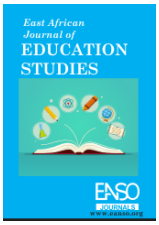
East African Journal of Education Studies, Volume 6, Issue 3, 2023
Article DOI: https://doi.org/10.37284/eajes.6.3.1521



East African Journal of Education Studies
eajes.eanso.org
Volume 6, Issue 3, 2023
Print ISSN: 2707-3939 | Online ISSN: 2707-3947
Title DOI: https://doi.org/10.37284/2707-3947

Original Article

Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda

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Article DOI: https://doi.org/10.37284/eajes.6.3.1521

Date Published:

18 October 2023

Keywords:

Inclusive Teaching and Learning, Students with Visual Impairment, Academic Staff, Public Universities.

ABSTRACT

Enrolment of students with visual impairment (SVIs) into higher education is rising globally, hence the need for inclusive learning environments and practices in universities. Academic staff are pivotal in ensuring inclusive practices in universities, given their pedagogic roles. Drawing on a larger project, this paper explores academic staff capacities for inclusive teaching and learning of SVIs in three public universities in Uganda. The study employed a qualitative interpretivist approach, specifically a case study design, and was theoretically informed by the social model of disability. Data was collected from three purposively selected public universities that enrol SVIs, from a sample of 73 respondents, comprising 17 academic staff, 09 academic leaders (4 Faculty Deans, 5 Heads of departments), 29 SVIs, and 18 administrative staff, using interviews, focus group discussions (FGDs), document analysis and non-participant observations. All data sets were analysed thematically. Findings show minimal staff capacities for inclusive teaching and learning of SVIs. The majority of the staff lacked awareness and sensitivity to the SVIs' learning needs due to poor coordination and information flow across university units that interface with students with disabilities. Staff capacities to adapt teaching and assessment processes for SVIs were also low, attributed to a lack of formal training and orientation in teaching SVIs, except for staff with academic backgrounds in special education and disability studies. The findings underscore the role of staff training in inclusive practices informed by Universal Design for Learning (UDL) principles and better coordination among university units for holistic, inclusive participation of SVIs.

APA CITATION

Sikoyo, L., Ezati, B. A., Nampijja, D., Asiimwe, J. A., Walimbwa, M. & Okot, D. (2023). Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda *East African Journal of Education Studies*, *6*(3), 174-191. https://doi.org/10.37284/eajes.6.3.1521.

CHICAGO CITATION

Sikoyo, Leah, Betty Akullu Ezati, Dianah Nampijja, Joyce Ayikoru Asiimwe, Michael Walimbwa and Daniel Okot. 2023. "Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda". *East African Journal of Education Studies* 6 (3), 174-191. https://doi.org/10.37284/eajes.6.3.1521

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

HARVARD CITATION

Sikoyo, L., Ezati, B. A., Nampijja, D., Asiimwe, J. A., Walimbwa, M. & Okot, D. (2023) "Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda", *East African Journal of Education Studies*, 6(3), pp. 174-191. doi: 10.37284/eajes.6.3.1521

IEEE CITATION

L., Sikoyo, B. A., Ezati, D., Nampijja, J. A., Asiimwe, M., Walimbwa & D., Okot. "Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda" *EAJES*, vol. 6, no. 3, pp. 174-191, Oct. 2023.

MLA CITATION

Sikoyo, Leah, Betty Akullu Ezati, Dianah Nampijja, Joyce Ayikoru Asiimwe, Michael Walimbwa & Daniel Okot. "Staff Capacities for Inclusive Teaching and Learning of Students with Visual Impairment: A Case of Public Universities in Uganda". *East African Journal of Education Studies*, Vol. 6, no. 3, Oct. 2023, pp. 174-191, doi:10.37284/eajes.6.3.1521

INTRODUCTION

The past decade has witnessed a global rise in the enrolment of previously underrepresented groups such as students with disabilities into higher education (Martins et al., 2018; Cotan et al., 2021; Amin et al., 2021), including in African countries (Salih & Kakizawa, 2022). The presence of such a diverse student population calls for inclusive higher education in order to maximise engagement and learning for all (Morina, 2022). Inclusive education recognises diversity among learners socially, culturally, physically, and mentally, premised on the view that all learners should study together regardless of differences (UNESCO, 2009). Inclusive education further identifies and removes barriers to access, participation, and achievement of all students (Ainscow, 2020), paying particular attention to students at risk of marginalisation, exclusion, and underachievement, such as students with disabilities.

Inclusive education has been promoted by several international protocols, including the World Declaration on Education for All (1990), the Salamanca Statement and Framework for Action on Special Needs Education (1994), the Dakar Framework for Action (2000), the 2006 United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) whose Article 24 requires countries to attain a right to education for persons with disabilities without discrimination based on equal opportunities at all levels of education (Amor et al, 2019) Furthermore, SDG4 promotes equitable and inclusive quality education and lifelong learning opportunities for all, with its Targets 4.5 and 4.A emphasising equitable access and inclusive learning environments and participation of persons with disabilities at all education levels.

Uganda, like other countries, has ratified various international conventions and protocols that safeguard the rights of persons with disabilities, including the UN Universal Declaration of Human Rights, the UNCRPD; the Salamanca Statement and Framework for Action on Special Needs Education, and Marrakesh Declaration (2013). In addition, national legal and policy frameworks such as the Constitution of the Republic of Uganda (1995) and the Special Needs and Inclusive Education Draft Policy (2011) call for an inclusive educational environment for all categories of people with disabilities (Emong & Eron, 2016).

As inclusive education becomes a global agenda in higher education, universities are obliged to ensure an inclusive learning environment for diverse student groups, including those with disabilities (Lawrie et al., 2017; Walton & Engelbrecht, 2022; Martins et al., 2018). Universities have therefore put in place interventions to support inclusive education for students with disabilities, such as institutional policies and regulations, especially affirmative action at admission, adapted infrastructure, and disability support services (Cotan et al., 2021; Sikoyo et al., 2021). Despite these efforts, barriers related to attitudes, resources and limited knowledge and skills persist, constraining the effective participation of students with disabilities in university education globally (Fernández-Batanero et al., 2022; Lourens & Swartz, 2016; Mutanga, 2018).

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

Like elsewhere, inclusive education for students with disabilities remains a challenge in sub-Saharan Africa despite the ratification of various international protocols and national frameworks (Mokaleng & Mowes, 2020; Ntombela, 2020). Attention has therefore shifted from justifying the need for inclusive education to emphasising its implementation (Mfuthwana & Dreyer, 2018), which requires interventions at institutional and classroom levels. Scholars argue that inclusive education ought to be taken up holistically at both institutional and individual levels by all those interfacing with students with disabilities (Martinez-Acosta & Favero, 2018; Zorec et al., 2022), by ensuring inclusive policies, pedagogic processes, administrative and support services, and physical infrastructure that accommodates diverse student needs. At the classroom level, educator perceptions, attitudes, awareness, and practices are key to ensuring inclusive learning (Morina, 2022; Little et al., 2023). It is imperative to assess how inclusive education for students with disabilities is being implemented in different higher education contexts.

Previous studies highlight educator practices as constraining the effective participation of students with disabilities in university education world over (Taneja-Johansson, 2021; Lintangsari & Emaliana, 2020; Seale et al., 2015). Additionally, while there is a growing body of literature on the attitudes and perceptions of university teachers towards disability, there is limited knowledge on adaptations that academics make to support inclusive teaching and learning of students with disabilities (Rannveig, 2020), hence the call for studies on the experiences of academics who teach and support students with disabilities (Omede, 2015; Manitsa & Doikou, 2022; Walton & Rusznyak, 2017).

Moreover, the current literature is dominated by studies from Europe and the USA, hence the calls for international perspectives on inclusive teaching and learning, especially from the global south (Morina, 2020). This paper contributes to the foregoing research gap by exploring staff capacities to support inclusive teaching and learning of SVIs in public universities in Uganda. The study focused on SVIs because visual impairment (low vision and blindness) is the dominant form of disability in Uganda, reflected among 7.2% of persons aged 5 years and above (UBOS, 2019).

The paper is guided by the following research questions:

- What are the levels of staff awareness and sensitivity to the learning needs of SVIs?
- How do staff adapt teaching and assessment processes to support inclusive learning of SVIs?

LITERATURE REVIEW

Inclusive education for SVIs in higher education has been researched from different perspectives. Some studies focus on student factors, some on the influence of learning environments and pedagogic processes and others on institutional-level factors. Within the learning environment, educator capacities and attitudes, accessibility of curricula and pedagogic processes, as well as utilisation of assistive devices and technologies influence participation of SVIs (Lintangsari & Emaliana, 2020; Miyauchi, 2020; Salih & Kakizawa, 2022; Eligi & Mwantimwa, 2017).

Higher Education Staff Awareness of Learning Needs of SVIs

Studies on staff awareness of the learning needs of SVIs are scanty; however, emerging research shows low levels of awareness among staff. For instance, a systematic review of inclusive education for SVIs by Miyauchi (2020) showed that although physically present in classrooms, SVIs were excluded from effective participation in learning due to the inaccessibility of the curriculum, especially in science and physical education courses. Barriers to accessing the curricula were attributed to teachers' lack of an understanding of how to teach SVIs. In addition, studies by Litangsari & Emaliana (2020) in Indonesia and Attachoo & Sitthitiku (2021) in Thailand revealed that inadequate learning materials and inappropriate instructional

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

adjustments constrained the SVIs' learning of English as a foreign language in universities, which was attributed to lack of disability-specific staff training.

In Africa, Salih and Kakizawa's (2022) study in Sudan shows that teachers lacked knowledge and skills in teaching SVIs and that music, foreign languages, and computers were inaccessible to the students, hence difficult to study. In addition, Chikukwa et al. (2012) evaluation study of an Open and Distance Learning (ODL) institution of higher learning in Zimbabwe reports that SVIs did not benefit from the flexibility offered by ODL due to staff capacity constraints and lack of equipment and services. Furthermore, Beyene et al. (2023) explored barriers to access to educational resources for SVIs in an Ethiopian University and reported inaccessible learning materials and library resources as challenges to the effective participation of the students in learning processes.

Staff need prior information about students with disabilities, particularly the types of visual impairment and the necessary accommodation for planning purposes. However, Mosia and Phasha's (2017) study in Lesotho showed that lack of access to timely information about SVIs negatively impacts educators' ability to plan and provide them with support.

Adaptation of Teaching and Assessment Processes for SVIs

Staff capacities to adapt teaching and learning processes are critical in supporting inclusive participation and meaningful learning of SVIs. For example, Erdem-Şengül and Yakut's (2022) study in Turkey shows that staff training in inclusive practices, their curricular adaptations in science and math subjects, and support from teachers with visual impairment enhanced the SVIs' learning.

McNicholl et al. (2023) study in Ireland reports that usage of assistive technologies positively impacted the educational engagement and psychosocial outcomes of students through enhanced independence, self-esteem, and social well-being. Similar findings are reported by Erdem-Şengül and Yakut (2022), Nyaga et al. (2017), Gambo et al. (2021), and Foley and Masingila (2015).

Nyaga et al. (2017) and Foley and Masingila (2015) suggest that the use of assistive technologies positively impacted SVI's engagement and independence in learning. Likewise, Eligi and Mwantimwa's (2017) study at a Tanzanian University shows that ICTS enabled SVIs to learn independently and collaboratively despite some students lacking specialised assistive devices and skills in their usage.

Furthermore, Simui et al.'s (2019) study at Zambian University shows that inadequate staff capacities, rigid curricula, and negative attitudes were the main disablers of the SVIs' learning. On the other hand, curriculum adaptations and social support from staff and peers positively impacted the learning of SVIs in a Zimbabwean university (Manyumwa, 2018). Similarly, Manitsa and Doikou's (2020) systematic literature review further shows how social support to SVIs in schools and universities positively impacted their learning and social-emotional development.

Although most research on SVIs' education in African universities highlights barriers, a small number of studies are emerging to show success stories. For example, Delport (2021) presents the success story of a visually impaired student and his visually impaired lecturer at a South African university, highlighting the strategies they adopted to overcome the challenges they faced. Similarly, Tekane and Potgieter (2021) report on successful teaching and learning strategies for blind students in the natural sciences in a South African context. Commitment from the teaching staff, the student's own commitment as well and services from a well-resourced disability support centre are credited for the student's success story.

Consistent with literature from other sub-Saharan countries, a range of barriers to the inclusion and participation of SVIs in Uganda's universities have been documented. These include negative attitudes, inaccessible physical facilities and

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

learning environments, inaccessible library resources, instructional materials and curricula, staff capacity constraints for inclusive teaching, inadequate specialised assistive devices, and support services (Namugenyi & Wamea, 2021; Wandera et al., 2017; Emong & Eron, 2016; Ojok, 2018). Such barriers, if not addressed, constrain the effective participation of SVIs in university education and go against the various national and global commitments to inclusive education.

Overall, the literature suggests that globally and in Africa, SVIs face three main types of barriers, namely physical access barriers (infrastructure), curricular access barriers (teaching methodology and curriculum content), and attitude barriers in inclusive education settings (Martins et al., 2018). Enablers of inclusive education for SVIs include staff awareness and training in inclusive practices, positive attitudes and perceptions of disability, supportive educator and peer support, accessible infrastructure and learning resources, disability support services and institutional-level holistic support systems (Miyauchi, 2020; Morina, 2020; Simui et al., 2018).

Inclusive education for SVIs is therefore, a complex phenomenon that is best addressed at different levels with collaboration among various actors to provide a truly inclusive and supportive system (Nilholm, 2021; Mfuthwana & Dreyer, 2018). The need for campus-wide interventions notwithstanding, the central role of educators in mitigating the curricular access and attitudinal barriers is recognised in the quest for inclusive education for SVIs. The current paper contributes to research on the influence of educator factors on inclusive teaching and learning of SVIs in university contexts in the global south.

Theoretical Foundations

Two theoretical models are popular in conceptualising education for students with disabilities, i.e., the 'individual or medical model' and the 'social model' on disability (Collins et al., 2019). The medical model views disability from the perspective of an individual and perceives it as a problem or impairment that can be 'cured' through special means, whereas the social model views disability from the perspective of society having barriers that 'disable' the functioning of persons with disabilities. The social model views disability as socially created by society (Oliver, 2013); hence, it focuses on removing barriers in the environment that restrict life choices for disabled people so that they can function effectively.

Inclusive education is premised on the social model of disability; hence, it recommends changing society and environments to accommodate people who live with impairment rather than changing individuals with impairment to accommodate society (Oliver 2013). In line with the social model on disability, societal barriers within university environments should be eliminated to make it as inclusive as possible to all learners, including those with disabilities (Moriña & Morgado, 2018). The study reported in this paper was premised on the social model of disability; hence, it posits that inclusive learning and teaching of SVIs require identifying and eliminating barriers that students face in university environments. The paper focuses on academic staff capacities for ensuring inclusive learning environments in universities, given their pedagogic roles.

Universal Design for Learning (UDL) is promoted as an effective framework for ensuring a sustainable and holistic strategy to provide inclusive education for all learners in higher education institutions, including those with disabilities (Mbuvha, 2019; Bryans-Bongey, 2018; Rice & Ortiz, 2020). Premised on the social model of disability, UDL assumes that barriers to learning are in the design of the learning environment and not in the student; hence, it is the learning environment that requires adaptation and not the learners (Hitch et al., 2015).

UDL is guided by three principles that focus on providing learners with flexibility in pedagogic contexts through multiple means of representation, action and expression, and engagement (CAST, 2018). Multiple means of representation provide learners with various ways

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of acquiring information and knowledge; multiple means of action and expression provide learners alternatives for demonstrating what they know; and multiple means of action and engagement tap into learners' interests, offer appropriate challenges, and increase motivation (Burgstahler, 2020).

RESEARCH DESIGN

This paper draws on a broader project that aims to strengthen the capacities of Uganda's public universities to provide inclusive teaching and learning to SVIs. The project adopted a hybrid of qualitative interpretivist and Design-Based Research. This paper draws on the project's situational analysis study that was conducted to gain a better understanding of the teaching and learning context for SVIs in Ugandan public universities. The situational analysis adopted a case study design given its effectiveness for in-depth analysis and understanding of complex phenomena in their contexts (Yin, 2003; Nilholm, 2021).

Data was collected from three purposively selected public universities (i.e., Kabale University, Kyambogo University, and Makerere University) that enrol SVIs, from a sample of 73 respondents, comprising 29 SVIs, 17 academic staff, 09 academic leaders (4 Deans and 5 Heads of departments) and 18 administrative staff. All selected staff interfaced with SVIs in one way or another. The study employed interviews, focus group discussions (FGDs), document analysis and non-participant observations. Interviews and FGDs permitted probing and clarifications on the experience of teaching SVIs as well as to understand the context in which the SVIs learned. Document analysis enabled the research team to gather information that already existed, such as university policies on inclusive education for students with disabilities. The use of multiple data collection methods enabled the research team to triangulate data from different sources.

Data was qualitatively analysed, and themes were generated in line with the research questions. Analysis of staff capacities focused on their perceptions, awareness and sensitivity to the SVIs' learning needs, forms of orientation received, adaptations made for SVIs during teaching and assessment, awareness and usage of specialised assistive devices and technologies, and their capacity gaps and needs. This paper reports part of these findings.

FINDINGS

Staff capacities for inclusive teaching and learning of SVIs presented in this paper focus on their levels of awareness and sensitivity to the student's learning needs and how they adapted teaching and assessment processes for the students.

Awareness and Sensitivity to SVIs' Learning Needs

Awareness and sensitivity to the unique learning styles of SVIs is a starting point for planning for inclusive teaching and learning. Overall, staff at Makerere and Kabale universities had low levels of sensitivity to SVIs' needs due to limited awareness of the types of visual impairment and the nature of learning support required by each type. Low levels of staff awareness and sensitivity were attributed to poor information flow across units interfacing with SVIs within universities, as well as a lack of staff orientation in teaching the students. A mixed picture emerged at Kyambogo University; staff at the Faculty of Special Needs and Rehabilitation (Faculty of SNR) were more aware and sensitive to the SVIs' needs than their counterparts in other academic units.

Lack of Information about SVIs

Staff at Makerere and Kabale universities said they did not receive prior information about SVIs enrolled on their courses; hence, they were usually unaware of the presence of SVIs until they meet them in lectures or while invigilating examinations as remarked by one;

> *No one tells you that you are going to meet the SVIs. You just bump into them in class; you meet them when you go to class, and no one prepares you for them (Lecturer, Makerere University).*

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A lecturer at Kabale University recounted an experience while invigilating examinations when she was alerted about the presence of an SVI in the room after referring the students to a clarification involving symbols she had written on the chalkboard, oblivious of the blind student. Reflecting on the incident, the lecturer remarked, *'When you see her putting on her shades, you cannot tell that she is blind.'*

The information gap between central administration units responsible for admissions and students' welfare and the teaching units contributed to the low levels of staff awareness about the SVIs' presence and their learning needs. A Faculty Dean at Makerere explained that although his office receives lists of students with disabilities, he does not directly interact with the students except occasionally when they have complaints because day-to-day academic matters are handled at the departmental level. Moreover, a Department Head in the same Faculty said he only interacts with SVIs during examination periods, when preparing alternative formats of question papers and while monitoring enforcement of regulations on using separate rooms and extra time. This implies that information flow within teaching units at Makerere is also constrained.

Difficulties in Recognising SVIs in Large Classes

According to the staff, recognising SVIs was particularly difficult in large classes unless the students directly identified themselves. Students with low vision were found more difficult to recognise compared to the totally blind. Nonetheless, the SVIs were recognised by the sound of their brail machines, by occupying front seats, or when they approached staff in offices for support.

In agreement with staff, the SVIs observed that most lecturers who teach large classes seem unaware of their presence. When asked to suggest how staff could support them better, one SVI at Makerere University responded;

> *I would tell the Vice-chancellor to organise seminars for all lecturers so that they are sensitised. This is because when I look at things, it seems some are not aware that we are here.*

A lecturer at the Faculty of Education, Kyambogo University, observed that one needs to be very vigilant not to forget the SVIs' learning needs; she wished all students could speak out and provide information about their needs. Similarly, a lecturer at Makerere University's Social Work Department noted that students who disclose their learning needs to staff are always supported. Academic leaders at Makerere and Kyambogo universities explained that staff were generally empathic towards SVIs and supported them when approached; hence, they wished all SVIs proactively reached out to staff and disclosed their needs. In agreement, the SVIs observed that although their lecturers and sighted peers seem aware of their learning needs, most are understanding and supportive when approached.

Lack of Staff Orientation in Teaching SVIs

The study inquired if the staff had received any form of orientation to teach SVIs, considering that most lacked expertise in special and inclusive education. Apart from staff from Kyambogo University's Faculty of SNR, none of the other participants had been orientated. Moreover, two academic leaders assumed the responsibility of orienting staff to teach SVIs lies elsewhere in the university. A Faculty Dean at Kyambogo University remarked, *"…We do not go into that [*staff orientation*] because we know Dean, Faculty of Special Needs and Rehabilitation is concerned*." A Makerere University Head of department confessed that,

> *"We have not sensitised colleagues about them*[*SVIs]; they just find them in class. We have not included them in our planning because we assume they are catered for by the Dean of students."*

Without orientation, the staff took personal initiative to support the SVIs in the best way possible, drawing on various sources of

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information and using empathy. For example, one lecturer at Kyambogo University's Faculty of Education took personal initiative to read about inclusive education and diversity issues, while another at Kabale University had '*learned a few things'* about SVIs from colleagues with experience in teaching such students.

Furthermore, Makerere University staff with academic background in social work relied on their prior knowledge of welfare issues and empathy, while another used her previous experience of coordinating disability issues in a non-government organisation. Similarly, staff with a professional background in education drew on their educational psychology knowledge.

Better Staff Awareness and Sensitivity to SVIs at the Faculty of Special Needs & Rehabilitation

Staff from the Faculty of Special Needs and Rehabilitation (SNR) were more aware and sensitive to the learning needs of SVIs than their counterparts from other academic units within Kyambogo University and the other two universities. This was unsurprising considering that staff at the Faculty of SNR have formal training in special education and disability studies; they had access to prior information on SVIs as well as support from academic leaders. One of the Heads of the Department explained that lecturers are always informed about SVIs admitted on different programmes and the nature of their impairments so that they can be planned for in advance. Additionally, staff participate in the orientation of students with disabilities at the start of academic years, where they are reminded about catering for individual learning needs.

Likewise, staff participants argued that their training and experience in special education and disability issues prepare them to support SVIs' learning needs. Commenting on how he encourages students to disclose their disabilities, one of the lecturers said, *'I tell them that if you have any disability, please do not shy away.'* A head of the department observed that despite their professional backgrounds, the staff are reminded to cater for students with disabilities during departmental meetings.

Capacity to Adapt Teaching and Assessment Processes

Adaptation of Teaching and Learning Processes

The findings present a mixed picture in terms of how staff adapted teaching/ learning processes for SVIs, with three varied categories. One category comprised staff who were adept in adapting pedagogic processes to support the SVIs. The second category had limited capacity to adapt their practices to fully support the students' learning; however, they endeavoured to support the students the best way they could. The third category lacked the capacity to adapt their practices to support the SVIs' learning needs and made minimal effort in that regard.

Category I

Category I comprised staff from the Faculty of SNR at Kyambogo University. All had expertise in Special Needs Education or disability studies and experience in teaching SVIs at the university level. In addition, some staff had previously taught in special schools for the blind at secondary or primary levels or worked in a disability organisation. These staff adapted their practices to support SVIs through the following strategies:

Prior to class, the staff;

- ensured favourable seating arrangements such that SVIs occupied front seats,
- provided summarised notes to the SVIs in advance to enable them to follow the lesson easily,
- ascertained and planned for the individual needs of the SVIs by making teaching profiles guided by the 'Individualised Education Plan' (IEP).

During lessons, the staff;

- deliberately involved the SVIs in class discussions;

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- used mixed grouping during group tasks so that the SVIs are supported by their sighted peers;
- used multiple teaching strategies to cater for the SVIs' learning styles;
- verbalised all aspects of the lesson, including PowerPoint projections to benefit the totally blind;
- ensured that they are audible enough;
- provided the SVIs with alternative modes of learning materials, e.g., large print text documents for students with low vision;
- ensured that pacing and sequencing of instruction accommodates the SVIs given that they need more time to complete tasks;
- referred the SVIs to the resource room for further reading and self-study using specialised assistive devices,
- followed up on students absent from class.

Overall, these staff supported the SVIs using varied strategies prior to, during and after the lesson, which is unsurprising given their expertise.

Category II

This category comprised most of the staff participants in the three universities. These staff did not have formal training in special needs or inclusive education, nor did they have any form of orientation in teaching SVIs; nonetheless, they endeavoured to adapt their practices to support the students. The common adaptations by this category included;

- reserving front seats for the SVIs to enable those with low vision to see the chalkboard,
- providing them with hard or soft copies of learning materials, on request,
- mixed grouping of SVIs with sighted classmates for peer support,
- Pacing learning activities to accommodate SVIs using braille machines,
- deliberately engaging the SVIs in class activities by calling out their names, directly asking them questions, and calling out reserved ones to contribute to discussions,
- Some staff provided further support to students after class when requested and followed up with those absent from classes for prolonged periods.

Furthermore, two lecturers at Kabale University said they 'dictate' (reading aloud) lesson notes during lectures. Other common adaptations cited by the Kabale University staff were the translation of notes into audio and the hiring of experts from a nearby special secondary school for the blind to braille and transcribe brailed materials.

Despite their limited capacity, staff in this category endeavoured to support the SVIs and were keen to learn more to enhance their capacities.

Category III

This category comprised four staff participants (three from Makerere University and one from Kyambogo University). These staff did not have formal training in special or inclusive education, nor did they receive orientation in teaching SVIs. However, unlike their counterparts in category two, these staff taught in a mainstream manner with minimal effort to adapt their teaching to support SVIs. While reflecting on their practice during the interviews, these staff realised that they had not given much thought to adapting their teaching to address the learning styles of SVIs. They said that they mainly teach in 'a mainstream way' because they are not sure of how to adapt their teaching to support the students' learning needs. A lecturer from Kyambogo University's Faculty of Education said,

> *'Now we are treating them in a standard way – we are not practising equity -we are not doing what we are supposed to do to support them, and it is out of ignorance.*

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Similarly, a lecturer from the School of Education, Makerere University, said that he teaches in a mainstream way because he focuses on the majority of students in his class but also to ensure coverage of the course outline, although he had noticed that some students struggle brailing notes during his lessons. He said*;*

> *So, we always teach the normal way ... I would say I have not done much to deal with these SVIs, so I have continued to teach in the mainstream way. In an exam, rarely do we think about the boldness and font of the exam script. It is always the Dean to remind us of this in case we forget.*

In addition, the lecturer cited above said he expected all students to participate in group presentations, although he was a bit patient with the SVIs because they need more time for such presentations. Similarly, a lecturer from the Department of Social Work at Makerere University explained that she addressed the class as a general group, but she was not sure if SVIs followed her style of teaching or not. She felt that students should be encouraged to approach staff and not fear and hold back from expressing their concerns because unless they speak out, she assumes that all is well.

Overall, these staff argued that because they lack the technical capacity to adapt teaching and learning processes for the SVIs, they expect students to approach them and request support whenever they need it.

Consistent with staff, the academic leaders observed that whereas lecturers take personal initiative to support SVIs, most are not aware of the different types of visual impairment and the specific learning needs of each type; hence, they treated students in the same way without any differentiation. One Head of the Department at Makerere University said, '*We have not itemised the needs of different disabilities, so we teach generally*. The academic leaders emphasised the need for SVIs to proactively reach out to staff for help using their student associations.

Teaching Concepts with Symbols and Graphical Illustrations

Teaching SVIs concepts requiring non-verbal illustrations such as graphs, tables, symbols, or formulae was particularly challenging to staff participants across the three public universities. For example, a lecturer from the School of Education, Makerere University, explained that he uses charts and other graphical illustrations in teaching but was not sure how the SVIs coped with such aspects. Similarly, a lecturer at Makerere University's social work department confessed that she had not done much as far as adapting concepts with illustrations because she did not know what to do. The foregoing lecturer's head of department elaborated on this challenge further:

> *While demonstrating, we tend to ignore them. Like spelling, use of pictures and telling stories. The use of graphics and pictures is important for learning. Some non-verbal communication you make, which increases concentration, is missed by these learners. They rely on their ears, and some of them are not able to hear well, which doubles their difficulty. These troubles are experienced at Makerere daily.*

Concurring with staff, the SVIs recounted how course units with graphics, symbols, and mathematical calculations were difficult to follow without any form of adaptation provided for them. They said that when using LCD projectors, most lecturers tend to address sighted students, as expressed below:

> *For me, I did not attend any lecture on Psychology because he was concentrating on people who were able to see what he was writing on the blackboard. And can you start asking questions about things you have not seen?* (Students' FGD, School of Education, Makerere University).

The students said they rely on sighted peers to explain to them graphical concepts, and when left with no option, they gave up on such course units.

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

Conversely, study programmes at Kyambogo University's Faculty of SNR were reported to be disability-friendly; hence, students can opt out of courses such as sign language that is incompatible with visual impairment.

Utilisation of Specialized Assistive Devices and Technologies

The study further explored whether the staff used any specialised assistive devices and technologies in teaching, considering that such resources can adapt pedagogic processes and materials into accessible formats for the SVIs. Staff from Kabale and Makerere universities did not integrate any specialised devices and technologies in their teaching because their universities lacked these resources; hence, they used generic equipment like LCD projectors for PowerPoint presentations, and others used whiteboards. Additionally, some lecturers used E-mail and WhatsApp to communicate and send learning materials to the students. A lecturer highlighted the limitations of using generic equipment with SVIs this way;

> *We use LCDs, we do not have any specialised equipment, and we are already getting lots of feedback from students complaining about how they can cope and that they do not fit into the online learning* (Lecturer, Social Work Department, Makerere University).

Consistent with staff accounts, SVIs at Makerere University said that their lecturers mainly used LCD projectors for teaching and had a tendency to move very fast and rarely explain pictures and graphics in the presentations, which negatively impacted their comprehension.

In contrast, a lecturer at the Faculty of SNR, Kyambogo University, explained that when using an LCD projector, he ensures that students with low vision sit in front and that he voices out whatever is projected for the blind students. Another lecturer said he sometimes conducts lessons in the resource room and refers students there for support in brailing or converting learning materials into audio format. Overall, the utilisation of assistive devices in teaching and learning processes was mainly determined by the availability of the resources in the university.

Adapting Assessment Processes

The study further explored how staff adapt assessment processes such as midterm tests, coursework assignments and examinations for SVIs. The findings showed varied adaptations across the three public universities, although most adaptations were institutional regulations and few individual staff initiatives.

At Kabale University, examination questions were read out for the students to braille prior to answering; the students were permitted to write their examinations and tests in braille format and allowed an extra 30 minutes during examinations. Furthermore, brailed examination scripts are taken for transcription at a nearby Secondary School for the blind before marking. One lecturer said she sets alternative questions for SVIs as an option for questions involving symbols.

At Kyambogo University, the Disability policy allows students an extra 45 minutes during examinations and sometimes one hour is granted in case a student is extremely slow and needs more time. Examination paper formats include a large print version to cater for students with low vision and a brailed format for the blind. In addition, students who want to braille are allowed to do so, while large-sized answer sheets are provided for low-vision students using large print. Furthermore, theory questions are read out or brailed. In addition, staff at the Faculty of SNR substitute questions involving diagrams and charts with tasks requiring descriptions.

Students with visual impairment use a separate room, the resource room at the Faculty of SNR, to write their examinations and tests to allow for a conducive working environment. Those unable to write for themselves have guides to support them in writing during examinations. Examination papers are brailed and transcribed by technical staff.

Adaptations of assessment processes for SVIs varied across departments at Makerere

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

University; however, the common ones included using sighted helpers to write examinations and tests, use of separate rooms, and extra time during examinations. The duration of the extra time was not clear among the staff and academic leaders. Unlike the other two universities, there was no differentiation in the type of assessment tasks set for SVIs at Makerere University, even when questions involved graphs, symbols, or diagrams. A lecturer at the School of Education said that he sets examination questions requiring illustrations and noted that SVIs always omitted such questions.

There was ambivalence among staff and students regarding the regulation of separate rooms at Makerere University. For example, a lecturer at the Department of Social Work said she always takes SVIs who use guides or braille machines to write tests in her office; the Dean of Students argued that SVIs are not always separated from other students during examinations, while the students said they usually begin their examinations much later than their sighted peers because departments do not plan for them separate rooms in advance.

Despite differences in assessment adaptation strategies, all staff and academic leaders in this study were unanimous in their expectation that SVIs meet the same standards in examinations just like their sighted peers. They argued that SVIs have capacities; hence, the same standards are used in setting and grading assessment tasks without reducing expectations for them. For example, a lecturer from Kyambogo University's Faculty of Education explained that while she allows SVIs more time during tests and exams, she expects them to meet deadlines for take-home assignments and that when grading, she does not lower standards and expectations for them. Similarly, a lecturer at Makerere University's Social Work department said, '*SVIs are marked and graded just like others.'*

DISCUSSION

This paper has explored the capacity of academic staff to support inclusive learning and teaching of SVIs in three mainstream public universities in Uganda. Overall, the findings have shown minimal staff capacities for inclusive teaching and learning of SVIs attributed to a lack of awareness and technical knowledge and skills, except for one academic unit in one university. Most of the staff did not get prior information about SVIs enrolled on their courses and only bumped into them due to poor coordination between various university units interfacing with the students. Lack of prior information about the students constrained staff efforts to plan for their learning needs, echoing studies that have shown that lack of access to timely information negatively impacts educators' ability to plan and support SVIs (Little et al., 2023; Mosia & Phasha, 2017).

Consistent with findings from earlier studies, this paper has shown that most staff lacked awareness and sensitivity to the SVIs' learning needs (Rannveig, 2020; van Jaarsveldt & Ndeya-Ndereya, 2015; Martins et al., 2018). Levels of awareness and sensitivity were influenced by academic backgrounds and experience teaching SVIs, individual initiative, and disability-specific institutional support. Staff with formal training and experience in special education or disability studies, those who took personal initiative, or worked in academic units with disability support services were more sensitive to the learning needs of the SVIs than their counterparts. This finding suggests that beyond staff expertise and initiative, institutional support is important in ensuring inclusive environments for SVIs in universities, which resonates with the need for holistic university-wide inclusivity (Zorec et al., 2022; Mutanga & Walker, 2017; Mfuthwana & Dreyer, 2018).

Despite limited awareness of the SVIs' learning needs, the findings have shown that when approached, most of the staff in this study supported the students; however, such goodwill required the students to disclose their learning needs to lecturers, which was not always the case. As argued by Rannveig (2020) and Kendall (2018), sometimes students prefer not to disclose their disabilities for fear of stigmatisation,

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disclosure of sensitive personal information, or not being understood. However, in contexts where staff lack awareness of the SVIs' learning needs and expertise in inclusive practices, students may have to disclose their disabilities and self-advocate for support.

The findings have further shown low staff capacities in adapting teaching and learning processes to support SVIs, except for staff with expertise in special education and disability studies. Moreover, universities lacked staff orientation in teaching SVIs despite their lack of formal training in special education; hence, it was unsurprising that staff lacked awareness of the learning needs of SVIs and how to adapt teaching/learning processes for them. Most staff relied on empathy and goodwill to support the students, consistent with earlier studies (Mbuvha, 2019; Lopez-Gavira et al., 2021; Abdella, 2018) and Cotan et al. (2021)'s argument that inclusive pedagogy often requires personal attributes like empathy and flexibility.

Despite their limited expertise, most lecturers organised favourable seating space for the SVIs and provided them with learning materials in digital formats, while others taught in a mainstream manner, making minimal effort to support the students. Previous studies have also shown that despite a lack of training, lecturers made a range of adaptations in their teaching to support students with disabilities (Carballo et al., 2021; Martins et al., 2018), which implies a positive disposition towards the learners.

Curricular concepts involving graphics, tables and symbols were particularly difficult to teach because most of the staff did not know how to present such information in alternative ways; hence, such concepts remained inaccessible to the students. Previous studies have shown that SVIs' curricular access barriers are due to a lack of disability-specific staff training (Miyauchi, 2020; Salih & Kakizawa, 2022).

Most adaptions in assessment processes in this study were institutional regulations on examinations, such as the use of separate rooms, extra time, and alternative formats for question papers. The setting of alternative questions to substitute items involving graphical information was restricted to staff with expertise in special education. On the other hand, and consistent with previous research (Lawrie et al., 2017; Little et al., 2023), the staff and academic leaders in this study were cautious about assessment practices that potentially watered-down expectations and standards for SVIs. They argued that SVIs should be graded using the 'same sieve' as sighted students because they have similar academic capacities.

Premised on the social model of disability, efforts to achieve inclusive education focus on transforming the educational environment to address the needs of all learners. Inclusive teaching and assessment practices informed by UDL require using multiple forms of representation, expression, and engagement to address diverse learning needs (CAST 2018; Burgstahler, 2020), including those with visual impairment. It is evident that the majority of staff in this study are still a long way from fully adapting their practices in line with UDL principles; hence, they need training and support in inclusive practices. On the other hand, staff with expertise in special needs and disability education employed a range of adaptions in their teaching and assessment practices aligned to UDL principles, underscoring the positive impact of staff training on inclusive practices.

CONCLUSION

Higher education is important for students with disabilities because it enhances their opportunities for economic productivity, independence, social well-being, and integration into society (Collins et al., 2019), and universities are obliged by international protocols and national legal and policy frameworks to provide inclusive education to all learners including those with disabilities. This paper has shown that the majority of staff in Uganda's public universities lack the technical capacities and institutional support to ensure inclusive learning for SVIs. Although academic staff are pivotal in ensuring inclusive practices,

Article DOI: https://doi.org/10.37284/eajes.6.3.1521

university education takes place in institutional contexts, hence the need for coordination and collaboration among all units and individuals supporting SVIs to ensure holistic, inclusive higher education.

ACKNOWLEDGEMENTS

The project on which the paper is based was supported by the Government of Uganda under the Makerere University Research and Innovation Fund.

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