



Examining the role of Education for Sustainable Development (ESD) in strengthening inclusive education in teacher education: A Vygotskian analysis of change projects from Malawi and Eswatini

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Abstract

Inclusive education has a transformative agenda that challenges education systems to accommodate gender and social class as well as diverse needs that include disability. Despite being emphasised in schools, its application in teacher education has been limited. This gap indicates that while inclusive education is prioritised in schools, teachers may lack pedagogical competencies that have not been allowed for in their training. At the same time, Education for Sustainable Development (ESD) has been recognised for its potential to transform education systems given its orientation towards collaborative learning, whole institution approaches, and respect for diversity. In this study, drawing on experiences from UNESCO's Sustainability Starts with Teachers (SST) programme, I examined the role of ESD in strengthening inclusive education in teacher education. The SST programme encouraged teacher educators in southern Africa to champion ESD practices while focusing on their contextual issues such as inclusivity. Focusing on two Change Projects from Malawi and Eswatini I used Vygotsky's sociocultural learning theory to explore opportunities for inclusivity that emerged from the SST programme. This examination led to strategies for maximising these opportunities in educational institutions and broader national contexts. Methodologically, this study involved interviews and workshops in the two selected Change Projects. The findings suggest that enrolling future teachers with disabilities in teacher education is essential for exemplifying an inclusive educational trajectory in schools. The Change Projects enabled teacher educators to work with ESD practices in developing inclusivity proficiencies in future teachers and ongoing efforts are needed to strengthen inclusive education in teacher education through ESD.

Keywords: education for sustainable development, educational foundation, educational future, inclusive education, teacher education

Introduction

Southern Africa's educational systems face numerous challenges including a lack of resources, high dropout rates and inadequate teacher training (Muchanga et al., 2020; Mukute et al., 2020). Addressing these challenges requires, among other interventions, a contextually relevant approach to teacher education (Mandikonza & Lotz-Sisitka, 2016). These challenges also hinder the implementation of inclusive education in the region (United Nations Educational, Scientific and Cultural Organisation, 2020). At the same time, Education for Sustainable Development (ESD) is acknowledged for its potential to transform education systems through its foundational principles, including collaborative learning, whole institution approaches, and respect for diversity. Essentially,

ESD should be understood as an integral part of quality education and lifelong learning. All educational institutions ranging from preschool to tertiary education and including both non-formal and informal education should consider it their responsibility to address sustainable development and to foster the development of key cross-cutting competencies related to sustainability. The development of these competencies is an essential contribution to efforts to achieve the Sustainable Development Goals (SDGs). (Rieckmann, 2018, pp. 39–40)

Inclusive education is defined broadly as an educational approach that seeks to address the diverse needs of all learners, regardless of their physical, intellectual, social, emotional, linguistic or other conditions (Graham, 2020). This approach is rooted in principles of equity and social justice that aim to provide equal learning opportunities and participation for all learners (Ainscow, 2020a). Key elements in inclusive education include differentiated instruction, individualised learning plans, and a focus on collaborative practices among teachers, learners, and the community (Ainscow, 2020b). Nonetheless, many educational institutions in southern Africa lack essential infrastructure, materials, and trained personnel necessary to support inclusive practices.

In Malawi, for instance, the shortage of resources means that classrooms are often overcrowded, and teachers are overburdened, making it difficult to provide individualised attention to learners with hearing disabilities (Phiri, 2021). Moreover, the lack of specialised instructional materials and assistive technologies further worsens the situation. Inadequate teacher training is also a critical issue in relation to the region's education system. Teacher education programmes often do not adequately prepare teachers to address the diverse needs of their learners (Chitiyo & Dzenga, 2021). According to Chataika et al. (2017), many teachers in Malawi lack the necessary skills and knowledge to create inclusive learning environments that accommodate all learners, regardless of their abilities. Socio-cultural attitudes towards disability and inclusion pose significant barriers to the successful integration of inclusive education in this country. Traditional beliefs and stigma associated with disability often lead to exclusionary practices both in schools and communities. For instance, negative perceptions of disability can result in learners with disabilities being marginalised or even excluded from educational opportunities (Kamchedzera, 2010). These

attitudes are deeply rooted in cultural beliefs and practices, making it challenging to change them. Resource constraints are also a significant challenge in countries like Malawi and Eswatini. The lack of adequate funding and resources means that many schools struggle to provide the necessary support for inclusive education (Muthukrishna & Engelbrecht, 2018). This includes not only physical infrastructure but also instructional materials and assistive technologies that are crucial for learners with disabilities. This means that without the necessary resources, teachers cannot effectively implement inclusive practices or support the diverse needs of their students.

Arguably, ESD presents opportunities to transform educational systems, including inclusive education. Since inclusive education is widely discussed in the school context with many failures noted (Ainscow, 2020a; Chitiyo & Dzenga, 2021), it is my supposition in this study that teacher education would be a good starting point for the strengthening of inclusive education through ESD praxis but the role of ESD in strengthening inclusive education in teacher education needs some dialectical ingenuity. In this study, I draw on experiences from UNESCO's Sustainability Starts with Teachers (SST) programme¹. The SST programme was a capacity building initiative for teacher and Technical and Vocational Education and Training (TVET) educators and was designed to strengthen ESD dimensions in their practices through an online course and institutional Change Projects across 11 southern African countries (Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, and Zimbabwe). The programme recognised that education must evolve to equip future generations with the knowledge, skills, and values necessary to navigate an increasingly complex world (Nolet, 2015; van Staden & Lotz-Sisitka, 2023).

Research questions

My study aims to answer these questions:

- How do teacher educators in southern Africa view the role of ESD in enhancing inclusive education in teacher education, based on UNESCO's SST programme experiences?
- What pedagogical competencies and practices are developed by teacher educators and future teachers in ESD-focused Change Projects in Malawi and Eswatini, and how do these contribute to inclusive educational environments?
- What strategies can teacher education institutions use to integrate ESD principles into their curricula to strengthen inclusivity for diverse future teachers, based on SST programme insights in southern Africa?

Through the research questions outlined above, in this study I approach inclusive education through ESD and call for the broader integration of its principles into teacher education curricula. My argument is that rather than excluding future teachers with disabilities, teacher education institutions can employ ESD praxis as a foundation to strengthen inclusivity within their systems. This approach can establish a future trajectory of inclusive education that

influences school teaching and learning practices positively. Unlike UNESCO (2009), I use the term *inclusive education* exclusively regarding disabilities in resonance with the SST Change Projects focused on in this study.

Overview of the change projects

As mentioned earlier, in this study I examine two ESD Change Projects in the SST programme that focused on inclusive education. The Change Project model allows participants to address issues pertinent to their practice context (Mandikonza & Lotz-Sisitka, 2016). Consequently,

[t]he interest of the teacher education professional learning programme, named “Sustainability Starts with Teachers”² was to support teacher educators across 11 southern African countries to develop situated ESD “Change Projects” that integrate aspects of Education for Sustainable Development (ESD) into teacher education practice. A situated “Change Project” in the SST programme means a project that develops or transforms curriculum, pedagogy, sustainability practices (e.g. waste management), engages communities in sustainability-oriented practices, or which transforms policy in teacher education institutions. (van Staden & Lotz-Sisitka, 2023, p. 1)

The first Change Project (Case A in this study) involved a teacher training college in Malawi, where the initiative centred on recycling waste into briquettes for cooking for economic empowerment. A key component of this project was the recycling machine and the necessity for the community of practice to include everyone in the activities. This project demonstrated that teacher educators must develop materials that are inclusive for all future teachers, including those with disabilities, with the expectation that future teachers will incorporate these inclusive practices in their classrooms. Case A emphasised the participation of future teachers with disabilities. This emphasis provided a practical example of inclusive education, thereby enhancing the pedagogical competencies of future teachers.

The second Change Project (Case B in this study) aimed at advocating infrastructural renovations at a college of technology in Eswatini to enable the enrolment of students, including future teachers, with disabilities. The central issue in this project was the role of infrastructure in promoting inclusivity in educational settings. Teacher educators in Case B aimed to ensure that they operated in inclusive environments, serving as role models for future teachers. The expectation was that such an inclusive environment may demonstrate to future teachers the importance of advocating better infrastructural conditions for learners with disabilities. Eventually, this may promote inclusivity in their teaching practices.

Sociocultural learning as ESD praxis for inclusivity in teacher education

Research (such as Chitiyo & Dzenga, 2021; Pather, 2019) highlighted the need for contextually relevant and inclusive educational approaches in southern Africa. Further research (see Imara & Altinay, 2021; Mandikonza & Kawai, 2023; Mandikonza & Lotz-Sisitka, 2016) argued that teacher education needs to transgress the established boundaries to prepare future teachers with the knowledge and skills necessary for promoting sustainability in diverse sociocultural contexts. Thus, teacher education practice has seen a shift in focus in increasing emphasis on sustainability (Mandikonza & Kawai, 2023) and inclusivity (Mitchell, 2005; Pather, 2019).

Inclusive education aims to capacitate teacher educators to equip future teachers with pedagogical competencies for creating learning environments that cater to the diverse needs of all learners in inclusive schools. Ainscow and Miles (2008) argued that in the context of teacher education, inclusive education extends beyond addressing diverse learning styles to encompass broader societal issues. The nexus between inclusivity and sustainability in teacher education emphasises creating learning environments that accommodate the diverse needs of all learners, regardless of their abilities or backgrounds. This entails that in teacher education, inclusivity and sustainability go beyond the classroom, involving innovative ways of enhancing education, such as recycling waste into inclusive learning resources for future teachers (Case A from Malawi) and renovating infrastructure for inclusivity for persons with disabilities (Case B from Eswatini).

The aspirations above can be understood better from sociocultural learning perspectives. Accordingly, in this study I employed Lev Vygotsky's sociocultural learning theory that provides tools for understanding and analysing the collaborative aspects of education through social interactions. Vygotsky (1978; 1981) emphasised the importance of collaborative learning and social interactions in activity systems. In my understanding, the collaborative dimensions of teamwork in the SST Change Projects connected sociocultural learning setups with the practical experiences of teacher educators in the selected SST Change Projects (Cases A and B). Vygotsky believed that cognitive development is inherently linked to social interactions and cultural contexts, as Daniels (2015) has noted. The sociocultural learning theory offers insights into how individuals learn through collaboration and shared experiences in their social environment (Artiles et al., 2020). Thus, the sociocultural learning theory helped me as a researcher to look into opportunities present in the SST Change Projects from Malawi and Eswatini using two Vygotskian notions—zone of proximal development and mediation.

Zone of proximal development

The zone of proximal development (ZPD) is one of the widely applied Vygotskian concepts in educational research. Vygotsky (1978) defined ZPD as

the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (p. 86)

In the context of this study, the actual developmental level entailed the achieved capabilities that teacher educators had already acquired through their practices. In other words, before the SST programme, these teacher educators were already engaged in different teacher education professional development activities to enhance their competencies in different focal areas. The level of potential development in this study implies the opportunities that the SST programme presented to capacitate the teacher educators on ESD issues while focusing on their unique interests such as recycling waste (Case A) and advocating infrastructural modifications (Case B). The collaborative nature of teamwork facilitated the scaffolding process, allowing individuals to receive the support needed to bridge the gap between their current abilities and their potential development (Artiles et al., 2020; de Souza, 2023; van Staden & Lotz-Sisitka, 2023).

The SST programme's focus on collaborative teamwork nurtured sociocultural interactions among teacher and TVET educators (United Nations Educational, Scientific and Cultural Organisation. Regional Office for Southern Africa [ROSA], 2023). Through collaboration and shared learning experiences, teacher educators (and future teachers) engaged in a dynamic exchange of ideas, perspectives, and knowledges. This collaborative learning environment became a crucible for the co-construction of understanding in that individuals contributed collectively to developing new insights and skills, hence the ZPD (Vygotsky, 1978). I used the concept of ZPD to explore opportunities in the SST programme via the two ESD Change Projects from Malawi and Eswatini. Through these opportunities, participants demonstrated their independent capabilities and identified areas in which they required support from others in the community of practice.

Mediation

Mediation is another Vygotskian concept widely applied to educational research. In essence, “[t]his is a critically important concept in educational research, and it lies at the heart of understanding interactive learning processes and how we might construct these using mediating tools” (van Staden & Lotz-Sisitka, 2023, p. 2). Vygotsky (1981) asserted that learning is a socially mediated process. He believed that cultural tools shape cognitive development in a specific cultural context (Daniels, 2015). In this study, cultural tools implied cognitive intuitions (such as views on disabilities as a dimension of inclusive education) and material resources (such as recycled waste for teaching aids and disability-friendly infrastructure) with which teacher educators engaged in their ESD Change Projects. The cultural context entailed their teacher education institutions and accompanying policies and practices.

As demonstrated in this study, Vygotsky's focus on the cultural-historical context of learning resonated with the SST programme's focus on Change Projects in specific institutions in

Malawi and Eswatini. When situated in the cultural-historical context of each institution, the collaborative aspects of teamwork, highlighted earlier, allowed for an exploration of how sociocultural factors influence the implementation and outcomes of ESD Change Projects. In this study, the cultural-historical context served as the perspective through which the collaborative aspects of teamwork were understood and interpreted.

Research design, materials and methods

My research, as reported in this paper, took a case study approach, following tenets in Cohen et al. (2018). This research design allowed for an in-depth exploration of the strategies employed in the SST programme and their impact on teacher education. It facilitated an examination of the collaborative aspects of the programme and its broader implications for inclusive education within the macro environment (the teacher education practice). The cases were located in the SST programme in Malawi and Eswatini. For the Malawi case study (Case A), teacher educators worked on a Change Project to recycle waste materials for inclusive teaching and learning while empowering future teachers with disabilities towards independent living pathways. For the Eswatini case study (Case B), the Change Project involved renovating college infrastructure, including lecture theatres and administration offices, to ensure physical access for teacher educators and future teachers with disabilities. In both cases, research participants were teacher educators involved in the SST Change Projects. Of course, the Change Projects also included future teachers and community members, but this was not the focus of the SST programme, so teacher educators are the only analysis unit in this paper. All teacher educators in the two Change Projects from Malawi and Eswatini were approached to participate but only those available were included, thus a convenience sampling technique (Cohen et al., 2018) was appropriate.

The study involved in-depth interviews with teacher educators to gather qualitative insights into their experiences and perceptions (see Cohen et al., 2018). It also involved workshops with the teacher educators related to the Change Projects to reshape and transform their practices (for the formative interventionist research process, see Engeström, 2011). There were three interview participants and five workshop participants in the Malawi case study. The Eswatini case study had four interviews and six workshop participants. I employed, thematic analysis, as outlined by Clarke and Braun (2017), to identify recurring patterns and themes from the interviews and workshops. I gave participants index codes representing the country (A for Malawi and B for Eswatini), data generation method (I for interview and W for workshop) and a participant number thus, for example, AI1, AW1, BI1, BW1, etc. I used these index codes to maintain the anonymity of participants in tandem with the ethical clearance (2021-4989-6408) granted by Rhodes University to a larger doctoral research project from which I prepared this paper.

Opportunities for inclusivity in teacher education via ESD: A Vygostkian analysis

Social interactions in cultural-historical context

Vygotsky's sociocultural theory emphasises the importance of social interactions, collaboration, and cultural tools in shaping learning and development. This was evident in the SST Change Project from Malawi (Case A) that took place at a college that trains primary school teachers. Despite enrolling a diverse population, the college lacked inclusive teaching and learning resources for future teachers with disabilities, mirroring the broader situation in Malawian primary and secondary schools. To address this, the SST Change Project used recycled wastepaper to create inclusive training resources and introduced similar initiatives in the primary schools where the college send its teachers. Other activities included tree planting and producing briquettes (cooking charcoal) from paper. The ultimate goal was to establish a sustainable teacher enrolment framework that considered the diverse nature of the future teacher population. During a workshop in Malawi, participants shared their thoughts as captured below.

AW1: The project has been recognised at the national and community levels. At the school level, student teachers are making and teaching others to make briquettes.

AW2: Teaching practice schools are supporting the project effectively. This is through how they care for the trees distributed to their schools.

Effective support from teaching practice schools indicates a positive social context in the local community. The collaboration between the Change Project and these schools highlights the significance of community involvement in the initiative's success. The care taken by schools in nurturing distributed trees reflects an understanding of environmental sustainability. This situation alludes to Vygotsky's view on the role of practical experiences through interactions in learning and development. In all the project activities, the emphasis was on involving individuals with disabilities to be part of the initiatives. For example, briquette making became one of the entrepreneurial strategies for persons with disabilities who are usually financially excluded in society. Thus, the teacher education practice in Case A wanted to amplify such initiatives which could impact the community through collaboration.

In Eswatini (Case B), social interactions and cultural context were central to creating awareness and sensitising individuals thus speaking to Vygotsky's argument on social interactions and collaborative learning. The Eswatini Change Project took place at a college of technology that, among other foci, trains secondary school teachers in Commerce Education and ICT in Education. Given its inaccessibility in relation to infrastructure, the college could not enrol future teachers (and other college students) with disabilities. Therefore, the SST Change Project advocated redesigning and renovating key structures to facilitate the enrolment of future teachers with disabilities. This advocacy, undertaken

through collaborative efforts, connected to the idea of futuristic infrastructure that can accommodate individuals with various disabilities, including physical paralysis. The collaborative efforts in Case B involved teacher educators and the administration, creating a shared understanding and supportive environment for inclusive practices.

During interviews in Case B, the focus was on how social interactions and historical factors contribute to perceptions and attitudes towards individuals with disabilities in the context of stigma and scepticism. One participant, B11, said,

These people who we are trying to involve have all these disabilities. They have been stigmatised for so long. So, to even think we want to improve things for them now, they are not even sure because of the stigmatisation of their disabilities. They feel we do not understand them. So, even if we call them for our workshop, sometimes you could see they just think it is another group who want to use us.

The stigmatisation of persons with disabilities influences the attitudes and perceptions of teacher educators and future teachers. Stigmatisation creates a specific perspective through which individuals with disabilities view interactions, including workshops or initiatives aimed at improving their situation. This speaks to Vygotsky's theory that acknowledges the importance of historical and cultural factors in shaping individuals' cognition. In the context of Case B, the workshop served as a learning mediating process in teacher education, providing a platform for sharing knowledge, experiences, and perspectives on inclusivity and sustainability.

Collaborative efforts towards transformation

Vygotsky's sociocultural theory implies that social interactions and collaborative efforts can transform attitudes and behaviours in sustainable development and inclusive education. Participants in Case A shared insights on this transformation.

AW3: Mindset change is improved on using charcoal. Instead, people can use briquettes. People are so willing to embrace the project thereby promoting sustainable development. Students are so willing to promote the change including in the community. Lecturers are so willing to conduct the project.

AW4: Production of briquettes has reduced paper littering and knowledge has been acquired in sustaining the environment, conservation of trees, and afforestation.

AW5: The project has brought mindset changes towards inclusive education. The project also has a multiplier effect if we look at how students in the teaching practice schools are mitigating excessive cutting down of trees.

The willingness to embrace the project indicates a positive social context in which interactions between future teachers, community members, and teacher educators create a supportive environment that facilitates mindset change. The project's practices, such as producing briquettes and reducing paper littering, represent efforts to address environmental

concerns over time. This connects to Vygotsky's idea that interactions mediate individuals' understanding and practices in, in this case, sustainability. The shift towards inclusive education and the project's multiplier effect on students in teaching practice schools indicate a broader spread of this change across the educational community.

In Eswatini, a participant, BW3, emphasised the importance of preserving existing knowledge and recognising its significance in the broader cultural and social context, in saying,

The issue of preserving what we have is very important that I have learned, but also, I have learnt that you know nothing is small as long as it is change and is sustained.

This statement brings into line Vygotsky's framework in that sociocultural interactions mediate the learning process. This participant pointed out that change, no matter how small, contributes to cognitive development and is part of a broader sociocultural process. This shared understanding of the value of change is a product of collaborative learning and shared experiences within a community of practice.

Supportive environment for collaborative activities

Vygotsky highlighted the role of supportive environment in mediating learning and development. In Case A, participants suggested that acquiring materials and using assistive technologies contribute to a supportive environment for collaborative activities in the Change Project, as captured below.

AI1: I would ask the donors to give us whatever they can give us that we can use to buy materials like glue or the mortars so that they are enough for the project.

AI2: We ask for provision of assistive technologies for the students with disabilities.

AI3: We need to encourage student teachers to adopt the change project model in their teaching practice schools to create a space for loosely structured interaction.

The request for materials and assistive technologies represents support needed to mediate the learning process. This support is essential for specific activities and contributes to creating a shared cultural understanding in the educational community. The introduction of assistive technologies facilitates learning in an individual's ZPD, enhancing the overall learning experience and promoting collaborative learning.

In Eswatini, participants highlighted the impact of structural modifications on creating an inclusive learning environment.

BW3: The renovations have enabled the inclusivity of toilets and dormitories for students with disabilities.

BW4: The project has led to the building of ramps in some buildings, and renovations of hostels, ablutions, and pathways around the institution.

BW5: Now, there is an enrolment of physically challenged students in the college faculties because of the near completion of facilities to accommodate disabilities.

BW1: It would be important to publicise or create proper awareness through media or well-written proposal papers to various institutions to see what mass impact these projects can have in our society.

The use of media and proposal papers can mediate information dissemination and shape individuals' understanding and perspectives on certain issues. Publicising or creating awareness can contribute to a broader societal understanding. These aspirations speak to Vygotsky's emphasis on social interactions and collaborative efforts in learning.

Influence of broader socio-political contexts

Sociocultural learning can also influence broader socio-political priorities. For example, in Case B, structural modifications and government processes impact the creation of an inclusive learning environment. This situation speaks to Vygotsky's position on social interactions that can influence broader socio-political contexts. A participant, BI3, said,

There is that political aspect to it, then it makes you step back and say, what do we really do? So, the structural modifications are a challenge, the government wheel is turning very slow you know there was a renovation taking place here, we were so happy to see a renovation taking place, especially in one of the hostels which we earmarked.

Government processes mediate the implementation of structural modifications. The slow pace of bureaucratic processes affects the adaptation of the learning environment to meet diverse needs. Political decisions and policies impact the educational institution's ability to create an inclusive environment. Through pair discussions during the workshop in case B, participants also highlighted financial constraints and their impact on infrastructure modifications.

BW1&6: Enforcing access to upstairs buildings or offices as it requires a bigger budget, yet our government has financial problems for infrastructural modification, i.e. lowered desks, speakers, lights and blinds, due to funds shortage.

BW2&4: Infrastructure modifications are one of the main challenges.

BW3&5: Erecting of ramps in all facilities within the institution is needed.

Financial constraints hinder the process of creating wide campus access. The limited budget also affects decision-making and the ability to implement necessary modifications, shaping the approach to inclusive practices. Overcoming financial challenges becomes a cultural

practice that shapes the approach to inclusive education in the institution. The challenges and processes of achieving inclusivity in education demonstrate how socio-political contexts and financial constraints interact to shape the learning environment. This addresses Vygotsky's framework that considers the influence of broader contexts and the role of social interactions in learning and development.

ESD as a foundation for inclusivity in teacher education and future school practices

UNESCO (2014) observed that ESD emphasises the need for transformative educational approaches that empower teacher educators, current and future teachers, and learners to contribute to sustainable development. Thus, the SST programme's focus on promoting ESD practices among teacher and TVET educators resonated with the call to mainstream sustainability in educational systems in southern Africa, with an expectation that the ESD orientations can enrich educational foci such as inclusive education and teacher education. Kurth and Foley (2014) observed that

the trend towards educating students with disabilities in general education settings has not been matched in teacher preparation programs, which continue to primarily prepare teachers for work in self-contained settings. There is a risk that, when higher education faculty do prepare teacher candidates for work in inclusive settings, the instruction is translated as creating a positive disposition toward inclusive education rather than as a commitment to equity in education supported by a set of skills and knowledge. Reframing teacher preparation for inclusive settings requires a critical understanding of exclusion united with instructional knowledge and skills for inclusive education. (p. 3)

The observation above entails an expressed need for teacher educators to be capacitated with competencies that could enable them to develop pedagogical proficiencies for inclusivity in future teachers. I suppose that ESD, as demonstrated through the two case studies from Malawi and Eswatini, has potential to reframe teacher education towards inclusive education. Thus, I found it important to examine how ESD nurtures inclusivity among teacher educators since this is essential in influencing the trajectory of education systems and societal development. This endeavour was undertaken from the Vygotskian perspective on ZPD and mediation.

The notion of a ZPD suggests that individuals can achieve more with the support of others (Vygotsky, 1978). In the context of this study, the support provided by teacher educators, future teachers, teaching practice schools, and the broader community facilitated the development and success of the SST Change Projects in Malawi and Eswatini. The recognition of these projects at both community and national levels indicates a shared understanding and appreciation of the cultural and social aspects embedded in the initiatives. The collaborative efforts at both institutional and community levels indicate the influence of sociocultural factors in the success of educational initiatives. The collective learning and

information sharing regarding environmental conservation demonstrate a communal effort towards a deeper understanding of sustainability. Teacher educators, as facilitators, play a central role in creating a supportive environment for learning and promoting positive attitudes (Lunenberg et al., 2014). This environment is crucial for transforming attitudes and behaviours towards sustainable development and inclusive education, as demonstrated in Cases A and B.

Learning and development are continuous processes (Vygotsky, 1978). The findings of this study highlight the dynamic nature of change and the cultural evolution that accompanies it. This resonates with Vygotsky's view that development is a lifelong process shaped by cultural and social experiences. For instance, the focus on inclusivity in infrastructure in Case B reflects a social context that values collaborative efforts to create environments that accommodate diverse needs. The modifications made to infrastructure illustrate the principle of social interaction in learning, where cultural practices promote inclusivity and accessibility. These practices shape the cultural norms of educational institutions in promoting environments that value diversity and accommodate the needs of all individuals (see Cerna et al., 2021).

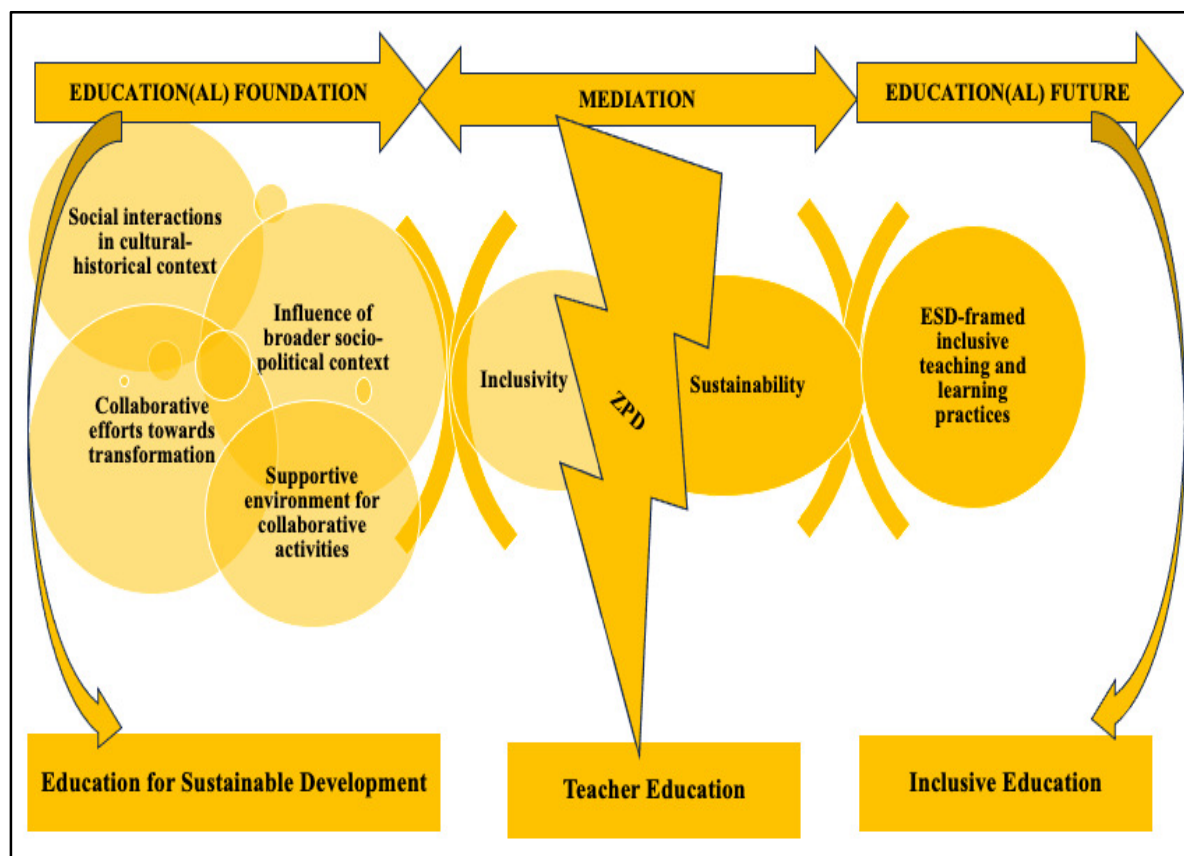
In a Vygotskian sense, teacher educators are crucial mediators of learning. For example, in Case B, SST teacher educators took the initiative to sensitise administration, staff, and students through workshops and awareness initiatives. This connects to the idea that teacher educators mediate the learning experiences of future teachers. They facilitate the acquisition of new knowledge and perspectives related to inclusion, contributing to a positive social context that values diversity (Kurth & Foley, 2014). Juvonen et al. (2019) argued that intentional efforts are needed to shape the social context of educational communities to be more inclusive and aware of diverse needs. This study found that teacher educators need to be cognisant of the historical and cultural factors contributing to inclusivity via sustainability in teacher education. Teacher educators facilitate understanding and create supportive environments that acknowledge and address the stigmatisation faced by persons with disabilities by acting as mediators.

As shown in Figure 1 below, teacher education is located at the crossroads of transforming education systems towards inclusivity. In this quest, ESD provides the theoretical dispositions and practical strategies for achieving inclusive education. I acknowledge that this praxis is not without challenges. Nonetheless, the role of teacher educators extends beyond traditional teaching to navigating and advocating necessary modifications despite bureaucratic challenges (Lunenberg et al., 2014). In Case B, their efforts in facilitating structural modifications represent cultural adaptations to external constraints including government processes. The ability of institutions to adapt to these constraints and strive for positive changes highlights cultural practices shaped by the larger socio-political context. In the context of campus-wide access, teacher educators and administrators are key in facilitating necessary modifications and creating supportive environments for diverse learners despite financial constraints. The collaborative approach to decision-making, involving different stakeholders as in Case A, enhances the potential for successful implementation.

This collaboration exemplifies Vygotsky's view on social interactions and shared problem-solving: the processes in Cases A and B had mechanisms to overcome the challenges in the Change Projects.

Figure 1

Mediation process for inclusivity in teacher education via ESD



Cases A (Malawi) and B (Eswatini) demonstrated that enrolling future teachers with disabilities provides opportunities to advocate and practise inclusivity in teacher education contexts. The presence of such individuals in teacher education environments prompts teacher educators to brainstorm practical ways to ensure inclusivity. As demonstrated in both cases, ESD initiatives serve as spaces of reason and practical arenas for ensuring inclusivity in teacher education. In other words, ESD lays a foundation from which teacher educators develop proficiencies to work with future teachers towards inclusive pedagogy (as in Case A) and an inclusive learning environment (Case B). The future teachers with disabilities enrolled in the two institutions exemplify the inclusivity nature of contemporary schools where education policy mandates the schools to include all learners regardless of their disabilities. Thus, through the two Change Projects, teacher educators and future teachers had a chance to practise inclusivity via ESD praxis.

Overall, the study has shown that (1) teacher educators in southern Africa (with Malawi and Eswatini as examples) view the role of ESD in enhancing inclusive education as integral to transforming educational practices. Their experiences in the SST programme provide valuable illustrations of how ESD principles can be applied to strengthen inclusivity; (2) the

pedagogical competencies and practices developed by teacher educators and future teachers in ESD-focused Change Projects in Malawi and Eswatini include collaborative learning, cultural adaptation, and advocating inclusivity. These competencies contribute to creating inclusive educational environments; (3) teacher education institutions can integrate ESD principles into their curricula by adopting collaborative approaches, sensitising staff, administration and students, and adapting to socio-political constraints. Based on SST programme insights (Case A in Malawi and Case B in Eswatini), these strategies can strengthen inclusivity for diverse future teachers, setting a practice trajectory for school practices.

This study contributes to southern Africa's discourse on transformative teacher education by examining teacher educators' experiences, successes, and challenges in the SST programme. Through this examination, my study provides illustrations of how the principles of ESD can enhance inclusive education in southern Africa, with Malawi and Eswatini as examples. The SST programme was phased out with a huge impact on teacher education practice as far as ESD is concerned (United Nations Educational, Scientific and Cultural Organisation, 2023). What is needed now is for communities of practice, like Cases A and B, to look at ways to expand what they learned from the SST Change Projects and embed these into their practices. As Vygotsky (1978) might put it, the teacher educators' experiences through the Change Projects have now matured from zones of proximal development into actual development levels. Consequently, these teacher educators are well positioned to mediate the learning of other teacher educators who were not initially involved in the SST programme.

Conclusion

In this study, I used Vygotsky's sociocultural learning theory to analyse collaborative and inclusive aspects of two SST Change Projects, one in Malawi and one in Eswatini. The findings point to the importance of the strategic enrolment of future teachers with disabilities as an exemplar of inclusive education in practice in teacher education. Furthermore, incorporating ESD principles appears to be an effective strategy for addressing diverse needs, particularly for future teachers with disabilities. Notable accomplishments, such as modifying infrastructure for better accessibility (Eswatini Change Project), demonstrate the substantial and lasting impact of the SST initiatives in creating a more inclusive educational environment. In collaborative settings, participants bring varying areas of expertise and knowledge, and their collective interactions can lead to co-constructed solutions surpassing individual efforts (as in the Malawi Change Project). The successful outcomes presented in this study provide evidence of the transformative potential inherent in inclusivity-oriented and ESD-focused teacher education programmes. Establishing enduring partnerships, securing support from diverse stakeholders and building on practical insights to enhance teacher education programmes beyond the SST is crucial particularly because of the need for sustained commitment to inclusivity in teacher education.

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