dated ICIDH (International Classification of Impairments, Disabilities and Handicaps), developed by WHO (World Health Organization), disability is related to an anatomic deficiency, and by neglecting the environmental and social factors of disability, it stands as an example of a personal medical model. On the contrary, in 1974, in the United Kingdom, UPIAS (Union of the Physically Impaired Against Segregation) mentions the social pressure and exclusion aspects in its disability definition, and this definition carries the characteristics of the social model (Barnes, 2011). Depending on the growing interest in disability issues, United Nations (UN) declares 1981 as the International Year of Disabled Persons, and in the same year, after not including disabled persons in the management of Rehabilitation International (RI) Disabled People International (DPI) is constituted (Barnes, 2012). The Foundation motto of DPI “Nothing About Us Without Us” reflects a new disability centred, independent and human rights-focused ideology in a political, cultural, economic context, and thus, it is adopted by most of the other disability organizations (Charlton, 1998). All of these developments show us how the disability concept transformed from a personal medical condition to a social movement. As a result of evolving into a social movement, different countries have begun to protect the rights of disabled people with laws. In addition to legislation, in 2001, WHO has presented a new classification for disability named as International Classification of Functioning, Disability and Health (ICF)

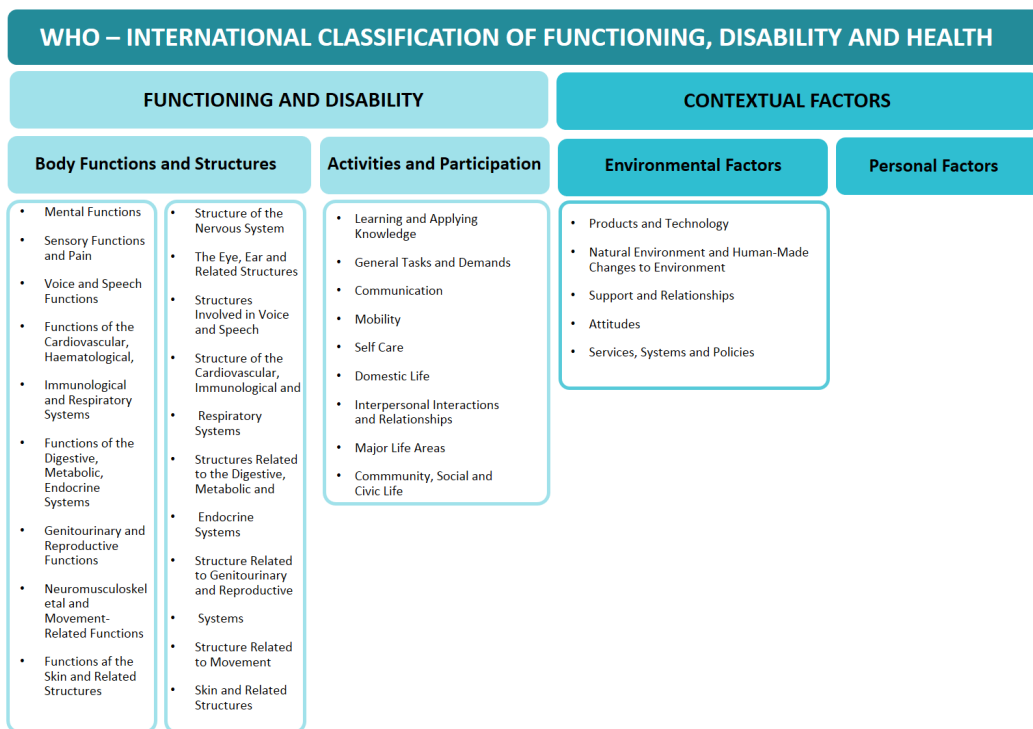
Within the scope of ICF, disability is defined as difficulties in three elements of functioning as body, activity, and participation (Alagappan et al., 2018). In ICF, there are two main categories as 1) Functioning and Disability, 2) Contextual Factors; and these are divided into sub-categories as 1a) Body Functions and Structures, 1b) Activities and Participation, 2a) Environmental Factors, 2b) Personal Factors (Figure 1). This new WHO classification proves the changes in disability concept from the medical model to the social model.

All of the changes in the disability concept have also affected the relationship between disability and the design of the physical environment. In the mid 20th century, since disability has been considered with a service aspect, there have been some regulations on the physical environment design. Within this

respect, design for the disability approach can be considered to show up in the mid 20th century. Kose (1998) mentions The American National Standards Institute (ANSI) Standard A117.1, "Making Buildings Accessible to and Usable by the Physically Handicapped," as one of the first imprints of the design for disability concept. Following it, with the efforts of disabled people and their supporters, design and disability-related regulations have been protected by the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973, and the Americans With Disabilities Act (ADA) of 1990 (Evans et al., 2017).

Figure 1. WHO International Classification of Functioning, Disability and Health.

Source: <https://www.who.int/classifications/icf/icfbeginnersguide.pdf?ua=1>



And also, in different countries, there have been similar regulations. However, it should be noted that while some of them were developed with a similar motivation like the USA as a result of social movements, others came into existence as a result of copycat attitude as in Turkey (Çaha, 2016). Within the scope of ADA, which is among the laws mentioned above, it is stated that a solution should be offered for all disability groups without separating any types of disability, and the concept of design for the disabled, which was generally handled in mobility and wheelchair till then, has gained a new

dimension (Imrie, 2012). These legislations that support accessibility for the disabled have steered Ronald Mace, Ruth Hall Lusher, Bednar ve Welch to search for a new way of creating design solutions for the built environment and came up with a new concept as universal design (Steinfeld et al., 2012). Within this context, in 1997, Ronald Mace introduces the seven principles of universal design as 1) Equitable Use, 2) Flexibility in Use Principle, 3) Simple and Intuitive Use 4), Perceptible Information, 5) Tolerance for Error Principle, 6) Low Physical Effort, 7) Size and Space for Approach and Use. (Story et al., 1998). Universal design does not wipe out the accessibility notion of the design for the disability approach, and there has always been accessibility consideration in universal design. It only becomes unnoticed since it has been considered from the first phase of the design process, and it goes beyond being a form of legally protected practice (Story, 1998). Thus, a unifying and egalitarian design language has been formed. As Meşhur and Çakmak (2018) emphasize, the essence of the universal design is being and feeling normal. Gossett, et al. (2009), indicating their shared perspective with Knecht (2004) and Salmen (2011), briefly define universal design as a design process of developing products for the widest range of users and providing solutions to every user. Universal design is interwoven with architecture, design, landscape planning, justice, education, ethic, health, rehabilitation and other disciplines and these characteristics required to be considered in universal design approach-based design practices (Lid, 2014). The universal design approach stays closer to the contemporary human-centred and interdisciplinary design concept.

Education And Universal Design

The strength of an education system is in direct proportion with its inclusive, unifying and egalitarian characteristics. Within this perspective, universal design practices in educational spaces have the power of consolidating the strength of the system. In educational spaces, universal design practices are usually actualized under the framework of disability regulations. Even though these practices seem to be disability oriented, they draw on to universal design in some aspects. Thus, inevitably, while establishing a linkage between educational spaces and universal design, studies related to disability and

learning environment have been used as resources. In these studies, the relationship between disability and educational environment is examined within its physical, social, and experience-oriented aspects. Ay, et al. (2017) evaluate a university campus in Turkey regarding TS9111 numbered standard in a quantitative study and note suitability of outdoor circulation areas. However, they also show unsuitable practices in interiors and toilets and social areas such as the dining hall and lack of design solutions for different disability types. Although the campus has been evaluated quantitatively in this study, it can be interpreted that in a social framework, the campus does not support diverse user groups in terms of socialization and personal hygiene. Similarly, another study, which evaluates the usage of Olbia Cultural Centre in Akdeniz University by disabled people regarding TS911 AND TS12576 standard, showcases limitations of the physical environment and indicates the cruciality of the physical environment in terms of human rights and equality (Yılmaz, et al., 2012). The existence of an exclusive environment is not peculiar to developing or under-developed countries, and it also exists in developed countries. Moriña Díez et al. (2015) transmit the ideas of disabled students in Sevilla University on the educational system. In this study, the students highlight how architecture prevents them from participating in daily life and accessing information and how inclusive design interventions like ramps, tactile stairs, Braille doors, and easy circulation can make a difference in every user's actions. Universal design practices can serve to provide equal opportunity for academic achievement between students (Evans et al., 2012). Designers who are responsible for providing solutions for educational spaces are needed to understand the concept of disability. Within this respect, as Kowaltoski et al. (2015) mentioned in their case study, active and equal involvement of disabled users in architecture and design education lead students to gain awareness of the significance of universal design and make project outcomes more connected to real life and also as Hidayetoğlu and Müezzinoğlu (2018) remark, current human-centred approach in design studios and universal design philosophy perfectly fit together. Lau et al. (2016) suggests two building inclusiveness assessment tools that evaluate the educational buildings in terms of design and management for physically and visually impaired people and underlines the importance of management approaches and operations and maintenance in addition to the design of the

external environment, entrance, horizontal circulation, vertical circulation and facilities. All of the abovementioned studies point to the impacts of the physical environment on accessing and participating in education and show the potential of universal design on strengthening the education system. As education, the universal design does not discriminate, underestimate, or tag any user group.

Methodology

Within the scope of this research, the Duzce University Faculty of Art, Design and Architecture Campus have been evaluated regarding universal design principles. Before serving as Faculty of Art, Design and Architecture, the campus and its buildings served at first as a hospital, then as an educational facility for the Faculty of Science and Literature. When that study was carried out, users from various ages from 17 to late 60 years old, including two disabled students, one with visual and the other one with hearing disability, were advancing from the campus facilities. There are two separate buildings for educational purposes (as Building a and Building B), two other separate ones as management building and Fine Arts Institute, one cafeteria, one for the dining hall, small workshop areas, and a cabin for security (Figure 2). Students and staff regularly experience and interact with the campus environment. In order to fully understand how diverse groups of users interact with the campus environment and to construct empathy and develop a deep understanding of what ways the physical environment affects education, the researcher experienced the campus via altering the ability of her mobility, vision, and hearing. Data is gathered both from these unique experiences and her ordinary everyday experiences. The researcher has recorded her altered experience via empathy maps, photos, and videos. Then, with the help of the collected data from everyday experience and altered experience, the researcher searched for small-scaled design solutions and evaluated the self-design process and outcomes from a universal design perspective. In total, participant observation, video recordings, and the design process itself supplied data for this study.

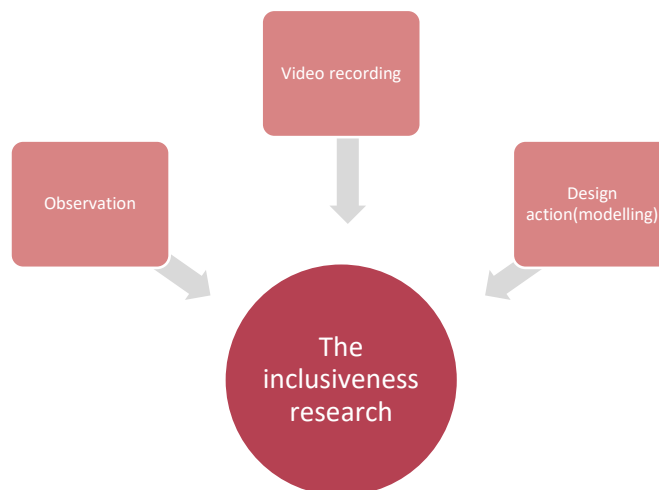
Figure 2. The Campus of Duzce University Faculty of Art, Design and Architecture



The application of different data collection methods helped to triangulate the data. Using participant observation, as Preiser (2008) underlines, the researcher could measure interaction patterns and social dynamics. Thus, it has been possible to analyze how diverse users interact with the different sections of the campus such as campus entrance, outdoor circulation areas, dining hall and canteen areas, indoor circulation areas, lecture rooms, and office buildings and how this interaction affects the social life of the users. As Holm (2014) explains, both a researcher's or other participants' photos or videos can be visual data sources for research; both video recordings of researchers and a researcher's college were used to measure behaviours, movements, and researcher's interaction with the environment. The researcher kept separate video recordings of her campus experience as a physically and visually impaired user. In both types of experience, she attached her camera to her body and recorded her movements, related environment, and reactions. In her visually impaired experience, a college of her helped the researcher record her experience; thus, the researcher's college interaction with the same environment, her movement, her reactions also constituted valuable data to compare how diverse users react to the same environment. After analyzing corresponding points of observation and video

recording data, places that cause obstacles for diverse campus users were photographed to identify the locations where universal design solutions were needed. Since it is impossible to solve and actualize all of the users' needs in universal design, needs should be prioritized (Afacan & Demirkan, 2010). Within the scope of this research, after determining campus users' needs via observation and video recording, places that need design interventions were prioritized in accordance with their importance level by using the Priority Grouping method of Karlsson et al. (2007), which have been adapted from Planning Game method. While grouping and prioritizing the places their impact level on fundamental rights and freedom, inclusivity, usage frequency, the possible cost of the needed solutions were considered. A design solution primarily requires needs analysis and problem definition (Roth, 1973). Similarly, An Introduction to Design Thinking Process Guide (n. d.) explains the stages of the iterative, human-centred thinking way of design as begins with empathy and definition. Then ideation, prototyping, and test come. So, in this study, participant observation and role-playing can be considered as empathy stage and prioritizing places that need design interventions helped the researcher make needs analysis and frame problem definition. The researcher and her colleague are the two participants of the survey process. With the help of initial ideas and prototypes search for increasing the inclusivity level of the campus has continued. Thus, the inclusivity level of the campus was evaluated through observation, video recordings, and design action (Figure 3).

Figure 3. The Research Procedures



Findings

With the help of the participant observation and video recordings that were actualized within the scope of this research, areas causing inequality and exclusion in the Duzce University Faculty of Art, Design and Architecture have been revealed (Table 1). The determination of environmental challenges for users on the campus plays a critical role in framing possible design solutions.

Table 1. Campus areas and identified problems.

Area	Problems
Campus main entrance	<ul style="list-style-type: none"> Narrow turnstile Not being able to perceive the audio stimulus Undefined card reader section Not being able to see inside of security cabin Interrupted pedestrian path by vehicle road suddenly after entering campus Not having tactile surfaces on the pedestrian entrance side of the sidewalks.
Circulation areas	<ul style="list-style-type: none"> Misleading tactile surfaces Narrow sidewalks Bumpy ground Urban furniture barriers on walking routes Disconnected pedestrian paths High stairs High slope roads Undefined main entrances of the facilities Interrupted pedestrian paths by vehicle roads
Dining areas	<ul style="list-style-type: none"> Limited space for movement Misplaced furniture Dining hall interior stairs Accessibility of green space
Institute Building	<ul style="list-style-type: none"> Limitation in circulation Having only stairs as the access option to the main entrance of the building

Area	Problems
	Curbs in green social spaces
Building A	Accessing the entrance by stairs without any stairhead The high slope of the disability ramp and closed door at the end of the ramp Closed-door at the place where tactile surface leads you and urban furniture on tactile route Hard to perceive the numbering and naming of the rooms Risky interior organization in classrooms Undefined beginning and endpoints of stairs Lack of disabled toilet Lack of guides inside toilets
Building B	Hard to perceive the numbering and naming of the rooms Risky interior organization in classrooms Undefined beginning and endpoints of stairs Insufficient and risky disabled toilets Not having audio alerts in elevators

Following the collected data, problematic aspects in the interaction between users and the campus space can be stated as main entrance experience, outdoor and indoor circulation and wayfinding, entrances of buildings, existing conditions for personal care, the usability of social facilities (Figure 4-11).

Figure 4. The campus entrance.



Figure 5. Dining hall and cafeteria.



Figure 6. The main entrance of building A (music department block)



Figure 7. Entrance of Graduate Management Office



Figure 8. Entrance of building of dean's office and faculty rooms



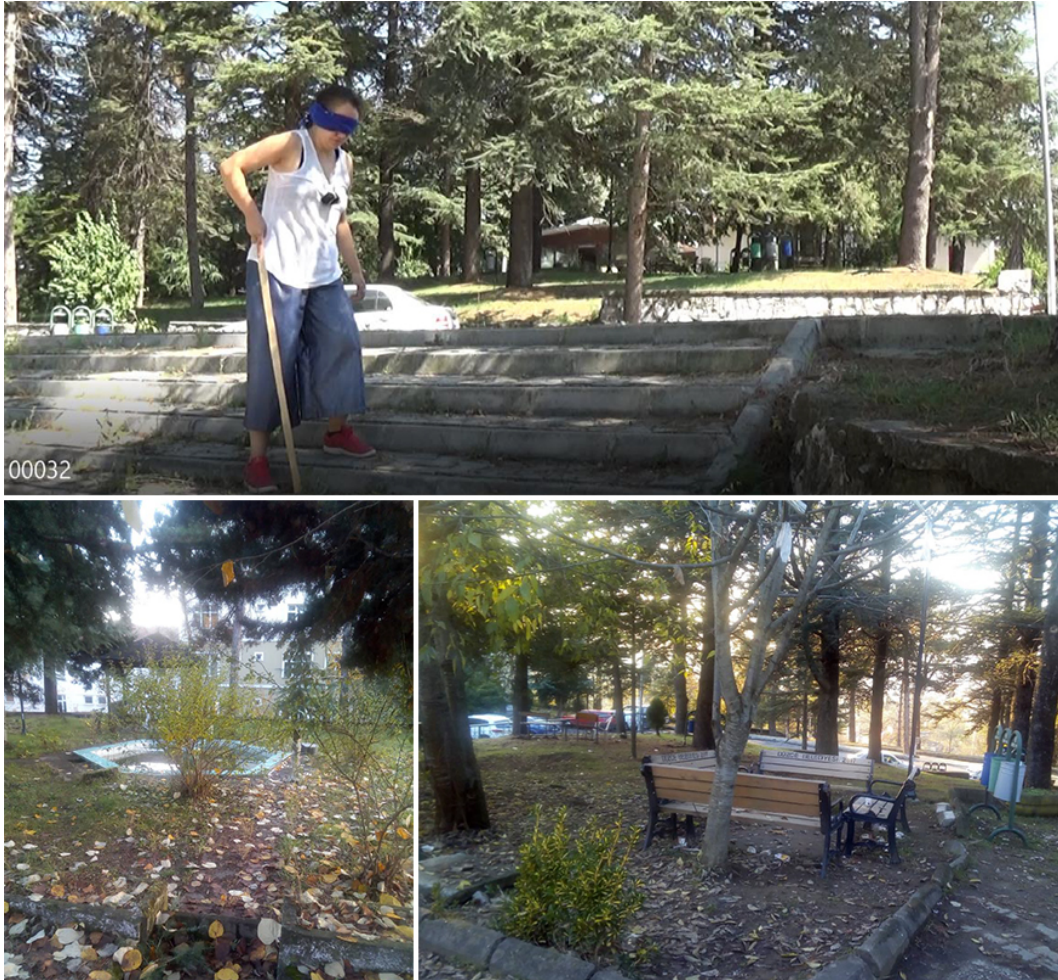
Figure 9. Building B toilet



Figure 10. Building A toilet



Figure 11. Outdoor circulation areas and social spaces.



Regarding the daily life practices of the campus users, places that need universal design interventions are grouped according to their priority level (Table2).

Table 2. Priority grouping of the spaces.

High	Medium	Low
<ul style="list-style-type: none"> Walking areas, outdoor circulation areas Turnstile Accessibility of toilets Building the main entrance Undefined entrances of facilities 	<ul style="list-style-type: none"> Undefined beginning and endpoints of stairs Hard to use toilet spaces Naming and numbering issues in buildings Interior arrangements in classrooms Interior circulation areas Lack of handrails on both sides of the stairs Lack of audio information system in the elevator 	<ul style="list-style-type: none"> Access to green space Building B main entrance Management building main entrance Institute main entrance

The places that require improvement for inclusivity are examined regarding how they conflict with universal design, their priority level, and possible design solutions (Table 3).

Table 3. Identified problems and possible solutions analysis within the framework of universal design.

Problem	Priority Level	Unsatisfied Universal Design Principles	Aim Of The Possible Design Solutions
Walking areas, outdoor circulation areas	High	Equitable Use, Simple and Intuitive Use Perceptible Information, Size and Space for Approach and Use	Enlarging walking areas, defining connected routes, improving for disabled people

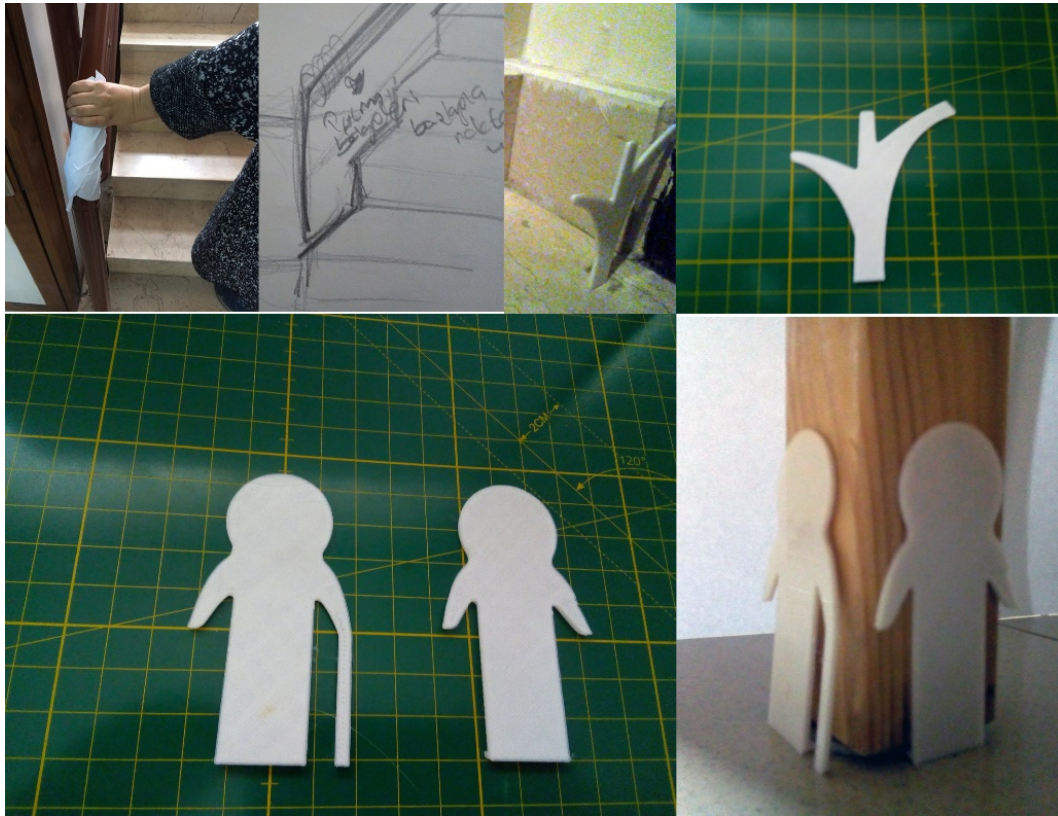
Problem	Priority Level	Unsatisfied Universal Design Principles	Aim Of The Possible Design Solutions
Turnstile	High	Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Low Physical Effort, Size and Space for Approach and Use	Easy pass from the turnstile, defining card reader area, making audio stimulus more informative
Accessibility of toilets	High	Equitable Use, Flexibility in Use, Tolerance for Error, Size and Space for Approach and Use	Developing solutions for diverse user groups
Building the main entrance	High	Equitable Use, Simple and Intuitive Use, Size and Space for Approach and Use	Easier entering to the building
Undefined entrances of facilities	High	Perceptible Information, Tolerance for Error	Supporting user to identify the surrounding environment
Undefined beginning and endpoints of stairs	Medium	Equitable Use, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use	Providing equally safe and usable vertical circulation
Hard to use toilet spaces	Medium	Equitable Use, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use	Developing solutions for diverse user groups inappropriate size and space

Problem	Priority Level	Unsatisfied Universal Design Principles	Aim Of The Possible Design Solutions
Naming and numbering issues in buildings	Medium	Equitable Use, Perceptible Information, Tolerance for Error	Easier access to different spaces in the campus for diverse user groups
Interior arrangements in classrooms	Medium	Equitable Use, Flexibility in Use, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use	Providing equally safe and accessible classroom
Interior circulation areas	Medium	Equitable Use, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use	Supporting users to circulate safely in the buildings
Lack of handrails on both sides of the stairs	Medium	Equitable Use, Flexibility in Use, Size and Space for Approach and Use	Supporting safe vertical circulation of all users
Lack of audio information system in the elevator	Medium	Equitable Use, Flexibility in Use, Simple and Intuitive Use, Tolerance for Error,	Supporting equality and safety in the vertical circulation of all users
Access to green space	Low	Equitable Use, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use	Providing equal opportunities inaccessibility and socialization

Problem	Priority Level	Unsatisfied Universal Design Principles	Aim Of The Possible Design Solutions
Building B main entrance	Low	Equitable Use, Tolerance for Error, Size and Space for Approach and Use	Making easier entrance for diverse user groups
Management building main entrance	Low	Equitable Use, Tolerance for Error, Size and Space for Approach and Use	Making easier entrance for diverse user groups
Institute main entrance	Low	Equitable Use, Tolerance for Error, Size and Space for Approach and Use	Making easier entrance for diverse user groups

When we consider the spatial problems that cause a deficiency in meeting universal design principles and their impact level, it has been revealed that most of the universal design interventions require a high budget. For this reason, in order to improve testability in the following studies, the places that have high or medium priority and need small-scaled interventions are chosen as the study area. Within this respect, disambiguation of the beginning and endpoints of the stairs and disorganized interior of the lecture rooms are defined as the design problems. Initial ideas were searched through quick mock-ups by considering universal design principles (Figure 2). Thus even if being at the very beginning of the ideation process, it is understood that small interventions can make positive impacts on usage. Only by using different materials and patterns at the beginning and end of the handrails, illustrated reminders to keep furniture in the classroom tidy can make a difference in the inclusivity level of the space.

Figure 2. Initial idea mock-ups.



Discussion

Above mentioned findings show us, as pointed by Lau et al. (2016) design of the external environment, entrance, horizontal circulation, vertical circulation and facilities of the campus directly affects the actions of people, thus affects the inclusivity level of the educational institution (Table 4).

Table 4. Areas and design problems analysis of the campus environment

Problematic area	Related Problem
External environment	<p>Difficulty in entering the campus area</p> <p>Discomfort in walking due to disconnected, narrow, bumpy walking areas</p> <p>Being unable to find the facilities due to lack of signage and information panels</p> <p>Much effort is required because of high slope circulation roads</p>
Entrances	Difficulty in entering into the buildings
Horizontal circulation	<p>Numbering and naming deficits of rooms cause difficulty in wayfinding</p> <p>Lack of audio, visual and tactile signs cause wayfinding and feedback problems</p>
Vertical circulation	<p>Inadequate size for access cause a decrease in vertical mobility</p> <p>Lack of audio, visual, and tactile signs cause safety concerns</p>
Facilities	<p>Difficulty in moving</p> <p>Lack of size, space and order for mobility</p>

The first barrier that the campus environment created is placed at the first interaction point with the user, at the main entrance of the campus. Whether disabled or not, every day, every pedestrian campus user is challenged by the

limited, hard use of the turnstile. It is very hard to enter the campus for people with physical or visual disabilities, or people with an ordinary backpack, or people with art portfolio cases, or people carrying their mock-ups, and also audio and visual feedbacks are insufficient. Thus, the experience of every pedestrian user begins negatively, and at first sight, they feel how their needs are ignored comparing the vehicle users. On the contrary of untagging characteristics of the universal design, as Story (1998) mentioned, their lifestyle and socio-economic conditions are being unbundled from other users at the first interaction.

When we look at the outdoor circulation areas of the campus, disconnected, narrow, bumpy walking roads, lack of informative elements, high slope circulation routes limit disabled users' ability to move independently on the campus. Thus, they lose more time circulating on the campus, and thus, their participation level to the social and educational activities decreases. It is very hard for them to socialize in coffee breaks as other normal users do, however being and feeling normal is the basis of universal design (Meşhur and Çakmak, 2018).

While the main entrances of office buildings or educational buildings do not offer suitable solutions for disabled people, at the same time, they also do not have enough size and space for users who carry musical instruments or art supplies. Thus, neither disabled users nor users with their professional equipment can move freely. In indoor circulation areas, exhibited goods and furniture limit user's movements, and also, users cannot get enough information about the location via audio or visual signs. Numbering and naming deficits cause being unable to be perceived by everyone. And also consistent with the findings of Ay et al. (2017), Yılmaz et al. (2012). and Moriña Díez et al. (2015), the design of the buildings prevent disabled people from advancing from the social facilities and using vertical circulation in the same manner with other user groups, and so, again, creates inequality. Even though some practices improve the accessibility of the educational environments following legislation and mandatory standards, they usually fall behind in fulfilling disabled people's needs. Not comprehending the idea behind the applied standards and laws, budget issues, not being able to make necessary changes simultaneously in an existing built environment, not being able to meet

decision-makers and users in the design process can cause this. Thus, inequality in the usage of educational spaces continues its existence. In the case of Duzce University Faculty of Art, Design and Architecture, all of the before-mentioned causes can be counted as the reasons why following standards and laws did not create a more inclusive environment. Universal inequality in educational environments can be solved via applying universal design principles at the very beginning of the design process, and it requires the full participation of all actors in the system.

Conclusion

The inclusivity level of educational environments reflects the egalitarian characteristics of an education system. The application of universal design principles while creating educational spaces provides the highest level of inclusivity and, therefore, supports equality in education. In this study, Duzce University Faculty of Art, Design and Architecture Campus was examined from the perspective of universal design via observation, video recording, and initial idea designs. Being relatively young, equality and inclusivity, caring characteristics of art and design and understanding the importance of physical environment make Duzce University Faculty of Art, Design and Architecture a perfect candidate for universal design and education research. As a result, it is revealed that the campus environment requires new universal design solutions to meet their diverse users' daily life needs and to give equal opportunity in education to any individual.

It should be noted that an individual interacts with the surrounding environment in accordance with the intended action, and during this process, requirements of the intended action, properties of environmental elements and personal characteristics of the individual are determinants. So, any universal design practice will fail if one of these three is neglected. It is only possible to analyze the inclusivity of an educational environment by considering its physical properties, its users' characteristics, and related actions. The campus environment has been handled holistically and initial design solutions have shown the positive impacts of small-scaled universal design solutions on the inclusivity level within this perspective. It has been

thought that, for further studies, in addition to role-playing, including diverse user groups in the data collection and design phase will result in a more improved design solution in terms of universal design. And, of course, to achieve a successful inclusive design solution in an educational organization, it is strongly suggested to involve management actors to design phases in further studies.

To conclude, it should be appropriate to mention that providing only equal opportunities in education is not sufficient to make the environment more inclusive. Of course, physical changes are linked with social change. However, they are only effective if they find a response in every actor of the system. So, it is crucial to make every actor of the system take part in educational space design.

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