

# The Enhancement of Socialization Regarding Accessible Architectural Design for Wheelchair Users in University Campuses: Case of Study 'Istanbul Okan University Campus'

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**Abstract:-** As population grow rapidly, there is a huge number of disabled people around the globe. This study concentrated on wheelchair users and the engagement and interaction with abled people and environment. Therefore, urban planners, architects, landscape architects, and researchers in urbanization play significant role to adapt the design in accessible understandable strategies. Accessibility is one of the common principals that widely known and essential in all designs among architects. This means that ecological urbanization has to indicate wheelchair user accessibility and circulation to be implemented clearly organic and readable, otherwise, wheelchair users face controversial trouble that limit their movements and rights. Accessible urbanization on cities and countries is being discussed for several decades to improve the typical ecological urbanization that some countries promote premium respectful consideration, some trying to improve, and some of them are not paying any attention and strategies for these human beings. These

citizens are consequently left prisoned home because of poor urban planning, and inconsideration from governors or stakeholders who less focusing on these important issues and incorporating properly with urban planners.

This study suggests proposal studies for wheelchair users around Istanbul Okan University Tuzla campus in Turkey. It emphasis the accessible circulation and social integration between dis (abled) students, as well as suggest trend ideas to enhance urban spots around the campus in order to achieve the social equity in all areas such faculties, recreational spots, sport, gates and doors, and the way round them. These inconsideration aspect s hinders their rights of participation and being sadly isolated.

*Keywords:-* Accessibility for Wheelchair Users, Campus Circulation, Socialization Strategies.

## I. INTRODUCTION

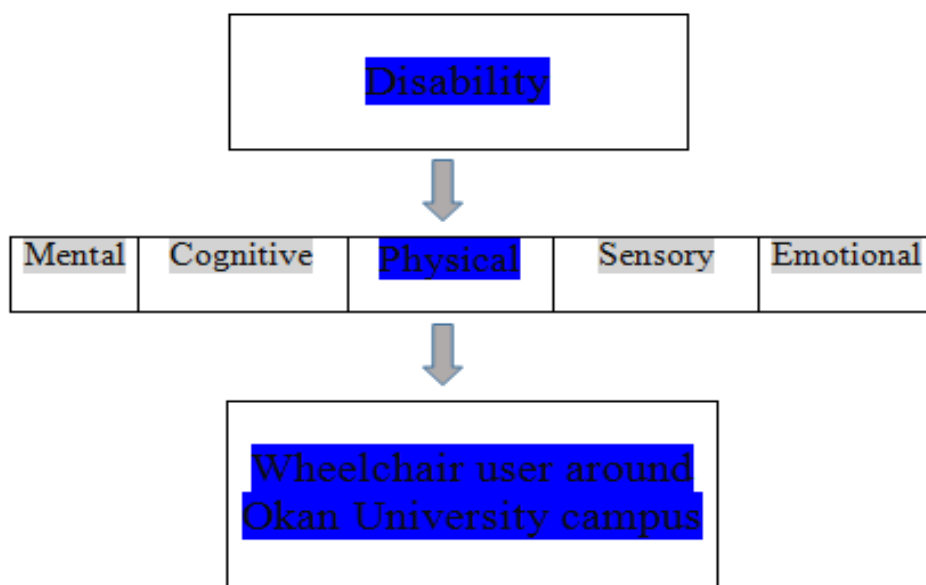


Fig 1:-Conceptual Framework

For estimated one billion persons with disabilities across the world, ill planned and developed towns and cities that lacks of accessibility often present; a combination of physical, environmental, technical and social barriers to physical and virtual infrastructures, facilities and public services (**United Nations 2016**).

In Okan University campus it is essential in/ around faculties to be friendly-user and barrier-free beside adapted to fulfil the needs of building for wheelchair users as far as the built environment is concerned. In reality, to accomplish the need for them we realize the mass needs are required to fulfil their needed. Moreover, planning for varying abilities and disabilities imply long-term built environment planning. There is worldwide conferences annually and inclusively set to discuss disability issues with international participation all around the world. Therefore, cities and towns accessible and inclusive for all, including persons with disabilities, is essential for sustainable urban development and realizing the Sustainable Development Goals (SDGs) for all. According to some evidences show that disabled people are represented as poor individuals comparing with whom do not have disability.

Secondly, considering UD is important in this study that refers to the rehabilitation strategy which promotes the design of environments, products, programs and services which are sensitive to and accommodate a wide range of individual abilities. (**Imrie & Hall, 2001; Iwarsson & Stahl, 2003**), these studies discusses Universal Design.

#### A. Problem Statement

There are some spots around university campuses that are inaccessible for wheelchair users. These areas has to be solemnly approachable for all people to reach the equal right among all human beings. Wheelchair students often forced to take longer ways to reach their destinations. They are struggling daily by facing these inappropriate urbanization development. They endure unbelievable effort that could be less if circulation and design were applied in better approachable way.

#### B. Aim of Research

The aim of this study is to increase our knowledge and awareness of accessibility from a number of situated perspectives and to deepen our understanding of environmental factors in the person–environment interaction while designing.

More importantly, the goal is to increase awareness among designers and architects to respectfully design and improve accessible university campuses for wheelchair users as well as to implement these pragmatic studies by cooperating with the administrative holders for updating.

#### C. Hypothesis

There are different perspectives whether the university campuses are governmental or private ones in terms of facilities, circulation, and scale. It differs because of economic issues and support to improve them. This improvement could be baths, gateways, proper ramps, as

well as toilets and activity approaches. It is, however, the main goal is the same which is providing suitable accessible environment for wheelchair student. If these studies are applied;

- There will be unexpected increase percentage of wheelchair students in the next a few years because of the university campuses adaptation.
- As far as university campuses are the second homes for wheelchair learners and they rather could be more favourable than first home because of comfortable sustainable accessibility that does not exist in first home often.
- Okan University campus is likely going to be one of the most welcomed and preferable institute for wheelchair users in Turkey locally and internationally.

#### D. Importance of the research

Lack of appropriate urbanization of campuses lead to decrease the number of wheelchair user students that respectfully have the rights to participate fully around university campuses, cities or countries. This paper improves the institution in terms of accessibility to be functionally approachable to increase the factors of ecology, which accessibility is one of them. It is highly recommended because with these circulation improvements there won't be any segregation between wheelchair students and abled ones which creates friendly warm environment to share for studies and activities. This provides balanced rights for all students to live cheerful and united with no matter of physical disability.

#### E. Limitation of the research

This research is a reliable research. It discusses the environment freely by the admission of the university campus. It also analyses the opportunities that could be applied to created better accessibility. Therefore, the limitations are wheelchair users in university campus. The research could also be modified at any time under any circumstances for a better research by the communication with the university. This research is on small scale due to limited time and inconvenience to interview wheelchair users. There should be further research and interviews and comparison studies between university campuses in the future.

#### F. Main definitions

Accessibility is the issue that enables persons with disabilities to live independently and participate fully in all aspects of life. The Preamble to the Convention emphasizes the importance of mainstreaming disability issues as an integral part of relevant strategies of sustainable development. In other words, it is paying the attention in the design regulation processes to promote suitable design that considers wheelchairs users to integrate with abled individuals freely by designing easily comfortable approach. "Now is the time for our ideas to be implemented. Now is the time, for women, girls, men and boys with disabilities to be consistently included in, and benefit from, the opportunities that are available to

everyone in society, (DFID’s Strategy for Disability Inclusive Development 2018-23, UK).

Accessible design is defined as the interaction between people and environment, therefore, design has to accommodate wheelchair users in all aspects to move freely around by themselves without any barriers or limitations.

Many countries around the globe set strategies that aim to increase and adapt typical design that fits wheelchair users. One of these visions is (US Department of the Interiors; Accessibility Strategic Plan, 2012) which negotiate to;

1. Create a welcoming environment for visitors with disabilities.
2. Ensure that new facilities and programs are accessible.
3. Upgrade existing facilities to improve accessibility.

**Note:** The point no. 3 is the point matches Okan university Tuzla campus adaptation study.



Fig 2:- Okan University Tuzla campus, the Study Case

## II. METHODOLOGY

### A. Research model

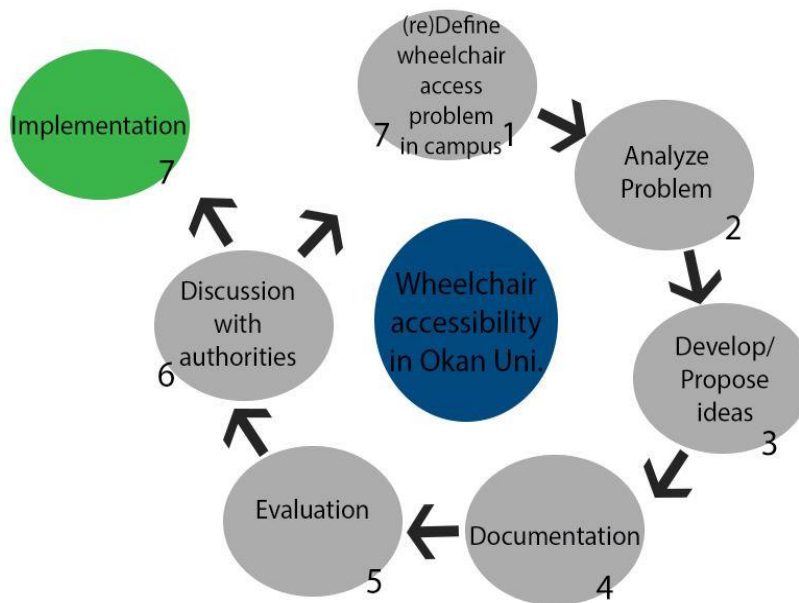


Fig 3

This figure 3 diagram indicates the steps of maintain urban developed campus in terms of accessible wheelchair students. This study has obviously initiated with defining the problem that wheelchair users face when they move around this green cheerful campus. Then, analysing the problem takes time to think if these analysis deserve developing and how worthy would they be if implemented, after that, suggestion new trend concepts to follow and document all these analysis. One of the main reasons of this paper is to implement this paper in real after being evaluated and discussed properly with the administrative office of Okan University.

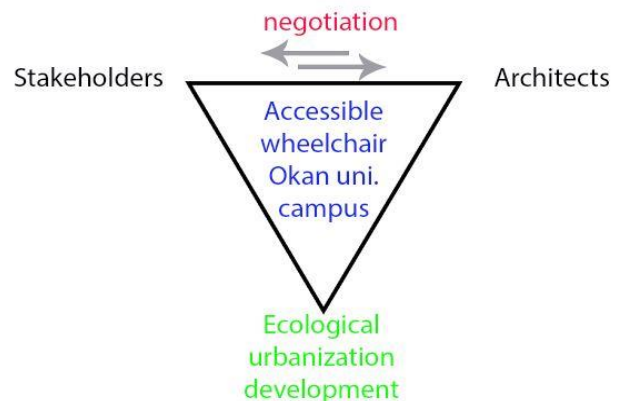


Fig 4









**Figure 4**, expresses that both Architects and Stakeholders have to discuss theories and ideas about ecological urbanization and studies the impact of implementation such wheelchair accessibility in Okan University that positively affect the review and reputation of this institution. Therefore, scientific corporation between architecture department and administrative office is essential to develop the institution a step further ecologically in terms of accessible circulation urbanism and other development.

*B. Research universe and Sample group*

The research universe for this study is wheelchair users. It is essential to consider them in design to achieve accessible managed facilities. And the sample group is campus inhabitants. These wheelchair users feel welcomed for engagement with some university campuses, and it will be more welcomed if they are adapted more and more.

*C. Data collection methods*

**Non-participant observation** was the main method to collect data for this research. This study is well observed since a few semesters ago when one of the wheelchair user was a classmate for an elective course in other department. That learner was noticed usually with a partner as a helper. I have been trying to interview him but our schedule times do not match to meet yet.

Type	Existed Problem In Okan Uni.	Explanation	Solution
Accessible Pathways		Continuous smooth ground materials needed.	 (Trentham forest park, Indonesia)
Accessible Ramps		Stairs to be attached with ramps.	 (Undefined)
Building Gates		Gates to be wheelchair accessible.	 (Architecture School in Barcelona)
Building Doors		Electronic automatic doors helping a lot.	 (Medicine faculty entry at Okan campus)


<p>Social Access</p>		<p>Seating access with free around movability.</p>	 <p>(Universal dimensions)</p>
<p>Activity Access</p>		<p>Access pathways modifications needed.</p>	 <p>(Emirates Stadium London)</p>
<p>Park Lot</p>		<p>Specify priority spots for wheelchair users.</p>	 <p>(Shenandoah park, Virginia)</p>
<p>Abbreviation Paths</p>		<p>This path used by abled, means helps disabled more if it was tiled.</p>	<p>/</p>

Fig 5

This **Figure 5** table indicates problems of accessible spots that wheelchair users can not share a part with. It is also shown some solutions and trends. These solutions are trends from around the globe, however, some of them are

exist in the same campus as well. This means that the campus status of accessibility for wheelchair users is good and it could be improved better with this research paper. Some of these well planned spots, Figure 6;



Fig 6

Focusing more on natural environment of the university campus. The university campus main focal point that exists among the faculties and considered as one of the main points where people meet with its status value. It is environmental green area with natural water channel flow and easily accessible for wheelchair individuals, as shown in figure7:



Fig 7

This focal spot has natural convenient atmosphere which meets the criteria for ecological urbanization in terms of clean air and accessibility. However, beside that focal point there is a social seating area in the nature side among the trees which is inaccessible by wheelchair users due to none ground material to reach them, Figure8:



Fig 8

#### D. Materials Planned to be used

##### ➤ Ramp Materials

The four types of materials typically used to construct wheelchair ramps include wood, concrete, steel, and aluminum. Wood is one of the more inexpensive materials for ramp building, but the cheaper cost comes with a maintenance price. Wood must be protected with sealer or varnish to prevent rotting and warping. You must add nonslip protection, like grit strips, to prevent accidents. Wooden handrails must be finished and maintained to prevent splinters. Wood boards must be placed close

enough together to prevent uncomfortable bumps but also be spaced far enough apart to allow water drainage. It is an ecological material. (Wheelchair Ramp Building Materials. 2019, Google).

##### ➤ Ground textile

Ground cover is essential for continuous accessibility. Suitable ground cover is important for wheelchair users that it has to be well maintained in order not to hinder users moving independently. Again it has to be natural element such natural wood to gain ecological sustainable healthy paths.

### III. EXPECTED FINDINGS AND RESULTS

While this study has been conducted to analyse accessibility circulation around the university campus, it seemed to be accessible for wheelchair users more than expected in many aspects. One of these aspects is connectivity among mostly all faculties by using smooth inclination slope around that often not exceeding 3% which is recommended for wheelchair users. Focusing more in building gates and entrances, most faculties have approachable entrances that sometimes could be from back side which is barely acceptable but wheelchair users got to apply more effort than other people, however, there is a new socio-cultural building that do not have any wheelchair accessibility from neither library entrance nor from the theatre one. It is recommended that to be modified. Moreover, car parks usually specify private places for heads of departments but do not specify others for wheelchair users, many car parks in the university campus are accessible but by specifying private places for them it gets smother in harsh weather (raining or snowing).

Another significant point which is the accessibility to classrooms. The classrooms are all reachable in all the faculties because of elevators as along as the entrances of faculties having no level differences with surrounding and having automatic entrance doors. However, dormitory rooms are not approachable for wheelchair users and having no appropriate toilets for them at least on ground floors which makes it easier to be reached. Therefore, with these circulation variation upgrading, university campuses are expected to be warmly welcomed environment for wheelchair users to participate fully participation in education. With this welcomed environment for wheelchair students after upgrading the facilities for university campus, Istanbul Okan university is soon expected to achieve good reputation locally and internationally for its equal right strategy for wheelchair user accessibility and with this marvellous reputation the world ranking increases to be more known and awarded for this respectful way of consideration.

#### IV. CONCLUSION

This study has figured out one of the most trend topics in last decades which is accessibility. Specifically, wheelchair accessible design is essential because it is faced in our daily life. Some university campuses are designed good to meet the criteria for wheelchair users, whereas others are poor urbanized. As we are architects, we have to increase our awareness while designing to accomplish the most suitable interaction environment between wheelchair users and abled people in university campuses. In this study case it is considered a good accessible wheelchair environment for these students with a few mistakes. If these problems gets modified, there will be a great deal of opportunities in returns but these upgrading facilities need specific budget.

This research paper conducted some ideas to upgrade the university campus facilities to be better welcomed institution for wheelchair students. With these consideration strategies Istanbul Okan University is likely going to be the most preferable university that respects all people ability and assume the equal rights and participation for all humanity. The achievement of enhancing this institution comes up automatically in returns. These fabulous returns are increasing of number of wheelchair student that brings out investment development and great reputation about the university campus to be internationally well known and awarded.

I suggest this paper to be evaluated and discussed with the university campus authority because of its significant knowledge. If there is missing gaps in it, it could be redefined to apply the most suitable criteria levels that match wheelchair users appropriately to pay less effort to reach their destinations independently as well as playing a major role in activities such as in (Queen Elizabeth Olympic Park, London 2012).

Finally, this wheelchair user accessibility study is connected with public transportation system because wheelchair users come to university campus through public transportation usually. I propose to study the strategy and criteria for public transportation system. It is valuable to study this as well even if wheelchair users live inside the campus because in holidays they might think to leave the campus through public transportation so it has to be well managed for them otherwise they get left isolated somewhere. Therefore, there should be further studies on analysing many university campuses and discuss various aspects toward ecological wheelchair urbanization accessibility.

#### ACKNOWLEDGEMENTS

This paper has been supervised by Assist. Prof. Dr. Bahar Baser. It was a master student research at Istanbul Okan University, Turkey. The author would like to thank the Professor for her contributions and advisory to this paper since draft processes till the end.

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