

## **Implementing competence about vision disturbances in Tanzania's teacher education – A contextual analysis**

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### **Abstract**

*Around the world, schoolchildren suffer from vision disturbances that may challenge their ability to learn to read and write. Often teachers lack the competences to identify and help children who struggle with vision problems. This study is a part of a Norwegian-Tanzanian research project with intentions to strengthen teachers' competences on identifying and improving pupils' vision problems. With a qualitative research design, we analyse how contextual factors of task, time, scale and direction provided possibilities and barriers for implementing the new competence in Tanzanian special needs teacher education, and for scaling up the competence to mainstream teacher education. The task, timing, and direction of the capacity building meant that the efforts were well received in special needs teacher education. The core ideas of the competence building corresponded with the national education strategies for inclusive education and may spread awareness on learning difficulties amongst teachers. Teachers' knowledge and awareness of vision disturbances and other learning problems may contribute to enhancing inclusive educational goals. However, further scaling up of the competence to ordinary teachers and into mainstream classrooms is hindered by factors related to task and scale, in particular a dual-track educational system and lack of teacher competencies.*

**Keywords:** Tanzania, teacher education, special needs education, inclusive education, competence building, vision problems

### **1. Introduction**

Around the world, schoolchildren suffer from vision disturbances that may challenge their ability to learn to read and write. A qualified teacher is the key for a child's thriving in school, but often teachers lack the competences to identify and help children who struggle with vision

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problems. This study is a part of a Norwegian-Tanzanian research project with intentions to strengthen teachers' competences concerning vision problems among primary school pupils.

Tanzania's education policies are changing. A new teacher education, and a competence-based primary school curriculum has been implemented. The country has endorsed international agreements on the right to education and inclusive education (IE). National education policies aim to strengthen inclusion and learner-centred activities. Teachers' professional development is always essential in implementing new policies (Reimers, 2020) and teachers hold a pivotal role in educational change (Hooijer, Van der Merwe & Fourie, 2021; Pantic & Florian, 2015).

International research indicates that between 25 and 30% of children in primary school age suffer from often undetected vision disturbances that may complicate learning and reading, and our research project found high prevalence of vision disturbances also in Tanzania (Wilhelmsen & Felder, 2021). Researchers argue for increased attention to teachers' and teacher educators' preparedness to support inclusive education (Florian, 2019; Florian & Camedda, 2020; Possi & Milinga, 2017). In Tanzania this takes us to special needs education (SNE).

This article analyses the potential for capacity building in special needs teacher education as a facilitator for improved education for vision disturbed children. We study how competence building regarding vision disturbances may support the ambitions embedded in Tanzanian education policies.<sup>1</sup> More specifically, we ask how contextual factors provide possibilities and barriers for implementing new competence on vision disturbances in special needs teacher education, and for upscaling this capacity building into mainstream classrooms. We draw upon research underlining the role of contextual factors related to educational reforms and capacity building for inclusive education in a Sub-Saharan setting as well as studies stressing local context translations and adjustments (Ball, Maguire & Braun, 2012). In particular, the analysis relies on a transformative approach to reforms (Christensen & Lægheid, 2013) that regard meso-level factors of tasks, timing, scale and direction influencing implementation and translation of new ideas.

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<sup>1</sup> Inclusive education is an approach which transforms the education system, including its structure, policies, practices, and human resources, to accommodate all learners in mainstream education by addressing and responding to learners' diverse needs (MoEST 2017; 12)

The article is based on findings from the Norwegian - Tanzanian partnership research- and capacity-building project *Securing Education for Children in Tanzania* (SecEd) (2017-2021), with the overall aim to contribute to improved schooling for children with learning problems<sup>2</sup>. A core element was a Continuous Professional Development (CPD) course on vision and learning, also including training eyes for better vision. The CPD aimed at college tutors and primary school teachers. Embedded in this knowledge is the focus on the individual learner, implicating a learner-centred perspective. The project was carried out in collaboration with the partner institution Patandi Teachers College for Special Needs. This article is based on the social research component of the project that aimed to understand the contextual factors that could support and hinder implementation of the innovative elements and their upscaling.

The following text starts with a presentation of the Tanzanian teacher education system and the organization of special needs education (SNE). After that we will address the conceptual tools used for the analysis, emphasising how contextual factors influence the local processes related to translation and adaptation of the capacity building ideas. Thereafter, we present the methodology, before going into the analysis and discussion of the material.

## **2. Tanzanian education context**

Since the days of president Nyerere, education has been promoted as a key to the development of Tanzania. This study concerns the structural and cultural framework of education for children with learning problems. Most of these children are found in mainstream classrooms, often with high risk of drop-out. Since 2008, inclusive education (IE) has been defined as the norm for learners with disabilities (Lehtomäki, Tuomi & Matonya, 2014). The 2018-21 *National Strategy for Inclusive Education* emphasise participation in basic education for all, addressing both impairments and problems of drop-out, and equity in learning outcomes (MoEST, 2017), and relies on three tiers: Special needs schools, special needs units in mainstream schools, and inclusive classrooms in mainstream schools. These can also be termed special schools, integrated schools, and inclusive schools (Mkumbo 2008, Braun 2022).

Tanzania's education system is highly hierarchical and centralised (Braun 2022). The Ministry of Education, Science and Technology (MoEST) oversees policies, monitoring and evaluation, and teacher education. The Presidents' Office – Regional Administration and Local Government (Po-RALG) is responsible for management of pre-primary, primary and

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<sup>2</sup> Tanzania is location for this project primarily for two reasons. The funding from Norwegian Research Council, specified certain countries, Tanzania being one. Also, long lasting collaboration relations with local education institutions were already established.

secondary education. Curricula are developed by Tanzania Institute of Education (TIE), organized directly under MoEST.

Po-RALG administers the country's more than 17 000 primary schools, with a special needs department being responsible for the 38 special needs (SN) schools and the 790 SN units. The numbers of SN students are increasing (JMT, 2021). However, the country still lags far behind in terms of including persons with disabilities, and most impaired children remain outside of education (MoEST, 2020; Tungaraza 2018; Miles, Westbrook & Croft, 2018).

Primary education is compulsory in Tanzania, and the enrolment rate is high (MoEST, 2017). However, there are challenges regarding drop-out and fluctuating pass rates. In 2017, only 91% of the pupils reached the last year of primary school (UNESCO 2020). The pass rates on school-leaving exams have fluctuated during the last 15 years (Po-RALG 2019, 2020), and reading tests indicate low learning outcomes for many students (Uwezo, 2019).

Mushi (2009) points at insufficient public spending and poverty as key reasons for low outcome of education. Further, we know that children's learning can be complicated by other factors. Research (McClelland, Acock, Piccinin, Rhea & Stallings 2013; Posner & Rothbart, 2005; Wilhelmsen & Felder, 2020) indicates a high probability that vision problems can explain dropout and failing academic performance. Problems related to vision acuity, ocular motor control and other disturbances may complicate the ability to see, either on distance or close, or to concentrate over time. Such problems may be hard to detect.

Like other countries, there are obstacles for detecting vision problems in Tanzanian schools. Classrooms are typically crowded, with few teaching- and learning resources available. In 2020 the grand total qualified teacher to student ratio, in governmental schools, was 1:62(Po-RALG, 2020). Rote learning and copying text from the chalkboard are dominant teaching methods. It is commonly seen that children struggle to follow. Tanzania does not perform universal health screening of school starters. Together with generally meagre eye-health infrastructure, this means that children may struggle with vision disturbances without being identified, assessed or helped (Mwakyusa, Katunzi & Shilio, 2017).

Most Tanzanian primary and secondary school teachers are educated at teacher colleges. The curricula proclaim that teachers should be able to handle learners with different learning needs. Research indicates that teachers in general lack such competence and that teachers' general working conditions inhibit following up each child (Miles, Westbrook & Croft, 2018; Tungaraza, 2014; Westbrook & Croft 2015). Out of Tanzania's almost 200.000

primary school teachers (Po-RALG, 2020), only 2179 teachers are qualified as SN teachers (MoEST, 2017). In general, teachers and other stakeholders show low awareness pertaining to impairments or sensory problems that complicate learning (Mnyanyi, 2009; Possi & Milinga 2017; Tungaraza, 2014; 2018). Rugambwa and Thomas (2013) also found that teachers tend to conceptualise disability as only physical impairments, and in effect categorize learners who lag behind as “slow” learners. They also argue that teachers need additional training to ensure realisation of IE.

As the only governmental teacher college that offers SNE at Higher Diploma level in Tanzania, Patandi Teachers’ College of Special Needs Education has offered education for in-service teachers since 1996 (Possi & Milinga, 2017). The college adheres to the national curriculum for special education that is decreed by MoEST, and answers to MoEST in everything they do, from budgets to teaching activities. The tutors are mostly former teachers with a BA degree and specialised competencies in the three tiers of SNE, and accordingly the college divides the teaching into three departments: *Intellectual Impairment and Autism, Hearing Impairment, and Vision Impairment and Deaf-Blind*. In 2018, MoEST initiated a new programme for pre-service student teachers at Patandi, due to the need for more SNE teachers. The college has the capacity of accommodating above 500 students, and with the new teacher training programme, the college is close to that target. Teachers who have been trained at Patandi mostly work in SN schools or -units across the country (Tungaraza, 2014), and the authorities are responsible for relevant job assignment.

### **3. Literature review and theoretical framework**

Our analytical perspective draws on several recourses, the first of which are studies of contextual factors related to capacity building and reforms aiming at enhancing inclusive education in Sub-Saharan setting. Capacity development means transformation that empower individuals, leaders, organizations and societies (UNDP, 2009). With this being a cornerstone in international development, still many development projects involving capacity building and technology transfer fail, according to the literary review by Lavagnon and Donelly (2017). Certain contextual conditions appear as important for capacity-building development projects; structural conditions (legislation, capacity in contextual institutions), institutional conditions, and project management. This also relates to the educational sector (Nkosana, 2013; Tabulawa, 2009).

Ideas of learner-centred pedagogy, the underlying constructivist theories, and IE are examples of global ideas that spread across countries, often through global donors. Tanzanian education policies and reforms are also informed by such ideas (Damiani, Elder & Oswago, 2021). Researchers point out how local contexts may complicate education reforms. Local culture and practices, economy and political-structural framework can challenge implementation of educational reforms (Vavrus & Bartlett, 2013). According to Schweisfurth (2011), challenges for implementing a learner-centred pedagogy in Sub-Saharan Africa include timing challenges, lack of material and human resources, in particular competencies in teacher training. Further, she points at cultural assumptions of authority, obedience and power relations between external donors, national stakeholders, and local actors as a barrier to reform. Curriculum theory highlights possible gaps between the ideological level of society down to the actual practice in classrooms (Goodlad, 1979). Such gaps may complicate implementation processes.

Damiani et.al (2021) find few studies of the practical sides of implementing IE in African contexts. Existing studies, however, report barriers to IE to include inadequate infrastructure, lack of resources, and learning materials, attitudinal barriers, lack of teachers' training and capacities due to the topic missing in teacher education (Braun 2022, Mkumbo 2008, Possi & Milinga 2017, Tungaraza 2014, Westbrook & Croft 2015). Analyses of learner-centred reforms in Sub-Saharan countries also point to an incompatibility between western-infused ideas of learners and learning, and the local cultural approaches (Nkosana 2013; Vavrus, Bartlett & Salema, 2013). Braun (2022) studies national stakeholders, and points to negative attitudes, limited knowledge, together with scarce resources and lack of materials in local markets, among factors preventing IE.

Florian (2019) regards teacher education as crucial for securing IE, but points to challenges regarding differing perspectives on inclusive practises and the content of teacher training. The blurred relationship between inclusive and special needs education has implications for teacher training. Teacher education programs aimed at separate groups of learners may in fact prove to be a barrier to inclusion, as they reinforce teachers' identities regarding who they are qualified to teach (Miles, Westbrook & Croft, 2018; Westbrook & Croft, 2015). This analysis pertains to the Tanzanian system, where a dual track system of mainstream and special education has been developed. This makes it relevant to regard the possible barriers related to this structural arrangement when analysing the possibilities for enhancing capacity building for inclusion and learner centred teaching.

From education policy research, we know that spread of innovations, such as new policies and curricula, may take the shape of translations and adjustments in the local contexts, where local stakeholders include new elements in their ongoing practices (Ball et.al., 2012). The context in which innovations are implemented need attention from policy makers and researchers. Schools have differing capacities, potentials, and limitations to incorporate new ideas or policies, and thus we need to pay attention to the context to appreciate the implementation process. Stakeholders on school level may be regarded as “street level bureaucrats” who must exercise discretion in dealing with complex situations (Lipsky, 2010).

To develop a tool for studying the potentials and barriers of upscaling the capacity building process and potentials for upscaling, we will build upon a framework for studies of reforms as transformative processes coined by Christensen and Lægheid (2002; 2013). This provides a contextual understanding of the limitations and possibilities for reforming education through capacity building in teacher education. Christensen and Lægheid (2002; 2013) argue that public reforms are not characterized by simple adjustment but must be regarded as transformative processes where ideas and concepts are redefined through contextual factors. This meso-level approach combines an organizational and contextual perspective. Reform programmes, like the one introduced through SecEd, are filtered, interpreted and modified by a combination of the national political - administrative history, culture, traditions and governance style on the one hand, and on the other hand the national polity features and structures that provide constraints and opportunities for actions. The compatibility of reform ideas with national contextual factors effects the actual changes that may take place, and the implications of the reforms implemented can be varied and ambiguous (Christensen & Lægheid, 2002). The compatibility of reform ideas with national contextual factors effects the actual changes that may take place, and the implications of the reforms can be varied and ambiguous.

By contexts is meant the circumstances, environment, background, or settings which affects, constrains, specifies, or clarifies the meaning of an event (Christensen & Lægheid, 2013). Based on Pollitt (2008), four context variables are singled out: Type of task, time, scale, and direction. **Tasks** regards the history of the jurisdiction, the nature of tasks and the principles for division of tasks. The **time** variable embrace different cultural attitudes as well as long- and short-term perspectives and disruptions. **Scale** has to do with the scope of reform – if it is narrow or wide, and whether it is international, national, local, or sectorial. **Direction** regards factors that may further or hinder the suggested changes, and the compatibility of ideas with

the contextual values. There is a dynamic relationship between the different contextual factors, and they may reinforce each other (Christensen & Lægheid, 2002).

The SecEd project represents capacity building based on international research about vision and learning problems. The chosen perspective questions a supposition that international norms may be spread through isomorphic diffusion with convergence as a result. According to Christensen and Lægheid (2013), the degree of compatibility between reform ideas and the embedded values of the national culture, decides the outcome. The polity, government form and formal decision-making structure affect the capacity to realize reforms. Hierarchical structures may give clear goals and commands from top-down, as in our case. However, actors also work on the reform ideas and put their mark on them throughout the implementation process. (Christensen & Lægheid, 2013). Thus, contextual variables also enable actors to transform new ideas to fit the needs and frames of their tasks. Innovations are adjusted to local contexts according to capacities, preferences, and understandings of people in their contexts. In this study, we regard Tanzanian educational values and the hierarchical structure of the education system as contextual factors influencing on possibilities for reforming teacher education and spreading new knowledge to the school.

#### **4. Methodology**

This study emerges from a four-year project involving multi- disciplinary staff in Norway and Tanzania. The authors of this article are social scientists who were responsible for documenting the process and analysing the contextual factors for implementation and upscaling of the project results. As such we have been both involved participants and observers.

With a social-constructivist perspective (Burr, 2015), we search for local stakeholders' perspectives with a critical stance towards taken-for granted knowledge, aiming to document local reception and responses to the project initiatives, local perspectives on potential scaling up and further application value of the new knowledge. The study can be characterised as abductive (Rinehart, 2020) as it seeks to develop categories and analytical arguments arising from the local perspectives and practices. Abduction involves immersion over time, together with a backwards mapping. Arguments come from data analysis over four years and discussing them against other research, theory, and participants.

Data were collected during 2017-20 and embrace observations, field conversations and individual and focus group interviews with core stakeholders. In addition, we have collected survey data from local communities and course participants, and analyzed policy documents,



reports and statistics. This methodological triangulation ensures validity in the research. Further, interviews were repeated, and information updated regularly with key informants. Long-term research engagement is important in establishing the trustworthiness of the data, focusing on criteria such as credibility and transferability (Lorelli et.al., 2017). Further, systematic analysis contributes to avoid subjective discretion or unexpected events in the research process.

The document material includes publicly available documents concerning strategies, programmes and statistics for primary education, teacher education, IE and SNE, and were collected through a snowballing process, and with the aid of partner representatives. Documents were examined for content, with the intention to understand the educational strategies and organisational context relevant to the project. Qualitative, semi-structured interviews were, with one exception, carried out in English to minimize problems of translation. The respondents are a strategic selection of managers and involved tutors from the college, primary school teachers and leaders who took part in the project activities. Informants also include leaders of the special education units in the two involved ministries, and stakeholders on local administrative levels. College tutors and students participated in group discussions. Data also arises from reflection notes from CPD participants regarding experience with course contents, as well as suggestions for implementation and scaling up of the new knowledge. The same participants were surveyed again after two years to probe their experiences with practising the knowledge in their daily work.

Data were coded in several steps individually and collectively by team members to secure intersubjective understanding. Open individual coding was followed by team-based discussions and re-coding according to core themes. A specialized coding based on the theoretical framework was then carried out. Preliminary results have been reported and discussed with peers throughout the project period, with the intention to increase credibility (Lorelli, Norris, White & Moules, 2017).

The study has been prepared according to approval by Norwegian Social Science Data Services (NSD) and the National Committee for Research Ethics in the Social Sciences and the Humanities' (NESH) ethical guidelines. The duty of confidentiality is guaranteed by the safe storage of notes and audio recordings. Most interviews have been recorded, according to informed consent and ethical clearance. Recordings were stored off-line and deleted once the research was completed. The names of informants have been anonymized to prevent recognition.

## 5. Analysis

### *Tasks*

The specific history and the nature of the jurisdiction's tasks make a difference when it comes to understanding the outcome of a reform process (Christensen & Læg Reid, 2013; Pollitt et al., 2004). The level of autonomy and control, the division and coordination of tasks and responsibilities as well as the historical-institutional context are considered crucial factors, along with cultural elements related to the political institutional system and the cultural compatibility of tasks.

The new competence brought forth by SecEd were implemented into an existing hierarchical structure. The partner college is the only government teacher training college for special needs teachers with specialised skills to teach children diagnosed according to the three official categories of impairment. This reflects the categories used in the special education system, with special classes, units or schools dedicated to the same categories. The position of the college in the field of SNE is unique, and the tutors can be considered national experts who are called to contribute when the national education authorities are initiating changes in SN curricula or syllabi. The college is, however, not autonomous, but directly governed from the national educational authorities. The tutors are civil servants, employed by the state. Tasks are directed by national authorities, and tutors have a duty to carry out relevant tasks on behalf of the government, involving reporting back to authorities. For the project participants at the college, their primary role is to carry out their obligations in line with MoEST instructions. This top-down organisation may complicate the efficiency of project implementation. A previous Patandi leader said about starting a project:

In our country is from top to down... it is hard if not people are very committed... it takes many months to get permit. Sometimes mentality... sometimes bureaucracy.

The restricted possibilities to initiate new practises from below, to meet the full ambitions of the SecEd project were met by efforts to formally anchor the project amongst relevant government stakeholders, through an MOU and dialogue with national and regional education authorities in collaboration with the local partner. This governmental support facilitated a commitment and enthusiasm for the project at college level. Delivery of a better and modernized teacher education was a clear target for the college. In a post-project perspective, the college principal summarised the process like this:

First, the SecEd collaboration has capacitated our staff. Several masters and two PhDs have been supported. Secondly, Patandi got support for teaching and learning material (...) Thirdly, it has given a new methodology for identifying children with vision disturbances. We had some methods from before, to work with the totally blind. But now we also have methods regarding vision disturbances, which make us understand more about vision. Fourthly, the project partnership has widened the scope of awareness of vision disturbances. There is a broader understanding of the issue of children`s vision disturbances. (...) It has changed the Patandi college. Not all is visible, that you can see with your eyes, but the change is there. The college reputation is growing. The working team is strong. Instead of depending on other experts, we have our own now.

Strengthened interdisciplinary collaboration, across the categories of impairments reflected in the curricula, policies, and the education sector, appears as an important result. Several tutors and leaders stressed it as an important outcome that the project activities brought them together in cross-departmental alliances. Under the current leadership, this growing tendency towards collaboration continues, with cross-departmental committees and daily staff meetings, providing arenas for exchange of ideas across the specialities. On an individual level, tutors also reported increased confidence in their classroom activities, as well as increased openness to see impairments as interrelated. According to college staff and leaders, the project strengthened the expert status of the staff, and provided participation in curricular changes in line with the national strategy of IE (MoEST, 2017). It is possible to argue that the project - initiated processes changed the college as an organisation and increased the competence amongst staff.

An aim of the SecEd project was to try out models for spreading knowledge on vision disturbances from teacher education to teaching staff in mainstream classrooms. The local project groups engaged discussions and planning for upscaling efforts, to reach out with new understandings of vision problems to improve the situation for learners with vision disturbances in mainstream classrooms. Participation from schoolteachers and school-leaders in the CPD was to ensure this. However, we find that that there are important challenges to succeeding with such efforts related to task, and particularly linked to the dual-track organization of the educational system. The special needs education can be described as a separate silo in the education sector, with specialized units and schools, teacher training as well as governmental structures (Helgesen, Heldal, Ludvigsen, Vågenes, 2020). The college

principal underlined the primary task of the college being: ...providing special needs education to teachers, so that they can go and support children with special needs in school.

This structure may shape teachers' professional identification as qualified only to teach a specific group of children, and not others (Florian, 2019). Thus, it is necessary to regard the challenges related to capacity building amongst SN teacher education and SN education specialists as a measure to increase the understanding of vision problems in ordinary classrooms. The overall focus of the college's Department of Vision Impairment is still on methods for teaching blind and low vision students, as this is stated in the national curriculum and instructions from the Ministry. The professional training primarily leads to positions within the SN educational system.

To reach out with more learner centred knowledge and methods regarding learning problems may be enhanced by anchoring it amongst leaders in the educational sector. To succeed, however, demands changing mindsets, as illustrated in this staff members' group interview quote:

Respondent 1: The challenge is there, you know, because it is something new, you know, to let someone understand something new, it is somehow difficult. That is why we are thinking on using some leaders to get informed, so that they can influence others down the stream there. (...) Mindset. The attitude. Yeah. Attitude. Because as [...] is saying even the leaders...their mindset towards individuals with different learning needs, is very negative (...) They just think that vision is all about deaf...ah...blindness, or low vision. Only that.

Respondent 2: The leaders, we thought the leaders should get informed first so that they will give us permission to work with their teachers. And even time. Because we are using their time.

The potential to change the mindset towards an awareness for learning difficulties in ordinary classrooms may seem limited, considering both the top-down governing and the silo-organization of the education system. Training teachers for special units and -schools, answers to the need for teachers with this capacity, but the silo-organisation can be a barrier for increasing teachers' capacity for dealing with learners with a range of learning problems and impairments in mainstream classrooms.

The continuity of capacity building both at college level and in the educational system may be hindered by another barrier that has to do with the national practice of assigning public

employees like college tutors and schoolteachers to workstations according to the authorities' priorities. Amongst the 21 college tutors who completed the CPD-course, several have been assigned to other institutions. This dispersal of specialist capacity can be regarded as a loss to the institution where the capacity building took place, but, on the other hand, it may be regarded as a gain for the broader educational system if the capacity can be utilized and spread in the new institutional setting. Our data indicate that so far, most of the reassigned staff are not positioned to directly use their newly acquired competencies in their new jobs.

### *Time*

The time variable embrace different cultural attitudes as well as long- and short- term perspectives and disruptions. We will here primarily regard the structural elements of timing and stress the timing of the introduction and development of the external project in relation to ongoing educational reforms in general, and in special needs teacher education and special needs education specifically. We also regard the regulation of time embedded in the regulation of work tasks that may limit the possibilities for initiatives of actors in the educational system studied here.

According to all the interviewees at the college, the SecEd project came at the right time. The college staff had capacity to engage in project activities, as student number in the current In-service program was below capacity, and another donor-induced project was concluded. The ministry as well as the college leadership embraced the project and underlined the good timing. A local coordinator and later a local project committee was established, taking care of the day- to day-activities as well as plans for upscaling. The project gave two tutors the chance to start a PhD and six CDP participants completed masters' degrees within the field of vision in education. The principal argued that this capacity building was of high value to support their activities. Training of tutors to inform and perform interventions in local schools could strengthen the college's role in community support.

The college participated in two other Norwegian partner capacity building projects during the SecEd project period. Parallel projects could potentially have challenged the staff regarding time and attention. Our tutor informants, however, pointed out that the projects to a large extent reinforced each other. The projects matched by adding resources in the form of technology and competencies to all three specialities. Thus, the projects jointly pushed for a synergetic development of the institution in a direction desired both by staff and authorities.

The establishment of a new pre-service teacher training program took place during the project period, initiated by the MoEST. This added to the teaching activities and provided a platform for trying out the newly acquired knowledge on vision through the curriculum. The college tutors' role as national experts in the SNE field opened up for introducing the new vision-knowledge for pre-service students specializing in vision impairment. The principal of the college was specific that this was a chance for the college to bolster their expert role and relate directly to the MoEST / Tanzania Institute of Education.

Time as a variable is relevant also regarding the attempts for upscaling of the capacity building program. Time as a resource was regarded a challenge to spreading competencies on vision problems among schoolteachers, and CPD students saw the time factor as a crucial barrier to further implementation, together with lack of material resources and societal awareness (Vågenes, Ludvigsen & Mniyani, 2023). Tanzanian teachers' work is strictly structured by demands inherent in the syllabi and curricula. One of the participating teachers formulated it this way:

According to our syllabus we do not have enough time ...of even teaching, even describing to others to understand about this. (...) You know we teacher's time to collaborate is an issue, everyone is busy with the routine work.

Teachers' schedules challenge the intentions of scaling up the awareness of vision and vision disturbances. Their limited time and massive workload, together with lack of resources in general may severely curtail the efforts to spread the awareness, and this calls for the attention of the national authorities.

### *Scale*

Scale has to do with the scope of the reform program. We analyse here the implementation and possible upscaling of an externally initiated, time limited project, with the ambition to strengthening competence concerning specific sensory disturbances. The means were pedagogical and technological innovations, whilst the scale was limited to the single national teacher training college for special needs and two partnering local schools.

Regarding scale, the partner college must be regarded a strategically important partner, as a main actor in Tanzanian special needs' education. This is illustrated by one of our informants, a director in Ministry of Educations, Science and Technology:

You know there are three key areas of impairment at Patandi which are actually... they produce resource persons in those three areas. That is visual, intellectual and hearing impairment.

The ministry regards this teachers' college as a key to developing seminars for teachers to strengthen the capabilities for Inclusive Education. More than half of the college tutors from all departments completed the CPD course in *Vision for reading and learning*. A few local school headmasters and teachers took part in the two CPDs. The college established structures to accommodate the project. A project-funded local coordinator position had day to day responsibility for the project at the college. A local project group of 10 tutors was established, with the intention to secure sustainability in the project and coordinate activities and outreach programmes.

The wider scope of the SecEd Project was to contribute to improving education by enhancing teacher competencies on learning problems related to sensory difficulties, in particular vision. During the project period, efforts were made to try out outreach and upscaling insights on vision problems to the mainstream classrooms and teachers. A model for diffusion of knowledge on vision disturbances to local schools was tried out, wherein CPD students taught teaching staff about vision and vision disturbances in a half-day course. In both schools the short course was well received. The participants were asked to reflect upon the potential of the new insights and for their perception of children in their classrooms. In both schools the short course was well received, and teachers reported increased awareness on learning problems gained from the course. According to the responsible college tutors, the short courses showed potential to stimulate critical reflection, develop informed professional practices and possible identification of children who need referral to specialist assessment. Focus group participants expressed a clear ambition to continue short courses, as a way "to continue spreading the knowledge". Initiatives towards national and local education authorities were made to extend this practice, but with little success. Other options for scaling up were discussed in focus groups. One CPD participant tutor reflected this way:

We can use different methods, for example, one of the ways in which we started by...putting... some thematic of vision disturbances in the curriculum. But still, this curriculum will be only for special schools. Where... a few numbers of learners are already identified and have been placed there. So, we can also incorporate the thematic in the general curriculum also. So that, at least every teacher who graduates from teacher education are having clues on how they can identify, and how they can make

reference, and how they can help these learners. But, for those who are at work already, we can also see on how we can give the knowledge to them.

To reach out to teachers across the country, familiar low-cost measures like distance learning and cascading models were regarded by tutors as means to spread knowledge and awareness on vision disturbances to teachers. Other efforts were also made to continue and enhance the capacity building into the school system. Together with project researchers, the local coordinator and key staff members met with national and local education authorities to inform about the project and discuss models for upscaling the capacity building. Central government officials pointed to the challenges of scale to reach out to schools and communities with competence and awareness on the needs of learners:

And here in the country we have about 16.000 primary schools for example. So, you have to have teachers trained in special needs, in all these schools. About 250.000 teachers at primary school level.

The new pre-service training programme must be seen in light of this, and the college principal answered in the following way to a question concerning the motifs behind the programme:

The reason behind this is to prepare more teachers. The authorities have realized that there is a shortage. There is a demand in communities and schools, and children need to be taken care of. The government has decided to extend the colleges on this background, there is a need for many more teachers. This is due to the awareness of the needs.

The tutors who completed the CPD engaged in implementing elements in the curricula of SN teacher training. Some elements were incorporated in 2019 as an add-on for the approximately 40-50 students who are specialising to become teacher for vision impaired. Further, a minor portion of the knowledge is added to the compulsory course called *Inclusive Education*, that introduces all the categories of impairments. Following these additions, students who finished diploma in 2020, with a specialisation in vision impairment, should be capable of detecting a range of vision dysfunctions and carrying out vision training. According to one of the tutors, “the students are now able to screen for vision disturbances, and even to train or stimulate vision of children”. Still, the challenge of scale will restrict the potential for profound changes, as the number of candidates is limited, and most schools will not have access to such competence.



### *Direction*

Direction is a variable that regards factors that may further or hinder the suggested changes, and the compatibility of ideas with the contextual values (Christensen & Lægheid, 2013). The project introduced knowledge on vision problems amongst children that may influence learning for college tutors and some primary school staff and leaders. To what extent do the project's core ideas correspond with the direction of relevant political ambitions and measures?

The competence building was seen a welcomed chance for individual career promotion, but also an important factor in the overall strengthening of the college and its position, and for the quality of teacher education and education in general. Key stakeholders at government, district, and college level, stressed that the project goals and measures were well in line with national education policy ambitions and the aims and purposes of the college activities. Through the MOU and partnership, both national authorities and local actors at college level have approved of the key elements of the pedagogical and technological innovations involved in SecEd.

The national policies aim at strengthening teacher education through new curriculum and prolonged training. Tanzania has endorsed international agreements and IE has been defined to be the norm for learners with disabilities. Several measures have recently been taken to enforce educational inclusion, but obstacles relate to enhancing awareness and competencies. The director of MoEST SN unit said about the national policies for IE and teacher qualifications:

So, we don't just want to go to the inclusive in the sense of Salamanca, that is every child has to be in a school, in his neighbourhood... Very difficult, because the challenges are quite different...parents, even the backgrounds of the parents, families...you know, they are not similar. Diversity in this kind of things sometimes it requires some kind of... actually... having everything that is required.

It is clearly a long way to go for a country like Tanzania to accomplish its plan for IE. When asked about the commitment from the government to press for this goal another of the staff in the SN unit in the Ministry filled in concerning national strategies, illustrating Tanzanian authorities' commitment and search for contextual solutions:

...the professor asked about the commitment of the government to achieve inclusive education. And, I have to say that the commitment is there, because we complying to

the universal right for learning. So, we are also trying to see what...what... fits in the context of Tanzania from the universal right for learning.

The objectives of the SecEd project have been considered by various stakeholders as potentially supporting the core policy ideas related to inclusive education. Upscaling the learner-centred knowledge and methods on vision problems may, however, be hindered by the divided tasks between the SN educational silo and the mainstream educational system, as well as the traditional learning methods, lack of time and teacher career patterns. Stakeholders did, however, point to the potential of increased awareness on learning problems in general and vision disturbances specifically, as an important contribution in line with central educational policies.

## 6. Discussion

Our material shows that task, timing, scale and direction of the SecEd project gave room and opportunity for strengthening competence among the staff at the college. The national authorities' scenario is for more SN teachers to reach all the schools of the country. It is essential that the new competencies come in timely when Tanzania is moving towards IE. The **timing** was good as the college had capacity to engage in the project and it was important with reference to the national strategy and policies for inclusive education, which in the case of Tanzania, in fact implies an emphasis on special needs educated teachers. The MoEST representatives confirm the authorities' commitment to universal education, to have every child in school. With reference to the **direction** involved in the project, we contend that the new competencies cohere with this.

It is crucial that the implementation of the new competencies coincided with the implementation of a new SN teacher-education programme. This renewed investment in SN teacher training by the national education authorities can be interpreted as connected to the simultaneous activities and capacity building taking place through three externally funded projects in the college. Development of curriculum for the new programme opened for implementing elements from the CPD through the role of college tutors acting as expert advisers in the process. The new competencies are additions to the more conventional curricula thematic, and clearly more directed towards teaching IE. Knowledge on vision disturbances may contribute to teacher-awareness of learning problems. In other words, the nature of the task provides significant opportunity for **scaling** up the relevant capacity. This naturally

depends on continued support from the national authorities and general awareness of the importance of teachers.

The major leap, however, remains, the implementation of this competence in mainstream teacher education. Implementing knowledge of learning problems and sensory disturbances in mainstream teacher education curricula produces the potential to unleash an increased awareness among teachers who will be placed in ordinary schools around the country. IE builds on a learner-centred perspective. Our findings, in line with other researchers, show that teachers are under pressure in a top-down governed system. This system does not necessarily provide room for individual reflections and awareness of learners' needs. Teachers are first line support for children who for some reason struggle to learn, but the teacher-student ratio and crowded classrooms (Mnyianyi, 2009; Possi & Mlinga, 2017; Schweisfurth, 2011; Tungaraza, 2014; Vavrus & Bartlett, 2013) represent obstacles for seeing each child. Sustainable scaling up the new competences on vision and learning is, according to our study, connected to anchoring elements of the competences in the mainstream teacher training. The current national policies have aimed to educate more SN teachers to support the policy for IE (MoEST, 2017b). This strategy may, however, be based on training into separate categories of disability, and not necessarily support the overarching strategies of inclusion (Tungaraza 2018; 13). Concerning structural barriers and challenges to the enactment of the new knowledge and further scaling up, the most obvious is the dual-track organization of the field of education. Special needs education and mainstream education are managed by separate units at all authority levels and can be described as two silos, where SN schools or units are separate from ordinary classes and SN teacher education is separate from ordinary teacher education. In teacher education challenges relating to the dual track system is enhanced by the policy to strengthen the realisation of IE, especially because mainstream teachers in general lack capacity to handle learners with special needs and learning difficulties (Mgeni, 2020; Mnyianyi, 2009; Rugambwa & Thomas, 2013; Tugaraza, 2014; 2018; Westbrook & Croft, 2015). This teaching structure may thus function as a barrier to increasing the teaching staff with capacity for dealing with learning problems and impairments and affect the scope of the upscaling efforts. Curricula and specialization of SN teachers are structured by the categories of impairments. Tasks, direction, and scope of the capacity building efforts are factors that are mainly connected to what we see as the special needs silo. Further, it is important that local culture of top-down management and control systems, lack of teachers' autonomy and time to follow up children who struggle to learn, are acknowledged as barriers that must be dealt with

if the new competences on vision and learning, and even inclusive education, is to be enacted in the schools of Tanzania.

## **7. Conclusion**

This analysis point to the role of contextual variables of task, timing, scale, and direction in implementing and upscaling new competence on learning problems in teacher education and schools in Tanzania. Findings show potential embedded in capacity building on vision problems for increasing awareness on learning problems amongst teachers, teacher educators, educational leaders, and authorities. The CPD and other capacity building measures enhanced empowerment and professionalization of SN teacher educators. Tanzanian teacher college staff showed strong commitment and thorough knowledge of the system of SNE and put dedicated efforts into securing the implementation of the project, but this was within a task-structure and political-administrative system that may limit local stakeholder initiatives. One striking paradox is that teacher education for inclusive education so far has been defined as teacher training for special needs. We argue that the national authorities must be further acquainted with the new competences and see its relevance and potentials for mainstream school and teacher education. In other words, it remains a challenge to move from scaling-up the competences to mainstreaming the competences in schools around the country, by means of a strengthened teacher education, and teachers' awareness of what causes learning difficulties. This will take time and resources and must be initiated by the cross-sectoral, national authoritative organs.

The final comment concerns the relevance of this study. This study regards specific contextual factors in Tanzania but has a wider relevance. Competence on vision disturbances as a barrier for learning is limited in many contexts and may hinder realisation of SDG4.

## **References**

- Ball, S. J., Maguire, M. & Braun, A. (2012). *How Schools Do Policy. Policy Enactments in Secondary Schools*. Routledge.
- Burr, V. (2015). *Social Constructivism. Third Edition*. Routledge. 2015.
- Christensen, T. & Lægreid, P. (2002). A Transformative Perspective on Administrative

- Reforms. In: T. Christensen. & P. Læg Reid, (Eds.) *New Public Management: The Transformation of Ideas and Practice* (13-39). Ashgate.
- Christensen, T. & Læg Reid, P. (2013). Contexts and administrative reforms: A transformative approach. In: C. Pollitt (ed.) *Context in Public Policy and Management. The Missing Link*. (p. 131-156), Edward Elgar.
- Damiani, M. L., Elder, B.C, & Oswago, B.O. (2021). Tracing the lineage of international inclusive education practices in Kenya. *International Journal of Inclusive Education*, 1-16. <https://doi.org/10.1080/13603116.2021.1995905>
- Florian, L. (2019). On the necessary co-existence of special and inclusive education. *International Journal of Inclusive Education*, 23 (7-8), 691-704. <https://doi.org/10.1080/13603116.2019.1622801>
- Florian, L. & Camedda, D. (2020). Enhancing teacher education for inclusion. *European Journal of Teacher Education*. Vol. 43(1), 4-8. <https://doi.org/10.1080/02619768.2020.1707579>
- Goodlad, J. I. (1979). *Curriculum Inquiry: The Study of Curriculum Practice*. McGraw-Hill Book Company.
- Hooijer, E.L., Van der Merwe, M. & Fourie, J. (2021). Symbolic Representations as Teachers Reflect on Inclusive Education in South Africa. *African Journal of Teacher Education* 10(1) 127-152. <https://doi.org/10.21083/ajote.v10i1.6549>
- Jamhuri ya Muungano wa Tanzania (JMT). Hotuba Jamhuri ya Muungano wa Tanzania (JMT) (2021). Hotuba Ya Waziri Wa Nchi, Ofisi Ya Rais - Tawala Za Mikoa Na Serikali Za Mitaa, Mheshimiwa Ummy A. Mwalimu (Mb), Akiwasilisha Bungeni Makadirio Ya Mapato Na Matumizi Kwa Mwaka Wa Fedha 2021/22. PO-RALG. <https://www.tamisemi.go.tz/storage/app/media/uploaded-files/HOTUBA%20YA%20WN%20OR%20TAMISEMI%202021.22.pdf>
- Lavagnon, A.I. & Donnelly, J. (2017). Success conditions for international development capacity building projects. *International Journal of Project Management*. 35(1), 44-63. <https://doi.org/10.1016/j.ijproman.2016.10.005>

- Lehtomäki, E., Tuomi, M.T. & Matonya, M. (2014). Educational research from Tanzania 1998-2008 concerning persons with disabilities: What can we learn? *International Journal of Educational Research* 64, 32-39. <https://doi.org/10.1016/j.ijer.2013.10.005>
- Lipsky, M. (2010). *Street- level Bureaucracy - Dilemmas of The Individual in Public Services* (2<sup>nd</sup> Ed.). Russell Sage Foundation.
- McClelland, M. M., Acock, A.C., Piccinin, A., Rhea, S.A., Stallings, M.C. (2013). Relations between preschool attention span-persistence and age 25 educational outcome. *Early Childhood Research Quarterly*, 28 (2), 314– 324. <https://doi.org/10.1016/j.ecresq.2012.07.008>
- Mgeni, M. (2020). *Assessing teachers' competences in managing learners with vision disturbances in Tanzania primary schools*. Master's thesis, Master of Education in educational management, Tumaini University Makumira.
- Miles, Susie, Westbrook, Jo & Croft, Alison. (2018). Inclusions and Exclusions in Rural Tanzanian Primary Schools: Material Barriers, Teacher Agency and Disability Equality. *Social Inclusion*, 6(2), 73-81. <https://doi.org/10.17645/si.v6i1.1203>
- Mkumbo, K. (2008). *Do children with Disabilities have Equal Access to Education? A Research Report on Accessibility to Education for Children with Disabilities in Tanzanian Schools*. Haki Elimu Tanzania.
- MoEST Ministry of Education and Vocational Training (2017). *National strategy on inclusive education 2018-2021*. Dar es Salaam, Tanzania: United Republic of Tanzania, Ministry of Education and Vocational Training.
- Mnyanyi, C. B. (2009). Developing teachers' work for improving teaching and learning of children with visual impairment accommodated in ordinary primary schools. *European Educational Research Journal*, 8(2), 336-351. <https://doi.org/10.2304/eeerj.2009.8.2.336>
- Mushi, P. A. K. (2009). *History and development of Education in Tanzania*. Dar es Salaam University Press.
- Mwakyusa, N., Katunzi, G., Shilio, B., Temba, H., Mbise, C., Mmari, V., Mashayo, E.,

- Bechange, S. (2017). Eye Health System Assessment Report, Mainland Tanzania. Tanzania Ministry of Health. <https://research.sightsavers.org/wp-content/uploads/sites/8/2018/05/Eye-health-system-assessment-Tanzania-2017.pdf>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16 (1). <https://doi.org/10.1177/1609406917733847>
- Nkosana, L. M. (2013). Theoretical Insights into Curriculum Reform in Botswana. *International Journal of Scientific Research in Education*, 6(1), 68-75.
- Pantic, N. & Florian, L. (2015). Developing teachers as agents of inclusion and social justice. *Education Inquiry* 6(3), 333-351. <https://doi.org/10.3402/edui.v6.27311>
- Pollitt, C. (2008). *Time, Policy, Management. Governing with the Past*. Oxford University Press.
- Po-RALG (2019). *Basic Education Statistics Tanzania (BEST). Pre-Primary, Primary, Secondary, Adult and Non-Formal Education Statistics 2018*. Regional Data. President's Office Regional Administration and Local Government.
- Po-RALG (2020). *Pre-Primary, Primary, Secondary, Adult and Non-Formal Education Statistics*. President's Office Regional Administration and Local Government.
- Posner, M.I. & Rothbart, M.K. (2005). Influencing brain networks: Implications for education. *Trends in Cognitive Sciences*, 9(3), 99-103. <https://doi.org/10.1016/j.tics.2005.01.007>
- Possi, M. K. & Milinga, J. R. (2017). Special and Inclusive Education in Tanzania: Reminiscing the Past, Building the Future. *Educational Process: International Journal*, 6(4), 55-73. DOI:10.22521/edupij.2017.64.4
- Raad, I. F. (2019). *Inclusive education and teaching children with special needs in Tanzania – an art of equity?* Master's Thesis, Western Norway University College of Applied Sciences, Norway.
- Rinehart, K. E. (2020). Abductive Analysis in Qualitative Inquiry. *Qualitative Inquiry*,

27(2), 303-311. <https://doi.org/10.1177/1077800420935912>

- Reimers F.M. (2020). *A political perspective and global education - Educating students to improve the world* (p. 121-127). Springer.
- Rugambwa, A. & Thomas, M. A.M. (2013). Teachers' Conceptualizations and Practices in Inclusion. In: Vavrus and Bartlett (Eds.) *Teaching in Tension. International Pedagogies, National Policies, and Teachers' Practices in Tanzania* (115-132). Sense Publishers.
- Schweisfurth, M. (2011). Learner-centred education in developing country contexts: From solution to problem? *International Journal of Educational Development* 31(5), 425–432. <https://doi.org/10.1016/j.ijedudev.2011.03.005>
- Tabulawa, R. T. (2009). Education reform in Botswana: reflections on policy contradictions and paradoxes. *Comparative Education*, 45(1), 87-107. <https://doi.org/10.1080/03050060802661410>
- Tungaraza, F. D. (2014). The Arduous March Towards Inclusive Education in Tanzania: Head Teachers' and Teachers' perspectives. *Africa Today* 61 (2), 109-123. <https://doi.org/10.2979/africatoday.61.2.109>
- Tungaraza, F. D. (2018). Sixty Years of Special Needs Education in Tanzania: Celebrating Audacity, Commitment and Resilience. *Papers in Education and Development*, 2018. University of Dar es Salaam Journals.
- Uwezo (2019). *Are Our Children Learning? Uwezo Tanzania Learning Assessment Report*. Twaweza East Africa. <https://twaweza.org/wp-content/uploads/2021/02/Uwezo-Kenya-Annual-report-FINAL-1.pdf>
- Vavrus, F., Bartlett, L. & Salema, V. (2013). Introduction. In: F. Vavrus & L. Bartlett (Eds.), *Teaching in Tension. International Pedagogies, National Policies, and Teachers' Practices in Tanzania*. Sense Publishers
- Vågenes, V., Ludvigsen, K., Heldal, I. & Helgesen, C. (2020). *Supporting Vision Competence Creation for Sustainable Education in Tanzania*. Paper for European Conference for Knowledge Management, Coventry University, UK. 2020



Vågenes, V., Ludvigsen, K & Mnyanyi, C. (2023) «I cannot do it alone». Teachers as Change Agents for Inclusive Education. In: Sæbjørnsen, Makuu & Ødegård (Eds). *Change Agents*. Universitetsforlaget. Forthcoming.

Westbrook, J. & Croft, A. (2015). Beginning to teach inclusively: An analysis of newly qualified teacher pedagogy in lower primary classes in Tanzania. *Teaching and Teacher Education*, Vol. 51, pp.38-46. <https://doi.org/10.1016/j.tate.2015.05.003>

Wilhelmsen, G.B. & Felder. M. (2020). Learning is Visual: Why Teachers Need to Know about Vision. In S.Waller, L.Waller, V. Mpofo & M. Kurebwa (Eds.). *Education at the Intersection of Globalization and Technology*. IntechOpen.

DOI: 10.5772/intechopen.93546

Wilhelmsen, G. B & Felder, M. (2021). About the importance of vision screening by teachers in schools: A study from Tanzania. *Improving Schools* 25 (3), 289-306. <https://doi.org/10.1177/13654802211004787>