

Challenges Experienced in Inclusive Education among Secondary Schools in Temeke District, Tanzania

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Abstract: This study investigated about challenges experienced in inclusive education among secondary schools in Temeke District, Tanzania. The study used the triangulation research design, where data emerged from an interview schedule, a questionnaire and the observation schedule. The analysis of quantitative data involved the use of frequencies and bar charts. The analysis of qualitative data followed the content analysis procedures. The researchers merged common themes to answer respective problem in the study. The study concludes that the schools in the study area experienced diverse challenges in implementing the inclusive education. Based on the findings, the study recommended that the Ministry of Education Science and Technology, in collaboration with education stakeholders and community members, should ensure availability of supporting devices such as hearing aids, Braille, wheel chairs and white canes for special needs learners. Furthermore, there is a need for teachers' training for improved teaching and learning outcomes in the inclusive environment.

Keywords: Inclusive education; special needs; secondary schools; curriculum.

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Introduction

Education is a crucial foundation for lifelong learning. It empowers the disadvantaged and promotes democracy and equality. Thus, it must be accessible to all (Goransson *et al.*, 2019). The Incheon Declaration of 2005 emphasizes inclusion and equity as foundations for quality education (Ydo, 2020).

Inclusive education aims at increasing the presence, participation and achievement of all learners (Rehwerder, 2019). Sustainable Development Goal 4 calls to ensure that schools provide inclusive and equitable quality education. Likewise, the UN Convention on the Rights of Persons with disability

of 2006 emphasized that the right to inclusive education encompasses a transformation in culture, policy and practice in all educational environments to accommodate differing requirements and identities of students, together with a commitment to remove barriers that impede that possibility (UNICEF, 2017a; UNESCO, 2020a). Furthermore, UNESCO (2020b) emphasized educational justification, which requires the development of ways of teaching that respond to individual differences that benefit all children. It also emphasized social justice where inclusive schools are targeted to change attitudes by educating all children together. Hence, inclusion targets to end segregation within education settings by ensuring

inclusive classrooms and teaching in accessible learning environments with appropriate support.

The government of Tanzania in the management of inclusive education has made efforts. For example, the 2018-2021 National Strategy on Inclusive Education intended to improve infrastructure and facilities to provide a barrier-free learning environment and to produce guidelines to produce inclusive and gender-sensitive textbooks and learning materials (Institute of Development Studies, 2020). Likewise, The Tanzania Education Sector Development Plan (ESDP) focuses on ensuring equitable access to education and training for all, including the most disadvantaged. It focuses on disadvantaged groups such as orphans and vulnerable children and children and adults with learning disabilities including physical disabilities (URT, 2018). The ESDP further sets out the need for an enhanced effort on improving the quality of education at all levels. This is necessary to ensure that children and young people do not merely pass through a universalized education system but that they acquire knowledge, attitudes and life skills that equip them to become productive, loyal and fulfilled citizens (URT, 2018).

Even though disability rights and inclusive settings for children with disabilities are provided in the 1977 constitution, the 2010 Persons with Disability Act, Inclusive Education Strategy 2018-2021, and the 2014 Special Education Needs Policy (United Republic of Tanzania, 1977; Tanzania Empowerment for Persons with Disability and Gender Health Organization, 2018), learners with disabilities experience difficulties in education, leading to school drop outs. There are still challenges particularly for children with disabilities in terms of accessing quality education, participation in teaching and learning process, and social exclusion in education (Rehwerder, 2019; African Initiatives, 2018). The identified gaps limit equal access, participation, achievement and education opportunities for learners with special education needs. This study aimed to establish the integration of inclusive education in teaching and learning in secondary schools in Temeke District.

Theoretical Framework

Social Model of Disability guided this study. The theory holds that disability is socially constructed and therefore any meaningful solution for the challenges encountered by disabled people must be directed at societal change rather than individual adjustment and rehabilitation (Barnes et al., 2010).

In this model, disability appears as a socially constructed phenomenon. It stresses the need to focus on the social aspects of disability, especially how the physical and social environment imposes limitations upon certain categories of people. Thus, disability is a socially constructed disadvantage. The social model addresses the barriers to participation experienced by people with disabilities due to different social and environmental factors in society (O'Connell et al., 2008). The Model plays a vital role in shaping social policy for people with disabilities at both national and international levels.

Empirical Literature Review

This section presents literature on inclusive education for learners with special education needs, the status of special needs and implementation of inclusive education in schools.

Inclusive Education for Special Needs Learners

Inclusive education in this study means education that does not exclude anyone based on disability, language, gender, class, ethnicity or any other barrier that prevents a child from accessing, participating, and engaging in education and its benefits thereof. It targets to broaden educational opportunities for children with disabilities and marginalized groups to realize their full potential (United Republic of Tanzania, 2017).

Inclusive education focuses on groups of individuals (children with disability and special educational needs) who have been excluded from educational opportunities. Factors that contribute to exclusion are negative social attitudes towards learners with special needs in school and the community, lack of knowledge and skills to manage teaching and learning for children with special needs and lack of awareness among parents and the community (United Republic of Tanzania 2017; Goransson et al., 2019). It also involves the transformation of regular schools into barrier-free environments to accommodate all learners. It further aims to mainstream students with special needs in flexible learning environments for acquiring quality education that optimizes their potential for holistic development (Rieser, 2008).

The Status of Special Needs

According to the World Health Organization (2018), 15 per cent of the population worldwide has a disability and 5 per cent (466 million) are deaf. To provide equal rights and opportunities for accessible, meaningful, quality and inclusive

education for learners with special needs, many countries have enacted laws and policies such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) of 2008, which encouraged stakeholders to take appropriate and responsive actions to inclusive education for exceptional students.

Despite the high rate of disability in populations ranging from 10 to 16 per cent, the reported number of children with disabilities in schools is much lower. The reported prevalence rates of disability in Uganda, Rwanda and Ethiopia were 1.79, 1.1 and 0.7 per cent respectively of total school enrolment (UNICEF, 2017a). This suggests that many children with disabilities are not in school.

Disability among children and young people aged 5 to 24 years is 2.3 per cent in Tanzania mainland and 1.8 per cent in Zanzibar. Females have higher prevalence rates of disability than is the case with males. The rates show that 7.8 per cent of females live with disability compared to 5.7 per cent of males living with disability in Tanzania mainland (National Bureau of Statistics, 2019, UNPRPD, 2021). Similarly, the rate of disability is higher in rural than in urban areas. This implies that children with disability tend to attend school more frequently in urban than they do in rural areas. This is attributed by high level of awareness and availability of friendly education facilities in urban areas (National Bureau of Statistics, 2019). Furthermore, the enrolment for learners with disabilities in secondary school was 10,749 in 2018/2019, where males were 5,551 and females were 5,198 in Tanzania Mainland. This represented 0.48% of secondary enrolment (United Republic of Tanzania, 2019; UNESCO, 2020a).

Implementation of Inclusive Education

According to UNICEF (2019), the implementation of inclusive education for pupils with special needs targets to ensure that schools have qualified personnel and training on inclusive education and the induction for new staff members takes place. A study conducted in Indonesia reported that the government had made various efforts to implement inclusive aspects in the education system. According to the study findings, schools had to modify their curricula to meet the needs of students with special needs (Sunardi et al. 2011). However, only 50 per cent of the curriculum, syllabi and instructional materials were modified in the schools by the time of the study.

Likewise, the government in the Philippines, through the Department of Education shifted the current educational system of special education (SPED) into an inclusive education system. Its main objective was to mainstream students with special needs in the regular classroom to learn side by side with normal students. This shift also included higher learning education. The findings show that teachers developed strategies for delivering quality education for inclusive classes despite the challenges. Teachers were also motivated to handle students with special needs (Dela Fuente, 2021).

Several studies in Tanzania examined the implementation of inclusive education in schools. These studies identified shortfalls in implementing inclusive education. For example, Possi and Millinga (2017) reported a shortage of learning materials and unfriendly classrooms due to varying disabilities among children. A study by Rugambwa and Thomas (2013) shows that there is limited information related to inclusive education in Tanzania and teachers have inadequate understanding of inclusion and pedagogical techniques for inclusive education (Tungaraza, 2018).

Kayagula (2019) reported similar findings and revealed that in most inclusive schools studied in Uvinza-Kigoma, the learning environment was not friendly to children with disabilities. For instance, among the four schools observed, only one school had adjusted latrines, chairs and desks. The rest of these schools had no chairs, desks and latrines that are adjusted to suit learning for children with disabilities. The surveyed literature worldwide and in Tanzania particularly indicate that nations have made efforts to implement inclusive education for children with special education needs. However, there are still challenges experienced by such children. Therefore, inclusive education was the aspect of interest in this study.

Methodology

This section presents the methodology that guided the study.

The Study Area

The study took place in Temeke District, Dar es Salaam region. Dar es Salaam region is among the regions that have the preferred characteristic for this study. The region has higher rates of learners with disability compared to other areas (National Bureau of Statistics, 2016; 2022). Temeke District was selected as it has both rural and urban settings.

The population in Temeke is 1,346,674 where males are 655,137 and females are 691,537 (United Republic of Tanzania, 2022).

The Study Design

The study use the triangulation research design whereby both quantitative and qualitative data merged to form a comprehensive analysis of the problem. Triangulation engages the use of both qualitative and quantitative approach I addressing research problems (Cooper & Pamela, 2014).

Population and Sampling

The population of the study involved 326 teachers from which 41 participated through simple random sampling. Out of 26,678 Form 3 and Form 4 students, 200 were sampled through simple random sampling. Finally, out of 66 heads of schools, eight participated by providing qualitative data.

Instruments

The study used an interview schedule, a questionnaire and an observation schedule as source of data.

Validity and Reliability

A pilot study took place before administering the questionnaire to the respondents. The researchers addressed the emerged issues regarding to the questionnaire's quality. The use of multiple sources of data guaranteed the reliability of the study results.

Statistical Treatment of Data

The analysis of quantitative data involved the use of frequencies and bar charts. The analysis of qualitative data followed the content analysis procedures. The researchers merged common themes to answer respective problem in the study.

Findings and Discussion

This section presents the results based on the research questions that guided the study.

Research Question 1: What is the Status of Special Needs in secondary schools?

In Figure 1, findings show that 26.6 per cent students reported having a disability. The results also show that 12.8 and 13.4 per cent of students with disability were males and females, respectively. The finding show further that the status of special needs differed among girls and boys in the study area.

The findings in Figure 2 show further that blindness and low vision were the leading types of disability in the study area. The percentage of females with blindness and low vision was high (9.3%) compared to the percentage of males (4.7%) with similar challenges. Likewise, the percentage of females with mental health difficulties was found to be high (7%) compared to that of males (2.9%).

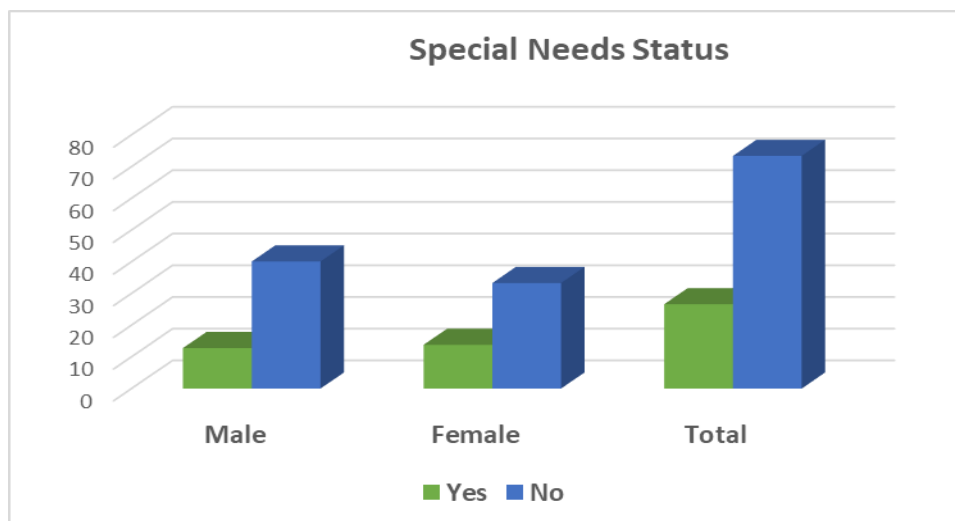


Figure: 1 Special Needs Status

These results have implication in participation in teaching and learning processes since mental disability may have significant reduced ability in learning new skills and in coping with teaching and learning due to slow ability in cognitive processing.

In addition, learners with low vision and blindness have trouble in reading and writing. The experiences they face may lower their confidence and concentration in the classroom (Durksen et al. 2017).

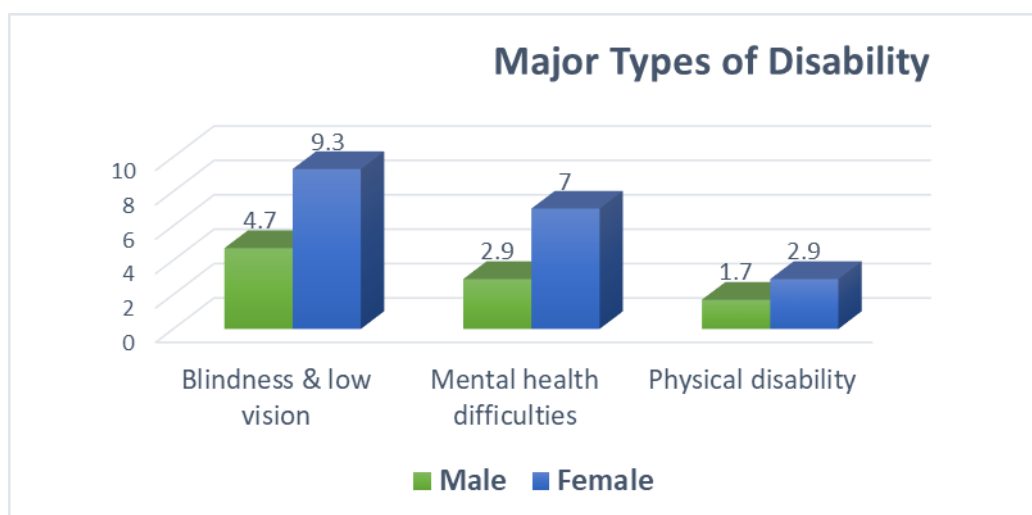


Figure 2: The Major Types of Disabilities

Table 1: Integration of Inclusive Education in Teaching and learning (n=41)

SN	Items	Agree		Undecided		Disagree	
		f	%	f	%	f	%
1	Students with special needs are motivated to learn	41	100	0	0	0	0
2	Teaching methods focus on students' needs	31	75.6	3	7.3	8	19.5
3	All students are considered in the content delivery	30	73.2	2	4.9	9	21.2
4	Teachers support students with learning disabilities	30	73.2	0	0	11	26.8
5	Teaching aids match with special needs requirements	29	70.7	5	12.2	7	17.1
6	There are adequate resources for inclusive education	12	29.3	8	19.5	21	51.2
7	Inclusive education covers content and methodology	9	21.9	28	68.3	4	9.8
8	There is ongoing training on inclusive education	8	19.5	19	46.3	14	34.1
9	Special needs learners can access facilities and equipment	7	17.1	21	51.2	13	31.7
10	New teachers receive induction on inclusive education	0	0	31	75.3	10	24.4

The findings in Figure 3 call for consideration and special attention towards provision of facilities that enable smooth undertakings of school activities among secondary school students with special needs. Facilities needed for learners with visual impairment include Braille, audio tape and large prints. These can enable learners to access information written in normal prints. Learners with mental disability may require adjustment in assessment tasks and time allocated for assessment due to low cognitive ability. Learners with physical disability have limited accessibility to classes. This may lead to poor attendance and participation in teaching and learning (Hayes & Bulat, 2017).

Findings from in-depth interview shows inadequacies in support services for learners with special needs. For instance, a teacher from school B reported,

Teaching and learning for learners with special needs, need much attention and focus for learners to grasp the learned

content. There is a need for some special tools for special need students to grasp the content taught in the teaching and learning process. For example, hearing support, enlargement of words for students with low vision, wheelchairs or elevators and special needs toilets are essential.

A teacher from school C recommended that students with low vision should sit near teachers' tables in the class and have their examination papers printed in A2 size. These findings show that the teaching and learning process for learners with special needs require special attention.

Research Question 2: How does the inclusive education take place in secondary schools?

The study sought to establish the integration of inclusive education in teaching and learning as it appears in Table 1. The table indicates that the majority of respondents agreed with the first five out of ten items. Particularly, they agreed that

students with special needs are motivated to learn (100%), that teaching methods focus on students' needs (75.6%), that teachers consider all students in the content delivery (73.2%), that teachers support students with learning disabilities (73.2% and that teaching aids match with special needs requirements (70.7%). Motivation has an important role in teaching and learning for both teachers and students. It increases learner's enthusiasm to learn and it addresses students' needs (Durksen et al. 2017).

Table 1 further shows that more than a half of respondents (68.5%) were undecided whether inclusive education addresses content and methodology and whether special needs learners can access facilities and equipment (51.2%). This shows that schools have to do much to improve content delivery and the approaches used to teach the inclusive classrooms. One of approaches that enhance content delivery is experiential learning which uses visual, auditory and self-directed student participation. This approach helps to enhance comprehension and mastery of content and it encourages, independent learning.

Finally, the majority of respondents disagreed about the availability of resources for inclusive education (51.2%). Resources for inclusive education include environmental types and human resources type, which contribute in improving performance (Hayes & Bulat, 2017).

Research Question 3: How does the teaching and learning environment for learners with special needs look like?

The study sought to describe the teaching and learning environment for learners with special needs.

Interview schedule findings show that the classrooms had considerable space, with adequate ventilation and safety. However, classrooms were not conducive for learners with special needs due to special needs learners' inability to access the classrooms. Particularly, there were few classrooms with ramps for physically impaired students. The in depth interview further revealed that,

Classrooms are not accessible to fulfilling the demands of students with special needs in our school. For instance, we allocate physically impaired students to the ground floor classes so that it is easy for them to move from one classroom to other areas. We have two laboratories on the ground floor and one on the upper level. The physically impaired students can access the ground-floor laboratories but it is a challenge for them to access the upper-level biology laboratory.

Ramps enable access to physical environment. School buildings built without consideration of persons with disabilities tend to limit physical accessibility to classes. This may lead to poor teaching and learning outcomes for learners with disabilities (Hayes & Bulat, 2017).

Table 3 shows results from the observation schedule. The table reveals not user-friendly infrastructure to physically impaired students. Furthermore, there were limited classrooms with ramps and the few ramps' quality was poor. Toilets were not accessible and hostels facilities were inadequate for learners with special needs. Improving the infrastructures and facilities help to address barriers in the learning environment and to ensure conducive learning environment d=for special needs learners (Licardo, 2019).

Table 3: Observed Status of Teaching and Learning Environment in Secondary Schools

Observed Items	Status
Infrastructures	Not user- friendly and accessible to the physically impaired students. There were few classes with ramps There were no clear ramps with minimum slope There were no accessible toilets with supportive grab-bars There was no accessible signage for toilets (that are visible and touchable) There were inadequate hostels
Supportive devices	There were no hearing devices, There were inadequate white cans There were no wheel chairs.
Human Resources	There was inadequate number of trained teachers in Special Education. There were inadequate training and seminars for capacity building.

Table 3 further revealed lack of hearing devices and white canes. Hearing devices help persons with hearing disorders to retrieve information in different environments using the hearing devices. White canes are walking devices. They help in guiding visually impaired persons to find direction (Erdem, 2017; WHO, 2022). Furthermore, there were no wheel chairs for learners with disabilities. Wheel chairs help persons with mobility impairments to move in a manner that is appropriate to their needs. Wheel chairs help learners with motor disability to participate in school activities with their peers (Erdem, 2017).

Supportive devices enhance the quality of teaching and has great effects in engagement, progress and achievement of learners with special needs (WHO, 2022).

Regarding the human resources, the findings show that there was inadequate number of trained teachers in special education. Inadequate human resource can affect the implementation of the inclusive education. The shortage of specialised teachers in special education appears to be a challenge experienced in schools in Tanzania and other developing countries as previous studies had reported inadequate number of teachers as a barrier in teaching and learning in schools (Tungaraza, 2014; Ydo, 2020, NORAD, 2021). Thus, teachers' shortage is a critical issue with negative effects on performance (Pholphirul et. al., 2023). The findings further show inadequate training and seminars for capacity building. Inclusive education require teachers who are skilled and competent in addressing complex issues in the classroom context Sugito, 2021)

Conclusion and Recommendation

The study concludes that the schools in the study area experienced diverse challenges in implementing the inclusive education. The number of females with disability was higher than the number of males. Blindness and low vision were the leading types in the schools. Furthermore, there was lack of supportive devices such as hearing devices, white canes and wheel chairs for learners with disabilities. While classrooms had considerable space with adequate ventilation and safety, the classrooms were not conducive for learners with special needs due to poor accessibility. Furthermore, the infrastructure was not user friendly to physically impaired students as there were limited classrooms with ramps, and the ramps'

quality was poor. Toilets were not accessible and hostel facilities were inadequate. Finally, there was inadequate training for teachers' capacity building and number of trained teachers in special education was limited.

The study recommends that the Ministry of Education Science and Technology, in collaboration with education stakeholders and community members, should ensure availability of supporting devices such as hearing aids, Braille, wheel chairs and white canes for special needs learners. Furthermore, there is a need for teachers' training for improved teaching and learning outcomes in the inclusive environment.

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References

- African Initiatives (2018). Disability Needs Assessment and Situation Analysis Monduli and Longido Districts, Arusha Region Moshi Rural and Urban Districts, Kilimanjaro Region. African Initiatives.
- Barnes, C., Mercer, G & Shakespeare, T. (2010). 'The social model of disability', in A. Giddens & P. Sutton (eds.), *Sociology: Introductory readings*, (pp. 161–166). Cambridge: Polity Press.
- Dela Fuente, J.A (2021). Implementing Inclusive Education in the Philippines: College Teacher Experiences with Deaf Students. *Issues in Educational Research*. (31(1) 94 -110.
- Durksen, T. L., Klassen, R. M., & Daniels, L. M. (2017). Motivation and collaboration: The keys to a developmental framework for teachers' professional learning. *Teaching and Teacher Education*: 67, 53–66
- Erdem, R. (2017). Students with Special Needs and Assistive Technologies: A Literature Review. *Turkish Journal of Educational Technologies* (6):1
- Goransson, K., Lindqvist, G., Klang, N & Magnusson, G. (2019). Professionalism, Governance and Inclusive Education. A Total Population Study of Swedish Special Needs Educators. *International Journal of Inclusive Education*, 23(6), 559-574. <https://doi.org/10.1080/13603/16.2018>.
- Hayes A. M., Bulat J. (2017). *Disabilities Inclusive Education Systems and Policies Guide for Low- and Middle-Income Countries*. Research Triangle Park, NC: RTI Press. <https://doi.org/10.3768/rtipress.2017.op.0043.1707>.

- Institute of Development Studies (2020). Inclusive Futures, Disability Inclusive Development. Tanzania Situation Analysis. IDS.
- Licardo, M. (2019). The use of Methods for Learning to Learning to Learn for Students with special Needs Slovenia. *European Journal of Special Education*. 34, 1.
- National Bureau of Statistics (2016). Disability Monograph. Dar es Salaam: The United Republic of Tanzania.
- National Bureau of Statistics (2019). Tanzania Mainland Household Budget Survey 2017-2018: Key Indicators Report. Dodoma: Ministry of Finance and Planning.
- NORAD (2021). The Bedrock of Inclusion: Why Investing in the Education Workforce is Critical to the Delivery of SDG 4. Tanzania Country Report.
- O'Connell, C., Finnerty, J. & Egan, O. (2008). Hidden Voices, Combat Poverty Agency, Dublin: Poverty Research Initiative.
- Pholphirul, P., Rukumnuaykit, P. and Teimrad, S. (2023). Teacher Shortage and Educational Outcomes in Developing Countries: Empirical Evidence from PISA-Thailand. *Cogent Education*. 10: 2 2243126, Doi: 10.1080/23311868.2023.2243126.
- Possi, M & Milinga J. (2017). Special and Inclusive Education in Tanzania: Reminiscing the Past, Building the Future. *Educational Process: International Journal*, 6(4), 55-73.
- Rehwerder, B. (2019). Disability Stigma in the Disability Inclusive Development (DID) Programme: An Overview of the Evidence. IDS. <https://www.ids.ac.uk/wp>
- Rieser, R. (2008). Implementing Inclusive Education: A Commonwealth Guide to Implementing Article 24 of the UN Convention on the Rights of Persons with Disabilities. London: Charles worth Press.
- Rugambwa, A. & Thomas, M. A. M. (2013). Teachers' Conceptualisations and Practices of Inclusion. In *Teaching in Tension*. doi:10.1007/978-94-6209-224-2_7.
- Sugito, K.E. P. (2021). Managing Human Resource Development of Educators in Inclusion- Based Elementary School. *Journal of Education and Learning*. 15(1) 1-10 Doi: 10.1159/v.lsi.16749.
- Sunardi, M.Y., Gunarhadi, P. & Yeager, J.L. (2011). The Implementation of Inclusive Education for Students with Special Needs in Indonesia. *Excellence in Higher Education*, 2, 1-10.
- Tanzania Empowerment for Persons with Disability and Gender Health Organization (2018). The Right of Persons with Disabilities to The Highest Attainable Standard of Health in Tanzania. TEPDGHO.
- Tungaraza, F.D (2014). Training Teachers in Special Education Needs in Tanzania. *Huria Journal of Open University of Tanzania*. Vol. 16 <https://www.ajol.info>.
- Tungaraza, F. D. (2018). Sixty Years of Special Needs Education. *University of Dar es Salaam Journals*. <https://www.journals.udsm.ac.tz.ped>
- UNICEF (2017a). The Challenge of Inclusion for Children with Disabilities. Experiences of Implementation in Eastern and Southern Africa. UNICEF.
- UNICEF, (2019). Standards for Inclusive Education. Eswatini Ministry of Education and Training.
- UNESCO (2020a). Inclusion and Education: All means all. Global Monitoring Report. Paris: UNESCO. <https://www.un.org>.
- UNESCO (2020b). Towards Inclusion in Education: Status, Trends and Challenges. Paris: UNESCO. <https://www.un.org>.
- United Republic of Tanzania (2017). National Strategy for Inclusive Education 2018 – 2021. Dar es Salaam: URT.
- United Republic of Tanzania (2022). Population and Housing Census: Administrative Units Population Distribution Report, Tanzania. Ministry of Finance and Planning and President's Office.
- UNPRPD (2021). Situation Analysis on Persons with Disability in the United Republic of Tanzania. UNCT Tanzania.
- Ydo, Y. (2020). Inclusive Education, Global Priority, Collective Responsibility. *Prospects*. 49: 97-101. UNESCO.
- World Health Organization) (2018). Deafness. <https://www.who.int/newsroom/facts-In-pictures/detail/deafness>.
- WHO (2022). The Global Report on Assistive Technology. Geneva: WHO.