

THE ENVIRONMENTAL ACCESSIBILITY TO INCLUSIVE EDUCATION PRACTICE FOR PERSON WITH PHYSICAL DISABILITY

Gach Deng PAL Department of Special Needs and Inclusive Education, Jig-jiga University, Ethiopia ORCID: https://orcid.org/0009-0003-6965-706X gachpaldeng@gmail.com

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Abstract

This study examines Dalkoch Primary School's environmental accessibility to inclusive practices for students with physical disabilities. Its goal is to evaluate the physical surroundings of the school in order to pinpoint any obstacles to inclusion. To comprehend accessibility potential and limitations, a mixed-methods design is used, includes a case study approach. Purposive and random samplings are used to choose participants, who include teachers, school administrators, and students with physical disabilities, in order to reflect a range of viewpoints. Surveys, semi-structured interviews, focus groups, and in-person observations of the school's facilities and classrooms are all used in the data collection process. Accessibility levels are assessed using statistical analysis of survey quantitative data, and major obstacles and enablers are identified through theme coding of qualitative data. Strengths and places for growth are identified by the findings, which include a lack of suitable infrastructure, a lack of inclusive practice training for teachers, and a need for a better understanding of the unique requirements of each student. Enhancing environmental accessibility through universal design principles, stronger support systems, and enhanced teacher training is what study suggests. Subsequent investigations ought to examine how these enhancements affect student performance and accessibility best practices in comparable learning environments.

Keywords: Environmental, accessibility, inclusive education practice, student, physical disability.

INTRODUCTION

Globally, there are over a billion people with impairments, and many of them encounter significant obstacles while trying to engage in physical activity. Maintaining a healthy lifestyle when disabled might be difficult because physical exercise typically calls for self-assured strength, endurance, balance, and coordination. People with disabilities may have one or more physical characteristics that are impacted by their impairment, which inhibits their ability to participate in sports, fitness, and physical activities connected to their jobs or homes (Barber & Barber, 2018).

The right to higher education has been in place since 1948, according to United Nations [UN] 1948's Universal Declaration of Human Rights, item 26.1. This Convention was followed by other international agreements that established the need to guarantee nondiscriminatory access to higher education for people with disabilities. Some of these are particularly noteworthy, such as the 2006 Convention on the Rights of Persons with Disabilities or the Disability Discrimination Acts in countries like Australia (Moriña & Morgado, 2018).

Worldwide, including in Turkey, inclusive education (IE), which advocates for equitable opportunity for kids with different skill levels to acquire knowledge, has emerged as a prominent pedagogical approach in elementary schools. The issue of IE becomes a significant topic of discussion among



designers who challenge the creation of inclusive, supportive learning environments, in addition to educators. In order to fully comprehend inclusion and assess the spatial nature of inclusive learning settings, it is imperative to consider equal opportunity, diversity, social justice, and participation. In Turkey, IE is only partially implemented due to unclear concepts regarding inclusion. A lack of efficient and thorough design approaches for physical learning environments and inadequate provision of school facilities required for IE further exacerbate this issue (Erkilic & Durak, 2013).

In context of Africa, the right to education is acknowledged as a fundamental right. It is essential for exercising other human rights and is a human right in and of itself (UNESCO 2015). Due to structural and other societal hurdles, people with disabilities (PwDs) in Africa have restricted access to education (Oyaro 2015). Higher education in African nations such as Botswana (Fidzani et al. 2013), Uganda (Emong & Eron 2016), Tanzania (Matonya 2016), and Ghana (Tudzi, Bugri, & Danso 2017) also reflects the difficulties they encounter in relation to the built environment. These studies were conducted in a physical accessibility context. PwDs must have equitable, inclusive, and nondiscriminatory access to education, which means that accessible constructed settings must be provided. In addition, in surroundings that are obviously inaccessible to PwDs, reasonable accommodations must be made to satisfy their unique demands for accommodations. Students with impairments, despite being pleased of their accomplishments despite all obstacles, have trouble accessing the built environment (Tudzi et al., 2020).

In context of Ethiopia, according to Tirussew (2005, p. 3), "in Ethiopia, PWDs are perceived as weak, hopeless, dependent, unable to learn," and "subject of charity" in reference to the undermining attitude in the Ethiopian setting. By evaluating and disclosing the circumstances and difficulties, as well as by making suggestions, the status of SWDs could be improved. There are several obstacles and challenges in the way of PWD education, particularly in higher education. The provision of learning resources and equipment, service delivery, architectural, cultural, and attitudinal factors are some of the obstacles to higher education accessibility for students with disabilities. In addition to the many other obstacles that impact the education of students with impairments, these students are clearly facing physical obstacles. On college campuses, it is considered that people have the right to roam freely (IDEA, 1997). Elements of physical accessibility include accessible classrooms, residence halls, dining rooms, recreational spaces, libraries, service delivery units, and exit pathways in case of emergencies; nevertheless, these fundamental prerequisites are not sufficiently met (Muzemil, 2018).

Recently, With the Education for All (EFA) goals, the globe is actively fighting for free, equitable, and high-quality education for everyone, beginning with basic education and progressing to secondary and, ultimately, higher education. Tanzania has been among the many nations that have adopted these aims. Education is a fundamental human right, especially for those with impairments, according to the 1948 Universal Declaration of Human Rights (Fitriana, 2014).

In the present instance of Ethiopia, the second most populous country in Africa, which has pushed for inclusive education while quickly raising school enrolment to reach universal basic education (UBE), Using fieldwork done in 2014 at schools in the Tigray area, the paper first briefly reviews the arguments around inclusive education and Ethiopia's approach before analyzing its execution. In terms of changing public perceptions, teacher preparation, school resources, and school-society ties, it ends with several potential lessons (Fitriana, 2014).



Despite their varied educational demands, all pupils are increasingly being placed in general education classrooms due to the global trend towards inclusive education. In general, inclusive education is understood to encompass not only educational access but also acceptance, involvement, and the assurance of high-quality education for all. Therefore, inclusive classrooms and schools focus on making all students feel welcome, supported, and educated despite variations in ability, culture, gender, language, class, and ethnicity (Engelbrecht et al., 2017).

Teachers are identified as key factors in determining the success of inclusive education (Ackah-Jnr, 2010; Cate et al., 2018; Miyauchi, 2020; Voltz et al, 2001). But they can also be significant obstacles if they don't understand inclusion, don't support it, lack the necessary skills, or have a negative attitude towards inclusive education (Ackah-Jnr, 2010; Lamichhane, 2017; Rieser, 2012). Previous research revealed that many teacher-related factors, such as teachers' lack of confidence in their ability to manage students with disabilities (Ababa & Tesfaye, 2024).

These are research objective:

- ✤ To identify the specific barriers that hinder access to inclusive practices for persons with physical disabilities within the school environment,
- To investigate best practices in inclusive environmental design that promotes accessibility for persons with physical disabilities in schools,
- To assesses the impact of environmental factors influence on the educational experience of students with physical disabilities,
- To assess the perceptions of school stakeholders regarding environmental accessibility for persons with physical disabilities.

Significance of the study is to enhance understanding of how environmental accessibility in schools can improve educational quality for students with physical disabilities, enabling their full participation in academic and extracurricular activities and fostering an environment for reaching their potential. It emphasizes the importance of creating accessible environments that promote social inclusion, allowing students with physical disabilities to engage meaningfully with their peers and the broader school community, thereby supporting a more inclusive culture.

METHOD

The study utilized a descriptive design within a mixed-methods framework to assess environmental accessibility in inclusive practices for students with physical disabilities. It involved three participant groups: students with physical disabilities, teachers and administrators. The mixed-methods approach combined qualitative and quantitative research to provide a comprehensive understanding of the issue. Data collection involved structured surveys, semi-structured interviews, focus group discussion, and direct observations of school facilities to evaluate physical accessibility. Data analysis included quantitative methods using SPSS software, while qualitative data was analyzed through narrative accounts from respondents based on recorded information. This approach aimed to capture the complexities of environmental accessibility and inclusive practices in educational settings for students with physical disabilities.

Population and Sampling Techniques are given in Table 1.



Target population and sample size							
Locations	Participants	Target Population	Sample size	Sampling techniques			
Dalkoch primary school at 01 kebele	Students	2500	170	S. random			
	Student with physical disability	10	10	Purposive			
	Feachers	170	70	S. random			
	School administrators	3	3				

Table 1. Target population and sample side

RESULT

The study's Results section uses tables and visual aids to effectively summaries and explain the data gathered during the investigation. It describes the analysis techniques used, including thematic analysis and statistical tests. The most important discoveries in respect to the research questions in the data are highlighted in this section. Crucially, the Results section keeps its emphasis on providing data without interpretation, saving any of these for the discussion part that follows.

S/no	Items	Options	Frequency	Percent	Valid percent	Accumulative
						percent
1	Gender	Male	148	82.2%	82.2%	82.2%
		Female	32	17.8%	17.8%	100.0
		Total	180	100.0	100.0	
2	Age	15-17	14	7.8%	7.8%	7.8%
		17-20	15	8.3%	8.3%	16.1
		20-25	151	83.9%	83.9%	100.0
		Total	180	100.0	100.0	
3	Marital status	Single	178	98.8%	98.8%	98.8%
		Married	2	1.1%	1.1%	100.0
		Total	180	100.0	100.0	
4	Educational level	Primary	30	16.7%	16.7%	16.7%
		Secondary	150	83.3%	83.3%	100.0
		Total	180	100.0	100.0	
5	Occupation	Student	180	100.0	100.0	100.0
6	Address	Gambella				
		region				
	Location	Dalkoch				
		primary and				
		secondary				
		school				
		01 Kebele	100	100.0		100.0
		Total	180	100.0	100.0	100.0

Table 2. Demographic Information of the respondent views of student

Source: Survey 2024



In the above Table 2, male=140(82.4%), Female=30(17.6%), 14(7.8%) =15-17 years and, 15(8.3%) = 17-20 years. About 151(83.9%) = 20-25 years of age. The above table show that, about 178(98.8%) were single, and 2(1.1%) were married. About 30(16.7%) =were in primary school level .About 150(83.3%)=secondary school 5-8.

Table 3. Respondent view of the students.

1	Descriptiv	ve Statistics			
	Ν	Minimum	Maximum	Mean	Std. Deviation
Do you have Physical disability?	180	1	2	1.94	.230
Does disability Influence on educational journey?	180	1	2	1.94	.230
Do the Physical barriers within school environment affect your ability to access for educational resource?	180	1	2	1.34	.475
Do you sometime attend the Training program about challenges faced by student with physical disability?	180	1	2	1.92	.269
Physical barrier within the school environment, such as stairs, narrow doorways, affect your movement around school compound?	180	1	2	1.26	.440
Design and school building hinder the participation in classroom activities?	180	1	2	1.28	.452
Specific areas of inaccessibility?	180	1	4	2.52	.924
Valid N (listwise)	180				

Source: Survey 2024

According to the above table 3, the student respondent were responded yes, mean value= 1.94 and, standard deviation=.230, According to the Table 3, the student responded was yes, about 10(5.6%). About 170 (94.4%) were respond No, the mean is 1.94, standard deviation of .230. About 119 (66.1%) were respond by, "YES", with mean 1.34 and standard deviation .475, According to the Table 3, About 166 (92.2%) was responded by no, with mean 1.92 and standard deviation .269.

Based on table, about", 133 (73.9%) were responded, 'YES with mean value of 1.26 and standard deviation of .440.

According to the Table 3, 129 (71.7%) responded, 'YES,' and about 51 (28.3%) respond, "NO" with mean value 1.28 and standard deviation .452.

In addition, (13.3% n=24) responded on narrow door with mean value of 2.52 and the standard deviation point is -924.



Table 4. Views of the Student Respondents.

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
School facilities easily access for student with physical disability.	180	1	3	1.40	.665
Equal opportunity to participated in school activities and events	180	1	3	1.84	.985
School provided adequate support	180	1	4	2.13	.983
School promoted welcoming and Inclusive Environment	180	1	4	1.52	.887
Technology effectively utilizes to enhance accessibility	180	1	3	1.64	.914
Personally witness of barriers that SWPD face in accessing facilities	180	2	5	4.32	.535
Improving environmental accessibility for swpd would benefit the entire school	180	Ι	5	4.04	1.155
Received adequate support from teacher	180	1	3	1.67	.897
School prioritizes making improvement to enhance accessibility	180	1	5	2.67	.909
Important of Inclusive practice	180	3	5	4.42	.558
Valid N (listwise)	180				

Source: Survey 2024

According to the table, about (70% n=126) were responded strongly mean value 1.40 and standard deviation point is .665.

According to the table above, with mean value 1.84 with standard deviation .985. The majority of respondent = (57.2% n=103) were responded strongly disagree.

According to table above, (52.2% n=94) were respondent disagree, with Mean value of 1.13 and standard deviation point of .983.

According to the table above, the Mean value is 1.52 and standard deviation point is .887. About (73.3% n=132) were respondent strongly disagree.

According to the Table 4. The Mean value is 1.64 and the standard deviation point is .914. About (66.1% n=119) were respondent strongly disagree.



According to the table. The Mean value is 4.32 and standard deviation point is .535. (64.4% n=116) responded agree.

According to the Table 4, (47.2% n=85) were responded agree The Mean value is 4.04 and the standard deviation point is 1.155.

According to Table 4. The Mean value is 1.67 and the standard deviation point is .897. (62.2% n=112) were responded strongly disagree.

According to the Table 4, the Mean value is 2.67 and standard deviation point is .909. (70.0% n=126) were responded disagree

According to the Table 4, the Mean value is 1.42 and the standard deviation point is .588. The majority of the respondent, the responded was agree.

S/no	Items	Options	Frequency	Percent	Valid percent	Accumulative
						percent
1	Gender	Male	52	74.3%	74.3%	74.3%
		Female	18	25.7%	25.7%	100.0
		Total	70	100.0	100.0	
2	Age	20-25	26	37.1%	37.1	37.1
		26-35	31	44.3%	44.3	81.4
		36-45	13	18.6%	18.6	100.0
		Total	70	100.0	100.0	
3	Marital status	Single	20	28.6%	28.6	28.6
		Married	31	44.2	44.2	50.0
		Engage	15	21.4	21.4	94.3
		Divorce	4	5.7	5.7	100.0
		Total	70	100.0	100.0	
4	Educational level					
		Diploma	19	27.1	27.1	27.1
		Degree	51	72.9	72.9	100.0
		Total	70	100.0	100.0	
5	Occupation					
		Teacher	70	100.0	100.0	100.0
		Teacher	10	100.0	100.0	100.0
6	Address	Camballa				
U	Address	region				
	Location	Dalkoch				
		primary and				
		secondary				
		scnool 01 Kabala				
		Total	70	100.0	100.0	100.0
		Total	/0	100.0	100.0	100.0

Table 5. General demographic information of Teachers.

Source: Survey 2024



In the Table 5 (74.3% n=52) were male and about (25.7% n=18) respondents were female. Regarding on above table, (37.1% n=26) of 20-25 years, and (44.3% n=31) of (26-35) years of age. About (18.6% n=13) 36-45 years of age,

In other hand, about (21.4%n=15) were Engage About (5.7%n=4) were divorce. This data about (27.1%n=19) were diploma level about (72.9%n=51) were in secondary school

Table 6. The Respondent view of the Teachers.

Descriptive Statistics							
	Ν	Minimum	Maximum	Mean	Std. Deviation		
School environment design is accessible	70	1	5	2.37	1.729		
for SWPD							
Inclusive principle design is active	70	1	5	2.36	.703		
incorporated in my classroom							
I'm aware of resource and support of	70	1	4	2.21	1.141		
SWPD to enhance the accessibility							
environment							
SWPD are involved in design and	70	1	4	2.17	1.167		
modification of learning environment							
Technology playing role to promoted the	70	1	2	1.23	.423		
environmental accessibility for SWPD							
Valid N (listwise)	70						
Source: Survey 2024							

According to Table 6, the Mean value is 2.37 and standard deviation point is 1.729. (58%n=41) responded strongly disagree

According to Table 6, the Mean value is 2.36 and the standard deviation point is .703. (67.1%n=41) responded disagree,

According to Table 6, (35.7%n=25) responded disagree and (32.9%n=23) responded strongly disagree,. The Mean value is 2.21 and standard deviation is 1.141.

According to the Table 6, the Mean value is 2.17 and the standard deviation point is 1.167. (40. %n=28) responded disagree.

According to the Table 6, the Mean value is 1.23 and standard deviation point is .423. (77.1%n=54) responded strongly disagree,

Table 7. The Respondent view of the School Teachers.

	De	escriptive Statis	tics		
	Ν	Minimum	Maximum	Mean	Std. Deviation
I found tool that are effective for SWPD	70	1	5	1.49	1.100
There is inclusive practice in your		1	5	2.33	.847
school.					
Environmental barriers limited the	70	1	5	4.47	1.248
implementation of inclusive practice in					
your school.					
You're providing support for SWPD to	70	1	5	2.17	.761
overcome the environmental challenges.					
Curriculum is supported the inclusive	70	1	5	2.00	1.142
practice in your school.					
Valid N (listwise)	70				
Source: Survey 2024					

Source: Survey 2024



Based from the above, Table 7. The Mean value is 1.49 and the standard deviation point is 1.100. About (80% n=56) responded strongly disagree,

According to the Table 7, the Mean value is 2.23 and the standard deviation point is .847 (75% n=53) responded disagree that

According to the Table 7, (81.4% n=57) responded strongly agree with Mean value of 4.47 and the standard deviation point of 1.248,

According to above data, (84.3% n=59) responded disagree The Mean value is 2.17 and the standard deviation is .761.

According to the Table 7, the Mean value is 2.00 and the standard deviation point is 1.142. About (50% n=35) responded strongly disagree.

S/	Items	Option	Frequency	Percent	Valid percent	Accumulative percent
no						
1	Gender	Male	2	66.7	66.7	66.7
		Female	1	33.3	33.3	100.0
		Total	3	100.0	100.0	
2.	Age	26-35	2	66.7	66.7	66.7
		36-45	1	33.3	33.3	100.0
		Total	3	100.0	100.0	
3.	Marital status	Single	1	33.3	33.3	33.3
		Married	2	66.7	66.7	100.0
		T	2	100.0	100.0	100.0
		Total	3	100.0	100.0	
4.	Education	Diploma	1	33.3	33.3	33.3
		Degree	2	66.7	66.7	100.0
		Total	3	100.0	100.0	
5	Occupation	Director	3			
		Total	3	100.0	100.0	
6	Address	Gambela				
		region				
		Total	3	100.0	100.0	

Table 8. Respondent views on demographic information of school admin.

Source: Survey 2024

According to the Table 8 of demographic information, about (66.7% n=2) were male. About (33.3% n=1) respondent were female, and about (66.7% n=2) were under the categories of (26-35) years of age. About (33.3% n=1) (36-45) year of age. About (66.7% n=2) respondent were married and the (33.3% n=1) respondent was single.

Respondent (66.7% n=2) degree and about (33.3% n=1) was diploma. About (100.0% n=3)

DISCUSSION, CONCLUSION and SUGGESTIONS

The study's findings regarding the highlighted significant barriers faced by students with physical disabilities (SWPD) in Table 3 and Table 4 showed that respondents acknowledged the existence of



these students and those physical barriers in the school setting have a detrimental effect on their academic journey. Problems like stairs, small doorways, and poorly designed facilities limit access and participation in class activities. This shows that immediate changes are required to make the environment more accessible and meet SWPD's needs.

As in Table 6, and Table 7, the data reveals a concerning lack of support and resources available for SWPD. A large proportion of respondents strongly disagreed that school facilities are not easily accessible, and it showed that students with physical disabilities do not have equal opportunities to participate in school activities. The absence of a welcoming and inclusive environment, coupled with ineffective use of technology, further exacerbates the challenges faced by students with physical disability. This lack of adequate support from teachers and insufficient prioritization of accessibility improvements suggest systemic issues within the school that hinder the educational experiences of SWPD.

Regarding Table 7, the study emphasizes the importance of inclusive practices and the need for active involvement of SWPD in the design of their learning environments. With only 40% of respondents indicating that SWPD are included in these processes, the findings suggest a disconnect between the needs of these students and the school's approach to inclusivity. The overall low awareness of resources and the ineffective promotion of environmental accessibility through technology further illustrate the critical need for comprehensive strategies aimed at enhancing the educational experiences of students with physical disabilities at Dalkoch Primary School. In due regard of research gap from the previous study, despite the extensive exploration of inclusive education across various studies, significant gaps remain in understanding the specific factors influencing teachers' and principals' attitudes towards the inclusion of students with disabilities, particularly in the Ethiopian context. While several scholars highlight the importance of teacher perceptions in successful inclusive practices (Ackah-Jnr, 2010; Cate et al., 2018; Miyauchi, 2020), there is a notable of teachers' lack of confidence in their ability to manage students with disabilities, lack of resources, and negative societal attitudes (Plotner and Marshall, 2015; Hästbacka et al., 2016), (Abebe et al., 2023). There is insufficient qualitative investigation into the nuanced challenges faced by teachers with limited experience in inclusive settings.

Interviews conducted at Dalkoch Primary School revealed significant obstacles to creating an inclusive and accessible environment for students with physical disabilities. Respondents noted a lack of inclusivity and incomplete knowledge of inclusive practices among school administrators and staff, leading to insufficient planning for necessary accommodations. The school's physical layout further compounds these issues, with barriers such as steps without ramps, narrow doorways, and inaccessible libraries creating an unwelcoming atmosphere. Despite attempts to collaborate with governmental organizations to establish a special needs resource center, implementation has been ineffective due to insufficient staff training, negative attitudes, and limited resources according to focus group discussion. Observations highlighted critical deficiencies, including poorly arranged classrooms and the absence of ramps, which severely restrict students' mobility and participation in activities, contributing to feelings of isolation and marginalization. This lack of accessibility ultimately undermines students' sense of belonging and their overall educational experience.

Conclusion

The study found that Dalkoch Primary School has serious accessibility problems that make it difficult to create a welcoming atmosphere for students with physical disabilities. Key findings showed that students' emotions of loneliness and social exclusion were caused by bad design elements including



small entryway and inaccessible facilities. Furthermore, inadequate training on the requirements of these children, a lack of staff collaboration, and little student involvement in planning were the main causes of the inefficient implementation of inclusive policies. Limited access to technology and educational tools made it much harder for students to interact with the curriculum. Overall, the results highlight the pressing need for more inclusive practices and improved environmental accessibility, which could increase psychological well-being by lowering dropout rates and promoting healthy peer connections in addition to improving educational performance

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Ethic and Conflicts of interest

Regarding the research, authorship, & publication of this article, the authors stated that there is no conflict of interest. All necessary research ethics guidelines were carefully adhered to throughout the conduct of the study.

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