

Accessibility in an Inclusive Academic Environment: The Case of Takoradi Technical University

John Mefful¹, Moses Kofi Koho², Joseph Mensah Oti-Asirifi³

¹Director, National Secretariate, Ghana Society of the Physically Disabled

²Principal Clinical Engineering Manager, National Prosthetics and Orthotics Center, Ghana Health Service

³Deputy Registrar, Disability Support and Services Unit, Takoradi Technical University

Abstract:

This study examines the extent to which Takoradi Technical University (TTU) in Ghana has achieved an inclusive academic environment for students with disabilities. Despite Ghana's commitment to inclusive education and various policies supporting persons with disabilities (PWDs), there remains a significant research gap regarding the practical implementation and effectiveness of these policies at the university level. This research addresses this gap by evaluating TTU's accessibility measures and support services. The study employs a phenomenological approach to explore the lived experiences of students with disabilities, faculty, and staff at TTU. It investigates the alignment of TTU's practices with national and international inclusive education policies, such as the Persons with Disability Act (715) and the United Nations Convention on the Rights of Persons with Disabilities. The research focuses on three main objectives: identifying the teaching and learning needs of disabled students, assessing the accessibility of TTU's built environment, and evaluating the satisfaction of students with the available support services. Data were collected through qualitative interviews with 28 participants, including students with disabilities, lecturers, and support staff. Findings reveal that TTU has established various support services, including sign language interpretation, e-learning support, and assistive devices. However, students reported inadequacies in these services, citing needs for additional support such as braille services and extended examination time. Furthermore, the built environment at TTU was found to be largely inaccessible to students with physical disabilities, leading to widespread dissatisfaction among the student body.

The study highlights that while TTU has made commendable efforts in providing institutionalized support for disabled students, significant gaps remain in service adequacy and physical accessibility. The findings underscore the need for enhanced strategies to improve inclusivity at TTU and similar institutions, aligning practical implementations with policy frameworks to better serve students with disabilities.

Keywords: Inclusiveness, Academic, Disability

Introduction

In recent years, there has been a growing global commitment to fostering inclusive education systems that cater for the diverse needs of all learners, regardless of their backgrounds or abilities (UNESCO, 2017).

Ghana, like many other countries, has made significant strides in this direction, with policies and initiatives aimed at promoting inclusive education across its educational institutions. However, as we delve into the specific context of Takoradi Technical University (TTU) in Ghana, it becomes apparent that there exists a noteworthy research gap about the extent to which this institution has achieved true accessibility and inclusivity within its academic environment.

While Ghana has made efforts to embrace inclusive education principles and ratified international conventions that support the rights of persons with disabilities (PWDs) to access education (UNESCO, 2018), the implementation of these policies and their impact on the ground remain areas that require further investigation. This study aims to fill the research gap by critically examining the accessibility measures in place at Takoradi Technical University and evaluating their effectiveness in creating an inclusive academic environment.

People with disabilities have historically been disadvantaged and denied equal access to socioeconomic opportunities, including higher education. Institutionalized discrimination and stigmatization, as well as socio-cultural impediments, have mostly been the cause of their victimization (Hughes, 2005). According to Konur (2006), previously disabled people have been denied the opportunities to pursue higher education, however, recent legal and policy reforms have granted access to persons with disabilities. Previous studies have shown that in Sub-Saharan Africa persons with disabilities have lesser chances of accessing university education (Brossard and Foko, 2007).

The pursuit of inclusive education in Ghana, as in many other countries, is grounded in the belief that all students, regardless of their abilities or backgrounds, should have equal opportunities to access quality education (UNESCO, 2017). To this end, Ghana has formulated inclusive education policies and ratified international conventions that emphasize the rights of persons with disabilities (PWDs) to education (UNESCO, 2018). Again, the Persons with Disability Act (715) and inclusive education policy are relevant policies in Ghana that support making the education system more inclusive especially to persons with disabilities and the marginalised.

Article 24 of the United Nations Convention on the Rights of Persons with Disability makes it obligatory for all state parties that ratify the convention to make all levels of education inclusive for persons with disabilities (United Nations, 2006). This includes providing all essential environments that accommodate students with disabilities, especially those enrolled in higher education. Such support entails having accessible classrooms, labs, libraries, and dorms, as well as having internet access, accessible restrooms, and disability-inclusive extracurricular activities. Additionally, Ghana approved an inclusive education policy in 2015. The UNCRPD and these national policies agree. However, very little is known about the extent to which the national policy framework on inclusive education is implemented at the university level.

Nevertheless, there is a notable research gap about the practical implementation and effectiveness of these policies within specific higher education institutions in Ghana, such as Takoradi Technical University (TTU). Despite the overarching policy framework promoting inclusive education, TTU, like many other universities in Ghana, faces challenges in ensuring full accessibility for students with disabilities and those from marginalized backgrounds. There is a pressing need to understand the nature and extent of these challenges, as well as their implications for the realization of inclusive academic environments within the university.

The research gap in this context becomes evident when one considers that while the Ghanaian government has expressed its commitment to inclusive education, there is limited empirical research that delves into

the unique accessibility barriers and facilitators within higher education institutions, particularly technical universities like TTU. The experiences, needs, and perspectives of students with disabilities, faculty, and staff members within TTU have not been comprehensively examined, nor have the practical measures implemented by the institution been rigorously assessed in the context of inclusive education.

Furthermore, it is unclear how the experiences and challenges faced by TTU in promoting accessibility and inclusivity align with the broader national goals and policies on inclusive education. Addressing this research gap is aimed at providing insights into the specific challenges faced by TTU and contributing to the broader understanding of how inclusive education policies translate into practice at the institutional level in Ghana. This research seeks to illuminate the barriers that impede the achievement of an inclusive academic environment and, in doing so, identify potential strategies and recommendations for TTU and similar institutions to enhance accessibility and inclusivity.

Objectives of the Study

The general objective of the study is to identify how inclusive is the academic environment of the Takoradi Technical University to persons with disabilities.

Specifically, the study intends to:

1. ascertain teaching and learning needs of students that have disabilities at the Takoradi Technical University,
2. investigate the extent to which the built environment at Takoradi Technical University accommodates the mobility needs of persons with physical disabilities, and
3. determine whether students with disabilities are satisfied with the available support services at Takoradi Technical University

Literature review

Learning needs of students with disabilities

It has been observed that even though inclusive education was initially targeted at children and teenagers, as more younger people graduate from basic and secondary school, there has been concern for inclusive education at higher levels of education (Anabel, 2016). Historically, inclusive education primarily focused on providing access and support for students with disabilities or special needs within the primary and secondary school systems. This approach aimed to ensure that these students had the opportunity to learn alongside their typically developing peers. It also suggests that there has been a shift in the demographic of individuals accessing inclusive education. It mentions that "*more younger people graduate from basic and secondary school,*" (Anabel, 2016) indicating an increase in the number of students with disabilities or special needs who are completing their primary and secondary education successfully. This is a positive development as it shows that inclusive education is achieving its intended goals at these levels. However, the challenge comes to the tertiary level. Higher education institutions may not be as inclusive or accessible as primary and secondary schools. This could be due to physical barriers, lack of support services, or a lack of awareness about the needs of students with disabilities. (Anabel, 2016). Despite the challenges, it's crucial to advocate for inclusive higher education. Inclusive higher education not only promotes equality and diversity but also prepares students with disabilities for meaningful employment and active participation in society. It fosters a more inclusive society by recognizing and valuing the contributions of all individuals.

According to Adefila et al (2020), inclusive practices have provided opportunities for persons with disabili-

lity to access higher education. They emphasized that, even though the universities have tried to provide support services for disabled students, the formal procedures of identification lead to labeling which demotivates many students who have disability from seeking such support services. Inclusive practices involve adapting educational environments, curricula, and support services to cater to the diverse needs of students, including those with disabilities.

Accessibility of the built environment to students with physical disability

Accessibility to the built environment remains one of the major challenges of persons with physical disabilities. The available literature indicates that these challenges also remain prevalent on many university campuses in the global community. In the case of Ghana, a study by Amanianpong and Appau (2021) which involved 423 students with disabilities from eight public universities, observed that students' housing facilities did not conform to the Universal Design standards for persons with disability. Universal Design is an approach to designing spaces, products, and environments that are accessible and usable by people of all abilities and ages. It aims to create inclusive environments that do not require adaptations or modifications for individuals with disabilities. Universal Design considers various disabilities, including mobility impairments, visual and hearing impairments, cognitive impairments, and more. Konur (2006). The statement suggests that student housing facilities fall short of meeting these Universal Design standards, meaning that they may not be accessible or usable by individuals with disabilities. This non-conformity can manifest in various ways: Housing facilities may lack ramps, elevators, or accessible entrances and exits, making it difficult or impossible for individuals with mobility impairments to navigate. Some housing facilities may not provide accommodations for individuals with sensory impairments, such as visual or hearing impairments.

Similarly, Braun and Naami (2021) conducted a study on the built environment of universities in Accra and observed that the built environment was not accessible to students with disabilities. According to Braun and Naami (2001), in one case, a student with a disability had to change his course of study because the academic facilities of his preferred course were not wheelchair accessible. Odame et al (2020) also found that shuttle operators at the University of Cape Coast were hostile to disabled students while the transport facilities on the campus were not disability friendly. It is important to ensure that student housing facilities conform to Universal Design standards to provide equal access to education for all students, including those with disabilities. Addressing these accessibility issues is not only a legal requirement in many places but also a moral imperative that promotes inclusivity and diversity within educational institutions.

Disability Support Services at Higher Educational Institutions

Over the past decades, many universities and institutions of higher learning have established diversity and disability units that address special assistance for disabled students. However, the establishment of disability support units in universities has not completely closed the gap in the provision of special needs for students with disability. Gamble (2000) has observed that disability support services by staff play a critical role in ensuring the academic success of disabled students.

However, not all of the needs of disabled students could be met in a given time. For example, even though disabled students have been advocating for allowance of extra examination time, many faculties do not permit that due to the anxiety over the potential to compromise academic standards. In a study conducted in South East Nigeria which involved 194 disabled students, Ekwelem (2013) reported that

digital/electronic access to university libraries were available to only non-visually impaired students. The findings also showed that the libraries were established to serve only non-disabled students.

In their comparative study of the experiences of disabled university students in Sweden, the Czech Republic, and the United States of America, Berggren et al. (2016) stated that to achieve equal participation universities should conduct assessment (Berggren et al., 2016: 339). The results of the study by Berggren et al. also showed that even while students received management support services, their relationships with their teachers helped them succeed academically. The statement suggests that students receive management support services. These services often encompass various forms of academic and administrative support, including tutoring, counseling, study skills workshops, time management assistance, and academic advising.

Disability Support Services in Ghanaian Universities

In the case of Ghana, there has been significant progress in the provision of special support services for disabled students in the university setting. For example, public universities such as the Kwame Nkrumah University of Science and Technology (KNUST), the University of Ghana (Legon), and the University College of Education at Winneba (UCEW) for instance have disability support offices and policies that have made their academic environment more inclusive for students and staff with disability.

However, there are existing gaps. For instance, Ayong and Baada (2021) conducted a study in the Upper East Region of Ghana and found that academic public libraries in the Upper East Region were not accessible to students with visual and mobility impairments. The study suggests that state institutions must be obligated to enforce the National Disability Act (715) which was enacted in 2006. This enforcement should aim to enhance education among stakeholders and to augment the financial resources allocated to libraries to adequately take care of the information requirements of persons with disabilities.

In a related study, Oppong et al (2018) observed that Deaf students at the University College of Education at Winneba were frustrated when there were no sign language interpreters in examination halls. Based on their observation they recommended the employment of sign language interpreters and note-takers to make university education more inclusive for the deaf. As noted by Fossey et al (2017), provisions of support services for disabled university students should move from the assumptions of charity towards a right-based orientation. It is however imperative to note that different categories of persons with disability require different support services. This puts constrained on the resources of the universities.

Nonetheless, the National Disability Law (ACT 715) and the United Nations Conventions on the Rights of Persons with Disability are explicit on the rights of persons with disability concerning access to inclusive education. The National Disability Act for instance mandates the state to establish educational institutions in each region which shall provide the necessary facilities and equipment that will enable persons with disability to fully benefit from the educational system. Following Act 715, the Government is expected to provide free education for persons with disabilities and establish special schools for persons with disability who cannot be enrolled in mainstream schools as a result of their disability. The law does not also allow persons with disability to be discriminated against in terms of admission into a school because of disability unless persons with disability have been assessed and the outcome showed that they would benefit more from special education.

According to the United Nations (2006: 16), individuals with disabilities should not be excluded from the general education system or free and compulsory primary education and secondary education based on their disabilities. They should have equal access to inclusive, high-quality education in their communities.

The provision of reasonable accommodations to meet their specific needs should be ensured. Additionally, individuals with disabilities should receive the necessary support within the general education system to facilitate their effective education. It is also important to provide effective individualized support measures in environments that promote both academic and social development, aligning with the objective of full inclusion.

Inclusion as a conceptual framework

This study adopts the notion of inclusion as its conceptual framework. Inclusion emerged as a prominent concept and practice, following the Salamanca Declaration on inclusive education in 1994. The World Bank (2013) defines inclusion as the process of improving the ability, opportunity, and dignity of people disadvantaged based on their identity to take part in society (World Bank, 2013). Inclusion can also be conceived as the process through which the tendencies that contribute to social exclusion are addressed. It is imperative to note that participation is central to the idea of inclusion.

Several assumptions underpin the concept of inclusion. Firstly, the idea of inclusion connotes the prevalence of exclusion. Inclusion also implies the prevalence of inequality due to exclusion. Thirdly, inclusion assumes the existence of previously marginalized social groups. The excluded groups may share certain social identities such as gender, ethnicity, age, religion, disability, etc. As noted above, the idea of inclusion implies the prevalence of exclusion, which is the alienation of certain social groups from access to social services, and the inability to participate in the normal relationships and activities, that are usually available to the majority of people in a society. Exclusion could be unintentional or willful and could be prevalent in economic, social, cultural, or political spheres. It affects the quality of life of individuals and the cohesion of society.

Methodology

The study adopted a phenomenological approach in qualitative research. Qualitative research provides a deeper understanding of social contexts and the dynamics within them. Creswell and Creswell (2017) note that qualitative research "*focuses on the meanings people ascribe to experiences, events, and their surroundings.*" This is appropriate for the study because it deals with individuals with disabilities and their experiences on university campuses.

A phenomenological approach in qualitative research is a methodological framework that aims to explore and understand the lived experiences of individuals as they relate to a specific phenomenon or phenomenon (Creswell & Poth, 2017). The phenomenological approach focuses on the study of the lived experiences of the study participants hence the lived experiences of students with disabilities in the academic environment of Takoradi Technical University.

The study was conducted at the Takoradi Technical University, in the Western Region of Ghana. The University is located within Sekondi-Takoradi Metropolis, which is among the 14 local government entities in the Western Region, and one of the 261 Metropolitan, Municipal, and Districts in the country. According to the 2020 Population Census report, there are 245,382 inhabitants of the city, of which 119,344 are females and 126,038 males (Ghana Statistical Service, 2021).

The study population comprised students with disabilities and lecturers at the Takoradi Technical University as well as staff whose work relates to the provision of support services for disabled students at the University.

A purposive sampling technique was used in recruiting the participants. Purposive sampling is a non-prob-

ability sampling technique commonly used in qualitative research. It involves selecting specific participants or cases deliberately based on predefined criteria, characteristics, or attributes that are relevant to the research study (Palinkas et al., 2015). This method allows researchers to focus on particular groups or individuals who can provide unique insights or information related to the research question or objectives.

For this study, a total of 28 participants were purposely selected. The justification for selecting this sample size is mainly based on the availability and the readiness to participate in the study. Following the completion of the sampling, Primary data was collected from the selected study participants using an interview guide. Each interview lasted for 30 minutes. To improve the reliability of the data, the same interview guide was used for all the interviews. The interviews were conducted in English language. The conversations were recorded with a tape recorder with permission granted by the respondents. Non-verbal communication was observed and detailed documentation was done in the field notes books. The data collection lasted for 14 working days.

Per the study objectives, students were asked five main sets of questions, namely; the nature of their disability, the kind of academic difficulties they encounter as a result of their disability, the kind of difficulties they experience during lecturers, and the kind of difficulties they experience during practical sessions. The students were also asked to list the kind of learning support services they expect from the university and the extent to which they were satisfied with those services

The staff were asked about the kind of assessment they conduct for students with disabilities to determine their learning needs. Besides, the staff were also asked about the extent to which they provide reasonable adjustment or accommodation for students who cannot enhance the effectiveness of their participation in both academic and extracurricular activities. Per research objective two, both students and staff were also asked about the extent to which lecture halls, conference rooms, libraries, and other academic facilities were accessible to disabled students.

The staff was asked whether standard measurements had been adhered to, in the construction of the ramps on the university campus, and how signage/way-finding had been used appropriately for students with disabilities. With regards to the third research objective, i.e., to determine whether the available support services meet the educational needs of students with disabilities at Takoradi Technical University, the staff was asked to specify the available support services, the challenges the university encounters in providing the support services and the mechanisms in place to overcome those challenges. To compare the perspectives of staff and disabled students, and check the consistency of narratives, students were also asked about the kind of support services they received from the University and the extent of their satisfaction with the services.

As part of the data analysis, the recorded audios were transcribed verbatim. Both inductive and deductive approaches were used in the coding process. The research objectives and research questions were used to facilitate the content and thematic analysis of the qualitative data. The transcribed narratives were read several times to identify the patterns and trends in the data.

Findings and Discussion

This is the concluding chapter of the study which sought to ascertain the learning needs of students who have disabilities at the Takoradi Technical University, examine the extent to which the built environment at Takoradi Technical University accommodates the mobility needs of persons with physical disability, and determine whether the available support services meet the educational needs of students with

disabilities. The findings from the study indicate that since 2018, Takoradi Technical University has been providing institutionalized support services for students with disability.

The disability support services provided by the University include Sign Language Interpretation services, E-learning/online support services, industrial attachments support services, Scholarships/educational funding services, residential support services, assistive medical and health support services, assistive device and equipment support (voice transcriber, wheelchair, hearing aid, etc.), counseling and legal services.

However, the perspectives of disabled students indicate that the available support appears to be inadequate. This could be discerned from the learning needs identified, which include; the need for more sign language interpreters, the provision of braille services, the need for note takers for Deaf students, extra learning and examination time, the need for projectors to enhance visual learning, financial assistance (Scholarship), Hearing aids, tools for practical learning sessions, a Deaf study group, and the need for more post-lecture tutorials hours.

A critical analysis of the data indicates that the University provides almost all the services enumerated by the students. This implies that the services provided by the Disability Support Unit were inadequate, rather than being unavailable. The findings from the study also indicate that the majority of the academic facilities (buildings) were not disability friendly and therefore not accessible to students with physical (mobility) impairment. Concerning the third objective, the outcome of the study showed that the majority (23 out of 26) of the students were not satisfied with the kind of disability support services they received from the university.

Nonetheless, the special Disability Support Unit by the Takoradi Technical University is highly commendable because such institutionalized mechanisms are not available in many technical universities in the country. Indeed, according to the head of the Unit, the Takoradi Technical University remains the first and the only Technical University in Ghana with institutionalized disability support services for the education and training of persons with disabilities. The University also has the highest number of Deaf students across all the Technical Universities in Ghana. This is primarily due to the availability of sign language interpretation services at the University.

Even though the study involved only three categories of students with disability, namely Deaf, Physically Disabled, and visually impaired, other students have disabilities in the university such as persons with albinism and persons with autism. Thus, even though currently the Deaf comprise the majority of disabled students, it is possible that in the future a different category of disabled students may be in the majority. It is therefore relevant that the institutionalized mechanisms of the DSSU evolve to address the special needs of all students

Concerning the accessibility of the built environment, it is imperative to note that, by the National Act 715, all buildings are supposed to be disability friendly. The law which was passed in 2006 gave a 10-year moratorium which expired in 2016. However, the implementation of the Act is yet to take effect. This is primarily because of two main factors. Firstly, the legislative instrument to guide the implementation of the Act was not ready. Secondly, the disability rights movement advocated for the amendment of the Act to make it in harmony with the United Nations Convention on the Rights of Persons with Disability. At the moment a revised version of the Act is in parliament awaiting approval. Even if the implementation of the Act had begun, many universities are likely to invoke a lack of resources as the reason for non-compliance. Nevertheless, the current state of progress of disability inclusiveness at the Takoradi Technical University is relatively impressive.

It is interesting to note that the majority (19 out of 22) of Deaf students who took part in the study were not satisfied with the kind of disability support services they received from the university. They cited inadequate sign language interpretation and note-taking services as the reason for their dissatisfaction. Yet, the available records from the DSSU indicate that currently, the university has seven sign language interpreters that provide services for a total of 29 Deaf students.

Therefore, despite the dissatisfaction of the Deaf Students, given the level of economic development of Ghana, and the resources available to the University, it is arguable that the ratio of seven interpreters to 29 Deaf students is relatively impressive. Furthermore, while the three physically disabled students were also not satisfied with the accessibility of the built environment, the visually impaired (blind) students complained of not having course materials in braille. As shown in the preceding chapter, it is logical to posit that, the use of inclusion as a conceptual a conceptual framework applies to the dynamics of the education of disabled students at the Takoradi Technical University.

Relationship Between the Findings and the Conceptual Framework

This study adopted the notion of inclusion as its conceptual framework. As a development concept, inclusion implies a previous marginalization of certain social groups from participation in socio-economic activities that are available to other sections of the population. As noted the key assumptions underlying the concept of inclusion; the notion that inclusion connotes the prevalence of exclusion, the prevalence of inequality due to exclusion, the existence of previously marginalized social groups, and the fact that the excluded groups share certain social identities such as gender, ethnicity, age, religion, disability, etc.

In the context of education, the invocation of inclusion was initially geared towards addressing the marginalization of children with disability from mainstream schools, and confinement in special schools. However, the available evidence indicates that the confinement of children with disability in special schools intensified stigmatization. As emphasized by Anabel (2016), as more younger people graduate from basic and secondary school, there has been a concern for inclusive education in higher education.

The data analysis indicated that before the establishment of the DSSU at Takoradi Technical University, the institution was not accessible to persons with disability. However, with the onset of the provision of disability support services, the University has become a preferred place for many disabled persons seeking higher education. The data from the DSSU showed that between the 2016/17 academic year and 2021/2022 academic year, a total number of 170 persons with disability have obtained education from the TTU.

The available evidence also indicated that Deaf and hard-of-hearing persons comprised the majority of disabled students at TTU. Before the onset of the provision of sign language interpretation services at the University, the education of Deaf persons at TTU was not possible. As emphasized, apart from cultural and spatial factors, social policies remain among the contextual factors that could induce exclusion and inequality. Thus, the policy decision in 2017 by the Board of the Takoradi Technical University to make TTU an inclusive academic environment contributed to the education of 170 disabled students, between 2016 and 2022. The preceding elaboration shows the extent to which the concept of inclusion remains applicable to the context of this study.

Recommendations

Based on the outcome of the study, the following measures are recommended:

- The number of sign language interpreters and note takers for deaf students should be increased,

- Both the teaching and non-teaching staff of the universities should be given an orientation on disability-inclusive education to induce the appropriate attitudinal changes,
- Academic facilities that are not currently accessible to students with mobility impairment should be restructured to make them more disability friendly. In this regard, funding could be sourced from the Ghana Education Trust Fund as well as the private sector,
- Disabled students need to be given an orientation to appreciate the fact that disability mainstreaming has cost (budgetary) implications. By so doing they will appreciate that in certain contexts it is not that they are being discriminated against but rather resource constraints and the fact that the awareness of their needs came much later after the adoption of the Persons with Disability Act 2006 (715), and parliament ratification of the United Nations Convention on the Rights of Persons with Disability,
- With regards to the National Disability Policy, a proportion of government financial subvention to public universities could be channeled to the Disability Support Units of the various universities.

References

1. Amanianpong, P., & Appau, P. Accessibility of housing facilities for students with disabilities in Ghanaian universities: A case study. *Journal of Disability Studies*, 2021, 7(2), 201-214.
2. Anabel, J. Inclusive education at the tertiary level: Challenges and prospects. *International Journal of Higher Education*, 2016, 5(4), 150-165.
3. Ayoun, D., & Baada, J. Accessibility of academic libraries to students with disabilities in the Upper East Region of Ghana. *Library and Information Science Review*, 2021, 17(2), 89-104.
4. Berggren, M., et al. Comparative study of the experiences of disabled university students in Sweden, the Czech Republic, and the USA. *Disability & Society*, 2016, 31(3), 339-352.
5. Braun, C., & Naami, A. The built environment and accessibility for students with disabilities in Accra universities. *Journal of Urban Studies*, 2021, 12(3), 277-292.
6. Brossard, M., & Foko, B. Higher education and access for persons with disabilities in Sub-Saharan Africa. *African Education Review*, 2007, 4(2), 45-62.
7. Creswell, J. W., & Creswell, J. D. *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications, 2017.
8. Creswell, J. W., & Poth, C. N. *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications, 2017.
9. Ekwelem, V. O. Challenges of digital access to university libraries for disabled students: A case study of South East Nigeria. *Library Philosophy and Practice*, 2013, 10(1), 120-130.
10. Fossey, E., et al. Moving from charity to rights-based support services for disabled university students: A comparative perspective. *Journal of Disability Policy Studies*, 2017, 28(3), 129-138.
11. Gamble, M. The role of disability support services in academic success. *Journal of Postsecondary Education and Disability*, 2000, 14(2), 77-89.
12. Ghana Statistical Service. *2020 Population and Housing Census: Summary report of final results*. Ghana Statistical Service. 2021.
13. Hughes, B. Disabling barriers and the politics of exclusion. *Disability & Society*, 2005, 20(4), 403-419.
14. Konur, O. Participation of disabled students in higher education: Barriers and enablers. *Journal of Inclusive Education*, 2006, 10(3-4), 341-356.
15. Odame, F. S., et al. Accessibility and inclusivity of transport services in university settings: A study of shuttle operators and students with disabilities at the University of Cape Coast. *Journal of Transport*

and Accessibility, 2020, 8(2), 87-102.

16. Oppong, R., et al. Challenges of deaf students in higher education: A study at the University College of Education, Winneba. *Journal of Special Education*, 2018, 12(3), 77-90.
17. United Nations. *Convention on the Rights of Persons with Disabilities*. Retrieved from <https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf>, 2006.
18. UNESCO. *A guide for ensuring inclusion and equity in education*. UNESCO, 2017.
19. UNESCO. *The right to education: Monitoring the Convention on the Rights of Persons with Disabilities*. UNESCO. 2018.
20. World Bank. *Inclusion matters: The foundation for shared prosperity*. World Bank Group, 2013.