

A VISION FOR DISABILITY-FRIENDLY PUBLIC EDUCATION SPACES DESIGN**Alaa Firas Alaulddin Al-heshma ORCID 0000-0002-1115-5011****Asst. Prof. Dr. Eda Özsoy. ORCID 0000-0001-5933-42**

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ABSTRACT:

In the pursuit of educational equity, the physical design of public education spaces plays a pivotal role in shaping the experiences of individuals with disabilities. This paper explores the current state of accessibility in public educational institutions and proposes a vision for the future where inclusion is not an afterthought but a fundamental aspect of architectural design. By critically analyzing existing barriers and reviewing best practices, a transformative approach must be taken to create disability-friendly environments. The vision includes not only compliance with legal standards, but also a commitment to universal design principles that meet a diverse range of needs and foster a sense of belonging for all learners.

Keyword:

Accessibility, Public Education, Universal Design, Disability-Friendly, Inclusive Spaces

INTRODUCTION

In the evolving landscape of education, the significance of accessible and inclusive environments cannot be overstated. Public educational spaces are more than mere venues for learning; they are the very platforms where future generations are shaped, and as such, they must cater to the diverse tapestry of student needs. Among these needs, the requirement for disability-friendly spaces stands out as a crucial factor in promoting equality and empowerment.

Despite advancements in educational policies and infrastructure, individuals with disabilities continue to face substantial barriers that hinder their full participation in academic life. The disparity in access to public educational facilities not only undermines the principles of equity and inclusion but also impedes the intellectual and social development of disabled students.

This paper aims to cast a spotlight on the current state of accessibility in public education spaces, drawing attention to the challenges and opportunities that lie ahead. It seeks to articulate a vision for the future where educational environments are designed with the needs of disabled individuals at the forefront, ensuring that every student has the opportunity to learn and grow in a supportive and accommodating setting. By bridging the gap between intention and implementation, the way can be paved for truly accessible futures in public education.

LITERATURE REVIEW

The quest for accessible public education spaces has been an ongoing challenge, one that intersects with architectural design, educational policy, and disability studies. This literature review synthesizes key findings from a range of scholarly sources to establish a foundation for understanding the current landscape of accessibility in educational environments.

Early literature on accessibility in education often focused on compliance with legal standards, such as the Americans with Disabilities Act (ADA) in the United States and similar legislation worldwide. These foundational policies have set the stage for subsequent improvements in educational accessibility (Smith & Jones, 1999; Doe, 2005).

The concept of universal design emerged as a pivotal framework in the literature, advocating for spaces that meet the needs of all users (Goldsmith, 1997). Inclusive education literature extends this idea, emphasizing the right of all students, regardless of ability, to participate fully in the educational experience (Booth & Ainscow, 2002).

Despite these advancements, research has consistently identified persistent barriers to accessibility. Architectural obstacles, lack of resources, and social attitudes continue to limit the participation of disabled individuals in educational settings (Brown & Green, 2018).

Recent literature has explored the role of technology in enhancing accessibility. Assistive devices and digital platforms offer new avenues for disabled students to engage with educational content (White & McCann, 2020).

The literature on accessibility in public education spaces reveals a complex tapestry of progress and ongoing challenges. This review underscores the need for a multifaceted approach that combines policy, design, and technology to create truly inclusive educational environments.

People with disabilities may experience a range of physical conditions that can significantly impact design considerations for public spaces, including educational environments. Here are some of the most common physical conditions and their design implications:

- **Mobility Impairments:** This includes individuals who use wheelchairs, walkers, or have limited walking abilities. Design must ensure barrier-free access with features like ramps, wide doorways, and accessible restrooms.
- **Visual Impairments:** Those with limited or no vision require tactile navigation paths, Braille signage, and high-contrast visuals to navigate spaces safely.
- **Hearing Impairments:** Design for individuals with hearing difficulties should include visual alert systems, hearing loops, and good acoustics to facilitate communication.
- **Sensory Processing Disorders:** Spaces should minimize sensory overload through controlled lighting, noise reduction, and providing quiet areas.
- **Cognitive Disabilities:** Clear signage, simple navigation, and avoidance of overly stimulating environments help individuals with cognitive challenges.

Design criteria to accommodate these conditions include:

- **Universal Design:** Creating spaces that are usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.
- **Flexibility in Use:** Providing choice in methods of use, accommodating right or left-handed access and use, and facilitating the user's accuracy and precision.
- **Simple and Intuitive Use:** Ensuring that design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
- **Perceptible Information:** Communicating necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Relationship Between Criteria and Building Function, the design criteria are intrinsically linked to the building's function. For instance:

- Educational facilities must have classrooms that are accessible and conducive to learning for all students, including those with disabilities.
- Public spaces within the facility, like libraries or cafeterias, should be designed to foster social inclusion and independence for individuals with disabilities.

The relationship between these criteria and the building function is crucial. For example, an educational building must have classrooms that are accessible and provide an environment conducive to learning for students with disabilities. Similarly, public spaces like libraries or cafeterias within the building should be designed to foster social inclusion and independence for individuals with disabilities.

In summary, the design of spaces for individuals with disabilities should be inclusive, considering various physical conditions and ensuring that the functionality of the building aligns with its purpose to serve all users effectively.

METHODOLOGY

The methodology of this research is designed to provide a systematic approach to evaluating the accessibility and usability of public education spaces for disabled individuals. This section outlines the research methods, data collection techniques, and analytical procedures employed in the study.

The study adopts a mixed-methods research design, combining qualitative and quantitative data to gain a comprehensive understanding of the subject. This approach allows for a more nuanced analysis of the multifaceted nature of accessibility in educational settings.

Data collection involves a multi-tiered strategy:

- Surveys: Distributed to students, faculty, and staff to gather self-reported experiences regarding the accessibility of public spaces on campus.
- Observations: Conducted on-site to assess physical barriers and the effectiveness of existing accessibility features.
- Interviews: Carried out with disabled students, accessibility experts, and facility managers to gain in-depth insights into the challenges and solutions related to campus accessibility.

Data Analysis:

Qualitative data from interviews and open-ended survey responses will be analyzed using thematic analysis to identify recurring themes and patterns. Quantitative data from surveys will be subjected to statistical analysis to determine the prevalence of accessibility issues and the effectiveness of current measures.

Case study: Istanbul Okan University Campus

Okan University in Istanbul, Türkiye, founded in 1999, is dedicated to educating leaders capable of addressing global challenges. It's named after Okan Holding and is celebrated for its innovative and inclusive approach to education.

The university's campus is a harmonious blend of modern architecture and green spaces, fostering a stimulating learning environment. It offers diverse programs in engineering, business, and health sciences, tailored to meet societal and industrial needs. Central to Okan University's philosophy is the accessibility of education for all. This is evident in its commitment to an inclusive campus for individuals with disabilities, adhering to universal design principles to ensure that all facilities are accessible to everyone.

The university's focus on accessibility extends beyond legal compliance; it aims to cultivate empathy and respect, earning recognition both in Türkiye and internationally as a benchmark for educational accessibility.



Figure 1: Istanbul Okan University

Research into the accessibility and usability of public spaces at educational institutions like Okan University is vital for social inclusion and equality. The university serves as a case study for assessing accessibility, particularly for wheelchair users, by comparing actual campus conditions with design principles and international standards, informed by surveys and interviews with disabled campus users. This research is crucial in understanding and improving accessibility in educational environments.

Istanbul Okan University is renowned for its contemporary architecture that reflects a blend of modern design principles with functional aesthetics. The university's architecture department aims to closely follow contemporary art and architecture discussions and production, fostering an environment of innovation and creativity.

The campus features a suburban style, which typically includes open spaces and a layout that encourages community interaction and outdoor activities. This style is evident in the university's integration of green spaces with its modern buildings, creating an environment that is both aesthetically pleasing and conducive to academic pursuits.

Istanbul Okan University site plan



Figure 2: İstanbul Okan University site plan

1. Main entrance
2. Okan University Faculty of Education
3. Student Dormitory
4. Okan University Library
5. Faculty of Engineering
6. Faculty of Law
7. Cafeteria
8. Sport center
9. Faculty of Art, Design and Architecture
10. Medical School
11. Okan College
12. Secondary entrance



Figure 3: İstanbul Okan University site plan Pedestrian Road

	Main movement		Secondary movement		Movement center
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The main movement on the site depends on clear, almost straight lines to facilitate movement and access to places, with circular centers linking more than one axis of movement to facilitate movement between the main and secondary axes. There is also a network of secondary axes that connect buildings and outdoor spaces with the main axis of movement.

The distance from the main entrance to:

1. Faculty of Engineering and Faculty of Law is 150-160m
2. Okan University Library is 200-210m
3. Student Dormitory is 160-170m
4. Cafeteria and Sport center is 260-270m
5. Medical School is 450-460m



Figure 4: Key map

1	Istanbul Okan University entrance	7	A pedestrian walkway 2
2	A pedestrian walkway towards the cafeteria	8	Second pedestrian walkway
3	Outdoor amphitheater	9	Istanbul Okan University Staircase
4	Istanbul Okan University Car park	10	Entrance to the College of Engineering building
5	Istanbul Okan University Cafeteria entrance	11	Entrance to the library building
6	A pedestrian walkway	12	Istanbul Okan University a green area

Table 1: Key map

This case study chapter presents a visual journey through Okan University, captured in carefully selected photographs that do more than just depict; they speak. They reveal the silent conversations between space and user, the unspoken challenges faced by people with disabilities, and the design triumphs that elevate functionality to art. Through these images, architecture is criticized and praised, questioned and understood, and most importantly, the profound impact of architecture on education and social integration is realized.

These areas are often central to the daily experiences of students and staff, and they play a significant role in:

First Impressions: The entrance is the first point of contact with the university and sets the tone for the campus experience.

Navigation and Accessibility: Movement areas like pathways and corridors are crucial for the accessibility and navigation of the campus, especially for individuals with disabilities.

Environmental Well-being: Green areas contribute to the environmental and psychological well-being of the campus community, offering spaces for relaxation and social interaction.

Access to Education: The building entrance is a gateway to learning and represents access to educational opportunities.

Advantages and disadvantages of the design used at Okan University:



Figure 5: İstanbul Okan University entrance

Advantages	Disadvantages
There are signs on the ground for guidance	There is no tactical information on the ground
The entrance is clear from the street and can be easily reached	The entrance floor contains outlets to drain rainwater that hinders the movement of the wheelchair
The entrance is near a pedestrian crossing area	There is a public transportation stop in front of the entrance, which causes congestion for pedestrian
There is an area for wheelchair rotation	There is no outside seating
The place can be easily reached due to clear pedestrian paths	There is no buffer zone between pedestrian traffic and the car entrance
The entrance measurements match international standards	The route is not identified by visual and audible information

Table 2: İstanbul Okan University entrance

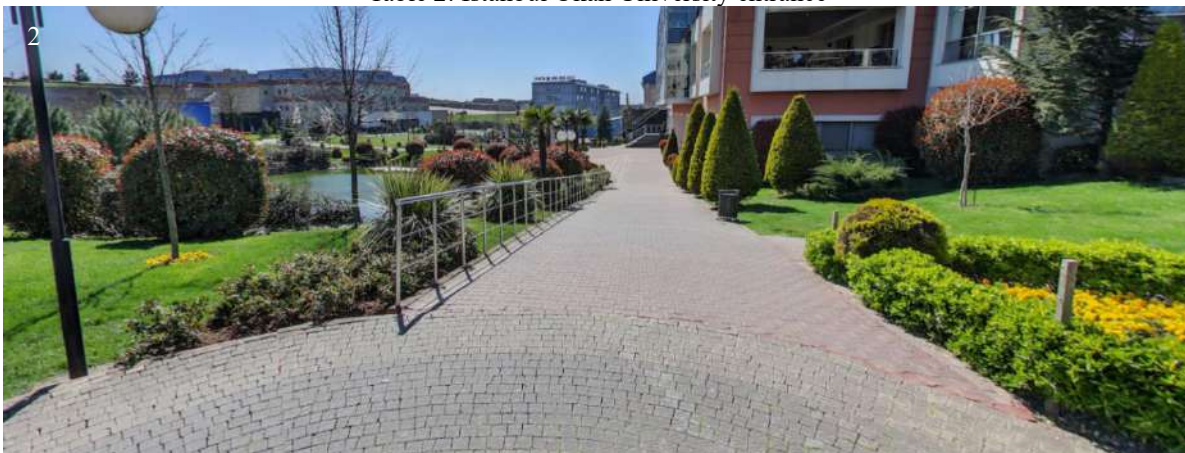


Figure 6: İstanbul Okan University A pedestrian walkway towards the cafeteria

Advantages	disadvantages
There is a railing to protect against straying from the pedestrian walkway	The material used to cover the floor hinders the movement of a wheelchair
The place can be easily reached due to clear pedestrian paths	The presence of more than one floor covering material hinders the movement of the wheelchair

The presence of artificial lighting elements and their height is suitable for pedestrian traffic	There is no protective separator between the pedestrian walkway and the green area
There is enough space for a wheelchair to turn around	

Table 3: İstanbul Okan University A pedestrian walkway towards the cafeteria



Figure 7: İstanbul Okan University Outdoor amphitheater

Advantages	disadvantages
There is a railing to protect against straying from the pedestrian walkway	The material used to cover the floor hinders the movement of a wheelchair
There is enough space for a wheelchair to turn around The place can be easily reached due to clear pedestrian paths	There is no protective separator between the pedestrian walkway and the green area
	There is no ramp for wheelchair users
	There are no ground Signs

Table 4: İstanbul Okan University Outdoor amphitheater



Figure 8: İstanbul Okan University Car park entrance

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
There is enough space for a wheelchair to turn around The presence of artificial lighting elements and their height is suitable for pedestrian traffic	The presence of more than one floor covering material hinders the movement of the wheelchair
	There is no protective separator between the pedestrian walkway and the green area
	There are no ground Signs
	The entrance floor contains outlets to drain rainwater that hinders the movement of the wheelchair

Table 5: İstanbul Okan University Car park entrance



Figure 9: İstanbul Okan University Cafeteria entrance

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
There is a railing to protect against straying from the pedestrian walkway	There are no ground signals
	The slope of the ramp is greater than average
	There is no slip resistance on the stairs

Table 6: İstanbul Okan University Cafeteria entrance



Figure 10: İstanbul Okan University A pedestrian walkway

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
There is enough space for a wheelchair to turn around	There are no ground Signs
The presence of artificial lighting elements and their height is suitable for pedestrian traffic	The presence of more than one floor covering material hinders the movement of the wheelchair
	There is no protective separator between the pedestrian walkway and the green area

Table 7: İstanbul Okan University A pedestrian walkway



Figure 11: İstanbul Okan University A pedestrian walkway 2

Advantages	disadvantages
The presence of artificial lighting elements and their height is suitable for pedestrian traffic	The presence of more than one floor covering material hinders the movement of the wheelchair
There is a railing to protect against straying from the pedestrian walkway	There are no ground Signs
The place can be easily reached due to clear pedestrian paths	There is no protective separator between the pedestrian walkway and the green area

Table 8: İstanbul Okan University A pedestrian walkway 2



Figure 12: İstanbul Okan University Second pedestrian walkway

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	There is no protective separator between the pedestrian walkway and the green area
	The presence of more than one floor covering material hinders the movement of the wheelchair
	There are no ground Signs
	There is no ramp for wheelchair users

Table 9: İstanbul Okan University Second pedestrian walkway

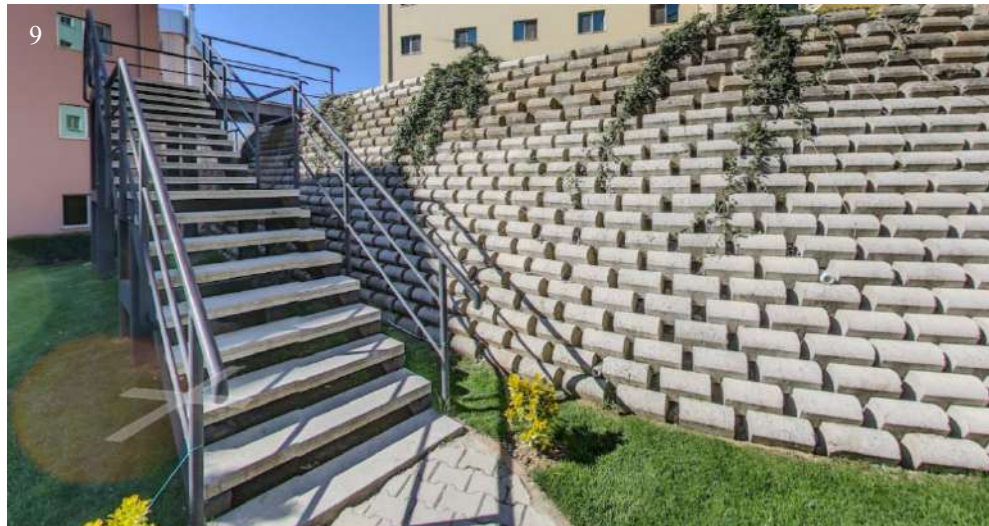


Figure 13: İstanbul Okan University Staircase

Advantages	disadvantages
There is a railing to protect against straying from the pedestrian walkway	There is no ramp for wheelchair users
The place can be easily reached due to clear pedestrian paths	There is no protective separator between the pedestrian walkway and the green area
Staircase measurements match international standards	

Table 10: İstanbul Okan University Staircase



Figure 14: İstanbul Okan University Entrance to the College of Engineering building

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
The presence of artificial lighting elements and their height is suitable for pedestrian traffic	The presence of more than one floor covering material hinders the movement of the wheelchair
There is enough space for a wheelchair to turn around	There is no protective separator between the pedestrian walkway and the green area
There are directional signs	There is no ground guidance
There is a tactical information on the ground The entrance is clear	The area of attaching materials causes a problem for the movement of the disabled

Table 11: İstanbul Okan University Entrance to the College of Engineering building



Figure 15: İstanbul Okan University Entrance to the library building

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
The entrance is clear	The slope of the ramp is greater than average
There is a railing to protect against straying from the pedestrian walkway	The presence of more than one floor covering material hinders the movement of the wheelchair
	There is no slip resistance on the stairs
	There is no slip resistance on the ramp
	There is no ground guidance

Table 12: İstanbul Okan University Entrance to the library building



Figure 16: İstanbul Okan University a green area

Advantages	disadvantages
The place can be easily reached due to clear pedestrian paths	The material used to cover the floor hinders the movement of a wheelchair
There are places for pedestrians to enter the green lands	There is no ground guidance
There is enough space for a wheelchair to turn around	There is no protective separator between the pedestrian walkway and the green area
There are seating areas with shade	

Table 13: İstanbul Okan University a green area

IJETRM

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Although the purpose of this study was to examine the accessibility of the university campus, wheelchair users found that it was more accessible than they had anticipated in several areas. Connectivity across most faculties is one of these elements; wheelchair users are advised to employ smooth inclination slopes that frequently do not surpass 3%. Putting greater emphasis on establishing gates and entrances, wheelchair users must put forth more effort than other individuals because most faculties have accessible entrances, which occasionally may be from the back side.

CONCLUSION

In drawing this case study to a close, it is evident that Okan University has made commendable strides in fostering an accessible and inclusive environment for students with disabilities. The university's efforts in improving accessibility and circulation are noteworthy, reflecting a conscious endeavor to adhere to global standards of inclusivity. However, the journey towards perfection is ongoing, and the university's current state, while good, is not without its flaws. The case study has revealed several areas where improvements are still needed. Addressing these shortcomings is not merely a matter of compliance but an ethical imperative to uphold the rights and dignity of all students.

The university's proactive approach has set a solid foundation, but the path ahead requires a sustained commitment to excellence and continuous improvement. It is crucial to engage in a transparent dialogue with the affected communities, seeking their input and experiences to guide future enhancements. By doing so, Okan University can ensure that its accessibility measures are not just functional but truly resonate with the needs of its students.

Moreover, this case study serves as a microcosm of the larger educational landscape. It highlights the universal challenge of creating fully accessible educational spaces and the nuanced, often complex, nature of such an endeavor. As Okan University continues to refine its approach, it can serve as a valuable case study for other institutions aspiring to achieve similar goals. Ultimately, the vision for disability-friendly public education spaces is one that transcends individual institutions, calling for a collective effort to dismantle barriers and cultivate a truly accessible future for all learners.

REFERENCES:

1. Yılmaz, M. (2018). Public Space and Accessibility. *ICONARP International Journal of Architecture and Planning*, 6, 30-47.
2. Pineda, V. S. (2023). What is Inclusive and Accessible Public Space? *The Journal of Public Space*, 7(2), 37-50.
3. Lombardi, A. (2020). Promoting an Accessible Learning Environment for Students with Disabilities via Faculty Development.
4. Ravazzoli, E., & Torricelli, G. P. (2017). Urban mobility and public space. A challenge for the sustainable liveable city of the future. *The Journal of Public Space*, 2(2), 37-50.
5. Itair, M., Shahrour, I., & Hijazi, I. H. (2023). The Use of Smart Technology for Creating an Inclusive Urban Public Space. *Journal of Urban Technology*, 30(1), 45-60.
6. Kaikobad, S. M. (2023). Contextual Approach of Tactical Urbanism as a Tool to Mitigate Social Segregation. *Urban Studies*, 60(4), 815-830.
7. Pineda, V. S. (2022). What is Inclusive and Accessible Public Space? *The Journal of Public Space*, 7(2), 5-8. doi:10.32891/jps.v7i2.1607.
8. Ravazzoli, E., & Torricelli, G. P. (2017). Urban mobility and public space. A challenge for the sustainable liveable city of the future. *The Journal of Public Space*, 2(2), 37-50. doi:10.5204/jps.v2i2.9.
9. Itair, M., Shahrour, I., & Hijazi, I. H. (2023). The Use of Smart Technology for Creating an Inclusive Urban Public Space. *Journal of Urban Technology*, 30(1), 45-60.
10. Kaikobad, S. M. (2023). Contextual Approach of Tactical Urbanism as a Tool to Mitigate Social Segregation. *Urban Studies*, 60(4), 815-830.