



Building Competency in Vision for Tanzanian Teachers

A case study focusing on training teachers on the impact of vision and vision problems in inclusive education in Tanzania.

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NORHED II (2021-2025)

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Why focusing on vision and vision qualities?

Vision is essential for developing motor functions, language, social communication, concentration

- 70-80% of all school activities are connected to visual inputs

- Reading is the most visual challenging activity

In school – 30-40% have disturbed vision
(Brain damages – 60%, Hearing loss - ???)

Securing Education for Children in Tanzania (SecEd)

2017-2021 (Visjon 2030, NFR, NORAD & Inovasjon Norge)

Western Norway University of Applied Sciences

Koblenz University of Applied Sciences

Patandi Teachers College of Special Needs

Teachers course (30 cred):

Vision for reading and learning

Including practical work in schools

Further development of an eye-tracker.

Research on viewing conditions in classrooms, pupils vision functions and teaching methods.

Practical work 1:
screening pupils functional vision

Practical work 2:
Pedagogical intervention with stimulation of vision functions

Our partner, **Patandi teachers' college for special needs education**: Implementing new knowledge into the education of vision teachers and special needs teachers.



- **distance** to the visual presentations
- **position** in class (blackboard etc.)
- **light conditions** with/without electricity
- **contrasts**



- Near-sighted, far-sighted or
disturbed eye motor problems?

ikke hva godt hun skulle
hun henne en hette av rød
pen at hun aldri ville gå
hun hetende Rødhette.

Photo: GBW

The vision and overall goal:

- *reduce poverty through stimulating better reading capabilities*
- *increase the percentage of students passing the final exams in Tanzanian Primary Schools*
- *based on better viewing conditions in the classrooms and improving vision functions among students with vision disturbances*

Tanzania children do not get any vision screening. Parents or teachers are not aware of how pupils' visual inputs are.

When teachers understand that pupils struggle with vision they can help. Refractor problems and visual disturbances are common among pupils in schools of Tanzania (30-40 %).

CPD-course «*Vision for reading and learning*» (30 cred) at HVL



Students 2017-18

12 teachers from Patandi
3 teachers from
primary schools



Students 2018-19

9 teachers from Patandi
6 students from
primary schools

- ## 2. Research
- 5 master degrees
 - 2 phd's
 - International articles
 - book chapters
 - Conference presentations
 - Arranged conference

As part of the education, and research, we assessed the functional vision of 150 pupils in Standard 1 and 120 pupils of Standard 5:

Visual acuity

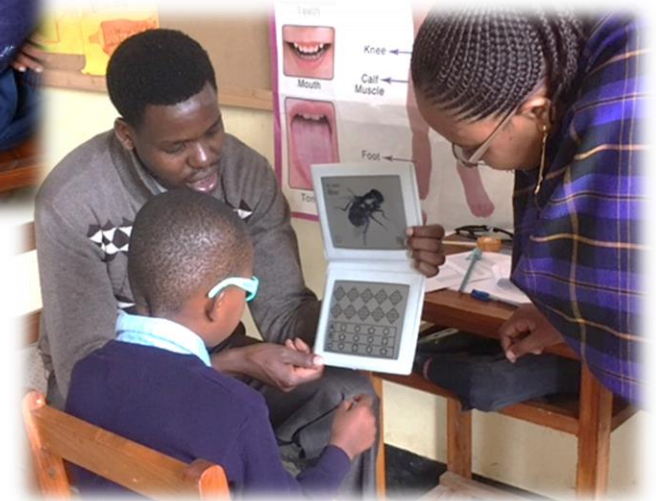
- Distance (3 m)
- Near (40 cm)



Stereo-vision Colour vision



Eye movements Accommodation & Convergence



As part of the education the students had to give vision lessons for two pupils each, Standard 2 (32 pupils), Standard 6 (27 pupils):



Practical work:

2 pupils each
1 lesson each
day in 3 weeks

Expected results

- *More knowledge about vision among primary school teachers*
- *More knowledge about vision in special needs education*
- *In the long run also secondary school teachers are in need of this knowledge*
- *Patandi Teachers College for special needs has an important role.*
- *Specialists need to be educated in vision on a higher academic level for supervision, development of new programs and research.*
- *Patandi can be a motor for developing a network of vision-specialist-teachers in cooperation with opticians, ophthalmologists and optometrists.*

Impacts for pupils

Better education for all

- Reading
- Managing exams
- Less drop-out

Individual development

- Self-esteem
- Motivation for more education (higher level)
- Staying in power (having more energy)
- Better development (motor and cognitive)

Involvement in other social-economic activities

- in school
- after school
- out of school



Up-scale

- Vision training of student teachers at Patandi
- Educating other vision specialist teachers on a master's level at a university
- In-service training/seminars/workshops on special and inclusive education across the country.



**Up-scale started
1st of August 2021
with the NORHED
II –project (2021-
2024) *Learning is
Visual.***

**Partners; Patandi,
UDom, TIE and
Koblenz.**



Preparations

CPD-course at Patandi, TIE and Patandi did most of the preparations.

Developed a curriculum (160 pages) together with many experts.

CPD-course for vision-teachers (n=19) at Patandi (2023)

Prof. Felder & prof. Wilhelmsen were supervising the tutors at Patandi.

Results:

- Good outcome for the students
- Not a sustainable model for the future
- In 2024 TIE and Patandi have implementing the CPD-curriculum into the vision teacher's education (2 year).
- All vision teachers will now get a deeper competence in vision.
- At Patandi teacher for the intellectual impairment and hearing loss learn about vision/ vision challenges.



Parallel to the activities at Patandi we worked on developing the curriculum and content of the masters' program at the University of Dodoma.



The goal was to start with students in fall 2022, but administrative issues hindered this.



VISUAL CHALLENGES IN LEARNING CURRICULUM

SEMESTER 1 YEAR 1

Course Code	Course name	Core or Elective	Credits/ Semester
SN 611	Visual Functioning	Core	30
SN 612	Vision and Hearing on Childhood Development and Early Learning	Core	15
SN 613	Vision and Vision Disturbances in Academic Learning	Core	15
Total Credits			60

List of Elective
SN 617: Methods of Teaching Persons with Visual Impairment

SEMESTER 2 YEAR 1

Course Code	Course name	Core or Elective	Credits/Semester
SN 621	Vision Intervention: Education, Stimulation and Rehabilitation	Core	30
SN 622	Inclusive Education	Core	15
SN 623	Vision and Technology	Core	15
Total Credits			60

List of Electives

Code	Course Title	Credits	Semester
SN 621	Braille Codes and Formats	15	1

Master of Education in Special Education Needs

Visual Challenges in Learning

1. Group 2023-2025
2. Group 2024-[2026]



Partner-meetings
Autumn 2021,
2022, 2023

Education in vision problems among pupils

Formal competence important for the quality of services in schools, communication with parents, the health system and authorities

Competence in vision has changed teachers' education and influenced TIE's work with the curriculums in pre-school and primary school

Formal competence important for the special needs teachers' work carriers

Formal competence important for research in special needs and education of coming professionals

Insight in vision important for teaching the society about what vision problems are – too many stories about witchcraft etc.

Sustainable Development Goals (SDG) from UN



Goal 4 Quality education

Goal 1 End poverty

Goal 3 Ensure healthy lives

How to develop a system
for structured assessment
and follow-up?