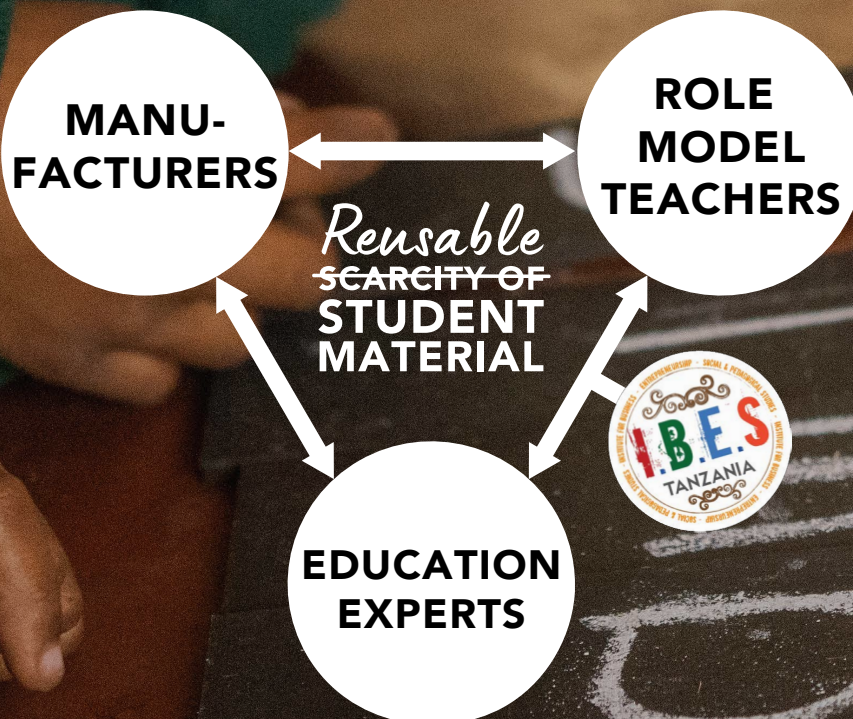


# BRIDGING EDUCATION WITH CRAFTSMANSHIP IN TANZANIA



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**B3.2** FINAL BACHELOR PROJECT

## CREATEACHING TANZANIA

**Student:**

Wietske Zwinkels [1673815]

**Coach:**

Aaqib Saeed

**Donors:**

UFE & S4S

**Client:**

IBES Tanzania

With a learning poverty rate\* of 61% (Twaweza, 2023) Tanzania is facing a significant learning crisis. Traditional teaching methods, like corporal punishment\*\*, strongly limit children's brain development. IBES, a Social Pedagogue-led institute trains schools how to teach differently and educates students to become creative, role model teachers who often start their own schools. The schools struggle by the scarcity of student materials. Therefore, this project bridges IBES with the local making industry, co-creating low-cost, reusable material, to further enable a new way of teaching.

\*percentage of 10 year's old that are unable to read and understand a simple text

\*\*physical punishment by an adult as a response to unacceptable child behaviour

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## SUMMARY

During a 2.5-week field trip to primary schools in Tanzania, first-hand observations showed how the current education system heavily relies on methods like corporal punishment and drilling. These **traditional teaching methods harm children and strongly limit their brain development.**



This project collaborates with IBES, a Social Pedagogue-led institute that trains schools how to teach differently. They also educate students to become creative, 'role model' teachers who often start their own schools. The schools who **try to make a difference struggle by the scarcity of student materials.**

Bridging local craftsmanship with education can add possibilities towards a new kind of education. Co-creating **low-cost, reusable student material is used as a medium to further encourage the positive transition** towards a more effective and unharmed education system.



# PROLOGUE POSITIONING

## *Who I am...*

As Industrial Designer, I feel strongly motivated to design for real-world problems, focussing on meaningful social change. I believe all children deserve the opportunity to develop themselves towards their full potential. Unfortunately, this is not the reality for many children in developing countries, where systematic barriers like traditional teaching methods and lack of resources strongly limit children's brain development (A.7).

My design philosophy is inspired by Victor Papanek's design principles. In *Design for the Real World* (Papanek, 2019), he emphasizes the need for design to serve humanity rather than profit. I choose to design for essential human needs, combining local system design and smart, simple product design.

Empathy is my strongest skill. It allows me to connect with new people, listen to their stories, and approach cultural differences with curiosity. My interest in cultural differences has shaped my professional work by integrating intercultural and participative design methods. I believe in starting with small, local solutions that can inspire broader change to enable myself to work closely with end-users and local stakeholders.

To ensure staying close to my Professional Identity and Vision throughout the whole project, three design pillars were created that formed the *North Star* of my design process.



Figure 1, Co-Creation Session

## *Design Pillars*

### **1 EMPHATIZE**

Design starts with connection. Do field research and be curious to get to know the stories behind the factual data.

### **2 TRANSFORM PRACTICE**

Focus on transforming outdated practices. Don't push market-driven solutions or strictly follow demand. Envision what the future needs and inspire others with this vision.

### **3 REALIZE**

Concepts are only as good as their ability to be realized. Make it tangible to engage clients and manufacturers and to outline feasibility.

# PROLOGUE POSITIONING

## *Positionality*

I am aware that designing for another culture brings biases. Growing up and studying in the Netherlands, I can never fully empathize with the real Tanzanian experiences. To limit personal assumptions, this project is approached with a strong focus on self-awareness and openness. However, I experienced that some culture practices were beyond my ability to empathize with. For example that more than half of Tanzanian child population experiences a form of violence including physical, sexual, or emotional violence (Magesa & Shekuwe, 2024) and almost 80% of young Masaai girls are Female Genital Mutilated, causing lifelong pain and health risks (Swai, 2023). My positionality as a Western student of higher education also created other barriers. Some teachers were shy to collaborate, assuming their English was not

good enough or they asked for expensive donations like Ipads. In these situations, the purpose of the project was repeated and clarified if needed. Cultural differences also required preparation. Tanzanian norms are rooted in collectivism and hierarchy in contrast with the Dutch' focus on individualism and egalitarianism. Through interviews with experienced designers for the developing world, teachers and school heads (A.4) and through a co-reflection session about cultural baggage with "Park Your Culture Here" (Hilten, 2024), I prepared for these differences. Partnering with and being guided by local NGO's during the fieldtrip helped ensure a cultural sensitive approach.

## *'White Savior' Complex and DDW*

Development work is often criticized for reinforcing 'White Savior' complexes. In these situations well-meaning outsiders impose solutions without fully understanding the local context, resulting in ineffective and sometimes even harmful solutions. I understand and am aware of this critique and actively work to avoid pitfalls, for example by shaping the project based on academic papers about Design for the Developing World (DDW) pitfalls and principles. These emphasize understanding the complete local contexts, prioritizing long-term sustainability and avoiding assumptions about user needs. (Wood & Mattson, 2016) (Mattson & Wood, 2014) (Kurh et al., 2013)

Though, I and other researchers do acknowledge that there are blind spots and missing information in the research field of Design for the Developing World.

*"Very little work has been published in the area of product design for resource-poor individuals...still much needs to be learned before we as engineers can become routinely effective at it. To that end, we invite and encourage academics and practitioners to critically evaluate their DDW experiences and share that evaluation in the archival literature so we can design more impactful solutions."*  
~ Mattson & Wood, 2014

# PROLOGUE POSITIONING

## *Cultural Sensitive Approach*

Because of this research gap in DDW literature, I further actively worked on avoiding pitfalls by ensuring the methods used during the fieldtrip aligned with local norms and cultural dynamics. Proven DDW frameworks like IDEO's Design Kit (IDEO.org, 2015) were adopted. These frameworks emphasize participative and co-creative approaches. However, even established methods require localization to fit Tanzania's specific cultural and social environment. Therefore I closely collaborated with local NGO leaders and always used a local guide to improve clear communication with schools and communities. Furthermore, the opinion of local stakeholder, like teachers, school heads, woodworkers, and educational experts played a key role in shaping the project, ensuring contextually relevant and sustainable outcomes.

## *Limitations and Scope*

This project focuses on addressing the scarcity of student materials and stimulating 'new' teaching methods. Broader systematic issues like overcrowded classrooms, lack of teachers and water shortages exceed the project's scope and require governmental interventions.

This initiative is not a solution but can form an inspiration on how to transform teaching practices. By empowering role model schools with new methods, change can spread across the education system. Demonstrating the effectiveness of rewarding, playful approaches at 'role model' schools could inspire systematic reform, like banning corporal punishment or other top-down government interventions.



Figure 2, Marking Notebooks Government School

# INTRODUCTION OF THE OUTCOMES

## *Project Goal*

This project aims to improve the quality of education in Tanzania, where 61% of children aged 10–14 cannot read or understand a simple text. Despite increased school infrastructure and enrollment, learning poverty remains high. Research identified the scarcity of student materials as one of three key contributors to poor educational outcomes. (Twaweza, 2023)

This led to the initial research question: *Can low-cost, educational and reusable student material help address the scarcity in Tanzanian primary schools?* To explore this, a magnetic alphabet board was designed and shared with school-related NGO's in Tanzania. Their feedback confirmed the severeness of the problem and welcomed the project. (A.4)

## *Identifying Challenges*

During a 2.5-week field trip to primary schools in Tanzania, firsthand observations and interviews resulted in finding five big themes that contribute to the poor learning outcomes of the current public education system (A.1):

1. Lack of motivated teachers: teachers were often not teaching and also left class early.
2. Overcrowded classrooms: some have over 100 students, limiting individual attention.
3. Poor life circumstances: Hunger, trauma, and thirst limit focus and learning.
4. Traditional teaching: heavy reliance on corporal punishment and drilling.
5. Scarcity of materials: essential teaching tools, like books and pens are scarce.

Initially, the project focused on government schools. However, the scale of the systematic challenges like overwhelming classroom sizes, teacher attitudes and financial constraints - made designing a sustaining approach on public schools too big of a challenge for the duration, resources and manpower of this project. So, I chose to focus on points 4 and 5 - traditional teaching methods and the scarcity of student material, because of their potential to be a realistic and impactful entry point without requiring immediate large-scale government intervention. (A.4, 6-8)



Figure 3, Government School

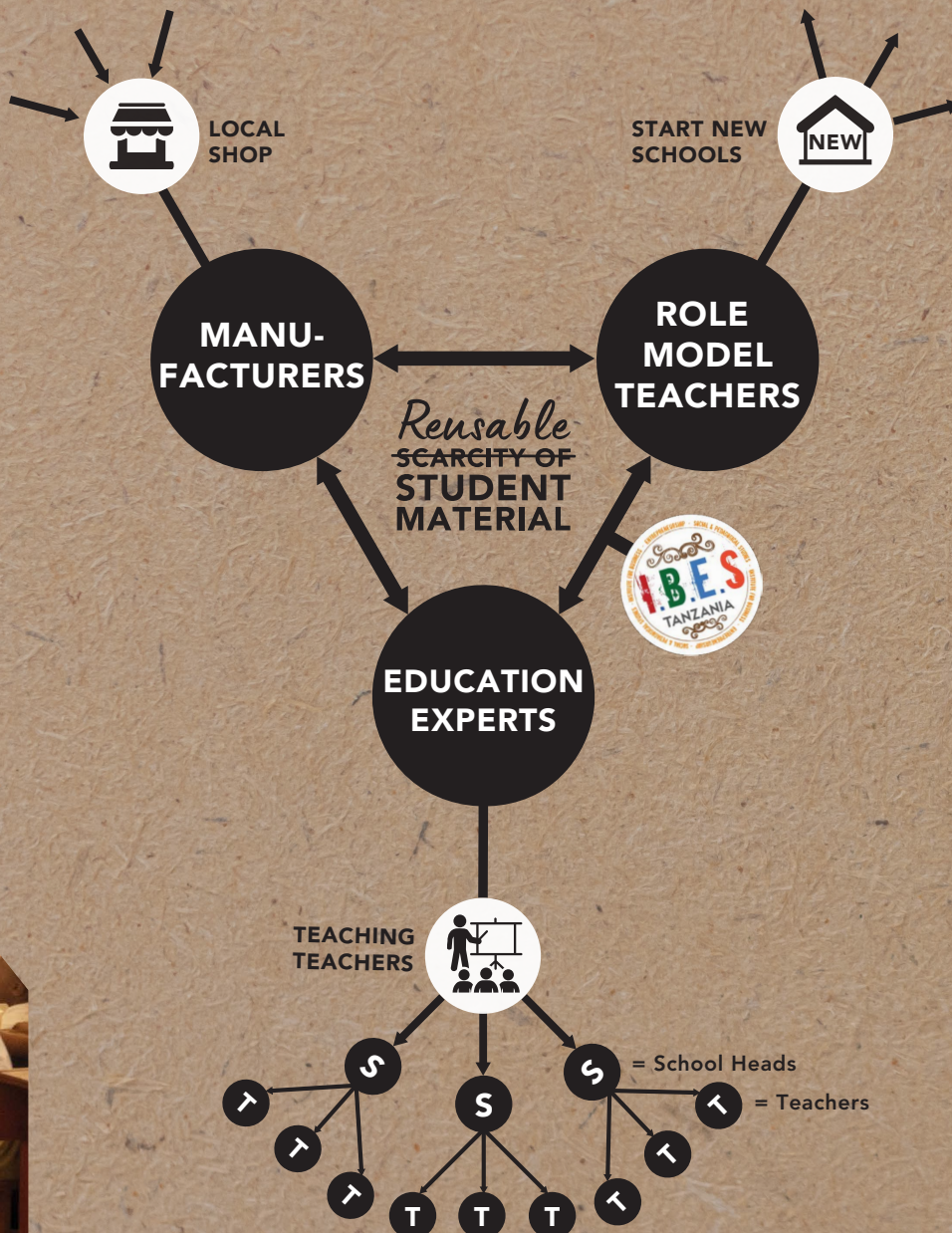
# INTRODUCTION OF THE OUTCOMES

## *Transforming the Practice*

The field trip findings led to a reframed research focus to 'role model' schools with IBES as key stakeholder. This Tanzanian-led institute trains school heads and teachers creative, child-centered approaches and educates students to become 'role model' teachers who often start their own schools. These schools are a feasible entry point to address both teaching methods and the scarcity of materials simultaneously.

'Role model' teachers and local woodworkers will create low-cost, reusable, and multi-functional teaching tools using participative and iterative design methods.

IBES will identify schools that would benefit most. The project also envisions embedding tool creation into IBES' teacher training programs.



## BRIDGING EDUCATION WITH CRAFTSMANSHIP IN TANZANIA

Initially targeting children directly, the project evolved to focus on transforming teacher practices as a way to indirectly help children. The approach shifted from bottom-up to top-down, with school heads and teachers becoming the primary audience. The system bridges schools who want to make a difference with the local woodworking industry in order to support and sustain their efforts. The so called Creative Collective - manufacturers, 'role model' teachers and education experts - together design reusable student material (f.4).

Figure 4, System Graphic Creative Collective



# INTRODUCTION OF THE OUTCOMES

## Realize

This project is not a research project with solely a proposed systematic strategy as result. This project has a strong emphasis on translating the concept into tangible, local feasible outcomes. During the field trip, local manufacturing capabilities were assessed by finding collaborative partners who locally produced three samples (f.5).



Figure 5, Three locally produced samples

Users and stakeholders saw most potential in the schoolboard pieces concept (f.6) and suggested multi-functional improvements, emphasizing group-based, interactive learning and minimizing assembly steps for scalable production. Based on these insights a redesign was created: the Schoolboard Puzzle Set (f.7) - . Made from locally available MDF and schoolboard paint, the clickable pieces support activities for various age groups (4–12) in various exercises (f.8), enabling teachers to adapt activities without needing new materials.



Figure 6, Schoolboard Pieces

## Feasibility

The blackboard puzzle board demonstrates manufacturability, with material costs estimated at €1.81 per set, potentially reducible to €1,-. Laser cutting and painting, locally available, is estimated to take 30 minutes per batch of 8 sets. At €10/hour labor, the production costs per set are €2.24. IBES has expressed willingness to pay €5 per set, showcasing local affordability and feasibility.



Figure 7, Schoolboard Puzzle Set

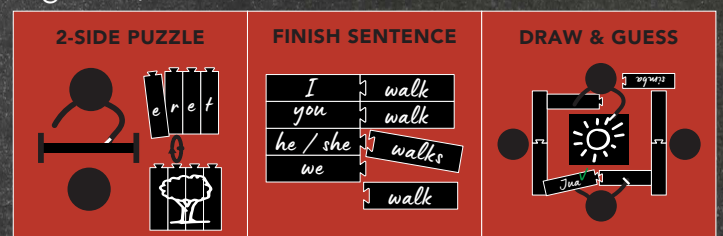


Figure 8, Examples of use

# PHASE 1 REMOTE DESIGN ITERATION

The last section introduced the outcomes of the project. It is not the usual way to start a design report with its results before explaining the design process. However, the following parts of this report will make more sense now the results are known beforehand.

This section explains the start of the design process which follows a Double Diamond structure (Banathy, 1996), consisting of Understand (literature research and online interviews), Define (scoping the challenge: "Design reusable, educational, low-cost student material to improve language learning for early primary school children"), Brainstorm (inspiration boards and sketches), and Prototype (co-creation and finalization).

It started during a family trip to Madagascar - summer 2024. A spontaneous drawing activity around a campfire with children from a remote river village (f.9) formed the first realization that not a lot resources are needed to improve language learning. While doodling in the sand, children eagerly wanted to know the French and English spelling. Visiting a rural school (f.10) further introduced me to the lack of student materials, overcrowded classrooms and bad infrastructure. It got me figuring how design could address such challenges.



Figure 9, Doodling in Sand Madagascar



Figure 10, Rural School Visit Madagascar

# PART 1 RELATED WORKS: Learning Poverty Madagascar

Learning poverty - the inability to read and understand a simple text by the age 10 - combines schooling deprivation (out-of-school children) and learning deprivation (children in school but failing to reach minimum reading proficiency). This metric monitors progress towards Sustainable Development Goal 4 (SDG 4), aiming to achieve universal quality education by 2030. In 2019, Madagascar's learning poverty rate was 93.9%. This is extremely high looking at the fact that only 3,1% of this percentage are out of school children, meaning that 9 out of 10 children can not read and understand a simple text after completing primary school. (Unicef et al., 2022).

Madagascar's economic decline and political instability have severely reduced government investment in education. In 2022, primary education expenditure was only USD 122 (PPP) per child - 78% below the Sub-Saharan Africa average (World Bank, 2024). Insufficient funding limits teaching materials and teacher incentives. Many teachers lack adequate education and neglect tasks like lesson planning, tracking attendance, and communicating progress (World Bank et al., 2014). The proportion of teachers with a bachelor degree was only 30% in 2021 and household poverty and low perceived value of education contribute to high dropout rates (Ministry of National Education of Madagascar, UNICEF Madagascar, & UNICEF Innocenti, 2022).

Another study (Heneveld, 1994) provided a contextual framework of stakeholders in Madagascar's education system, including the government, local communities, schools, NGO's, and international donors (f.11). This systematic overview inspired a multi-stakeholder approach for this project. The study also identifies three key themes that strongly guided my approach:

1. Strengthen School Leadership: School heads often lack the authority, skills and motivation to lead pedagogically.
2. Provide Teacher Guides and Textbooks: The availability of printed materials like textbooks and teacher guides is insufficient. Provide low-cost materials produced locally by printers and teachers.
3. Support Community Participation: Community and parent involvement is essential. Investments should make use of the strong role of the community against the weak role of the government.

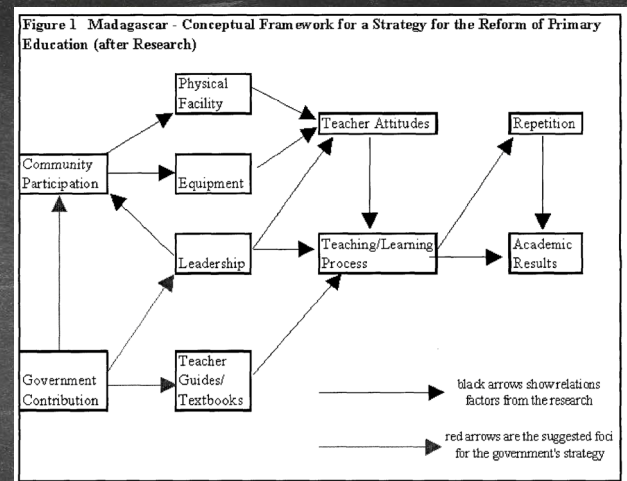


Figure 11, Framework: Reform Education

*"Provide more low-cost student materials produced in Madagascar by printers and by teachers themselves. The goal should be to get more materials into teachers' and students' hands quickly"*  
~ Heneveld, 1994

# PHASE 1 REMOTE DESIGN ITERATION

The initial phase focused on understanding Madagascar's education system through literature analysis and mapping of research findings (f.12), which was used as conversation starters with coaches. These discussions shaped the initial stakeholder map (f.13) and project direction: 'Design an interactive education program/method/tool that can improve the learning development of public primary school children in Sub-Saharan Africa.'. An interview with the founder of Stichting Madelief, a Malagasy NGO supporting a local village and primary school, made me conscious about logistical and cultural barriers when implementing a project in Madagascar. Her feedback, see quote, together with skeptical feedback from coaches (f.14), made me critically rethink my approach (A.2) and pushed me to scope down my project goal, removing the part of designing a program or method and focusing on low-cost, reusable student materials.

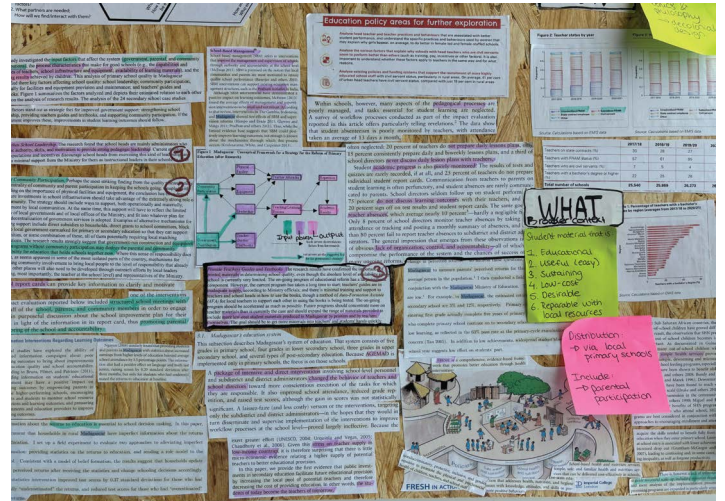


Figure 12, Mapping Research Findings

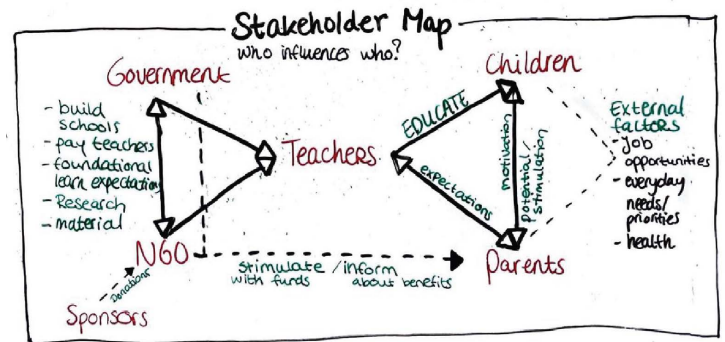


Figure 13, Initial Stakeholder Map

"The problem you dive in is broad and not solvable by 1 design in 3 months. You will need 6 months in the field minimum. Scope it down. Improving the school system is complicated. After 20 year in this country I still don't see a way in. Plus, most teachers only speak Malagasy," ~ Founder Stichting Madalief (A.2)

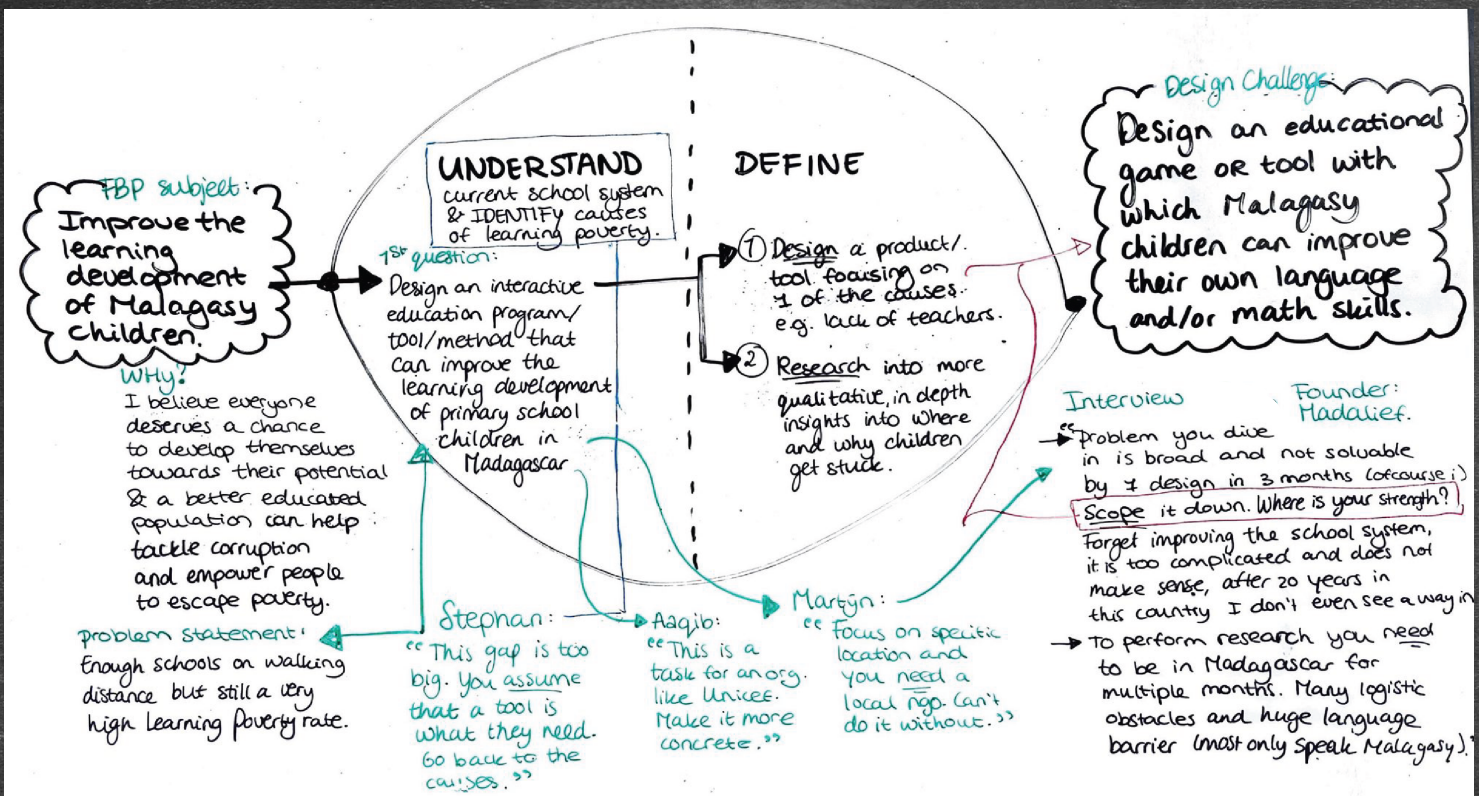


Figure 14, Incorporating feedback in Understand and Define phase

# PHASE 1 REMOTE DESIGN ITERATION

Literature reading confirmed the educational potential of African games: 'In spite of their educational potential, board games have rarely been used in an African educational context in the way they have been used in K-12 and university settings in Europe or the United States (Bayeck, 2017).' Bayeck proposes five African board games with educational potential to integrate in African school systems (f.15).

The literature findings, together with the creation of a persona (f.16) and further brainstorming resulted in the development of five key design principles and the first concept: the Language Learning Canvas (f.17): a laser-cut alphabet board with magnetic drawing paper. This reusable tool allows children to trace, write, and draw, using a magnetic slide eraser to reset the canvas.



Figure 15, African Ancient Games

## Key Design Principles

1. Educational
2. Useful (easy & intuitive)
3. Sustaining: durable, reusable, reparable
4. Low-cost
5. Desirable

**Daniël José Christian**

Persona



**AGE:** 10  
**OCCUPATION:** Child  
**PERSONALITY:** Friendly, calm  
**SIBLINGS:** 5  
**LOCATION:** Countryside of Arusha, Tanzania

**BIO:**  
 A friendly, hard-working child in Madagascar, helping out his parents - who earn \$1/day - on the farm during the weekend. During the week he goes to a local primary school. He is motivated to learn but can not read a simple text yet.

### Family

Daniël's family owns a piece of land in central, rural Arusha. Every weekend they walk 3 hours with a Zebu-led carts to Antananarivo to sell fruit and vegetables for an average total of \$7, which is enough money for an ultimate basic way of living. Half of the week Daniël's older brother is Pousse-Pousse biker in the village, earning an extra \$3/week to finish their home brick by brick.

### Needs

Daniël needs to learn English so he can help at the traveller's hotel nearby and need to work in all his free time to save enough money to study.

### Frustrations

It is hard for Daniël to improve at school as the teacher always has little time and he is not able to read the books where he should learn from himself.

### Future

In the future Daniël hopes to become a cook for the traveller's hotel, set up by a local NGO that took care of his father when left as orphan. He also wants to maintain the land to keep using his own produce to cook.

Figure 16, Persona

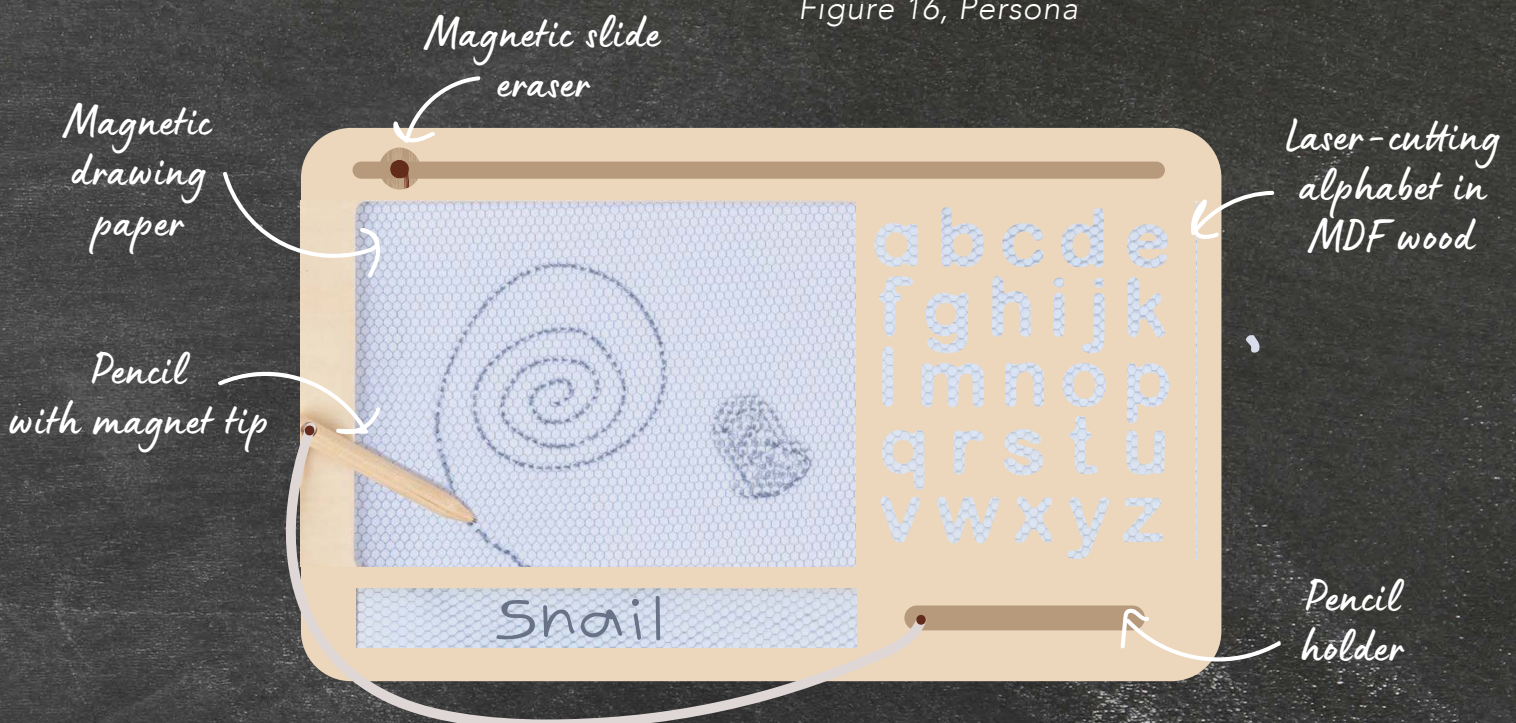


Figure 17, Sketch of Language Learning Canvas

# PHASE 1 REMOTE DESIGN

## Shifting focus to Tanzania

Logistic challenges in Madagascar made me contact NGO's in other Sub-Saharan countries. Fourteen organizations in Arusha, a region in Tanzania, expressed interest in the project and confirmed the issue of scarcity of student material (A.3). Online interviews (A.4, f.18) with six NGO leaders, school heads and/or teachers confirmed that the project plan was possible and desirable: all schools welcomed me to come conduct field observations. Also the availability of woodworkshops and materials to create the products were confirmed. Feedback raised concerns about the magnetic component's practicality in Tanzania. This led to a redesigned concept: a sandbox with alphabet stones. Both concepts were presented at midterm demo day (f.19) to gather feedback on design methods for the fieldtrip. Proposed methods were: IDEO Design Kit (IDEO.org, 2015), (auto-)ethnography and co-creation.

"Designs need to be durable and easy to repair with locally available materials—something that can withstand dust and sand. Think bamboo, wood, or recycled materials, anything that's adaptable to their environment."

~ Founder - 'Framerunner'

"Without a good education, their future is bleak. Most will end up as drivers, housemaids or thieves. They can't have a good future if they don't learn English or go to school."

~ Founder 'Giving Hands'

"We can connect you with a local workshop. They mostly use wood and MDF, and the owner is quite creative."

~ Founder - 'Natembelea'

"What's interesting about your design is that it is reusable and durable. Kids can use it, and it can be passed on to others next year."

~ Founder - 'Natembelea'

"More than half of the students can't afford textbooks, so they often share or miss out on copying what's written on the board."

~ School Head - 'Wisdom'

"Many children face psychosocial issues, which I believe is the biggest cause of their difficulty to learn."

~ Founder 'Modern School'

"In Tanzania, it's important to build relationships with local workshops to make sure the design can live on. Co-create with local stakeholders and really listen to what they need."

~ Founder - 'Framerunner'

"We need more interaction between students and teachers, and we're running short on teaching aids."

~ School Head - 'Wisdom'

"One big reason for the poor outcomes in government schools is the lack of material. They don't have exercise books because they can't pay, they don't have pencils, they don't have a backpack..."

~ Founder 'Giving Hands'

"Teachers think that hitting and punishing children is the most effective way to make them learn. If you don't have your homework, they beat you. If you don't have your exercise book, they beat you."

~ Founder 'Giving Hands'

Figure 18, Quotes Interviews with NGO's

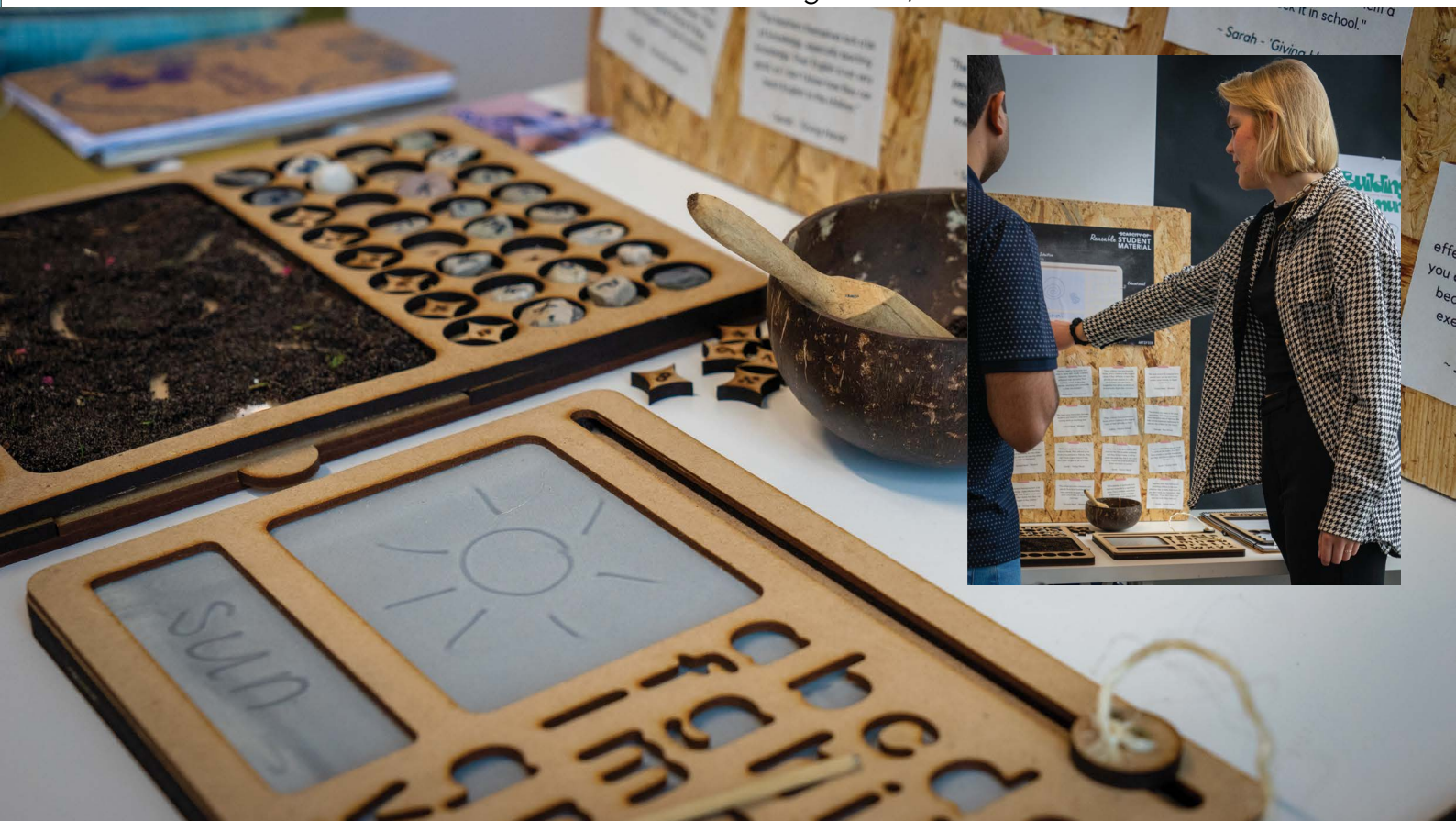


Figure 19, Midterm Demo Day

# PHASE 1 REMOTE DESIGN

## Co-Creation Session

In order to not arrive in Tanzania with two example prototypes that were quite similar in terms of child interaction, a co-creation session with 20 participants was held to create prototypes for conversation starters and for pilot testing. Bringing multiple options to show enabled me to get broader instead of specific, tunnel vision feedback.

The session produced a variety of concepts and low-fi prototypes (A.5, f.23), including puzzle boards and writing tools, with all a strong focus on playful and collaborative learning. Figure 22 is important to highlight as this puzzle board sketch created by one of the participants, after multiple iterations, became the example of the medium presented on final demo day.



Figure 20, Co-Creation Session



Figure 21, Co-Creation Session

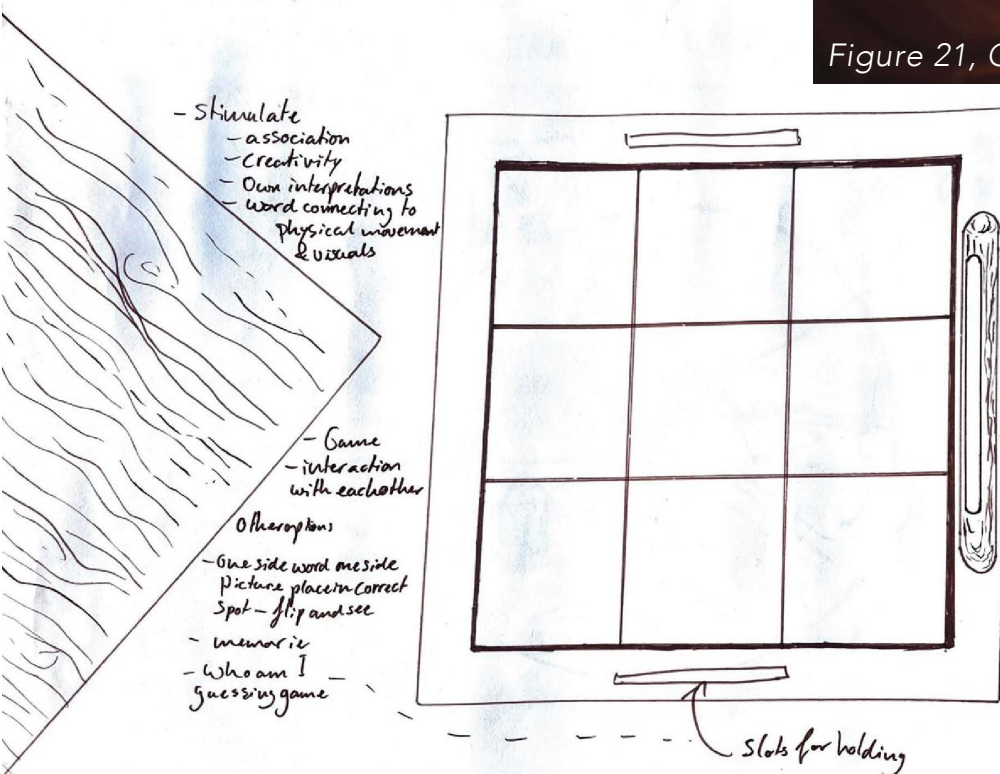


Figure 22, Co-Creation Session Puzzle Sketch

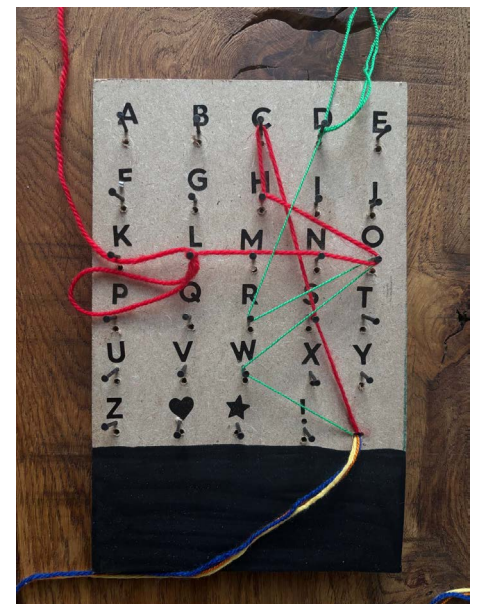


Figure 23, Low-fi Prototype

## PART 2 RELATED WORKS: Design Approach

The design approach integrates participatory design, qualitative research, and decolonial design principles to address the challenges of designing for the developing world.

Inspirations include projects like Chlorine Dispenser and Liter of Light (f.24). The *Chlorine Dispenser* project by Poverty Action Lab, 2020, demonstrates a data-driven approach using randomized evaluations to assess variations in price, marketing, and packaging.

'Two years after implementation, 61% of sampled households used chlorine compared to less than 15% in the control group.' Coster, 2014)

This shows the importance of using data to guide design decisions and measure impact.

*Liter of Light* focuses on hyper-local production and community empowerment through solar lighting workshops. This approach highlights collaboration with local communities and using accessible, low-cost materials.



Figure 24, Chlorine Dispenser & Liter of Light

### *Design for the developing World (DDW)*

DDW brings unique challenges for the designer, including limited resources, cultural differences and systematic barriers. Literature highlights the importance of localized solutions using local available materials and make the local community feel responsible through participative methods to ensure sustainability. Authors like Amy Wood (2018), Christopher Mattson (2019), and Rachel Sosa (2016) identify common pitfalls, such as:

1. Discontinuity: Solutions often fail to continue due to weak integration of local production capabilities or resource availability
2. Misinterpreted Needs: Designers may prioritize their perspectives over actual user needs, neglecting socio-cultural contexts.

These findings informed a mind map to guide the design process (f.25).

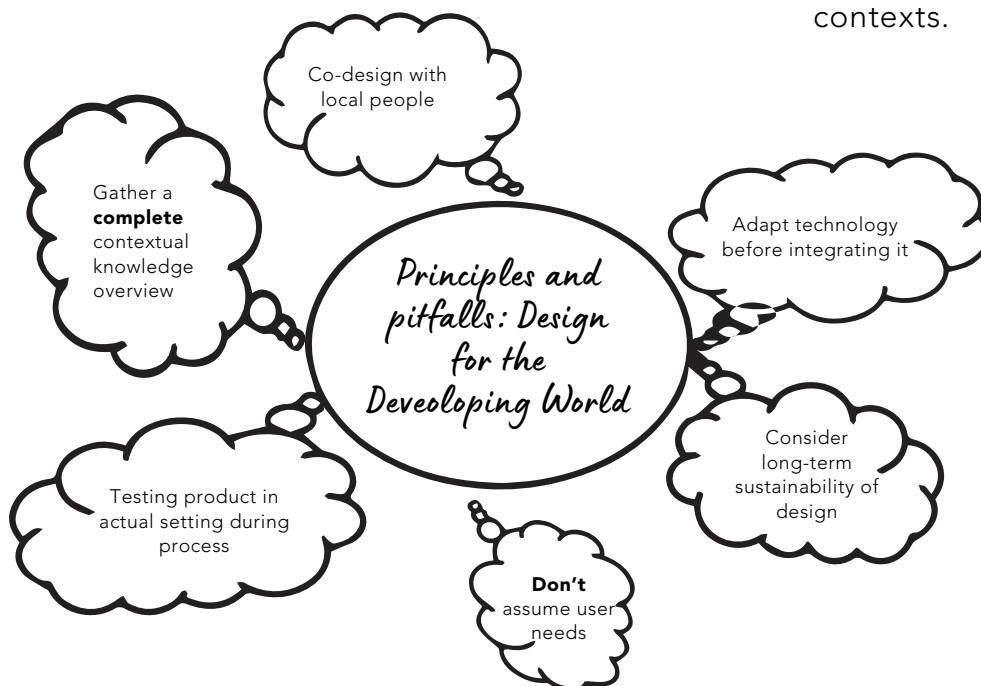


Figure 25, DDW Principles and Pitfalls (Mattson & Wood, 2014) and (Wood & Mattson, 2016)



## PART 2 RELATED WORKS: Design Approach

### *Qualitative Research: Ethnography*

The limited research on Design for the Developing World and the causes of poor education quality create a need for additional qualitative research. Qualitative researchers collect data in a natural setting sensitive to the people and places that are studied. In this project this is done by field notes (A.6) and interviews (A.7) and a daily reflective diary (A.8). The kind of qualitative research used is ethnographic research, focusing on culture-sharing groups to uncover shared patterns of behavior, beliefs, and languages. (Cresswell, 2013) Fieldwork at three entire primary schools in Arusha included classroom observations during daily school activities and conducting in-depth interviews with teachers and school heads. Observations were unstructured - without predefined categories - for open-ended data collection. Semi-structured interviews were also open-ended to avoid assumptions and capture as complete as possible participant perspectives.

### *Design Kit by IDEO*

IDEO.org's Human-Centered Design methodology (IDEO.org., 2015) combines Research-through-Design and participatory design strategies as also proposed in the DDW literature readings. The Design Kit consists of frameworks that focus on empathy, iterative prototyping, and stakeholder collaboration in order to address real user needs. Examples of methods used are co-creation, improve interview skills by 'talking less' and set up guided tours.

### *Decolonial Design*

Decolonial design critiques traditional top-down approaches, advocating for co-creation that respects and incorporates local knowledge. As a Western designer working in a different cultural context, I adopted a non-expert role, focusing on dynamic, people-centered processes that empower local communities.

### *Mapping Design Practices*

A study on mapping design research types encouraged me to critically position my project within a participatory mindset (Dubberly, 2008). Key insights that shaped my approach are:

1. Participatory Design:  
Co-creating solutions with teachers, school heads and craftsmen.
2. Generative Tools:  
Prototypes form shared languages between users and stakeholders.
3. Applied Ethnography:  
Combining observations with interviews for deeper insights.

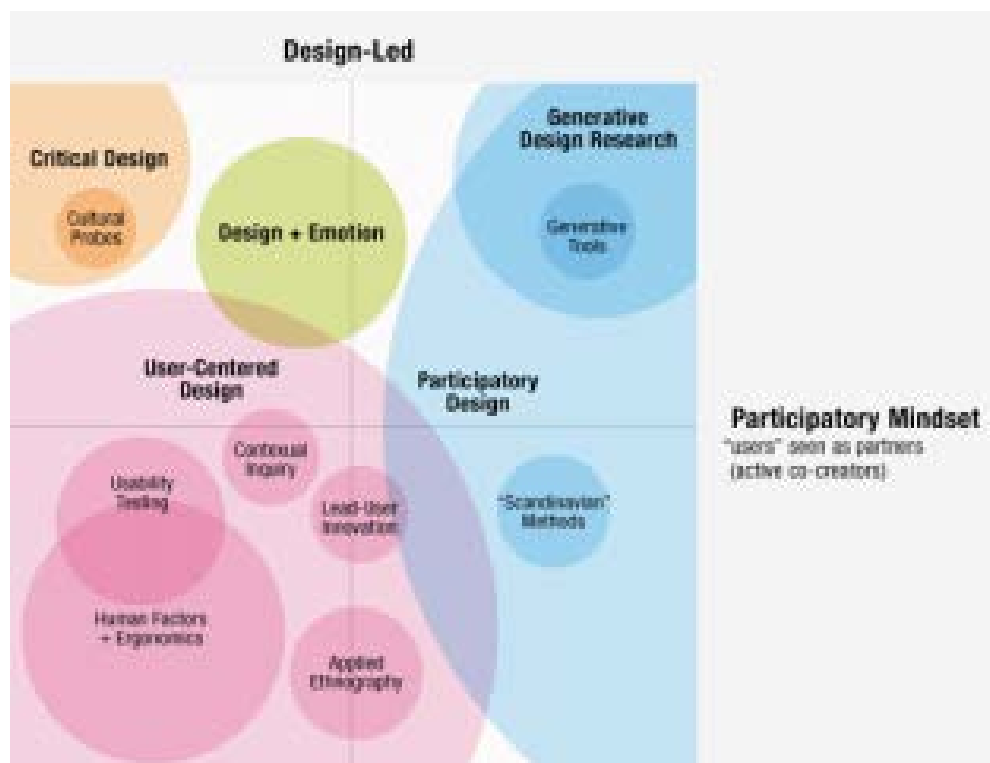


Figure 26, Map of Design/Research Types

# PART 3 RELATED WORKS: Learning Poverty Tanzania

This page provides insights from the 2023 KiuFunza 4 Baseline Survey, which randomly selected 185 public primary schools in Tanzania. The outcomes show severe challenges, with 35% of classrooms 'orphaned' - no teacher present (f.27) - and early grade students facing overcrowded classrooms, averaging 75 and up to 147 students per teacher (f.28). Other major obstacles are a lack of textbooks (f.29), and insufficient pedagogical training (f.30). Furthermore, figure 31 illustrates the significant gap between teachers' perceptions and actual foundational reading skills. Nationally, teachers believed an average of 53% of students were proficient, but assessments showed only 20% passed. This inaccuracy may come from limited awareness, afraid to report the truth, or inadequate assessment tools, as only 27% of teachers use written evaluations (f.32). 53% of Grade 2 students failed to read 3 out of 5 words (f.33), preventing progression to more advanced reading tasks. Without better teaching methods or efforts, these foundational educational skills will continue to limit students' educational future. (Twaweza, 2023)

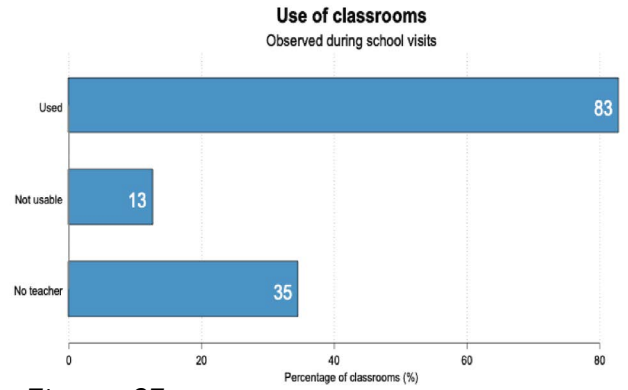


Figure 27

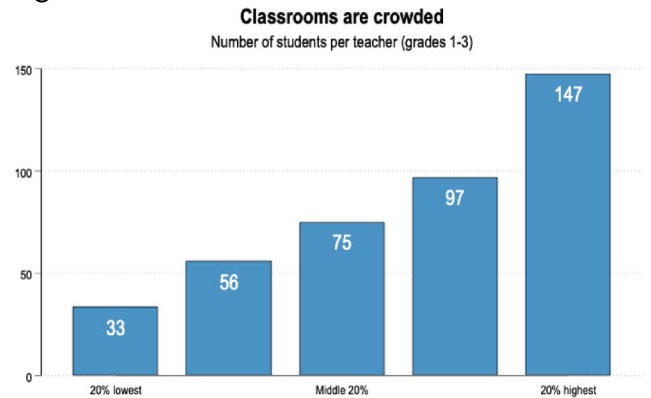


Figure 28

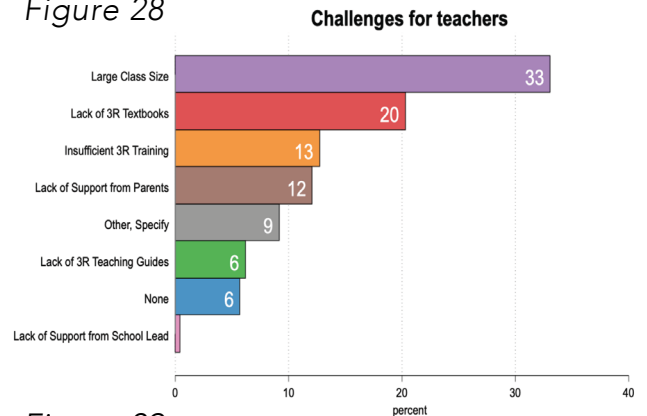


Figure 29

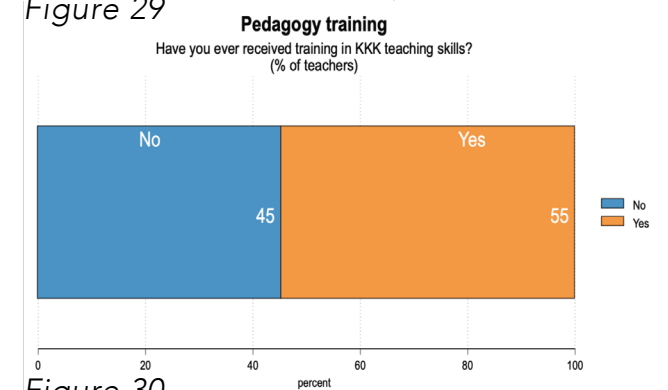


Figure 30

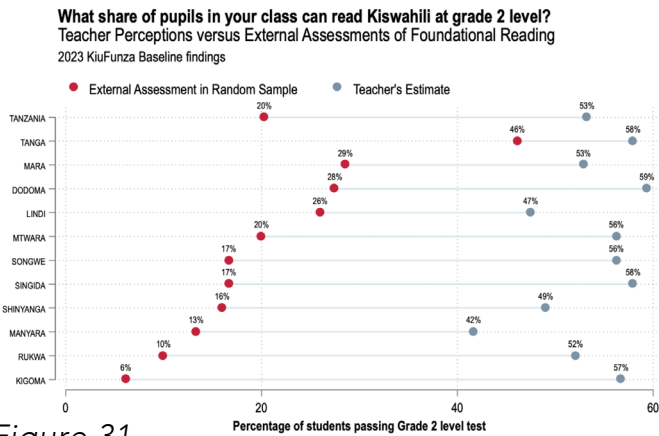


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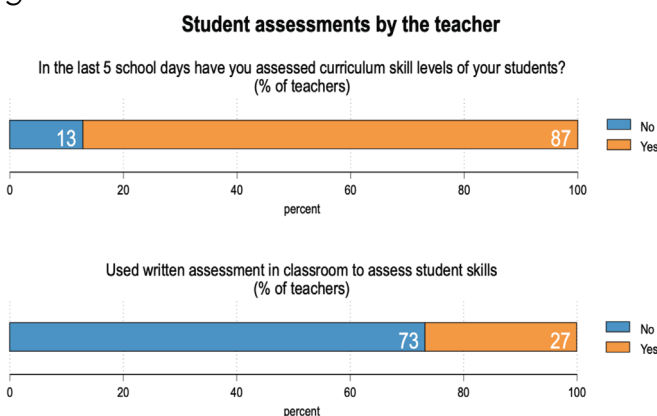


Figure 32

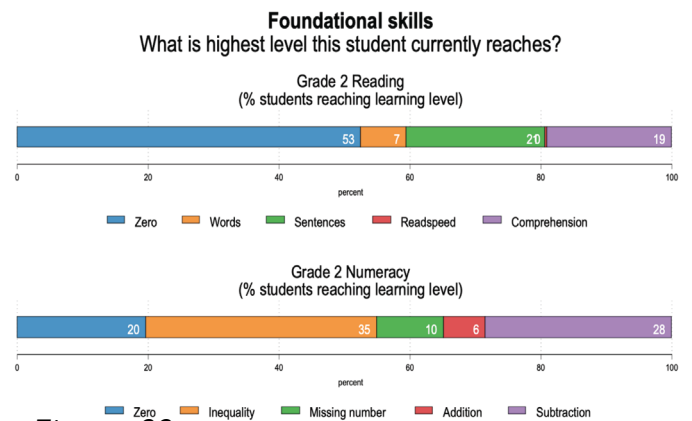


Figure 33

# PHASE 2 IDENTIFYING CHALLENGES

This section explains the design process behind identifying the challenges of improving education quality in Tanzania. It aligns with the first pillar of my design philosophy: Empathize. Understanding learning poverty required me to go beyond quantitative desktop research and go on a fieldtrip in the context.

Week one focused on Ethnographic Field Research at government schools performing Unstructured Observations (A.6) and Semi-Structured Interviews (A.7). Week two included visits to private schools, woodworkshops and stakeholder and client IBES (Institute of Business, Entrepreneurship and Social-Pedagogue) for observations and stakeholder meetings.

The field trip began with a visit to a government school in Arusha, guided by a volunteer teacher from Liechtenstein who had been at the school for two months. Observations over five school days involved sitting in the back of classrooms during language lessons (English or Swahili) in Grades 1-4. Lessons were recorded and observation notes (A.6) were taken and interviews with five teachers were conducted (A.7). This all resulted in identifying five main challenges (A.1):

1. **Overcrowded classrooms:** ~100 students per teacher leads to a lack of individualized attention. It makes it almost impossible for teachers to help all slow learners, provide individual feedback and address behavioral issues.
2. **Traditional Teaching Methods:** teaching heavily relied on corporal punishment and repetitive drills. Children were often hit for mistakes, resulting in fear rather than an encouraging learning atmosphere. Drilling resulted in students able to repeat sentences but not comprehending their meaning.

A reflective diary was updated every evening (A.8). This section outlines the data-gathering process during the field trip and presents the categorical data analysis conducted that identified the presented challenges.



Figure 34, In Row for Food

*"Last week when I entered the school area, I saw a boy shivering on the ground getting hit by a teacher. I had to go to the hospital with him, he was in real bad state. I get so sad if I think about what happened when I was not there to stop the teacher."*

*~ Liechtenstein Teacher (A.6)*

## PHASE 2 IDENTIFYING CHALLENGES



Figure 35, Fieldnotes



Figure 36, Documenting

Grade 5  
Children are sitting in groups of 10 reading around a book because only 10 books for 100 children. They are reading out loud  
Boy has to read out → other Boy is quietly helping.  
2 boys are sitting in the back of a group now standing up to look what they're missing. Not the whole group can see what they have to read.

11:35 Teacher tells us she has to go to a funeral, lesson is over, children have to do 'self-directed learning' for the rest of the day...

Figure 37, Teacher Leaving Class at 11:35



Figure 39, 10 Students per Book

### 3. Unmotivated, Dishonest, or Absent Teachers:

one third of classrooms were "orphaned", another third an unmotivated teachers was present but not actively teaching. Dishonest attitudes were observed, for example that a teacher sold donated posters for personal profit or when during lunch, donated food meant for children was taken by teachers (A8). The NGO supporting the school confirmed trust issues with teachers and suggested solutions like lockers to prevent theft (f.38).

### 4. Lack of Student Materials:

although public education is free in theory, parents must pay for uniforms, notebooks, and pencils. Observations showed that half the children lacked proper supplies, which results in a growing group of slow learners. (A7) Textbooks provided by the government are not enough (f.39).

### 5. Poor life circumstances:

at least one child in every class was found sleeping, teachers explained this is often due to hunger. Many children come to school without breakfast or lunch. Water availability was also limited. (A6-8)

"I fear that if you give them a very cool tool like the reusable notebook, and they bring it home, it will be stolen because they live in very poor slums. Maybe we could build them a locker and lock it in school."

~ Founder - 'Giving Hands'

Figure 38, Quote Founder Giving Hands (A.4)

# CATEGORICAL DATA ANALYSIS: GOVERNMENT SCHOOL

## Overcrowded Classrooms

"The class is very large. For example, I have 97 students in Standard 1 and 2 combined. That makes it hard to teach effectively." - Teacher 1

"Sometimes, volunteers help with marking or teaching. It's helpful to have more people in the classroom." - Teacher 2

"We have 2,400 students, and we are supposed to have 48 teachers, but we have far fewer." - Teacher 3

"In one stream, there are about 100 students. In 2005, we had around 298 in total across streams." - Teacher 4

"Some children are left without a teacher, which makes it hard for them to learn anything." - Teacher 3

(G3) 20 of 100 children have to stand up to see what teacher is writing as they sit so close to each other in a very crowded classroom.

"There are many teachers on the street... they are just waiting to get employed." - Teacher 4

"We have a lot of students but not enough teachers. Every class must have two teachers." - Teacher 5

"In one class, we have around 100 students. My class has 90, my neighbor's class has 110, and another one has 105. And for every class, there's only one teacher." - Liechtenstein Teacher

"On some days, we just don't have enough staff to cover every class. It's impossible to teach properly." - Teacher 1

(G1) Boy punching a girl on head, girl crying and on the ground for a long time. Too many children for teacher to even notice that this was happening.

(G3) Only half of children wanted to get marked, 30% of them was not able to copy the sentence, 30% copied completely and had some answers right and 60% copied half / answered half wrong.

In the back of the class a boy is punching a muslim girl on her head. Now he's punching another boy. boy walks away crying, later he punches a boy that's sitting on the ground in the corner. Teacher begins singing, boy that was hitting stands up with big smile and waves to us. He has no clue that he was doing something wrong. Too many tasks for teacher to see what is happening.

Done with marking  
I helped teacher mark, it is way too much with 100 children.  
Half of children raised their hands to get marked,  
30% of the children was not able to copy the sentences on paper.  
30% copied the sentences completely & filled in something on each question  
60% copied half / answered half wrong.

Sometimes children stand up to see what teacher is writing. Quite a lot of movement. They sit very close to each other, so normal that they can not read all spaces of chalkboard.

## Traditional Teaching Methods

"We use singing a lot. Children remember lessons better when they sing." - Teacher 2

"Teaching requires a lot of passion and patience. Many children come to school with behaviors they've learned at home, like insulting or bullying others. Our job is to correct these behaviors and make them better individuals." - Teacher 3

"If a student misbehaves, we sometimes have to use tasks or small punishments, but occasionally we resort to sticks to make them understand." - Teacher 3

"If students understand the song, they remember faster. When playing, they sing that song." - Teacher 5

"Once, I walked into the classroom and said, 'Hi children, how are you?' They all replied, 'I'm fine, thank you.' I tried something different, saying, 'Are you ready for English?' But they just repeated, 'I'm fine, thank you,' because they didn't understand what I'd asked." - Liechtenstein Teacher

Children were beaten standing in the row for food as they were pushing too much.

"When they are afraid of me, they know that I am the boss." - Teacher 5

"The children are afraid because they know if they don't listen, there are consequences." - Teacher 5

"Last week when I entered the school area, I saw a boy shivering on the ground getting hit by a teacher." - Liechtenstein Teacher

"It's partly because of the overwhelming number of students. In a class of 100, it's almost impossible to manage without some form of strict authority." - Liechtenstein Teacher

"The children see the teachers using violence and mimic it. They walk around with sticks, hitting each other." - Liechtenstein Teacher

(G5) 20% of children were not able to copy sentence, no children answered more questions than the first two which were already answered by teacher. This was more a copying/writing lesson than reading comprehension.

Teacher holds a stick, she ticks on table to get the children more quiet, when she does you see the children getting alert immediately, as they bounce back. They seem afraid of the teacher. Teacher does not say anything, just 'quiet', so I don't know what the

I propose to help mark the answers as there were so many children, she gave me her red pen. I started marking it stood out that some children (20%) weren't able to copy the sentence and no children answered more questions than the first two, which we answered klasikaal. So, it was more a copying/writing lesson than reading comprehension. Should the focus be different? expectation gap. How come these children can not yet answer the questions? Or was it too little time (15 min)

# CATEGORICAL DATA ANALYSIS: GOVERNMENT SCHOOL

## Unmotivated, Dishonest or Absent Teachers

"The teacher is often alone. If she's not around, the children are left alone because there's no substitute teacher." - Liechtenstein Teacher

"At first, I thought the teachers were all kind and wanted the best for the children. But I've since seen situations where they put themselves before the students. For example, I once brought a ball for the kids, and the next day it was gone. I later found out a teacher had taken it and sold it." - Liechtenstein Teacher

"If you are a teacher, you have a responsibility to teach. Some teachers don't take this seriously." - Teacher 5

"When you have 100 children and no teacher, they can't concentrate. It's just noise." - Teacher 5

"I've learned not to give things to teachers because sometimes they sell them instead of using them for the kids." - Liechtenstein Teacher

(G3) Teacher is not in classroom because: 'She does not want to teach, no reason.'

"Sometimes donated materials don't make it to the students; they are mismanaged." - Teacher 5

"I donated porridge for the children. Later, I found out teachers were taking it for themselves." - Liechtenstein Teacher

"I donated porridge for the children. Later, I found out teachers were taking it for themselves." - Liechtenstein Teacher

"It's partly because of the overwhelming number of students. In a class of 100, it's almost impossible to manage without some form of strict authority." - Liechtenstein Teacher

"The NGO who supports this school also told me that it is hard to put your trust in the teachers." - Liechtenstein Teacher

(G3) Teacher stopped teacher at 11:35 and explained to us 'I have to go to a funeral, it is self-directed learning for the rest of the day.'

Outstanding observations of today:

- \* 3 classrooms were 'orphaned'
- \* More teacher absence in the upcoming weeks bc of test weeks for the secondary school
- \* Teacher took 1 bucket with beans that Sarah had donated: FOR THE CHILDREN to eat themselves → while not all children had ~~pushed~~ had pushed yet.
- Teachers are lying right into your face. Don't trust them
- \* Children were beaten when standing in ROW for food as they were pushing too much.

11:35 Teacher tells us she has to go to a funeral, lesson is over, children have to do 'self-directed learning' for the rest of the day...

## Lack of Student Materials

"We have 15 - 19 books for each subject. So they have to share with 10." - Teacher 1

"We lack many teaching aids. We need visual aids, audio aids, and projectors. Most teaching aids are created by teachers, but we don't have enough resources to make or buy them." - Teacher 3

"Students often share books because there aren't enough for everyone." - Teacher 4

"The books provided by the government are too few, and the library is closed for some classes." - Teacher 4

"Most children come from poor families. Government schools are free, but parents still have to pay for uniforms, books, and food, which many can not afford" - Liechtenstein Teacher

(G1) Half of the children don't have notebooks / pencils so they don't even have a change to do the task.

"There are many teachers on the street... they are just waiting to get employed." - Teacher 4

"Sometimes volunteers bring things like footballs, but they disappear quickly due to the large numbers." - Teacher 5

"If you want to teach something, you should be able to draw it, but we lack materials for drawing." - Teacher 5

"Some kids can't afford pencils and have to borrow from their neighbors." - Liechtenstein Teacher

(G5) Children are sitting in groups of 10 reading around 1 book. 10 books for 100 children, not everyone can see what they have to read.

State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

Grade 5  
Children are sitting in groups of 10 reading around 1 book because only 10 books for 100 children. They are reading out loud. Boy has to read out → other boy is quietly helping.  
2 boys are sitting in the back of a group now standing up to look what they're missing. Not the whole group can see what they have to read.

for me, it was not clear at all what they should write and for the children next to me also not. They just entertain themselves a bit. half of the children don't have notebooks and pencils, so they don't even have a chance to do the task. In total 100 children.

1 child wears a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one? child in the back is standing on bench to see what is written. State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

# CATEGORICAL DATA ANALYSIS: GOVERNMENT SCHOOL

## Poor Life Circumstances

"Some children only get tea at home and come to school hungry, which makes it hard for them to concentrate." - Teacher 2

"Many parents keep their children at home, but we encourage them to bring them to school to learn and interact." - Teacher 3

"Some parents drink too much, and children don't have support." - Teacher 5

"They come to school without food, and you can see it in their behavior." - Teacher 5

Some children look exhausted, have blue bruises on their body, different uniforms.

~30 children have no cup (parents need to provide) so they wait while their friends drink first, but we're almost out of porich, not enough for everyone.

"Some children don't come to school because of bad companions or poverty at home." - Teacher 5

"I've seen children sharing lids or small containers to eat the porridge. Some even use their hands because they don't have cups." - Liechtenstein Teacher

Many children go to school without breakfast and also have nothing for lunch." - Liechtenstein Teacher

"Some kids can't afford pencils and have to borrow from their neighbors." - Liechtenstein Teacher

The water pump at the school is broken so they cannot get new water.

State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

I child wears a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one? child in the back is standing on bench to see what is written. State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

~30 children have no cup (parents need to provide) so they wait, while their friends drink first. I see children giving their cup to the next one, Sarah is almost out of porich, not everyone get porich yet.

Some children's eyes almost closed, they look exhausted. Some have blue bruises on their body, is it from getting hit? I see broken uniforms, different green buns. The parents have to buy the uniforms. I see two little water bottles, no drinks to see further. The water pump at school is broken, so they cannot get new water.



Figure 40, Sleeping Child Government School



Figure 41, Government School Break

# PHASE 2 IDENTIFYING CHALLENGES

## Conclusion first week

Overwhelmed by the first week, the realization came that this were too big systematic challenges to approach within the scope of this design project. A lot starts with the overcrowded classrooms as this can cause teachers to get unmotivated or use corporal punishment because they get overwhelmed too. (A.7) Poor life circumstances may be a main cause for the lack of student materials and the dishonesty of teachers. Unfortunately, the combination of these two, makes it hard to introduce reusable student material on government schools.

The overcrowded classrooms and the lack of student material is mainly a financial government issue. In interviews a teacher explained: 'There are enough teachers educated, they are just waiting to get employed, but the government does not employ them.' (A.7)



Figure 43, Handcrafted Student Material

## Private School Observations

Observations on two private schools showed a strong contrast. It became immediately clear that these schools provided better learning outcomes, children of 6 year-old started English conversations with me and were already able to write (f.42). Three themes were identified as biggest areas of improvement:

- 1. Learning Environment:** classrooms were equipped with handcrafted materials (f.43), sufficient notebooks and pencils. And most importantly, there were around 30 students per classroom.
- 2. Teacher Attitudes:** Teachers were highly engaged. Some had no time for interviews, as they wanted to teach, which never happened on government schools. Corporal punishment was rare and mild and teaching methods included a bit more interactive exercises and less drills.

- 3. Organized Teamwork:** The private schools demonstrated a strong collaboration between teachers and school heads. For example, during a teacher meeting, one teacher proposed creating holiday workbooks for children, showing the others printed exercise pages duck-taped together with plastic covers.

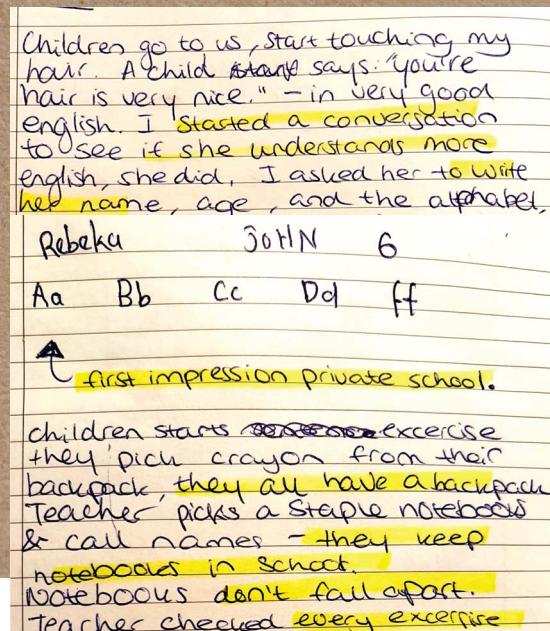


Figure 42, Writing With 6-Year-Old



# CATEGORICAL DATA ANALYSIS: PRIVATE SCHOOLS

## Learning Environment

"In private schools, with 40-50 children in a class, you can afford to provide individual attention." - Teacher 2	"The school needs laptops, computers, and projectors for better teaching." - Teacher 2	"We work hard to make learning engaging by integrating colorful handcrafted materials and games into our lessons." - Teacher 2	"School fees include food, books, stationery, and sometimes transportation. However, the books are often not enough, as they're expensive." - Private School Head	"Having smaller class sizes of around 30 children allows us to focus on each student's progress." - Private School Head	(Preschool) Reading/writing lesson: boy can read 12/15 words, girl 15/15, they can write words themselves with small mistakes.
"In private schools, there's a lot of English, a lot of work, and many activities compared to government schools." - Private School Head	"We ensure every child has the materials they need, like notebooks, pencils, and visual aids, to support their learning." - Teacher 1	"It's very simple to help a child with reading or writing in private schools because we have fewer students." - Teacher 2	"In my class, every child has their own notebook and pencil, and we use them for both writing and creative exercises." - Teacher 1	(G1) 6-year old starts an English conversation with us and writes her name and the alphabet correctly	(G2) All children have a backpack and there is a big staple notebooks which they keep in school, they don't fall apart.

Boy has to do it alone, the pace is very more slow, if it takes longer than 2 sec. the teacher says herself. But he can read 12/15 words. A girl has to do it alone, 15/15 girl has to write 'antelope' ✓

girl has to write doll, writes Bol corrected by teacher another: BALL ✓ another chair → chair after every child teacher says clap for him. And they do a clap song. It sounds less drilling, the

Children go to us, start touching my hair. A child says: "you're hair is very nice." - in very good english. I started a conversation to see if she understands more english, she did. I asked her to write her name, age, and the alphabet.

Rebeka JOHN 6  
Aa Bb Cc Dd ff

↑ first impression private school.

children starts ~~exercise~~ exercise they pick crayon from their backpack, they all have a backpack. Teacher picks a staple notebook & call names - they keep notebooks in school. Notebooks don't fall apart. Teacher checked every exercise

## Teacher Attitude

"Teaching in private schools is different because we focus on practical teaching methods rather than just drilling." - Teacher 2	"We do use drilling for basics, but we try to balance it with creative activities like drawing or storytelling." - Teacher 1	"I have never had a moment to sit during class hours because I want to make sure every child is actively participating." - Teacher 1	"I make most of the teaching aids myself." - Teacher 2	(G1) Teacher continuously walks through class and corrects at the same time.	(G1) One boy is not really involved, as I write this teacher makes eye contact and he is involved again.
"Corporal punishment here is rare. We use rewards and positive reinforcement to motivate children." - Private School Head	"We use a lot of songs, pictures, and even music to make learning more interactive and enjoyable for the children." - Teacher 2	"We don't take breaks or leave the classroom because every moment counts." - Teacher 1	"I prefer using real objects like mangoes and apples to teach concepts in a way children can understand." - Teacher 2	(G1) Teachers asks who has no pencil and lets children with multiple share with the others. She also helps a child with a broken pencil tip.	(G1) 'Okay now I want you to congratulate yourself, all of you!' Bigger focus on rewards than punishments

Teacher continuously walks through class and can correct at same time.

teacher: "who has no pencil?" 5 children raise hand → "okay, assist him please"

Children are copying the sentences. Teacher walks through classroom saying "copy, copy, copy". She helps some a child of which the tip of the pencil broke.

Boy completely left is not really involved, eyes at half is now he is already more involved eye contact teacher wants children teacher.

Okay, now I want you to congratulate yourself, all of you

bigger focus on congratulations (reward)

# CATEGORICAL DATA ANALYSIS: PRIVATE SCHOOLS

## Organized Teamwork

"Management—like the owner, the manager, the school headmaster, and the academic master— all work closely to supervise and assess the staff." - Private School Head

"I like this system because it ensures that the school's performance and academic system are well-organized." - Private School Head

"The directors and teachers are very serious about monitoring teaching quality and ensuring students' success." - Teacher 2

"In private schools, the management and teachers create a strong chain between workers and administrators." - Private School Head

"When you apply for a job in private schools, you sign a contract with the owner, and you must write your objectives and plans." - Private School Head

In teacher room assistant is creating holiday workbooks from paper, plastic sheets on top and ducttape.

"We conduct about four parent meetings per year, compared to one or two in government schools. These meetings help us address children's problems and administrative issues." - Private School Head

"If a child is struggling, we communicate with the parents to address the issue together." - Teacher 1

"We follow the curriculum and syllabus closely, and as a team." - Teacher 2

"At our teacher meetings, we discuss ways to improve and track progress, ensuring no student is left behind." - Teacher 2

"I know the parents of each child and talk regularly to them." - Teacher 1

It is clear they follow a clear lesson plan as we observed same lessons at grade 1A and B.

In teacher room <sup>assistant</sup> teacher was creating "holiday workbooks" for children → paper, plastic sheet on top, ducttape together.

It is clear they follow a clear lesson plan as we saw same lessons at grade 1A & 1B



Figure 44, Private School Grade 1 Child



Figure 45, Private School Grade 1 Classroom

## PHASE 2 IDENTIFYING CHALLENGES

### *Meeting client and stakeholder IBES*

IBES is a Tanzanian business set up by a social- pedagogue from the Netherlands. It runs without any funding, earning bits from parental fees of daycares all over Tanzania and bits from schools who are in training. IBES daycares are pre-primary schools for children up to 6 years old. Observing at IBES classes showed 5 year-olds can already write in English. IBES makes sure these children have a strong foundation for their educational future, by a strong focus on interactive and collaborative learning. They also give trainings to external school heads and teachers:

*'Somehow IBES has become famous in the past 15 years. External schools come to us asking: how do you do this? How do you provide this quality education without any punishing methods?'* – Founder IBES (A.8)

These schools are invited for a teacher training at IBES where they are made conscious of their behaviour and learn how a child's brain actually works.

The third subpart of IBES is their education program. IBES's founder emphasized the importance of unlearning habits and teach creative and interactive teaching methods.: *'Their whole life, they've been taught that only one answer is right. This system creates young adults scared to think outside the box.'* (A.8) More and more private schools, for whom it is essential to provide quality education as otherwise parents won't pay, are starting to see the impact of this different kind of teaching. As a result, all IBES students find a job before they finished the 1-year program.

However, the reality is that also IBES is struggling with scarcity of student materials as they want to keep parent fees as low as possible. Also, multiple ex-IBES teachers have set up their own schools further extending and carrying the mission. However these schools completely start from scratch. No student material and no external funding makes it hard to actually carry out the mission of interactive, collaborative learning.



Figure 46, Teacher Clay Workshop at IBES

*"The goal of IBES is to create jobs that do not exist yet, jobs that can transform ineffective or even harmful practices. I see potential in your project as it creates new local jobs. I can use these products in interactive teaching trainings and be the middle person between woodworkers and external schools who would be very happy with these products.  
~ Founder of IBES (A.8)*

## PHASE 2 IDENTIFYING CHALLENGES

### *Local production capabilities*

Two woodworkshops were visited, guided by a local businessman / graphic designer. The goal was to assess local production capabilities and find a partner for creating reusable student materials. During the tours, woodworkers demonstrated their capabilities, which were based around furniture crafting. When showing three example prototypes, one woodworker said: "I didn't know you could make these things with MDF; I only use it for bookshelves." (A.8)

A co-creation session was held with this woodworker and the graphic designer (f.47), but brainstorming proved difficult as they were not used to brainstorming on the spot as they normally fulfill fixed orders. The graphic designer explained that people in Tanzania are not used to creative thinking.

Three example prototypes were left with the woodworker, who was tasked to create three own versions using his skills and materials. Three days later, he presented exact replicas of the prototypes (f.48), with millimetre precision and laser-cutting. He explained: 'It was so difficult on the computer, I used the laser-cutter from my friend for the first time.' (A.7) Initially unfamiliar with laser-cutting, he taught himself the technique within three days. An amazing example of the adaptability of local talent. The laser-cutting technique is not yet common in Tanzania, but it is possible to use. For the redesign, the woodworker recommended to focus on minimizing the assembly steps for production efficiency. The visit proved that low-cost student materials can be produced locally using MDF and schoolboard paint. Future efforts must focus on refining participatory methods to enable better co-creation.

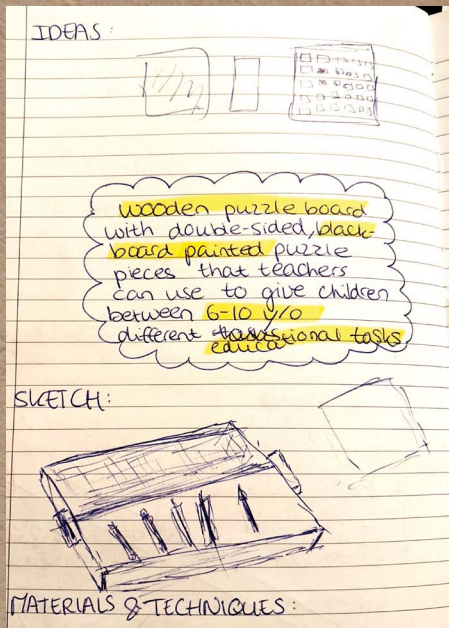


Figure 47, Co-Creation



Figure 48, Locally produced samples



Figure 49, Woodworkshop Conversation

# PHASE 3 TRANSFORMING THE PRACTICE

This section explains the proposed collaboration between local manufacturers and the education system more in depth, sustained by a quantitative research project.

Three main findings were taken out of the fieldtrip and data analysis:

1. Systemic Barriers: government schools face significant challenges, making private schools a more viable starting point for project implementation.
2. Local Production Feasibility: creating low-cost, reusable materials is possible with local resources.
3. Cultural Gaps: teachers and woodworkers struggled with creative thinking, emphasizing the need to refine and localize participatory methods.

This led to reframing the project' focus. First the main goal was to use small, simplistic product design to adress scarcity of student material. But the poor education quality is mainly caused by ineffectient or even harmful beliefs and practices and thus, in order to change, the systems and beliefs need to be changed. However, as IBES and the Liechtenstein teacher emphasized in interviews, *'You can not change a whole system.'* To address government school practices, first the government needs to be willing to change. They need to be willing to provide more than 1 teacher for 100 children. However, it is an Industrial Designer's task to see possibilities between barriers and limitations. Which, in this case, can be done by bridging two practices and showing others what is possible together. If woodworkers work together with IBES, creating reusable teaching materials for IBES' education program, teacher trainings and (pre-)primary schools, it can strengthen the schools who try to make a difference in the 'new kind of teaching' transition which again can inspire others. When more people belief in this new practice, it may reach the government's attention.



Figure 50, Government School



Figure 51, Pilot Test Government School

*" It is an Industrial Designer's task to see possibilities between barriers and limitations. Which, in this case, can be done by bridging two practices and showing others what is possible together. . "*  
~ Wietske Zwinkels

## PHASE 3 TRANSFORMING THE PRACTICE

### Reframed Project Goal

The reframed project goal is: 'Bridge the local making industry with schools who want to make a difference to further enable the transformation of teaching practices.' These schools are referred to as 'role model' schools and its teachers 'role model' teachers.

The goal incorporates the importance of addressing both teacher attitudes and the scarcity of materials at the same time. A two-year quantitative research study in Tanzania at 350 public schools across 10 districts of Tanzania strongly recommends this dual approach, see quote. (Mbiti et al., 2018)

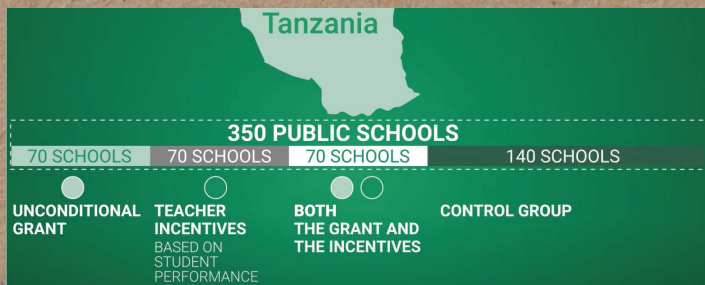


Figure 51, VoxDev Video Screenshot (Mbiti et al., 2018)

'Two of the biggest constraints to improving education outcomes are the lack of resources and lack of teacher motivation... what we found after two years is that only providing extra resources had absolutely no impact on learning outcomes. Providing teachers some incentives based on how their students performed had some positive impact. But when providing both resources and incentives, you get a substantial improvement in learning outcomes, much bigger than the sum of the parts... Sometimes just alleviating one constraint on its own is not enough. You need to alleviate multiple constraints together to get the impacts you need.'

– VoxDev, 2021

### Participatory Design

The project also envisions embedding material creation into IBES's teacher education programs, making teachers active participants in the design process. For example, teachers-in-training could ideate teaching aids as part of their curriculum, pitch ideas, and collaborate with woodworkers to produce tools for real classroom use.

### Target Audience

Initially children aged 4-12 were directly targeted, focusing on how products can help them learn even without involvement of teachers, as was proposed by the founder of Stichting Madalief (Madagascar). But the approach shifted towards a top-down approach with the primary target audience being:



Figure 52, Government School Teacher

1. School Heads: committed to transitioning towards interactive, child-centered teaching methods.  
"If the boss doesn't see the value of transforming the practice, the impact will never continue." – Founder of IBES (A.8)
2. Teachers: equipped with reusable materials, they can further adopt more creative methods.  
"We use drilling because it only requires a chalkboard and children's voices. Sometimes, children lack notebooks or pencils, and marking notebooks takes too long." – Government School Teacher (A.7)
3. Students (indirectly): wishes and needs are involved in the design process of the teaching methods and materials as they are based on child-pedagogue knowledge.

# PHASE 3 TRANSFORMING THE PRACTICE

## System Design

The system was designed through multiple iterations, informed by discussions with coaches. Initial visuals were too hierarchical (f.53) or unclear at first glance (f.54). The final system (next page) emphasizes collaboration and, inspired by a Reflective Transformative Design Process diagram (Hummels & Frens, 2008), positions the Creative Collective at a circular core with interconnections between:

1. Manufacturers: local woodworkers and creative entrepreneurs produce reusable student materials.
2. Education Experts: e.g. IBES's founder and team provide pedagogical expertise.
3. Role Model Teachers: e.g. graduates of IBES's education program contribute their practical insights.

Schools can access the Creative Collective's materials in three ways:

1. IBES Teacher Training: student materials are integrated into training programs.
2. Local Shops: external schools can purchase materials directly from the local shop in the village. (f.56)
3. New Schools by IBES Graduates: materials co-created during the education program can be used in new 'role model' schools.

### STAKEHOLDER MAP

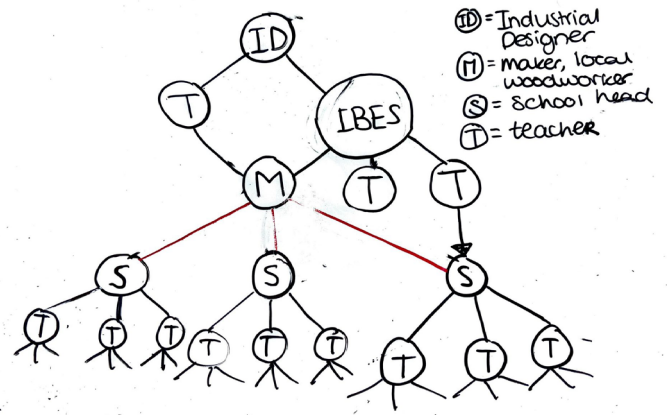


Figure 53, System Iteration 1

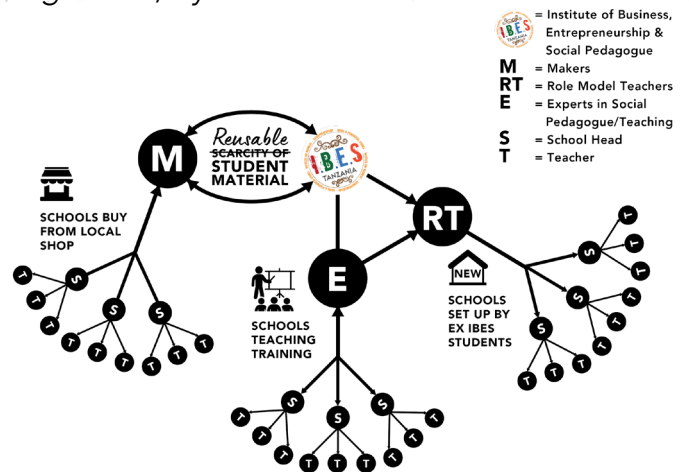


Figure 54, System Iteration 2

"If you can make more of these tools locally, it could even become a sustainable business for the school, selling the tools in a shop to support themselves."

~ Local Graphic Designer / Business Man

Figure 56, Quote Graphic Designer (A.4)



Figure 57, Pilot Test Government School

The system demonstrates what is possible through collaboration, creativity, and resourcefulness. The project's next step is to inspire and enable teachers, education experts and woodworkers to design and create their own teaching materials. Future efforts will focus on teaching them participatory design approaches empowering them to ideate, prototype, and iterate educational tools without external help.

# BRIDGING EDUCATION WITH CRAFTSMANSHIP IN TANZANIA

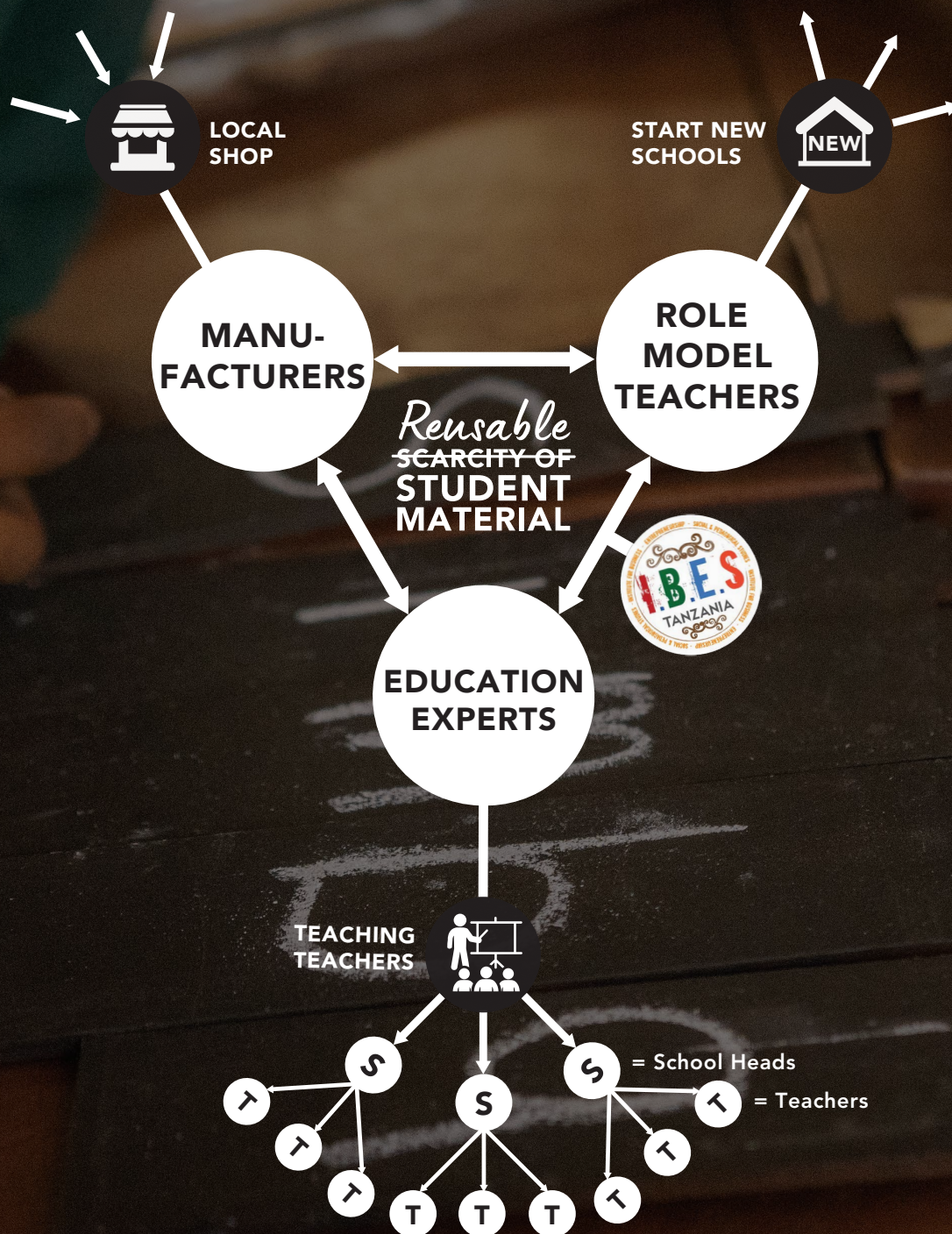


Figure 58, System Graphic

Donors:



This project is funded by University Fond Eindhoven and Students From Sustainability Delft, enabling us to kickstart the production costs of the first badge of student materials.



# PHASE 4 REALIZE

This phase focuses on Pillar 3 of my design philosophy: Realize. A personal goal was to present a feasible, tangible product with a price tag on demo day, to emphasize the importance of translating concepts into actionable outcomes. This section outlines the redesign process, cost breakdown, and next steps for local production.

## *Stakeholder and User Feedback*

After observations and interviews, example prototypes (f.59-62) were shown to teachers and woodworkers and a pilot test was conducted with three 7-year olds.

Teacher interviews during the field trip showed a preference for the double-sided Schoolboard Pieces (f.60). One teacher noted:

*"I already know various exercises I can do with this thing, writing numbers on one side and how you spell the numbers on the back, or words on one side and the children can draw the word on the back." (A.7)*

A pilot test (A.8) with three government school children confirmed the design's intuitive interaction but highlighted difficulties in fitting pieces into the frame.

The founder of IBES also preferred the Schoolboard Pieces, emphasizing its multi-functional use:

*"I like this one the most as you can use it for different levels and age groups, even though it's the same product." (A.8)*

The local woodworker and graphic designer, confirmed the feasibility of using MDF and schoolboard paint, after exploring alternatives like ceiling board and plywood. MDF (6mm) was chosen for its durability. The woodworker also suggested to focus on the Schoolboard Pieces concept as they were easiest to produce and proposed to simplify the design even more to minimize assembly steps.



Figure 59, Alphabet Stone Box



Figure 60, Schoolboard Pieces



Figure 61, Alphabet Tracing Boards



Figure 62, Chalkboard Sandbox

# PHASE 4 REALIZE

## Redesign

The feedback from students, teachers, IBES, and manufacturers (A.5-A.7) informed four key principles for the redesign:

1. Intuitive for children: the design should be easy and engaging to use.
2. Multi-functionality: enable various exercises and interactions.
3. Minimized manufacturing steps: reduce assembly time.
4. Maximized material usage: minimize waste and costs.

The pieces are redesigned (f.63) to be clickable, like a puzzle, which is interactive for children. Also, the frame can now stand vertically, which makes it easier for children to pull and push the pieces in and out, aiming to stimulate interactive and playful learning.

1. Clickable pieces function as a puzzle, encouraging interaction. The frame stands vertically, making it easier for children to pull and push pieces.
2. The open-ended design invites teachers to create their own exercises, promoting creativity and adaptability across age groups, see examples of use (f.64)
3. Preparing and painting MDF is estimated to take about 30 minutes for 8 sets. Future iterations will remove the need for glue, further simplifying production.
4. Each 2438.4 mm × 1219.2 mm MDF sheet (standard available format) produces 8 sets. Every cut-out piece is utilized, with no waste. For instance, the inner frame of one exercise is repurposed in another.

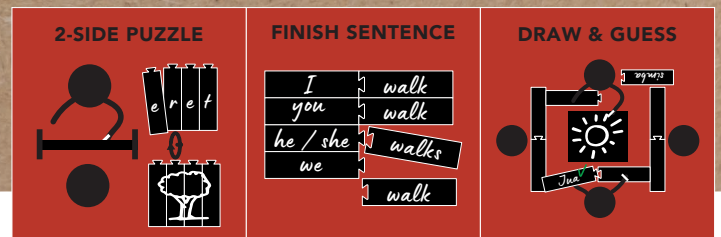


Figure 64, Examples of use

1. Write words on one side, draw visuals on the other, and reassemble collaboratively.
2. Children race to assemble correct sentences using prepared pieces.
3. One child draws, while others guess and spell the word collaboratively.

## Why Local Production

Local production has been a priority because utilizing local materials enables a localized supply chain, reducing environmental impact and enabling full local ownership, both operational as material management, remains with local stakeholders. Also the project introduces new techniques to craftsmen, empowering them with skills for future opportunities. Localizing the production process supports local job creation.

## Cost Breakdown

The affordability and scalability of the redesign are reflected in this cost breakdown:

- Material Costs: MDF (€1.34 p.p.) + Blackboard Paint (€0.27 p.p.) = €1.61 p.p.
- Labor Costs: ~30 minutes per batch of 8 sets = €0.625 per set at €10/hour.

Total Cost: Material + Labor = €2.24 per set. IBES's already willingness to pay €5 per set shows the production model balances affordability and feasibility.



Figure 63, Redesign

# DISCUSSION

It was a complex challenge to design in a context completely different than my own. Reflecting on the project's outcomes and process, four topics are picked out that can form starting points for further discussion.

## *Incomplete Contextual Overview*

Field research and networking in Arusha was done for a total duration of twenty days. In combination with my positioning as Western designer, this forms an important point for discussion. The preparation work during the Remote Design phase and the approach to always be guided by and network with local experts, did help a lot in spending the time efficiently. However, I agree that this time frame can be seen as too short to dive into a complex problem like quality education. This can also be seen through the gathered data. For example, an unexpected interview with a local passer-by who, as a child, had been to both government as private school said:

*'I think, it's not about the quality difference between schools because there are some students that have gone to private schools and have the worst outcomes and some from government school the best. So I'm not saying that bad service is good, no. But I think it's mainly the efforts of the student.'* (A.7)

This project illustrates only the limited amount of perspectives of locals and observations on three schools in total, which results in not being able to paint the full picture of the complex topic. I acknowledge that there may be important information and perspectives missing in this paper. I also realize that, to create continuous impact you need to be in the context for longer, building trust and a deeper connection with stakeholders and users, which was not possible in the timeframe of this project and is the reason why a next, longer visit, is already planned.

## *Reliability of Data*

During observations, my presence visibly influenced behaviors. Teachers began teaching when I entered the room and stopped just after my exit and teachers stopped hitting children as they know we do not want to see that. Also during interviews, questions were sometimes answered by self-interest rather than truth, for example when a teacher requested posters for her classroom despite previously receiving donated materials, which she sold. Important data points are double-checked with the stakeholders, but still these observed behaviour changes can raise discussions about the reliability of the qualitative data.

## *Robustness of the system*

Another discussion point can be about the probability of long-term success of the proposed system with the Creative Collective. Currently, IBES plays a big part in the kickstart of this system which can raise questions.



To make the system more robust it is smart to incorporate more organizations inside the Creative Collective. Still as IBES leaders and the graphic-tee designer emphasized, doing business in Tanzania is hard as people have little money to spend and businesses that do succeed have to pay high taxes to the corrupt government. If the business model is robust enough to survive the big challenges after the kickstart funding has ended remains a challenge.

## DISCUSSION

### *Test Impact*

The stakeholders showed their enthusiasm and willingness to collaborate when the system was introduced to them. However, the Creative Collective is not yet producing reusable teaching materials and the teaching material has not been tested in use across multiple primary schools yet. Data about the impact of the project is extremely valuable for design iterations and to for example reach the attention of the government to extend reach to public schools. Therefore, in the next section a quantitative research proposal will be outlined shortly, to show how I envision to approach measuring the impact of this project.

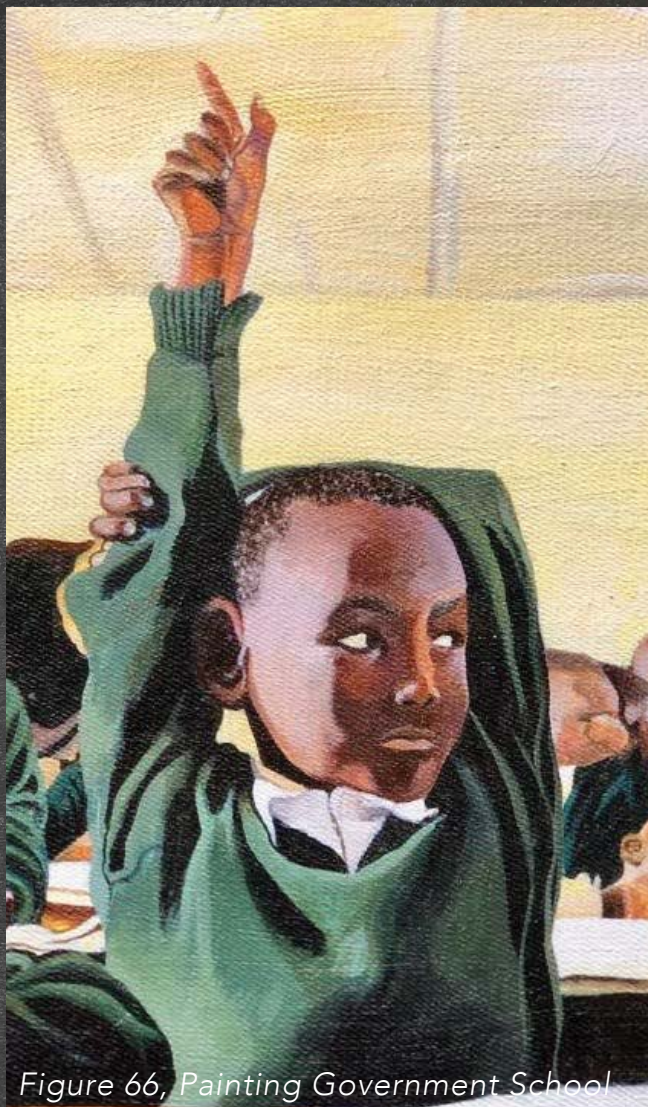


Figure 66, Painting Government School

## CONCLUSION

Through a combination of ethnographic fieldwork and co-creation, this project proposes a collaboration between local educators and craftsmen who can together produce multi-functional teaching material to further enable the transformation between more interactive, child-centered teaching practices in Tanzania.

Fieldwork findings show that systematic barriers on government schools are yet too big of a challenge to form a feasible starting point for project implementation. That is why in collaboration with IBES - a social-pedagogue education institute, 'role model' schools are connected with local woodworkers to form a Creative Collective that produces reusable teaching materials.

The project approach has a dual focus on both teacher attitude as material shortage, which is in line as advised in relevant quantitative research (Mbiti et al., 2018). Also, participatory design values are central in the project to enable local ownership amongst stakeholders. While systematic change on government schools requires government involvement, the Creative Collective can be seen as a groundwork for broader adoption and scalability.

In conclusion, this project proposes the transformative potential of combining the local manufacturing industry with creative teachers and education experts to help improve the quality of education in Tanzania. It contributes to the DDW field as inspiration project on how to use ethnography and connect with stakeholders to create solutions that can be continued by local stakeholders.

## FUTURE WORK

This project does not end with its current conclusion. There will be a second part to it, which will include kickstarting the local production of reusable student materials, teaching the Creative Collective how to design new variations, broadening the variety of stakeholders to new organizations and measuring impact.

The first step is to finalize the Schoolboard Pieces Set design, e.g. removing the need for glue, to be ready for production of 250 sets. This will be followed by teaching the Creative Collective design methods. They will be introduced to ideation, prototyping, and iterating on new teaching tools to transition the project from an external initiative to a locally-driven movement.

Next is to expand the network of stakeholders to for example Right to Play and Ace Africa. Ace Africa is active across Tanzanian and Kenian government schools and is experienced in measuring larger-scale impact with the government as key stakeholder. They already showed interest in the project from the start and proposed to set up a large scale testing phase across multiple government schools. Right to Play is a global organization active on public Tanzanian schools with a similar vision as IBES: promoting interactive, play-based learning.

Finally, measuring the project's impact across a larger set of schools is essential for understanding its effectiveness and refining its approach. A structured impact assessment will include both qualitative and quantitative data collection. Written assessments will track literacy improvements, while teacher logbooks and semi-structured interviews will document classroom experiences and the tools' influence on teaching practices. Insights from this data can guide future design iterations and system evolution, ensuring the Creative Collective can continue to exist and evolve.



Figure 67, Playing with Prototypes



Figure 68, Bringing Water to Class

## PERSONAL REFLECTION

It took cultural sensitivity, realistic scoping and a lot of flexibility to navigate this project.

One of the biggest challenges was designing for a context completely different than my own. Limited resources limit design possibilities and cultural differences like less creativity and traditional teaching beliefs required an open attitude, active listening, and avoiding creating assumptions. I found conducting interviews way more difficult than in earlier projects due to misunderstanding or interpretation from both sides. Through practice and honest feedback from my partner, I improved interview skills.

Flexibility was hardly needed as there were many unexpected challenges like how co-creating with local woodworkers proved more difficult than expected. Keeping an open attitude during the fieldtrip also resulted in coincidentally meeting the founder of IBES in a coffee bar.

Additionally, scoping down the broad challenge of quality education into an actionable project required continuous reflection and refinement, which was difficult and sometimes even frustrating. For example when I realized government school implementation is not yet possible due to dishonesty of teachers, even though I felt big passion for supporting government school children.

All by all, I am glad with the outcome of this project so far. I did not expect to get this many insights from only 2,5 week in the context. I am content with how I stayed true to my vision as designer about designing sustainable, simple but functional outcomes. And most of all, this project taught me that impactful design for the developing world is not about offering ready-made solutions but about empowering communities to create their own.

## ACKNOWLEDGEMENTS

This project would not have been possible without the amazing support and collaboration of many individuals and organizations. I want to thank my partner for his personal support, thoughtful reflections, cultural sensitive attitude and constructive feedback which enabled me to improve a cultural sensitive attitude. Also, thank you for documenting all the work during the fieldtrip. Next, I want to thank IBES, and especially its founder, whose dedication inspires me a lot. Their guidance, expertise and belief in the project were and are fundamental in shaping it. Special thanks goes to all fourteen organizations that showed interest in this work, especially Natembelea Africa and Giving Hands, who generously hosted us during the fieldtrip. Their guidance and connections to local networks made our stay productive and inspiring. I would also like to give a special thanks to the teacher from Liechtenstein, whose honest and sustained explanations about government school happenings were crucial in understanding the local context. Also thank you all teachers and school heads from the three primary schools for your time, openness and willingness to collaborate. Thank you academic coaches - Aaqib Saeed, Stephan Wensveen, Martijn van Loon, and Anna Merl - for almost weekly guidance, thoughtful feedback, and expertise that helped me stay focused and push the project forward with clarity and purpose. I am grateful for the generous funding from University Fonds Eindhoven and Students4Sustainability Delft. Their support will provide the resources to kickstart this project, enabling us to realize its potential. Thank you for believing in this work.

In the preparation of this report, I responsibly made use of AI tools, following the guidelines set by the Department of Industrial Design TU/e. ChatGPT (OpenAI, 2023), was occasionally used to refine grammar or improve clarity. The input was critically reviewed and adjusted to maintain the originality of this work. Additionally, Whisper AI (OpenAI, 2023), was used to process and transcribe interviews and video recordings.

# REFERENCES

- Banathy, Bela H. (1996). *Designing Social Systems in a Changing World*. Springer US. p. XV, 372. ISBN 978-0-306-45251-2.
- Bayeck, R. (2017). A review of five African board games: Is there any educational potential? *Cambridge Journal of Education*, 48(2), 1–20.  
<https://doi.org/10.1080/0305764X.2017.1371671>
- Community chlorine dispensers for better health | The Abdul Latif Jameel Poverty Action Lab. (2020, February 1). The Abdul Latif Jameel Poverty Action Lab (J-PAL).  
<https://www.povertyactionlab.org/case-study/community-chlorine-dispensers-better-health>
- Coster, H. (2014, May 14). Peer pressure can be a lifesaver. *Opinionator*.  
[https://archive.nytimes.com/opinionator.blogs.nytimes.com/2014/05/14/peer-pressure-can-be-a-lifesaver/?\\_php=true&\\_type=blogs&\\_r=0](https://archive.nytimes.com/opinionator.blogs.nytimes.com/2014/05/14/peer-pressure-can-be-a-lifesaver/?_php=true&_type=blogs&_r=0)
- Creswell, J. W. (2013). *Qualitative Inquiry & Research Design: Choosing among Five Approaches* (3rd ed.).
- Dubberly, H. (2008). An evolving map of design practice and design research.  
<https://www.dubberly.com/articles/an-evolving-map-of-design-practice-and-design-research.html>
- Heneveld, Ward. (1994). *Improving Madagascar's Primary Education: A Focus on Schools*. Africa Region Findings & Good Practice Infobriefs; No. 29. © World Bank, Washington, DC.  
<http://hdl.handle.net/10986/10006> License: CC BY 3.0 IGO.
- Hummels, C. and Frens, J. (2008). Designing for the unknown: A design process for the future generation of highly interactive systems and products. In: A. Clarke, M. Evatt, P. Hogarth, J. Lloveras and L. Pons. *New perspectives in Design Education Volume 1. Proceedings of the 10th International Conference on Engineering and Product Design Education*, Barcelona, Spain, 4–5 September 2008, pp. 204–209.  
[https://www.researchgate.net/publication/351561663\\_Designing\\_for\\_the\\_unknown\\_a\\_design\\_process\\_for\\_the\\_future\\_generation\\_of\\_highly\\_interactive\\_systems\\_and\\_products](https://www.researchgate.net/publication/351561663_Designing_for_the_unknown_a_design_process_for_the_future_generation_of_highly_interactive_systems_and_products) [accessed Jan 07 2025].
- IDEO.org. (2015). *The Field Guide to Human-Centered Design* (1st editie).  
<https://www.designkit.org/resources/1.html>
- IDEO.org. (n.d.). *Facilitator's Guide for Introducing Human-Centered Design*.  
<https://www.designkit.org/resources/7.html>
- Kuhr, R., Otto, K. N., Sosa, R., & Raghunath, N. (2013). *Design with the developing world: A model with seven challenges for the future*.  
<https://www.researchgate.net/publication/270182408>
- Liter of Light – Lighting up lives, one bottle at a time. (n.d.). <https://literoflight.org/>
- Magesa, R. J., & Shekuwe, R. (2024). Determinants of Child Abuse in Arusha Region. *East African Journal Of Arts And Social Sciences*, 7(1), 139–149.  
<https://doi.org/10.37284/eajass.7.1.1840>
- Mattson, C. A., & Wood, A. E. (2014). Nine Principles for Design for the Developing World as Derived From the Engineering Literature. *Journal of Mechanical Design*, 136(12). <https://doi.org/10.1115/1.4027984>

# REFERENCES

- Mbiti, I., Muralidharan, K., Romero, M., Schipper, Y., Manda, C., & Rajani, R. (2018, July 1). Inputs, Incentives, and Complementarities in Education: Experimental Evidence from Tanzania. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3222444](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3222444)
- Ministry of National Education of Madagascar, UNICEF Madagascar, & UNICEF Innocenti. (2022). Data Must Speak: Profile of head teachers and teachers in public primary schools in Madagascar. UNICEF. [www.unicef.org/innocenti/media/3101/file/UNICEF-DMS-Madagascar-Policy-Brief-2-EN.pdf](http://www.unicef.org/innocenti/media/3101/file/UNICEF-DMS-Madagascar-Policy-Brief-2-EN.pdf)
- OpenAI. (2023). ChatGPT (Mar 14 version) [Large language model]. (OpenAI, 2023)
- OpenAI. (2023). Whisper AI [Speech-to-text model]. Retrieved from <https://openai.com/whisper>
- Papanek, V. J. (2019). Design for the real world: human ecology and social change.
- Swai, V. (2023, November 16). Save the girls: Project against genital mutilations in Massai villages. Friedrich Naumann Foundation. Geraadpleegd op 7 januari 2025, van <https://www.freiheit.org/global-partnership-hub-nairobi/save-girls>
- Twaweza. (2023). Delivering quality education? 10 insights from public primary schools in Tanzania. Twaweza. [https://www.twaweza.org/wp-content/uploads/2023/11/2023\\_KF\\_BL\\_report\\_10insights.pdf](https://www.twaweza.org/wp-content/uploads/2023/11/2023_KF_BL_report_10insights.pdf)
- Unicef, Unesco, The World Bank, Foreign, Commonwealth & Development Office, USAID, & Bill & Melinda Gates Foundation. (2022, June 23). The state of global learning poverty: 2022 update. Unicef. <https://www.unicef.org/media/122921/file/StateofLearningPoverty2022.pdf>
- van Hilten, E. (2024). Park your culture here. [Master's thesis, Eindhoven University of Technology]. <https://projects.id.tue.nl/id/mDIA8B>.
- VoxDev. (2021, 7 juni). Getting Bang for your Buck on Education Spending [Video]. YouTube. <https://www.youtube.com/watch?v=0nYYc3ix4SU>
- Wood, A. E., & Mattson, C. A. (2016). Design for the Developing World: Common Pitfalls and How to Avoid Them. *Journal of Mechanical Design*, 138(3). <https://doi.org/10.1115/1.4032195>
- World Bank. (2024). Madagascar Learning Poverty Brief (English). Learning Poverty Brief. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/099062624135540223/P17920911c1285008180621777e295579fb>
- World Bank; Lassibille, Gerard; Tan, Jee-Peng; Jesse, Corne. (2014). Managing for results in primary education in Madagascar: Evaluating the impact of selected workflow interventions (English). Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/539301468088145388/Managing-for-results-in-primary-education-in-Madagascar-evaluating-the-impact-of-selected-workflow-interventions>



## **APPENDIX**

1. Categorical Data Analysis
2. Process Notes
3. Online Networking
4. Online Interview Transcripts
5. Co-Creation Workshop Sketches
6. Observation Notes
7. Interview Transcripts
8. Reflective Diary Fieldtrip
9. ERB and Approval Form

# A.1 CATEGORICAL DATA ANALYSIS

## Overcrowded Classrooms

"The class is very large. For example, I have 97 students in Standard 1 and 2 combined. That makes it hard to teach effectively." - Teacher 1

"Sometimes, volunteers help with marking or teaching. It's helpful to have more people in the classroom." - Teacher 2

"We have 2,400 students, and we are supposed to have 48 teachers, but we have far fewer." - Teacher 3

"In one stream, there are about 100 students. In 2005, we had around 298 in total across streams." - Teacher 4

"Some children are left without a teacher, which makes it hard for them to learn anything." - Teacher 3

(G3) 20 of 100 children have to stand up to see what teacher is writing as they sit so close to each other in a very crowded classroom.

"There are many teachers on the street... they are just waiting to get employed." - Teacher 4

"We have a lot of students but not enough teachers. Every class must have two teachers." - Teacher 5

"In one class, we have around 100 students. My class has 90, my neighbor's class has 110, and another one has 105. And for every class, there's only one teacher." - Liechtenstein Teacher

"On some days, we just don't have enough staff to cover every class. It's impossible to teach properly." - Teacher 1

(G1) Boy punching a girl on head, girl crying and on the ground for a long time. Too many children for teacher to even notice that this was happening.

(G3) Only half of children wanted to get marked, 30% of them was not able to copy the sentence, 30% copied completely and had some answers right and 60% copied half / answered half wrong.

In the back of the class a boy is punching a muslim girl on her head. Now he's punching another boy. boy walks away crying, later he punishes a boy that's sitting on the ground in the corner. Teacher begins scolding boy that was hitting, stands up with big smile and looks to us. He has no clue that he was doing something wrong. Too many kids for teacher to see what is happening.

Done with marking  
I helped teacher mark, it is way too much with 100 children.  
Half of children raised their hands to get marked,  
30% of the children was not able to copy the sentences on paper  
30% copied the sentences completely & filled in something on each paper  
60% copied half / answered half wrong.

20/100  
Sometimes children stand up to see what teacher is writing. Quite a lot of moaning. They sit very close to each other so narrow that they can not read all spaces of chalkboard.

## Traditional Teaching Methods

"We use singing a lot. Children remember lessons better when they sing." - Teacher 2

"Teaching requires a lot of passion and patience. Many children come to school with behaviors they've learned at home, like insulting or bullying others. Our job is to correct these behaviors and make them better individuals." - Teacher 3

"If a student misbehaves, we sometimes have to use tasks or small punishments, but occasionally we resort to sticks to make them understand." - Teacher 3

"If students understand the song, they remember faster. When playing, they sing that song." - Teacher 5

"Once, I walked into the classroom and said, 'Hi children, how are you?' They all replied, 'I'm fine, thank you.' I tried something different, saying, 'Are you ready for English?' But they just repeated, 'I'm fine, thank you,' because they didn't understand what I'd asked." - Liechtenstein Teacher

Children were beaten standing in the row for food as they were pushing too much.

"When they are afraid of me, they know that I am the boss." - Teacher 5

"The children are afraid because they know if they don't listen, there are consequences." - Teacher 5

"Last week when I entered the school area, I saw a boy shivering on the ground getting hit by a teacher." - Liechtenstein Teacher

"It's partly because of the overwhelming number of students. In a class of 100, it's almost impossible to manage without some form of strict authority." - Liechtenstein Teacher

"The children see the teachers using violence and mimic it. They walk around with sticks, hitting each other." - Liechtenstein Teacher

(G5) 20% of children were not able to copy sentence, no children answered more questions than the first two which were already answered by teacher. This was more a copying/writing lesson than reading comprehension.

Teacher holds a stick, she holds on table to get the children more quiet. When she does you see the children getting alert immediately, as they bounce back. They seem afraid of the teacher. Teacher does not say anything, just 'quiet', so I don't know what the

I propose to help mark the answers as there were so many children, she gave me her red pen. I started marking. It stood out that some children (20%) weren't able to copy the sentence and no children answered more questions than the first two, which we answered classically. So, it was more a copying/writing lesson than reading comprehension? Should the focus be different? expectation opp. How come these children cannot get around the questions? Or was it too little time (15 min)

## Unmotivated, Dishonest or Absent Teachers

"The teacher is often alone. If she's not around, the children are left alone because there's no substitute teacher." - Liechtenstein Teacher	"At first, I thought the teachers were all kind and wanted the best for the children. But I've since seen situations where they put themselves before the students. For example, I once brought a ball for the kids, and the next day it was gone. I later found out a teacher had taken it and sold it." - Liechtenstein Teacher	"If you are a teacher, you have a responsibility to teach. Some teachers don't take this seriously." - Teacher 5	"When you have 100 children and no teacher, they can't concentrate. It's just noise." - Teacher 5	"I've learned not to give things to teachers because sometimes they sell them instead of using them for the kids." - Liechtenstein Teacher	(G3) Teacher is not in classroom because: 'She does not want to teach, no reason.'
"Sometimes donated materials don't make it to the students; they are mismanaged." - Teacher 5	"I donated porridge for the children. Later, I found out teachers were taking it for themselves." - Liechtenstein Teacher	"I donated porridge for the children. Later, I found out teachers were taking it for themselves." - Liechtenstein Teacher	"It's partly because of the overwhelming number of students. In a class of 100, it's almost impossible to manage without some form of strict authority." - Liechtenstein Teacher	"The NGO who supports this school also told me that it is hard to put your trust in the teachers." - Liechtenstein Teacher	(G3) Teacher stopped teacher at 11:35 and explained to us 'I have to go to a funeral, it is self-directed learning for the rest of the day.'

Outstanding observations of today:

- \* 3 classrooms were orphaned.
- \* More teacher absence in the upcoming weeks bc of teachers for the secondary school.
- \* Teacher took 1 bucket with beans that Sarah had donated FOR THE CHILDREN to eat themselves while not all children learning. Teachers are lying right into your face. Don't trust them.
- \* Children were beaten when standing in row for food as they were pushing too much.

11:35 Teacher tells us she has to go to a funeral, lesson is over, children have to do 'self-directed learning' for the rest of the day.

## Lack of Student Materials

"We have 15 - 19 books for each subject. So they have to share with 10." - Teacher 1	"We lack many teaching aids. We need visual aids, audio aids, and projectors. Most teaching aids are created by teachers, but we don't have enough resources to make or buy them." - Teacher 3	"Students often share books because there aren't enough for everyone." - Teacher 4	"The books provided by the government are too few, and the library is closed for some classes." - Teacher 4	"Most children come from poor families. Government schools are free, but parents still have to pay for uniforms, books, and food, which many can not afford" - Liechtenstein Teacher	(G1) Half of the children don't have notebooks / pencils so they don't even have a change to do the task.
"There are many teachers on the street... they are just waiting to get employed." - Teacher 4	"Sometimes volunteers bring things like footballs, but they disappear quickly due to the large numbers." - Teacher 5	"If you want to teach something, you should be able to draw it, but we lack materials for drawing." - Teacher 5	"Some kids can't afford pencils and have to borrow from their neighbors." - Liechtenstein Teacher	(G5) Children are sitting in groups of 10 reading around 1 book. 10 books for 100 children, not everyone can see what they have to read.	State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

Grade 5  
Children are sitting in groups of 10 reading around 1 book because only 10 books for 100 children. They are reading out loud. Boy has to read out → Boy is quietly helping.  
2 boys are sitting in the back of a group now standing up to look what they're missing. Not the whole group can see what they have to read.

For me, it was not clear at all what they should write and for the children next to me also not. They just entertain themselves a bit. Half of the children don't have notebooks and pencils, so they don't even have a chance to do the task. In total, in...

I had heard a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one? Child in the back is standing on bench to see what is written. State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

## Poor Life Circumstances

"Some children only get tea at home and come to school hungry, which makes it hard for them to concentrate." - Teacher 2

"Many parents keep their children at home, but we encourage them to bring them to school to learn and interact." - Teacher 3

"Some parents drink too much, and children don't have support." - Teacher 5

"They come to school without food, and you can see it in their behavior." - Teacher 5

Some children look exhausted, have blue bruises on their body, different uniforms.

-30 children have no cup (parents need to provide) so they wait while their friends drink first, but we're almost out of porch, not enough for everyone.

"Some children don't come to school because of bad companions or poverty at home." - Teacher 5

"I've seen children sharing lids or small containers to eat the porridge. Some even use their hands because they don't have cups." - Liechtenstein Teacher

Many children go to school without breakfast and also have nothing for lunch." - Liechtenstein Teacher

"Some kids can't afford pencils and have to borrow from their neighbors." - Liechtenstein Teacher

The water pump at the school is broken so they cannot get new water.

State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

I child wears a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one? child in the back is standing on bench to see what is written. State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

-30 children have no cup (parents need to provide) so they wait, while their friends drink first. I see children giving their cup to the next one, Sarah is almost out of porch, not everyone get porch yet.

Some children's eyes almost closed, they look exhausted. Some have blue bruises on their body. I see brown uniforms, different green buns. The parents have to buy the uniforms. I see two little water bottles, no drinks to see further. The water pump at school is broken, so they cannot get new water.

## Teacher Attitude

"Teaching in private schools is different because we focus on practical teaching methods rather than just drilling." - Teacher 2

"We do use drilling for basics, but we try to balance it with creative activities like drawing or storytelling." - Teacher 1

"I have never had a moment to sit during class hours because I want to make sure every child is actively participating." - Teacher 1

"I make most of the teaching aids myself." - Teacher 2

(G1) Teacher continuously walks through class and corrects at the same time.

(G1) One boy is not really involved, as I write this teacher makes eye contact and he is involved again.

"Corporal punishment here is rare. We use rewards and positive reinforcement to motivate children." - Private School Head

"We use a lot of songs, pictures, and even music to make learning more interactive and enjoyable for the children." - Teacher 2

"We don't take breaks or leave the classroom because every moment counts." - Teacher 1

"I prefer using real objects like mangoes and apples to teach concepts in a way children can understand." - Teacher 2

(G1) Teachers asks who has no pencil and lets children with multiple share with the others. She also helps a child with a broken pencil tip.

(G1) 'Okay now I want you to congratulate yourself, all of you!' Bigger focus on rewards than punishments

Teacher continuously walks through class and can correct at same time. teacher: "who has no pencil?" 5 children raise hand -> "okay, assist him please" Children are copying the sentences. Teacher walks through classroom saying: copy, copy, copy. She helps some a child of which the tip of the pencil broke.

Boy completely left is not really involved, eyes at half -> now he is already more involved eye contact teacher boasts children teacher.

Okay, now I want you to congratulate yourself, all of you. bigger focus on congratulations (rewards)

# A.1

## Learning Environment

"In private schools, with 40-50 children in a class, you can afford to provide individual attention." - Teacher 2

"The school needs laptops, computers, and projectors for better teaching." - Teacher 2

"We work hard to make learning engaging by integrating colorful handcrafted materials and games into our lessons." - Teacher 2

"School fees include food, books, stationery, and sometimes transportation. However, the books are often not enough, as they're expensive." - Private School Head

"Having smaller class sizes of around 30 children allows us to focus on each student's progress." - Private School Head

(Preschool) Reading/writing lesson: boy can read 12/15 words, girl 15/15, they can write words themselves with small mistakes.

"In private schools, there's a lot of English, a lot of work, and many activities compared to government schools." - Private School Head

"We ensure every child has the materials they need, like notebooks, pencils, and visual aids, to support their learning." - Teacher 1

"It's very simple to help a child with reading or writing in private schools because we have fewer students." - Teacher 2

"In my class, every child has their own notebook and pencil, and we use them for both writing and creative exercises." - Teacher 1

(G1) 6-year old starts an English conversation with us and writes her name and the alphabet correctly

(G2) All children have a backpack and there is a big staple notebooks which they keep in school, they don't fall apart.

Boy has to do it alone, the pace is way more slow, if it takes longer than 2 sec the teacher says herself.  
But he can read 12/15 words  
A girl has to do it alone, 15/15 girl has to write 'antelope' ✓

girl has to write doll, writes Doll corrected by teacher another Ball ✓  
another chair → chair  
after every child teacher says clap for him. And they do a clap song. It sounds less drilling, the

Children go to us, start touching my hair. A child says: "you're hair is very nice." - in very good English. I started a conversation to see if she understands more English, she did. I asked her to write her name, age, and the alphabet.  
Rebeka JOHN 6  
Aa Bb Cc Dd Ff  
first impression private school.  
children starts ~~exercise~~ exercise they pick crayon from their backpack, they all have a backpack Teacher picks a staple notebook & call names - they keep notebooks in school. Notebooks don't fall apart. Teacher checked every exercise

## Organized Teamwork

"Management—like the owner, the manager, the school headmaster, and the academic master—all work closely to supervise and assess the staff." - Private School Head

"I like this system because it ensures that the school's performance and academic system are well-organized." - Private School Head

"The directors and teachers are very serious about monitoring teaching quality and ensuring students' success." - Teacher 2

"In private schools, the management and teachers create a strong chain between workers and administrators." - Private School Head

"When you apply for a job in private schools, you sign a contract with the owner, and you must write your objectives and plans." - Private School Head

In teacher room assistant is creating holiday workbooks from paper, plastic sheets on top and ducttape.

"We conduct about four parent meetings per year, compared to one or two in government schools. These meetings help us address children's problems and administrative issues." - Private School Head

"If a child is struggling, we communicate with the parents to address the issue together." - Teacher 1

"We follow the curriculum and syllabus closely, and as a team." - Teacher 2

"At our teacher meetings, we discuss ways to improve and track progress, ensuring no student is left behind." - Teacher 2

"I know the parents of each child and talk regularly to them." - Teacher 1

It is clear they follow a clear lesson plan as we saw some lessons at grade 1A and B.

In teacher room <sup>assistant</sup> teacher was creating holiday workbooks for children → paper, plastic sheet on top, ducttape together.

It is clear they follow a clear lesson plan as we saw some lessons at grade 1A & 1B

# A.2 PROCESS NOTES

## Problem statement:

A lot of schools have been built in the developing countries of Africa, resulting in the fact that most children are able to go to school within walking distance (A. Banerjee, E. Duflo 2011). However, recent reports show very low learning outcomes. E.g. in Tanzanian public primary schools the learning poverty rate is 61% (=61% of students aged 10-14 y/o cannot read and understand a simple text (Twaaweza, 2023)).

## Problem causes

widespread ignorance / confusion about foundational learning progress by **teachers**.

**Parents** often choose to invest in school for the 'smartest' kid, the others start working from early age.

early grade **teachers** face very large classrooms.

1/8 of class-rooms are orphaned (no teacher). 1 day/week **teachers** are 'sick'.

**Children** find school boring / unuseful.

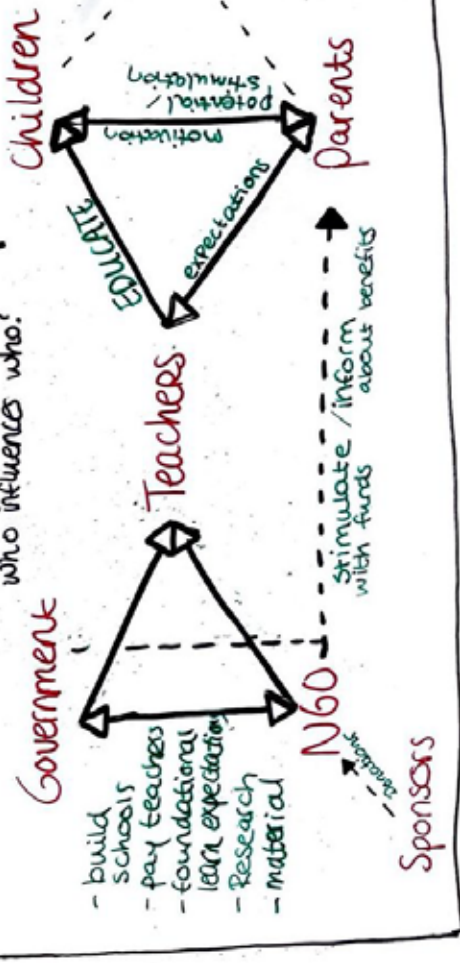
They don't see the long-term benefits and perceive school as 'a lottery'.

## Project Direction:

Design an interactive <sup>tool/method</sup> education program that can improve the learning development of <sup>public</sup> primary school children in Africa.

## Stakeholder Map

Who influences who?



- Madadielief

Witleg Project:

Onderwerp: Leerontwikkeling van Basisschool kinderen in Madagascar verbeteren.

① Onderzoek: norm onderwijsstelsel niet goed

Heel veel versch. interne en externe factoren.

kan: op t in gaan: bv: leraren tekort, niet genoeg aandacht per kind.

spelletje ontwerpen kinderen zichzelf kunnen leren lezen of schrijven

MinibCO | *orange bouge nummets; vandenbrouwer; 12 avingates reiliggen!*

**Perspectief?**

eerste projecten binnen het onderwijs in Madagascar gedaan waar je wat over kan vertellen?

Iets voor ig denkt dat ze nodig hebben?

Antsirabi: 20 jr geweest: heel korte tijd: *groot gebied*

complete contextual knowledge overviews

→ Hoe kan ik meer te weten komen over het schoolstelsel?

→ eerdere projecten gedaan: wat doen jullie voor de school?

Is er iets waarvan je denkt: dit hebben ze nodig?

2 paar maanden. *20 mensen, paar spelletje; Tally Corps*

Directe Contacten ②

- Teacher
- Father/Mother with child
- school head

Marie: *angels* engels schoolje - Rita *angels* - *groot gebied* programma

Validation Process ③

Over 2 maanden heb ik Product / tool / onderzoek getest kan worden. *opgezet dat*

- iemand voor open?
- zelf eisen?

Design a game or tool with which children (10-14) in Madagascar can improve their math/language skills.

OF: onderzoeksproject: dat het product, bv een verspreid spelletje voor de kinderen, data kan verzamelen over waar de interesses liggen & waar ze afhaken.

Om zo een beter inzicht te krijgen in wat er nodig is voor verbetering.

Frans → Malagasy legenda.

Frans: Malagasy, Alles van uitschrijven te doen uitschrijven

A.2

Sociologie

waterbouw

# ITERATION WEEK 3+4

**FBP subject:**  
 Improve the learning development of Madagascar children.

**Why?**

I believe everyone deserves a chance to develop themselves towards their potential & a better educated population can help tackle corruption and empower people to escape poverty.

**problem statement:**  
 Enough schools on walking distance but still a very high learning poverty rate.

**UNDERSTAND**  
 current school system & IDENTIFY causes of learning poverty.

**1st question:**

Design an interactive education program/tool/method that can improve the learning development of children in Madagascar

**DEFINE**

- 1 Design a product/tool focusing on 1 of the causes. e.g. rate of teachers.
- 2 Research into more qualitative, in depth insights into where and why children get stuck.

**Design Challenge:**  
 Design an educational game or tool with which Madagascar children can improve their own language and/or math skills.

**Interviews**

**Founder: Hadaief.**

Problem you dive in is broad and not solvable by 1 design in 3 months (course!)

**Scope it down. Where is your strength?**

Forget improving the school system, it is too complicated and does not make sense, after 20 years in this country I don't even see a way in

to perform research you need to be in Madagascar for multiple months. Many logistic obstacles and huge language barrier (most only speak Malagasy).

**Stephan:**

"This gap is too big. You assume that a tool is what they need. Go back to the causes."

**Aagio:**

"This is a task for an org. like Unicef. Make it more concrete."

**Martin:**

"Focus on specific location and you need a local NGO. Can't do it without."



WHAT: Design an educational, low-cost, sustainable easy to use & repair product that children in developing countries can use and re-use to improve math and/or language skills.

WHERE: Developing countries, rural areas

WHO: primary school children

WHY: Lack of teaching material is found as 1/3 biggest causes for problem or low learning quality. (other: school leadership support, community participation)

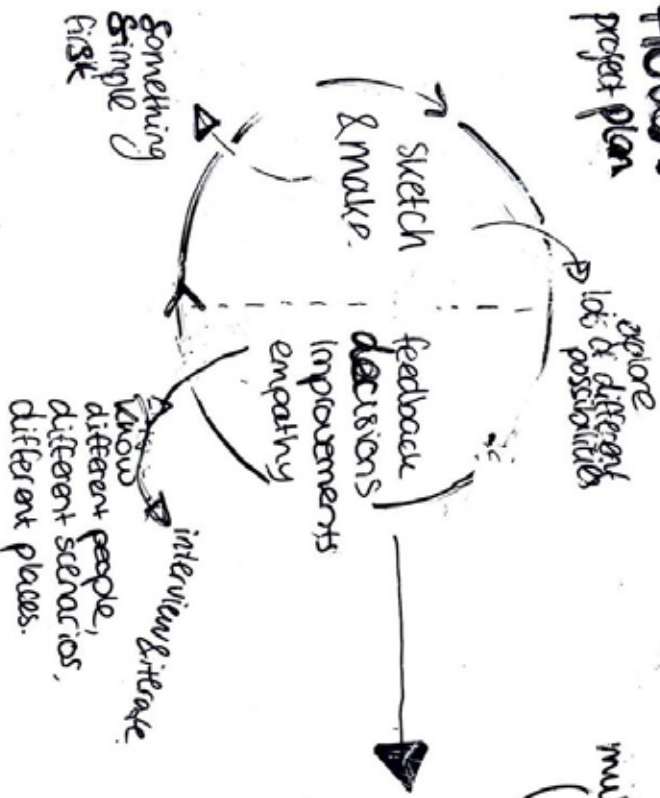
FRAMING

Design approach & process: Multi-culture design process, A universal design approach. A participative approach.



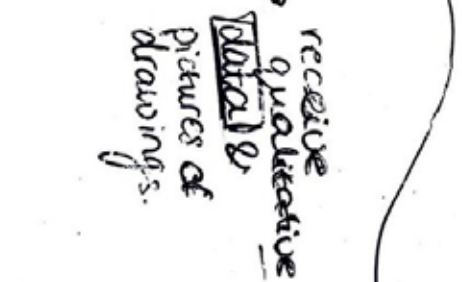
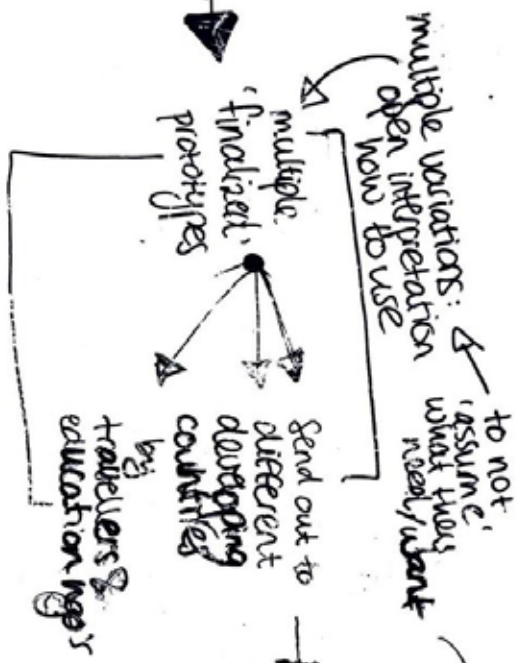
HOW:

project plan



A.2

1 DESIGN LANGUAGE LEARNING (ANALYSES)

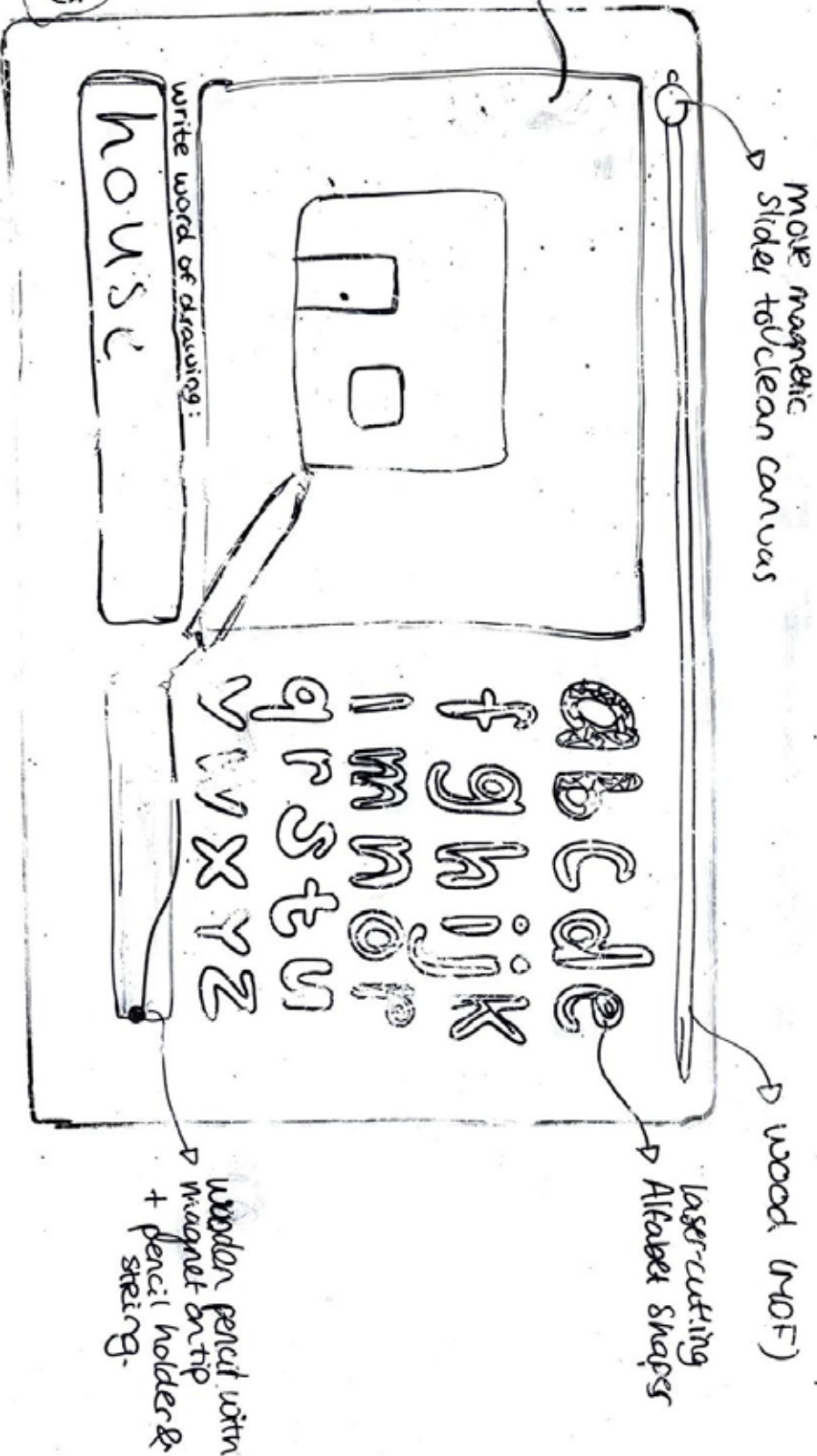


2 PARTICIPATIVE, MULTI-CULTURE EXPLORATION

3 COMPARE DISCUSS & FINALIZE

# Language Learning Canvas

for primary school students in Sub-Saharan Africa



## Key Principles:

1. educational
2. useful (easy & intuitive)
3. sustaining: durable, reusable & repairable
4. low-cost
5. desirable

4

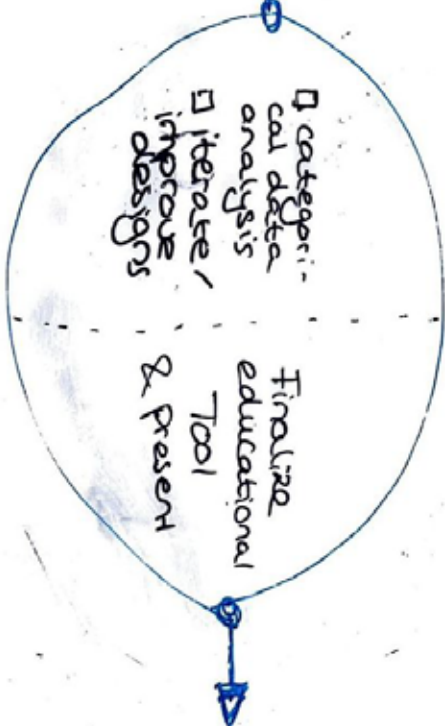
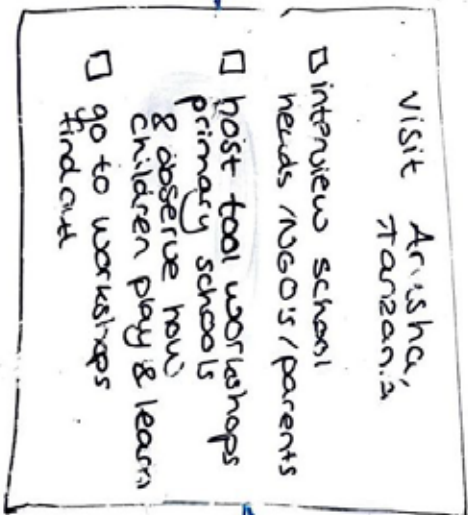
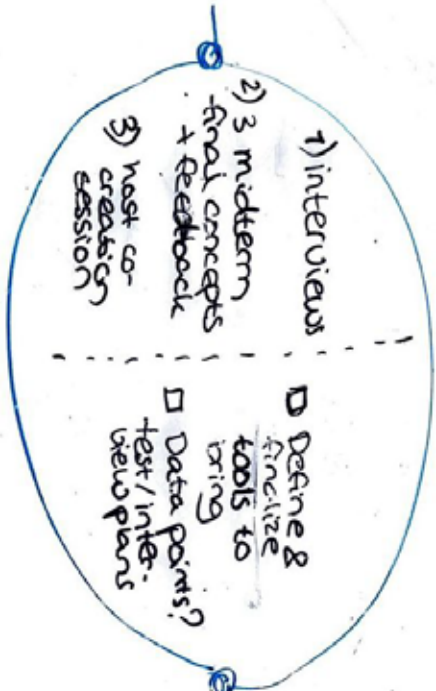
# FINAL PROJECT PLAN

scribing  
p. 13.19

explore,  
interview,  
design phase

Test, data,  
research  
& empathize phase

final design  
& presentation phase

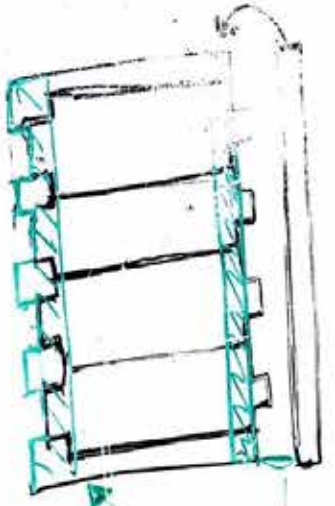
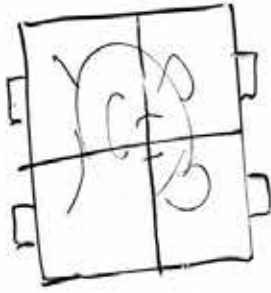
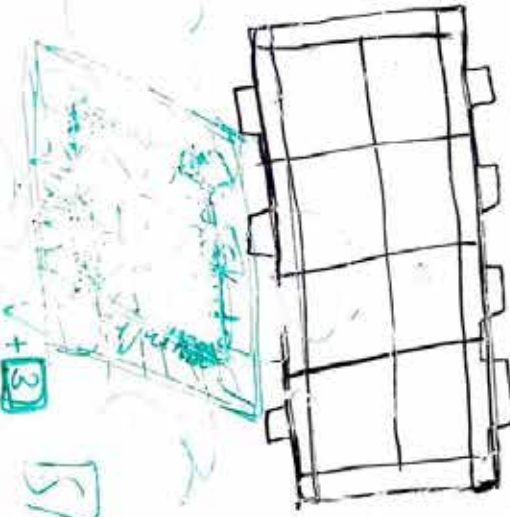


OCTOBER

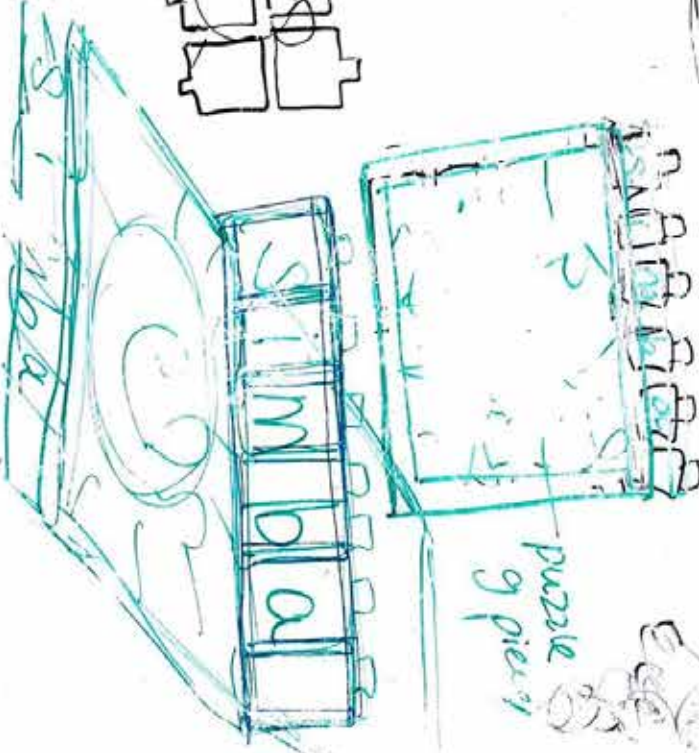
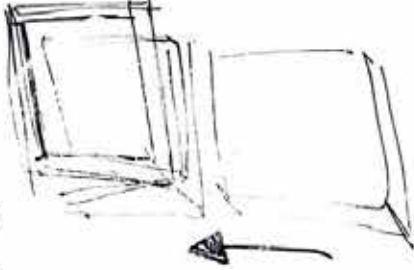
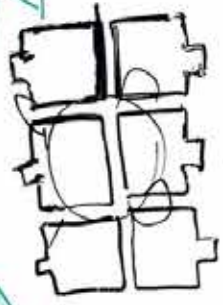
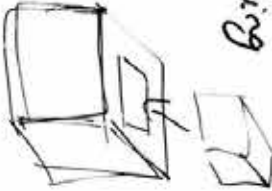
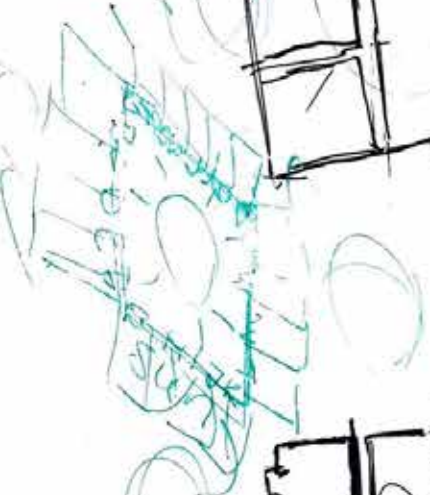
NOVEMBER

DECEMBER

A.2

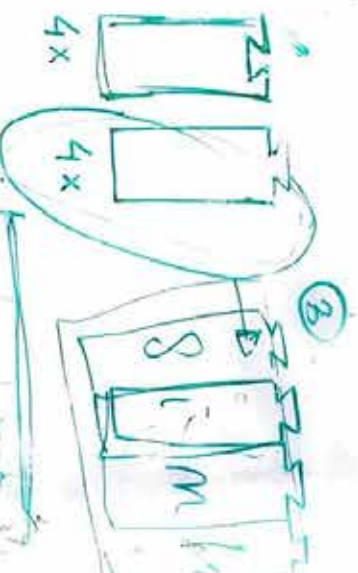
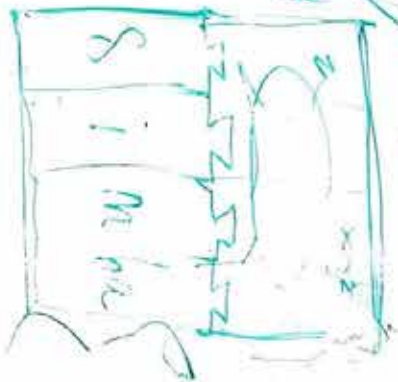
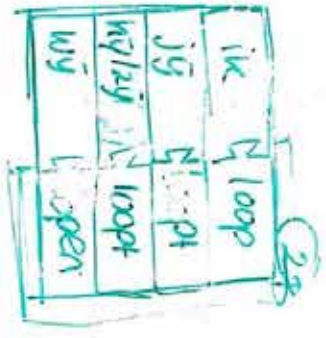
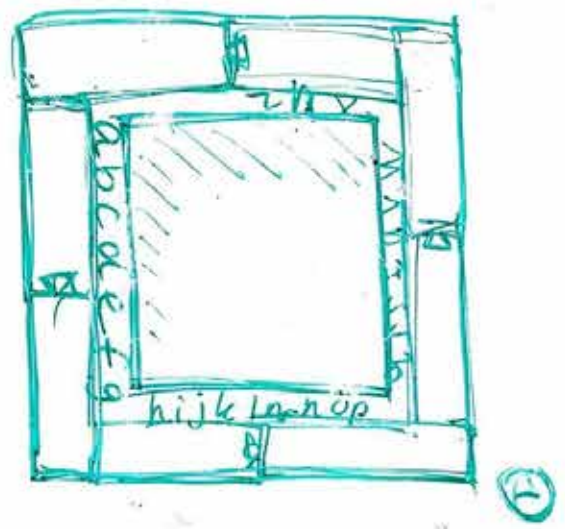
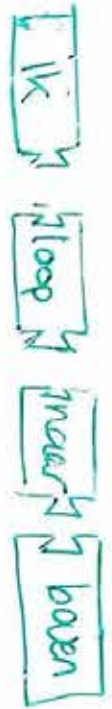
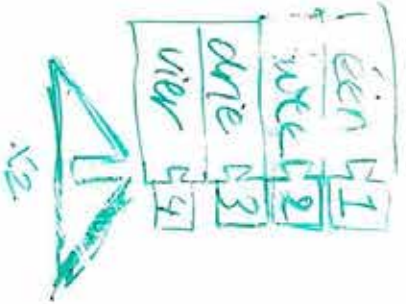
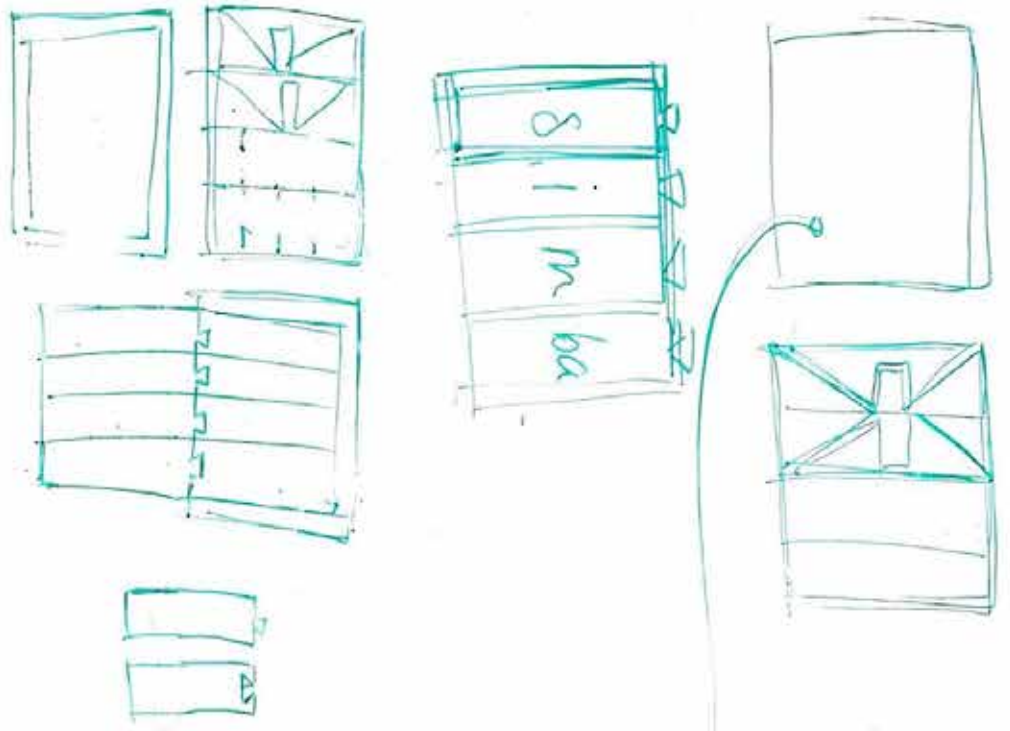


- group thing
- interactive frame
- drawing + spelling



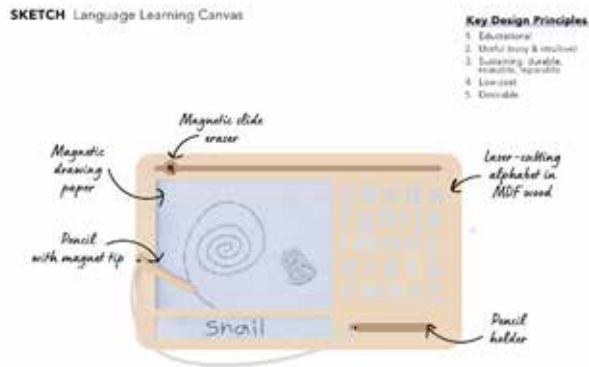
puzzle  
of pieces

memory  
with words  
puzzle  
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we de

# A.3 ONLINE NETWORKING



Dear

Wietseke

My name is Wietske, a Bachelor student in Industrial Design at the Technical University of Eindhoven. I am reaching out because I am currently working on a project that aims to improve the quality of education in primary schools across Sub-Saharan Africa, particularly Tanzania.

In my research, I have identified that one major contributor to low learning outcomes is the lack of teaching and student materials. To help address this issue, I am currently designing a low-cost, reusable notebook or drawing board that will enable children to improve their language skills (see sketch of the initial design concept in the attachment).

I would love to discuss the possibility of collaborating with your organization to further develop and pilot this concept within a primary school in Tanzania. Your insights and feedback would be extremely valuable during my design process.

For the testing phase, I would like to know if it is possible to voluntarily visit your school, bringing the created product and test it with local children on the school. Your school can then keep the drawing letter boards as gift and as appreciation of collaborating with this project!

Thank you for your time and consideration. I look forward to the possibility of working together.

You can call (+31 6 83901886) or e-mail me anytime.

Kind regards,  
Wietske

Beneath are my next steps:

I am available next week the 14, 15 or 16 oct between 9 a.m. - 6 p.m. Tanzanian time for a Zoom call to learn more about student materials that are currently missing or scarce and thus desirable.

My plan is to visit in the first weeks of November. During my time there, I aim to observe how a group of students interact with the product, gather feedback, and broaden my understanding by interviewing local teachers, parents, and your team members. This will help me fine-tune the product for further stages of development.

In the second phase, I will apply the learnings from the field to improve and finalize the educational tool. Afterwards, I intend to launch a fundraising campaign in the Netherlands to produce more of this finalized tool to donate to your school.

Looking forward to hearing from you!

# A.3

## Interview Questions for School Heads & Teachers and NGO employees that work on primary schools in Arusha, Tanzania:

### **Educational Tools and Learning Circumstances:**

1. What educational tools or materials are most scarce at your school?
2. Which specific tools do you think would have the biggest impact on improving students' learning experiences?
3. What are the most common challenges teachers and students face due to the lack of these materials?
4. Could you describe the overall learning level of the students at different grades?
5. How would you rate the school's access to books, notebooks, writing tools, and learning resources?

### **Learning Environment and Methods:**

6. What teaching methods do your teachers currently use for English and Swahili instruction?
7. How do students typically learn new subjects? Are there any unique teaching techniques specific to this region?
8. What strategies do teachers use to engage students who are struggling with reading and writing?
9. At what age or grade do you start teaching students Swahili reading and writing? How about English?

### **Cultural Insights (Games and Materials):**

10. What traditional or popular games do the children or adolescents in your area typically play?
11. Do you think integrating these games into educational tools could help with learning?
12. Are there any common materials that people in your region use to craft products, such as wood, bamboo, or recycled materials?
13. Is there a local tradition of crafting tools or toys from recycled materials? What types of products are typically made?

### **Sustainability and Local Production:**

14. Do you have any contacts or workshops in the area that could help produce low-cost educational tools locally?
15. What types of local resources or materials would be the most accessible and sustainable for crafting learning tools?

## A.3

<b>Organization</b>	<b>Contact Person</b>
Art in Tanzania	Kari
Giving Hands	Sarah
Viva Tazania	Tizia
School of St Jude	Gemma
Upschool	Gavin
Step Africa	Juma
TOBFC (olive branch)	Deborah
Tanzanian Childrens Fund	Alex Bohan
Natembelea	Schola
Arican Childrens Heaven	Edward
Ace Africa	George
Dinka	Hanne
Africa Amini	Cornelia
Core Tanzania	Jeannette



# A.4 ONLINE INTERVIEW TRANSCRIPTS

## Online Interview Transcripts

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Founder – Giving Hands .....	1
Founder - Framerunner Tanzania .....	3
Founder -Viva Tanzania .....	4
School head & teacher – Step Africa –Private School .....	8
Founder – Natembelea –pre-school .....	10
Ace Africa .....	12

### Founder – Giving Hands

08/09/2024

Hi, it's Sarah from giving hands in Tanzania, and I thought I do voicemail, because it may take so much time. So for me, I have two babies, so I don't know if it will work with a zoom call, because my husband, he's always on Safari. Now it's high season, so I'm along with them, and I still have the hostel to host and the project to manage, so they never sleep the same time. So I don't know how to do it, because I'm always breastfeeding. The other one is always streaming, and I have to run after him, otherwise he will do crazy things. So maybe I can answer your questions in voicemail, if that's fine for now.

Of course, you can come in November. That's fine. The school, as far as I know, the next holidays, they are in December. So that's fine, and for the reason why, so we cooperate with government school. There are, of course, many private schools. They have great teachers. They have one teacher for only, I think, yeah, 20 to 30 students. So it's like in Europe. So that's fine, and we cooperate with government schools, because they really need help. And they have, yeah, one teacher sometimes for 70 or 90 children. So the reason what I experienced after three years here is that the government schools, the children don't pay for school, so they are very poor there, mostly because, when you have money, you put them to private schools. And because of that, the government, they don't pay the teachers enough, so the teachers, they don't really have motivation to work. And of course, it's exhausting. I only have two children, and sometimes they drive me crazy. I don't want to imagine that you have, I don't know, 93 year old children. I would kill myself, probably, or run away. So it's just too much work for them, and too less stuff, and also too less paid. So they don't really have motivation. And also the teachers education is not very good. So the teachers themselves, they like a lot of I don't know how to say knowledge, and especially teaching knowledge, the pedagogic things, they don't have that at all. Also their English is not very good, so I don't know how they can teach English to children. So I think that's one major point. I think that you have to, oh, yeah, not only this, but I think it would be good to start with the teachers, such that they know how to teach. Our volunteers, they are mostly pedagogic teachers, so they try to give them lessons how to teach. But the teachers, they don't do it like that. I think they would know now, but they just do like they did 50 years ago, they think hitting and punishing children is the most effective way to make them learn. So if you don't have your homework, they beat you. If you don't have your exercise book, they beat you, things like that. But also, of course, the one big reason for at least 90% of those students is the lack of material. So they don't have exercise books because they can't pay, they don't have pencils because they don't pay. They don't even have a backpack. So even if you give them an exercise book, someone would steal it, or they just destroy it. So this is, of course, this would

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be very good if they would have a tool, which is for free, and then they can learn with it. They would be very grateful. Also, in schools, the teachers, they don't have enough chuckle to write the, I don't know the topics on the board, they don't have scissors. Sometimes they don't have pencils themselves. They don't have access book themselves. They don't have a printer, so they can't even print them sheets and things like that. So I think that's that's also, of course, a major point. And yeah, so I think it will be a great help if you start fundraising, and also if you offer them something where students can learn. But I fear, honestly, that because we donated them very much already, we donate them balls. We donated them goals for playing football, our Waterfield. So many exercise books, many pencils, school uniforms, the volunteers. They really donate them much, but the next day it's gone. And I fear that if you give them for free a very cool tool, like an iPad thing or the thing which you want to give them, and they bring it home. And because they live very poor, they live in very poor, like slums. So I think people would steal that. So I don't know how we could do it. Maybe we could build them a locker and then they lock it in school. So the only person who could steal would be the teachers, and then our volunteers would know, because they are always there. So I think maybe that's the best solution. I don't know. I will have to figure out. But for starting it's very great what you do. And I'm sure they will profit very much, because the children, they are very smart, they would like to learn, and they really don't have a future. If they go to government schools, they just don't have a future. They can be drivers. If here the motorcycle drivers, they don't have a driving license because they can't pay that and they can't speak English. So the future of them will be to either steal money or to, I don't know, cook for someone or be a housemate, but they can't really have a good future if they can't speak English and if they didn't go to a good school. So it would be very great if they could improve the learning skills with your tool.

**1. Is it possible to stay at your hostel in early November? Is it near the school where you and the volunteers work? My friend, who is skilled at making videos, plans to join me to help with fundraising promotion material.**

"Yeah, that's fine. And the school is about maybe, let's say, 30 minutes from door to door. So it's not too far with the local buses. On the first day, we give you a town tour, and on the second day, we bring you to the project and explain how to get there. Also, there's another volunteer, Elijah, so don't worry; you're never alone."

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**2. It's great if the product can be produced/repaired locally. Do you know of workshops or contacts in Arusha? What types of materials, like bamboo or wood, are commonly used for crafting there? Or is there waste material that can be recycled?**

"Yeah, I'm sure they can produce that here because they have all kinds of industry and materials, so waste materials that can be recycled. Yes, there's one company that recycles, but I'm not sure if all the companies recycle. I'll ask my husband; maybe he knows better."

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**3. You mentioned the issue with teachers' methods. Do you think designing a tool to teach pedagogical skills would help, or will it be unhelpful because they know already but still follow traditional practices?**

"I think, yeah, first would be good to teach them. And second, I think they will still probably follow the traditional ways of teaching. Only the old ones; the younger ones would appreciate changing their teaching skills. I'm sure those who have worked as teachers for 20-30 years won't change, but the rest, I'm sure that's our starting point, and they will be happy."

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**4. You raised a great point about donated materials disappearing. The tools will be low-cost, so no electronic iPads, for example. But maybe something larger, like a wooden communal writing table that stays in the classroom, could be a more secure direction. Do you think this is a better idea than individual reusable notebooks?**

"Yes, that table will stay there, and they can also lock things. I told them if people still take things, then they have to lock it, so they have one room where they can lock it. Reusable notebooks would also be welcomed, but it's hard to say. I think when you come and see, it's

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better to see for yourself because I can ask the teacher, but I'm not sure if he can imagine what we are talking about."

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## 5. Swahili is the first language, right? At what age do primary schools start teaching Swahili reading and writing, and when do they introduce English?

"Yes, Swahili is the first language. I think they start teaching Swahili at three, because they start primary school at three, and they also teach English at three."

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## 6. Lastly, what traditional games are commonly played in Tanzania? I could draw inspiration from them to make the product more culturally integrated.

"That's hard to say because it depends on how rich you are. For poorer people, they play backgammon with the tops of bottles, and they have a wheel, which they roll on a stick and then run after that. I think that's the most common thing without having any kind of game materials. I never saw the pictures you sent here, but I guess it's something like what they play with the tops of the bottles."

## Founder - Framrunner Tanzania

09/10/2024

### 1. Previous Projects in Tanzania:

- She has been involved in multiple projects in Tanzania, including working in hospitals, children's physiotherapy, and community programs.
- She collaborated with *Comprehensive Community-Based Rehabilitation Tanzania (CBR)* in Dar es Salaam through the Salvation Army, focusing on movement technology (such as framerunners) to provide affordable solutions. They would often bring equipment to Tanzania based on requests from local physiotherapists.

### 2. Major Challenges Faced:

- Scheduling appointments can be difficult due to unpredictable lifestyles in Tanzania.
- The most important aspect is building relationships and maintaining strong connections within the community. When working on projects, it's crucial to engage in dialogue with local communities to understand their true needs.

### 3. Experience Working with Children/Schools:

- She has experience working with children, particularly in schools for children with disabilities in Tanzania.

### 4. Design Feedback:

- For a product design intended for Tanzanian schools (such as replacing paper or pens), it is essential to ensure that it can be locally produced, maintained, and repaired.
- The design must withstand environmental challenges like dust and sand. Suggested materials include bamboo, wood, or metal. Plastic chairs, for example, tend to break down in these conditions, which is why durable, locally available materials are crucial.

### 5. Local Production Possibilities:

- She highlights the importance of local production for sustainability. She recommended researching local manufacturing workshops in Arusha and Dar es Salaam to identify where similar products are made.

### 6. Contacts:

- *Stichting Rondon Baba* in Mali, run by Yvonne Gerne, who set up a school with an NGO.
- Personal contacts in Ethiopia (Waalre) and through *Salvation Army* in Tanzania.
- Connections with *Afrika Amini* and mobility aid workshops in Arusha.

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- She mentioned *Sido* in Dar es Salaam, a semi-government workshop that manufactures wheelchairs and other tools.

"The most important thing is to focus on community and togetherness. It's not just about solving problems; it's about understanding what they truly need through ongoing dialogue."

"Making appointments is often difficult, life is unpredictable, and plans rarely go as expected. But the strength lies in being flexible and working with the community on their terms."

"Designs need to be durable and easy to repair with locally available materials—something that can withstand dust and sand. Think bamboo, wood, or recycled materials, anything that's adaptable to their environment."

"When designing, ensure that your product can be produced and repaired locally. In Tanzania, it's important to build relationships with local workshops, whether in Arusha or Dar es Salaam, to make sure the design can live on."

"The biggest surprise was realizing that what works in one context doesn't always translate to another. It's essential to co-create with local stakeholders and really listen to what they need."

## Founder-Viva Tanzania

### Interview with Tizia, Founder of NGO Viva Tanzania

**Interviewer:** I really like the idea that you had. I think it's best if we directly speak with someone from the school. Do you have any questions, or is there anything we could discuss right now?

**Tizia:** Yes, I plan to visit at the start of November, on the 1st, and I'd like to discuss the goals of the visit, the possibility of accommodation, and the exact locations of the schools you're in contact with.

**Interviewer:** Does it depend on the teachers as well?

**Tizia:** Yes, we have two schools we are working with, so we will reach out to them first. We're also going to reach out to the other one. Today is a public holiday in Tanzania, which I didn't keep in mind last week, so it might take a bit longer to arrange. Both schools are within working distance from our accommodation.

**Interviewer:** Have you been to Tanzania before?

**Tizia:** No, I haven't.

**Interviewer:** So, I'm working on my final bachelor project in industrial design. I'm interested in helping children in developing countries get better opportunities to learn languages. I think you saw my sketch of the alphabet drawing boards. I'm looking at making something reusable, low-cost, and repairable in Tanzania to provide students with more learning materials. Since I'm designing from the Netherlands, I want to visit Tanzania to talk to teachers and see how classrooms operate. I also want to bring pilot tools and arrange a workshop in a classroom where the teacher can give the tools to the children. We'll observe how they interact with them to see what works and what doesn't. My third goal is to visit local workshops, if you know any, where they produce wood or other materials we can use for these products.

**Tizia:** What age range of children do you have in mind?

**Interviewer:** I was thinking about 10 years old, but maybe they start earlier?

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**Tizia:** They start with the alphabet at around three years old, so if parents can afford it, they send them to preschool, which starts at three. If they can't afford it, they usually start school at five or six. Primary school lasts for seven years, so they usually finish school around 14 or 15.

**Interviewer:** It sounds like a focus on younger ages could be beneficial for your project.

**Tizia:** Yes, pre-planning can be difficult in Tanzania, so a lot of things will sort themselves out once you're here.

**Interviewer:** What's your perspective on the current state of education, particularly the scarcity of materials?

**Tizia:** The current state is very poor. Teachers are not properly educated. Many of the people who fail in school become teachers, so while there are dedicated individuals who want the best for the kids, the education system itself is lacking. Classrooms are short on materials. We only work with private schools because government schools only teach in Swahili, which is not helpful for volunteers who don't speak it. Working with government schools involves a lot of bureaucratic processes, including applying for permits. Working with private schools is much easier because we can directly talk to the school directors.

**Interviewer:** I saw on your website that you have two schools you work with. What are their names?

**Tizia:** One is called the Modern School, and the other is Santa Deos. We wanted Santa Deos to join the meeting today, but we haven't heard from them.

**Interviewer:** If we do get a meeting with a teacher or the director, would that be helpful?

**Tizia:** Yes, absolutely. We will inform them about the purpose of your visit.

**Interviewer:** What are your travel dates to Tanzania?

**Tizia:** I'll be in Arusha from the 1st to the 18th of November.

**Interviewer:** You mentioned you have accommodation?

**Tizia:** Yes, I can send you rates and a proposal once we hang up.

**Interviewer:** My partner, who is a professional filmmaker, wants to come along. He could document the design process or create a fundraising video for your organization.

**Tizia:** That sounds like a great idea! The school might need an introduction video.

**Interviewer:** Is the Wisdom School where the chicken project is happening?

**Tizia:** Yes, that's correct. We have many projects there. For example, a previous volunteer started a chicken project, and they use the eggs to help provide for the school.

**Interviewer:** What materials do you think the school currently needs?

**Tizia:** They need more teaching aids and learning materials. Your idea could greatly benefit them.

**Interviewer:** I'm eager to see how this project unfolds!

**Tizia:** You're welcome!

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2nd interview with Salkha & Tizia & ...

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## **Interview with Salkha, School Head of Modern School**

**Salkha:** If you have options for what you can provide, that would help. There are many things that volunteers want to bring, but when they arrive, they can see the situation. Maybe you can give me options for what you think you need, and I can work around those.

**Interviewer:** I understand. I can send you sketches or pictures via email, but I first need to see the situation before I can understand what you need. The goal of my visit is not to bring something and test it, but to observe the situation and see what you need help with. After my visit, I can further develop the product because I'll know better what's needed.

**Interviewer:** Can I come to the school and interview some different teachers between the 1st and 18th of November?

**Salkha:** Yes, that's fine. The teachers will be available.

**Interviewer:** Can you give me your ideas about how to improve the quality of education at your school?

**Salkha:** This year, we have a new curriculum that has been changed and improved. It's more interactive, focusing on student-centered learning approaches, creativity, and innovation. We sometimes ask students to create their own teaching materials. We don't rely on specific items like capsules or pens. Instead, we're moving towards more creative and innovative learning methods, especially using technology. Recently, we introduced computers and information technology into our teaching.

**Interviewer:** Are the teachers educated enough to implement these new changes?

**Salkha:** No, we do a lot of training. Teacher training is essential because the syllabus is new and the teachers were not trained on it. The school must put effort into training teachers.

**Interviewer:** How are you currently conducting this training?

**Salkha:** It's expensive to keep training. We educate ourselves first, then train the management team. They then train the teachers. We focus on in-house training because it's more cost-effective and allows us to continually assist teachers, even if there are changes in staff.

**Interviewer:** Sounds interesting. I'd love to see examples of the new curriculum and interactive lessons when I visit your school.

**Salkha:** Yes, it's still in the trial phase, but we can show you examples.

**Interviewer:** I want to focus on language learning, specifically English and Swahili. How is that currently going in your school, and what materials do you use?

**Salkha:** We use listening exercises, audio comprehension, dictation, and essays. Upper classes have practical lessons, debates, and exhibitions. However, we lack sufficient language teachers. Training them is an ongoing effort, and we provide resources and books for improvement.

**Interviewer:** How do you train other teachers or share knowledge among them?

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**Salkha:** We have pedagogical training with experts and education consultants who train our teachers. We often send our strongest teachers to training sessions, and they return to train others. These sessions are interactive, focusing on what the teachers know and how they can improve.

**Interviewer:** Is it possible for an English teacher to join the training?

**Salkha:** Yes, she can join during the English departmental meetings.

**Interviewer:** What do you think are the biggest struggles for the children in your school?

**Salkha:** Affordability of textbooks and learning materials is a significant issue. Some children come from economically disadvantaged backgrounds, which affects their learning. Additionally, many children face psychosocial issues, which impact their ability to learn.

**Interviewer:** How do you currently help students with these challenges?

**Salkha:** We have counselors who provide private sessions in a safe environment. We also have a suggestion box where students can anonymously share their concerns. For more serious issues, we may refer them to a psychiatrist.

**Interviewer:** Are parents involved in the school community?

**Salkha:** Yes, we have a parents' teachers association that meets at least twice a year. We also organize activities to engage parents, allowing them to see what their children are doing. We keep parents informed through WhatsApp groups.

**Interviewer:** How often does the parents' council meet?

**Salkha:** The parents' association meets a minimum of two times a year.

**Interviewer:** Does your school have access to the internet?

**Salkha:** Yes, we use computers as part of the syllabus for both students and teachers.

**Interviewer:** That gives me a much clearer idea about the school. I'm looking forward to my visit to observe the situation.

**Salkha:** It's important to meet the people and understand the current situation. The school is within walking distance from the accommodation, about a 10-minute walk.

**Interviewer:** I'll see you at the beginning of November. I'm looking forward to it!

**Salkha:** I'll ensure you get the email address of our volunteer coordinator, who will assist you during your visit.

**Interviewer:** My partner will join me; he's a film producer and can document the process for your organization.

**Salkha:** That sounds great! You'll be able to see him during your visit.

**Interviewer:** Thank you very much, and have a great day!

**Salkha:** You too! Looking forward to seeing you soon.

## School head & teacher – Step Africa –Private School

**School Head:** I've been to Holland. I studied there.

**Interviewer:** Really? Where did you study?

**School Head:** In Enschede, at what is now the University of Twente. I studied there in 1997, probably before you were born.

**Interviewer:** Yes, I wasn't born yet. What a coincidence!

**School Head:** So, our school, Bethlehem Star, is a pre and primary school with about 341 students. We start from the Baby Class for children around three years old. Then we have the Middle Class, which is for four-year-olds, and Pre-Primary for five-year-olds. According to Tanzanian policy, children start Class 1 when they're six.

**Interviewer:** So, primary school starts at six?

**School Head:** Yes, and we have seven grades, from Class 1 to Class 7. The oldest children are usually around 13 or 14 years old, but sometimes they are younger.

**Interviewer:** And Step Africa is involved with your school?

**School Head:** Yes, Step Africa is one of the volunteer organizations we work with. They have been bringing volunteers to help since 2022. They assist in teaching different subjects, but they are not professional teachers, just teaching assistants. They also run outreach programs.

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**Interviewer:** I'm working on a design project right now, looking at how we could create a reusable, low-cost notebook for schools in Tanzania. I heard there's a scarcity of student materials. Is that true for your school as well?

**School Head:** Yes, it is.

**Interviewer:** Could you tell me more about the materials you currently have and what is missing? I want to bring some pilot tools to Tanzania to test in classrooms and see what works best.

**School Head:** We mostly have books, and teachers use fixed wooden boards for writing. We don't have digital notebooks or smart boards, and we only have about 10 computers in a dedicated computer room. Tablets are out of the question. Most students rely on textbooks, but unfortunately, more than half of them can't afford to buy their own. The teachers have to write a lot on the board, and the students copy from it. But sometimes, children miss out on things because they can't see or copy fast enough.

**Interviewer:** So, do the students at least have their own notebooks and pencils?

**School Head:** Yes, the school is supposed to provide them, but many parents can't even afford the school fees, so buying books is also a problem. There's always a shortage.

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**Interviewer:** I saw in an email that you suggested using water-erasable boards. You mentioned those might be helpful?

**School Head:** Yes, I think they would be useful, but in some cases, it might be better to buy things like exercise books here to avoid extra luggage when you travel. We do have bookshops where materials can be bought locally.

**Interviewer:** That makes sense. I'll keep that in mind.

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**Interviewer:** We are planning to visit Arusha from the 1st to the 18th of November. Would it be possible to come to your school, interview some teachers, and perhaps run a workshop with different student materials to see what works best?

**School Head:** Yes, that's possible. We just need to arrange the exact dates so we can prepare.

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**Interviewer:** Could you share more about your perspective on the quality of education at your school and how it could be improved?

**School Head:** There are many areas for improvement, particularly in teaching materials. More interaction between students and teachers would be beneficial. We need more teaching aids, especially in science and social science subjects, where we lack essential materials. Children are learning more theory than practical lessons because we don't have enough tools for experiments or demonstrations.

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**Interviewer:** For subjects like English and Swahili, are there any tools you wish you had to improve language learning?

**School Head:** I'll pass you over to our English expert to explain more about that.

**English Teacher:** We start teaching English from the age of six. Sometimes, children who can't afford textbooks struggle with learning, but we try to find solutions. We use storybooks and textbooks, but we could really use more tools. For example, software or educational games could help the children learn English in a more interactive way.

**Interviewer:** So, would a game-based tool to teach English or the alphabet be useful?

**English Teacher:** Yes, it would. The children need easier ways to learn since English isn't their native language.

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**Interviewer:** What other tools or ideas could help improve your lessons?

**English Teacher:** Games, songs, and phonics activities would help. We also use competitions in spelling and pronunciation.

**Interviewer:** That sounds great. I'll bring some educational materials when I visit, and we can see how they work in your lessons.

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**Interviewer:** One last thing—do you start teaching English at three years old now, instead of six?

**School Head:** Yes, we start teaching English from three years old, even though the government policy suggests starting at six.

**Interviewer:** Interesting! I'll reach out to Yuma about the logistics, but thank you for all the valuable information today.

**School Head:** You're welcome! We'll be ready to assist you when you arrive.

## Founder – Natembelea –pre-school

**Interviewer:** Hello, I'm Wietske, and I'm studying product design in the Netherlands. For my last project, I'm exploring how product design can help improve education in Tanzania. I shared the sketch of the alphabet boards. I'm curious to hear your thoughts and how you see this idea fitting in with the schools you work with.

**Schola:** Yes, we connect volunteers with schools, and we will host you during your stay here. You'll be volunteering at a school that needs support. There's a school called Wisdom Preschool.

**Interviewer:** Wisdom Preschool?

**Schola:** Yes, it's a preschool. For learning language and words, your idea could be beneficial. The fact that your design uses MDF makes it durable, which is important. The kids can use it, and it can be passed on to others next year. It's also repairable, which we find interesting.

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**Interviewer:** That's exactly the goal – for the product to be durable and repairable. My plan is to observe how the tool works in classrooms and what materials are available locally for repair. Do you know of any local workshops where things can be fixed?

**Schola:** Yes, we can connect you with a local workshop. They mostly use wood and MDF, and the owner is quite creative. You could even work on your designs there and test them in the schools.

**Interviewer:** That sounds great! What age are the children in the preschool?

**Schola:** The children are aged from three to seven, before they start Class 1. You could also visit a primary school to get a broader perspective, but most of your work would be with the preschool.

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**Interviewer:** I agree that starting with the preschool makes sense. The alphabet tool fits that age group. But it could be helpful to visit the primary school too, just to observe how they handle language learning.

**Schola:** That can be arranged. The schools and the workshop are not far apart, so you can easily move between them. Public transport here is affordable, only a quarter dollar per trip.

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**Interviewer:** Perfect! You also mentioned accommodation. Does Ace Africa provide that?

**Schola:** Yes, we provide accommodation and host volunteers. You'll stay with us, go to the schools during the day, and return for meals. Your partner, who's a filmmaker, is also welcome. He could create videos for fundraising or to promote the school projects.

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**Interviewer:** That sounds like a great idea. He could help document the chicken project or other initiatives at the school.

**Schola:** Yes, the preschool started a chicken project where they sell eggs to support the school, like buying sugar for porridge. A video could help with fundraising. Volunteers have also built classrooms for the school, so your idea would be a great addition.

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**Interviewer:** When you say the school is in need, what are the biggest improvements they still require?

**Schola:** Learning and teaching materials are scarce. Your idea of durable, reusable materials would be perfect. If you can make more of these tools locally, it could even become a sustainable business for the school, selling the tools in a shop to support themselves.

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**Interviewer:** That's great to hear. Is there a noticeable shortage of student materials like textbooks and notebooks?

**Schola:** Yes, materials are scarce, especially learning tools like what you're designing. This is why we think your project is a perfect fit for this school.

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**Interviewer:** I'm excited to see the school. Should I bring as many tools as possible to test with the students?

**Schola:** Yes, bring whatever you can, and we'll test it in the classroom. Your ideas align with what we need, so we're excited to see how it develops.

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**Interviewer:** One last question – is Wisdom School a private or government school?

**Schola:** It's a private school, run by a church. The owner is Pastor Gabriel, and the school is within the church compound. The other primary school is also private, but we can arrange a visit to a government school if you want to see the differences.

**Interviewer:** That would be helpful to compare. I've heard government schools have fewer English lessons compared to private ones.

**Schola:** Yes, English is only taught as a subject in government schools, while most subjects are taught in Swahili. Private schools tend to focus more on English, and the children tend to speak it more clearly.

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**Interviewer:** That's interesting to know. I'll send you the exact dates for my visit, and we can plan from there.

**Schola:** Sounds good! We'll send you an invitation letter, which you can use to apply for your visa. We're looking forward to your visit!

## Ace Africa

**Interviewer:** Hello, good morning.

**George:** Good morning. How are you?

**Interviewer:** I'm good, thank you. And you?

**George:** Very well, thank you. I cannot see you on video, but I can change my computer.

**Interviewer:** No problem.

**George:** Let me connect to my phone. Can you see me now?

**Interviewer:** Yes, I see you. Nice to meet you.

**George:** Hello! This is my colleague, Ogesi.

**Interviewer:** Hi, nice to meet you both.

**George:** We can start. I think I should first introduce myself and the project, and then you can explain more about your organization.

**Interviewer:** Sure! I'm Wietske, a product designer from the Netherlands. Together with my partner, I started a project to design low-cost, reusable student materials for schools in Tanzania, where resources are very limited. I found out about Ace Africa and saw you're involved in various educational projects. Our plan is to visit Arusha and the Kilimanjaro region from November 1st to November 18th. We would like to visit local primary schools to observe the situation and interview teachers for better insights into what is truly needed. This trip will help us refine the product and possibly direct it differently.

**George:** My name is George Godwin. I'm the head of education at Ace Africa and a member of the senior management team. This is Ogesi, our child development officer. Ace Africa is a registered NGO working in Tanzania, partnering with entities in Kenya and the UK. In Tanzania, we have several projects focusing on child development, education, child rights, protection, health, and well-being. Our headquarters is in Arusha, and we also operate in Moshi and the Lake Zone.

**Interviewer:** That's a lot!

**George:** Yes, we work with various primary schools on different projects, primarily through our Child Development Department. We focus on child protection, rights awareness, and training teachers to create child well-being clubs, which helps in providing essential training around life skills, health education, and rights education.

**Interviewer:** Interesting! So, the main support you provide to primary schools is through teacher training?

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**George:** Yes, we train teachers on child-to-child methodologies, allowing them to teach essential skills to their students. Once trained, we establish well-being clubs with a sample of students, where additional training on life skills, sexual health, and child rights is provided.

**Interviewer:** How do you deliver these trainings?

**George:** We work with our partners and government professionals to conduct training sessions, which usually last about five days. The training includes manuals and comprehensive processes to ensure teachers understand how to implement these practices in their classrooms.

**Interviewer:** Can you explain how teachers train each other?

**George:** We take the strongest teachers, often leaders, and have them attend specialized training. They then conduct sessions after class for their peers, making the training interactive. We assess their teaching methods and provide feedback to help them improve.

**Interviewer:** Is it possible for me to join a training session for English teachers?

**George:** Yes, absolutely. You can observe during English departmental meetings, which focus on assessment, evaluation, and training.

**Interviewer:** What do you see as the biggest challenges for the children in your schools?

**George:** Affordability of textbooks and learning materials is a significant issue. Additionally, many students face psychosocial challenges, such as unsafe home environments, which impact their learning.

**Interviewer:** How do you currently support students facing these issues?

**George:** We have counselors who provide individual sessions in a comfortable setting. We also have a suggestion box for students to voice their concerns anonymously. If a problem is larger than what the school can handle, we may refer them to a psychiatrist.

**Interviewer:** Are parents involved in the school community?

**George:** Yes, we have a parents' teachers association that meets at least twice a year, where parents can voice their opinions and suggest improvements. We also organize activities to involve parents in their children's education.

**Interviewer:** What kind of activities do you involve parents in?

**George:** We prepare activities that allow parents to see what their kids are doing and participate in their learning process. We also use WhatsApp groups to keep parents informed about school events and updates.

**Interviewer:** How often do the parents meet?

**George:** The parents' association meets a minimum of two times a year. We also hold online meetings to facilitate communication.

**Interviewer:** Does your school have access to the internet, and do you use computers?

**George:** Yes, we have internet access, and we use computers as part of the curriculum, especially for subjects like science and technology.

**Interviewer:** I'm getting a clearer idea of your school. I'm interested in observing the situation, especially regarding language learning.

# A.4

**George:** For language learning, we focus on the upper classes where English is taught, starting from standard four.

**Interviewer:** What age are the children in standards four, five, and six?

**George:** Children in these classes are typically between eight to eleven years old.

Here's an improved version of the transcript from the interview with George, the educational manager of Ace Africa, with filler words removed and the dialogue clearly separated:

---

**Interviewer:** Yes, I think it will be good to stick to that. It's also possible to focus on learning the Swahili language, starting with the general alphabet for younger children. We can see both and maybe switch between classes.

**George:** Yes, that's also possible.

**Interviewer:** Do you have direct contacts with the teachers we can interview about teaching languages?

**George:** Yes, we usually work with partners we call volunteers. They go into our database. Before starting any new or replicated project, we have contact with them. We begin at the district education officer level, obtain a letter, and then proceed down to the primary schools and teachers. So, we have proper communication channels from top officials to primary level schools.

**Interviewer:** If we visit the schools, can the teachers introduce the tools we plan to bring? This will be our first insight into how the children interact with them.

**George:** Yes, that will be possible once we clear all the communication channels I mentioned. We need to have everything documented, like having your project outlined. It's doable, not impossible.

**Interviewer:** So, we need to approach the government first?

**George:** Yes, we can work through our colleague. I can provide a brief overview of what you are expecting to do. She will reach out to the top official in the district with a letter from us. I will ask you to provide me with a very short letter summarizing your project and expectations.

**Interviewer:** That sounds good. I can provide a short letter for you to attach since we only have two weeks to implement the activities. Is the first of November too early for this?

**George:** We need to start early next week, as I will be unavailable from November 3rd to 9th. If we prepare beforehand, it will give my colleagues time to assist you and ensure your project is successful.

**Interviewer:** I will join you around the 11th of November.

**George:** From November 1st to 9th, my colleagues will support you in our office. I will send you directions to our office.

**Interviewer:** Is it best if you select the primary schools for us to visit?

**George:** Yes, let me do my best to identify the best schools for you to visit. I can provide you with a mapping of the route from the schools.

**Interviewer:** That would be very helpful.

# A.4

**George:** I will communicate with my colleague and find the best schools for your research.

**Interviewer:** I can start working on the letter for the government now, so let me know what else to do.

**George:** That's fine. We can keep communicating throughout the process.

**Interviewer:** Can you send me the next steps, including the government letter?

**George:** Now, we need to identify the schools. Once we do that, I will inform you of their locations. We will develop an introductory letter that I will need you to provide me a brief address for you and your colleague. This will be included in the letter, detailing your visit and its purpose.

**Interviewer:** Understood.

**George:** We need to prepare a sample, as I don't want to create bias with leading questions. It's better for you to observe the genuine responses from the teachers.

**Interviewer:** That makes sense. It's good that the teachers know what to expect.

**George:** Yes, it's important for them to understand the project beforehand.

**Interviewer:** Can you explain what happens when we are there? For example, will we have support from Ace Africa during our visit?

**George:** Yes, you will receive support from our offices. I will provide directions to our office. We will use our office cars to visit schools.

**Interviewer:** That's good to know.

**George:** If you need permits, we can help with that too.

**Interviewer:** We're considering coming in on a tourist visa but could also apply for a volunteer approval.

**George:** It's safer to have a letter informing immigration about your visit, so I can write one for you.

**Interviewer:** That would be great!

**George:** Please remind me in two days to prepare that letter. Send me your names and a brief summary of your visit.

**Interviewer:** I will do that.

**George:** Once we have everything ready, we'll attach the letter and reach out to district officials. This way, you can implement your activities without delay.

**Interviewer:** Sounds good!

**George:** You should also prepare to provide examples of other education projects we've implemented. I can send you a link to a report.

**Interviewer:** That would be helpful.

**George:** I'll send the link, and you can read the report from a previous project.

**Interviewer:** Thank you! Is there a template for the letter about our project, or should I just draft a short description?

# A.4

**George:** Most of the letter will come from us, but you should include a brief summary of your project and its implications for our education system.

**Interviewer:** I understand.

**George:** It shouldn't be a large project, just a pilot program. This way, we avoid complications with the ministry level.

**Interviewer:** Agreed! It's a good approach.

**George:** Your design can complement our existing teaching techniques and materials.

**Interviewer:** Can I attend one of your training sessions while I'm there?

**George:** Yes, we can arrange for you to attend our upcoming training for the football project, where we teach teachers how to coach.

**Interviewer:** That sounds interesting!

**George:** This training promotes rights and protection in schools. It would be a valuable experience for you.

**Interviewer:** I would love to see that in action!

**George:** I will check if it's possible for you to join and then confirm.

**Interviewer:** Great! Do you have any questions for me?

**George:** So far, everything is clear. I look forward to working together!

**Interviewer:** Thank you for the information. I now have a better understanding of your organization and how you implement projects.

**George:** I can give you more details when you're here. You'll learn a lot.

**Interviewer:** I look forward to it!

**George:** Have a great day!

**Interviewer:** You too! Bye!



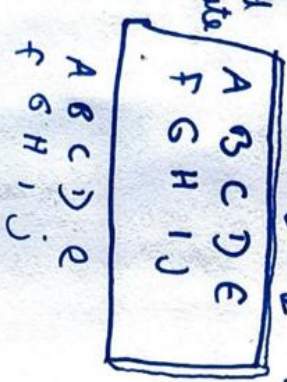
# A.5 CO-CREATION WORKSHOP SKETCHES

Materials:

- Sand
- Water
- Wood
- Dirt
- Leaves?
- Hair
- Sticks
- Sun
- Mirror?
- Glass?

• Kids to make hours?  
 • Why?  
 • Why?

Draw in sand  
 wood template



kid sees light shape and traces it in the thin layer of sand



mirror shines sun light through and sand

Wood  
 Template to let light through in letter shape



little pots with illustrations, words on it and water in it

BOOM

write in the sand and fill your tracing with water to lock it in

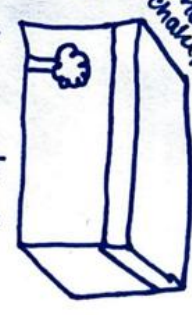
But then it's wet, so use something else than water to lock it in?



A little pot with illustration on it. ask kids what colour it's



A box that has a certain colour in it.



learn colours



other kids tries to guess to colour

one kid opens box to see what colour it's and then tries to either write or draw on the outside of the box

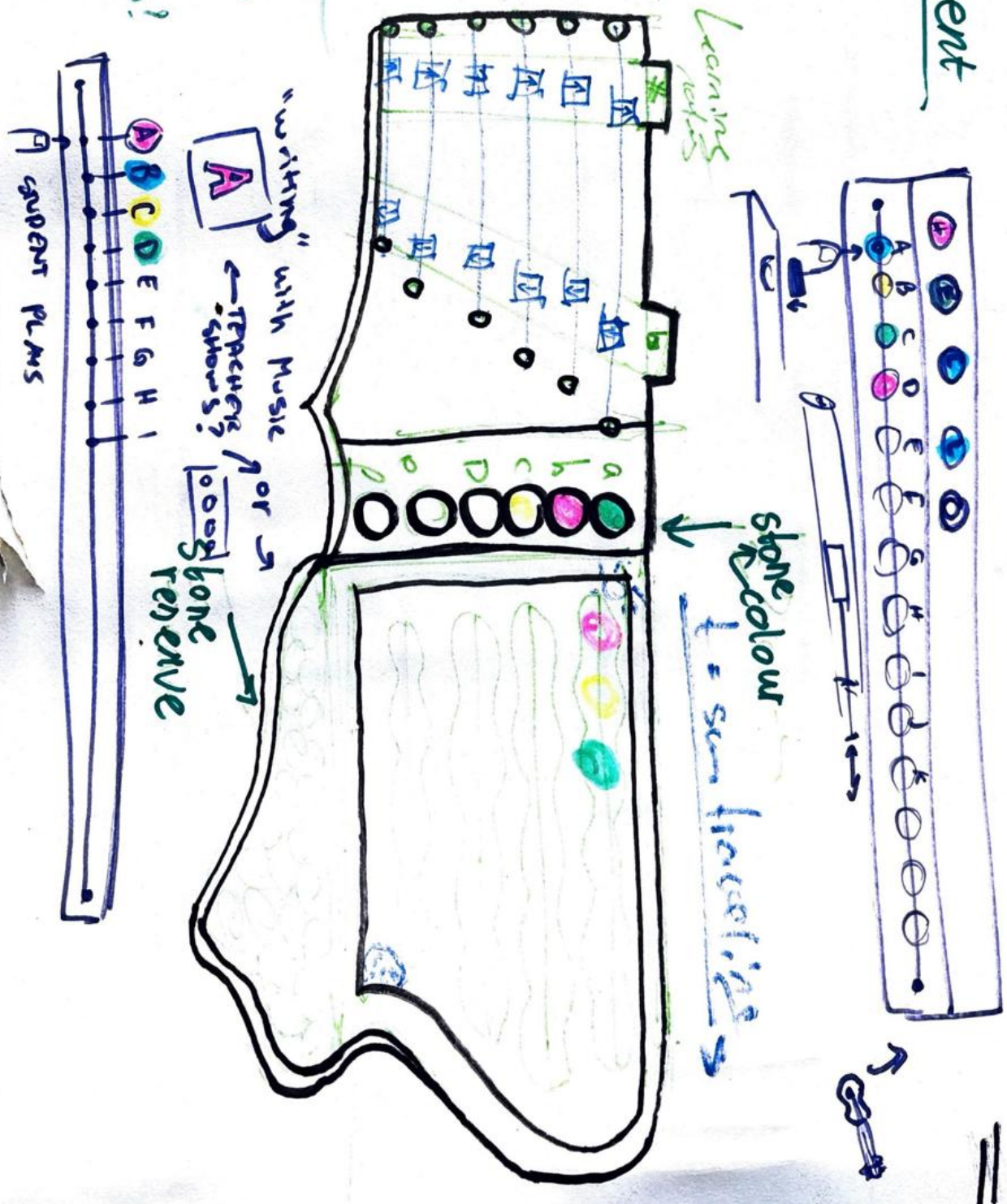
# Music instrument

- Local culture
- Own identity

Instrument from our culture

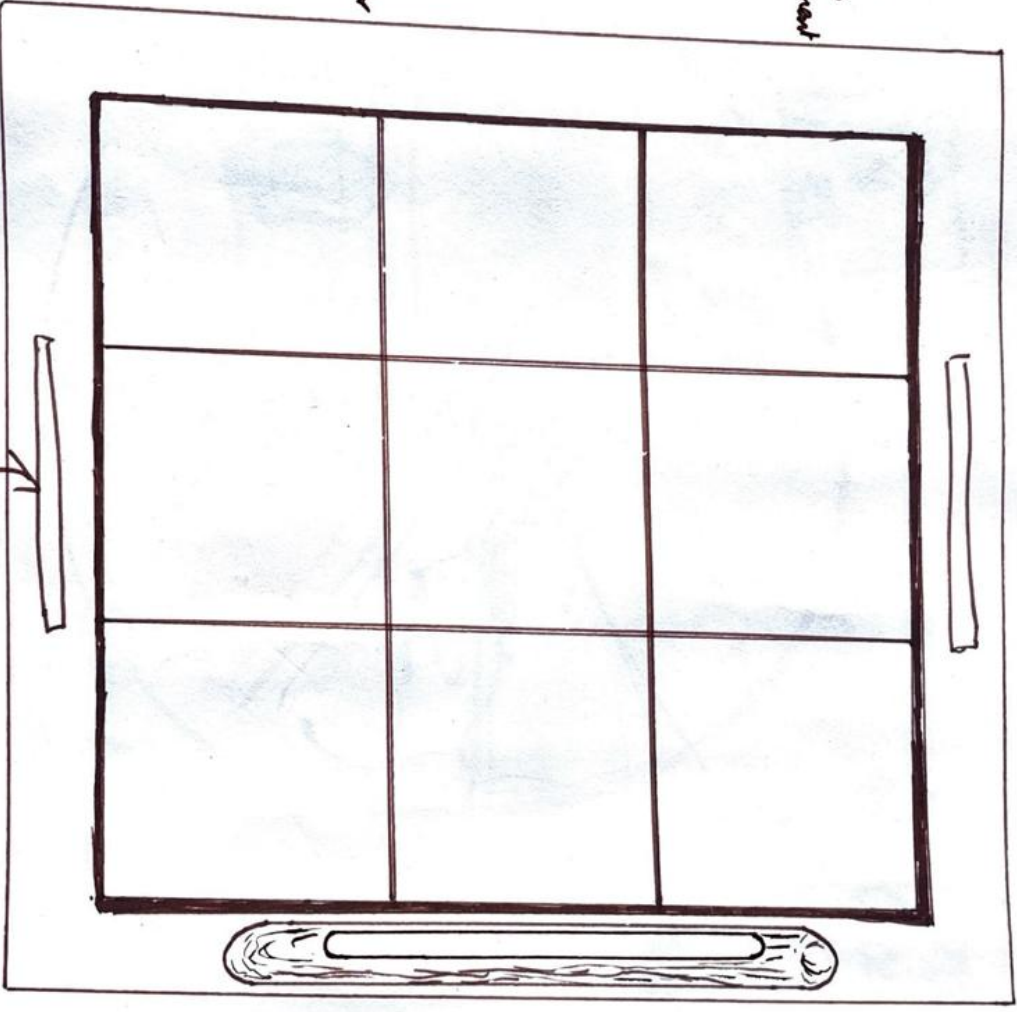
Alphabet Song Playable on different levels

Make your own instruments  
 Bamboo flute?  
 What are the local materials?



A.5

- Stimulate
  - association
  - Creativity
  - Own interpretations
  - word connecting to physical movement & visuals
- Same
- interaction with each other
- Observations
  - Give side word one side
  - Picture place in correct spot - flip answer
  - memorize
  - Who am I
  - Guessing game



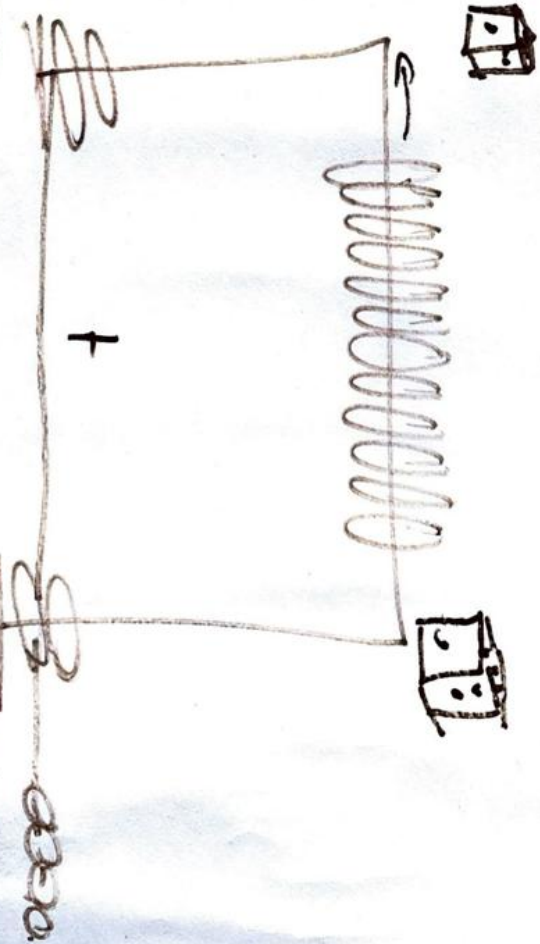
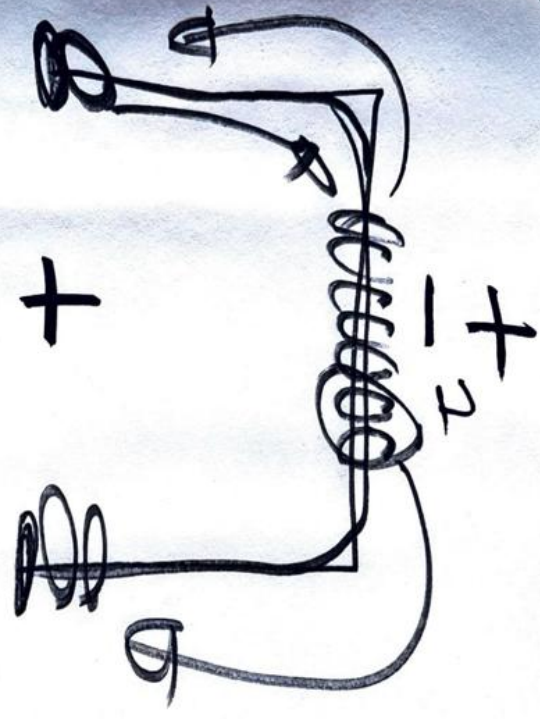
Slots for holding

- First version lying down
- 1 standing & 1 for different games
- Lid to keep pieces together and for easy flip
- holder for chalk / charcoal

A.5

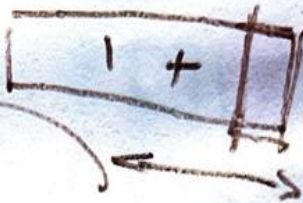
learn to count  
"feraan"

→ with stones / "Plesdoppen"



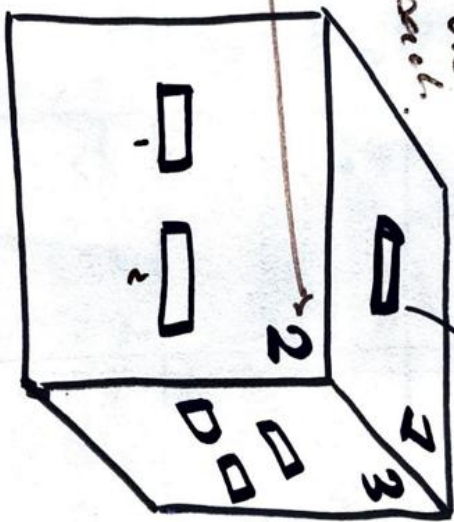


→ crayon

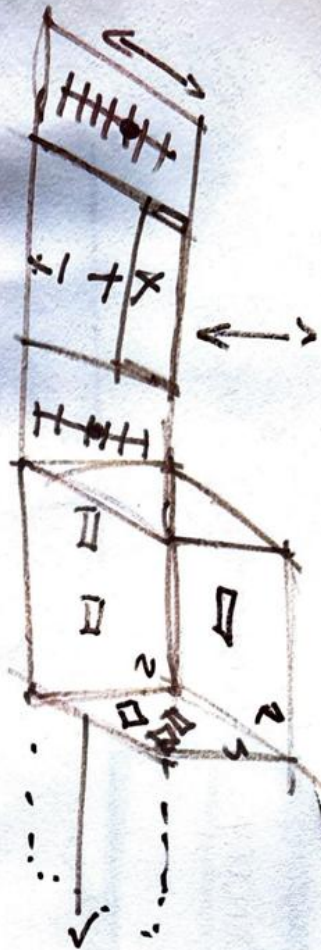
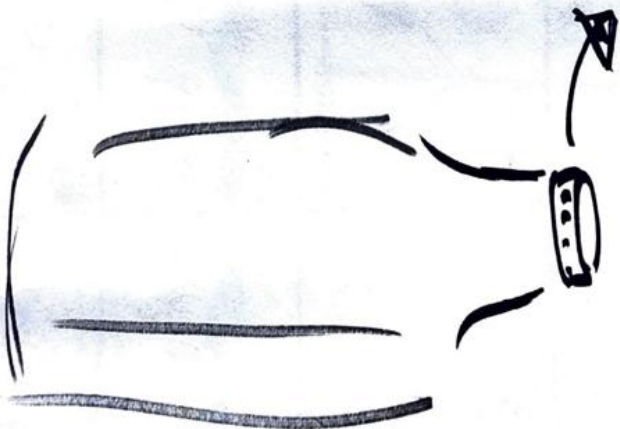


Writing  
USualiza  
Country  
USualize

direct visual  
feedback.



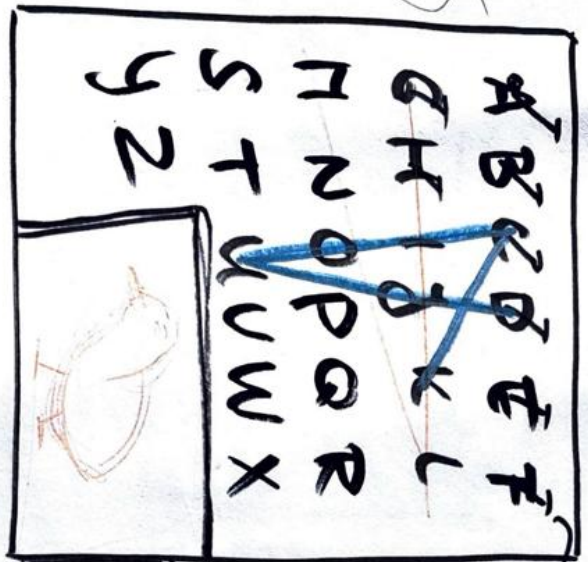
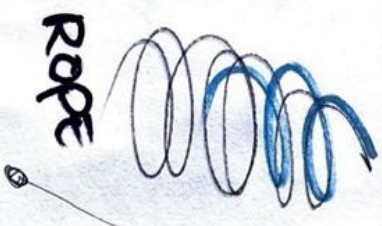
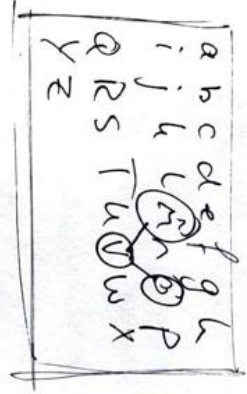
object based.  
put in  
1 bottle cap



WRITE LETTERS



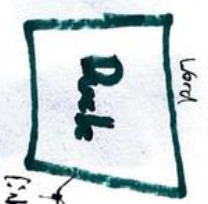
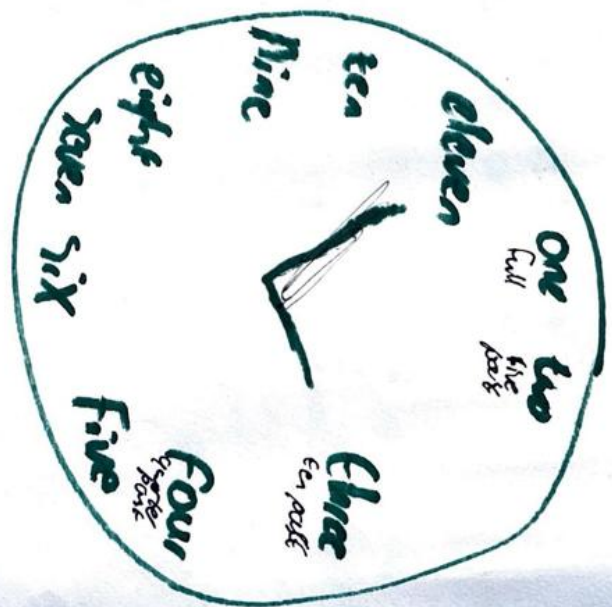
Sandbox  
to write in the sand



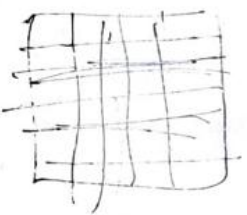
NAIL BOARD

Dragon

Challenge the children



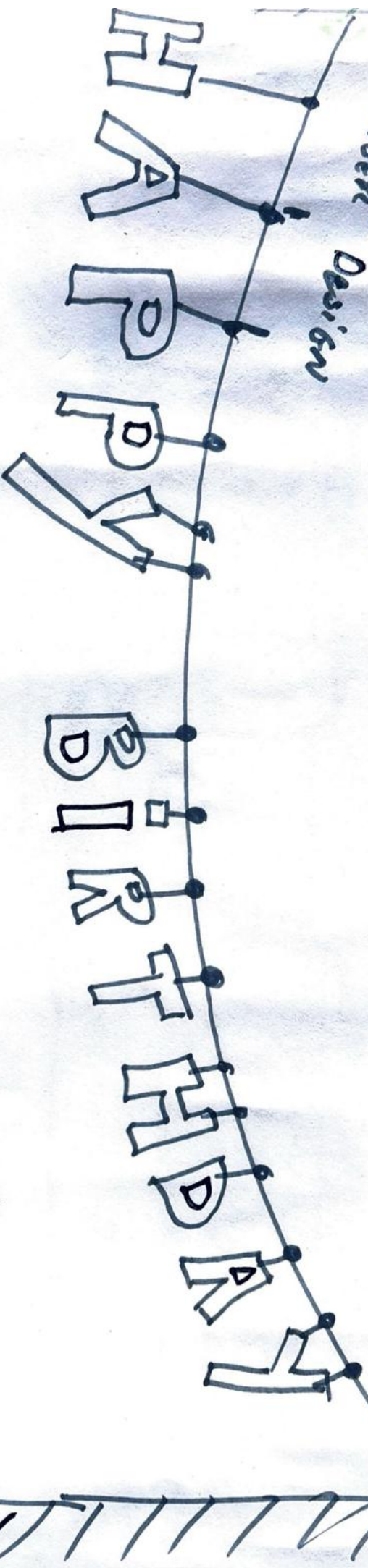
memory  
Word/color



30cm x 90cm

"Slinkers" Design  
A  
Lekkerblijven  
Bop achterkant

A



theme → what's hanging in the classroom  
 - Day's of the week  
 - day planning → the  
 - calendar board

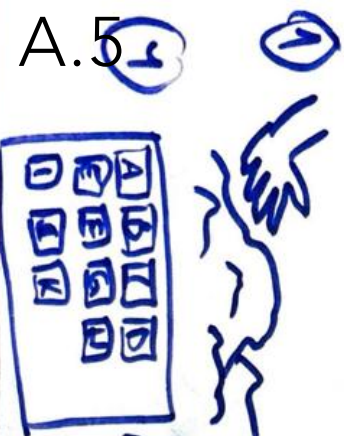
- All children "figure out" their own name

- Also hang up: birthdays: 4/5/6/.../12

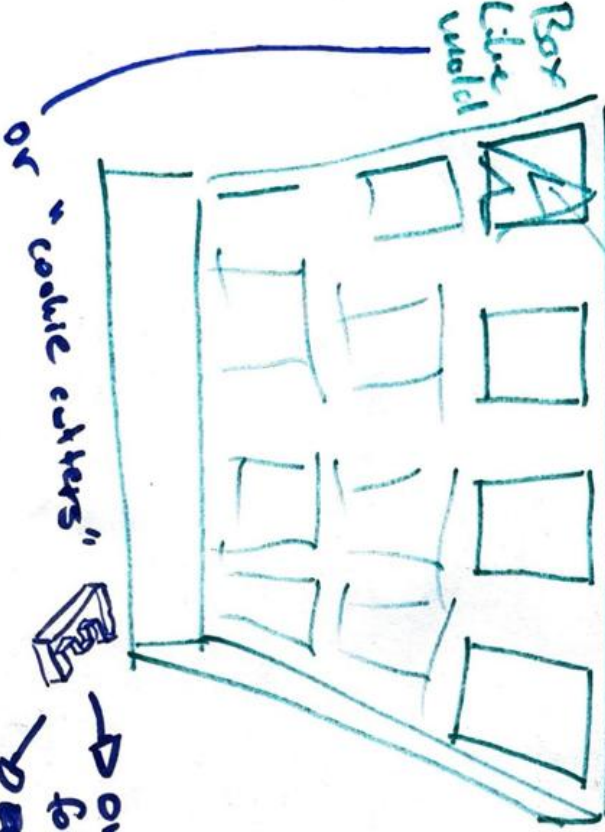
- Alternatives to hang up: - Season: summer winter autumn spring

- special occasion: Kermis

- <sup>5</sup> Create their own "Kroontje" is the weather today ... degree ☺ ☁



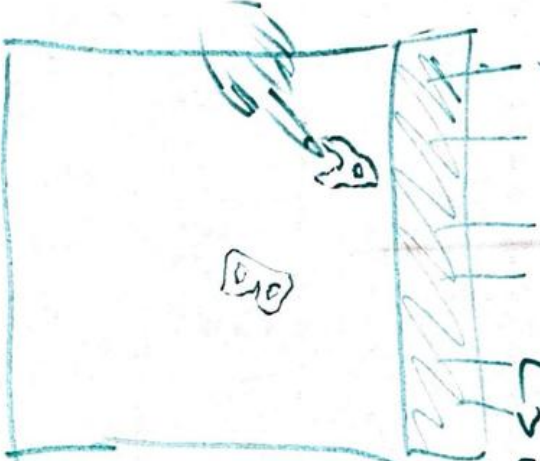
MAKE WORDS WITH LETTERS



or "cookie cutters"  
one set for many kids  
Each lid creates their own alphabet



- endless possible
- carving into stones
- carving into something
- clay that doesn't dry

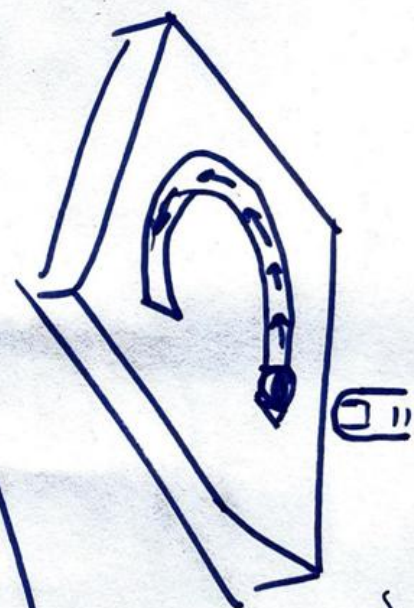
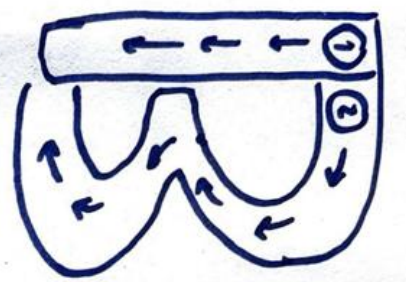
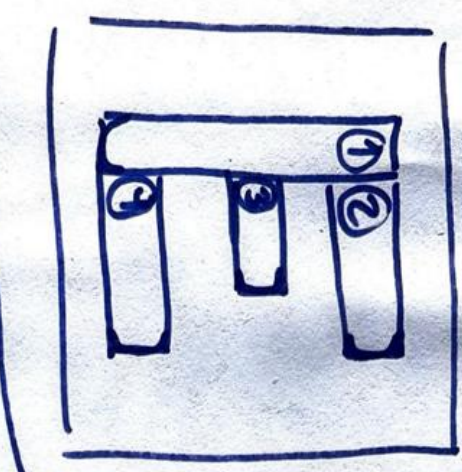
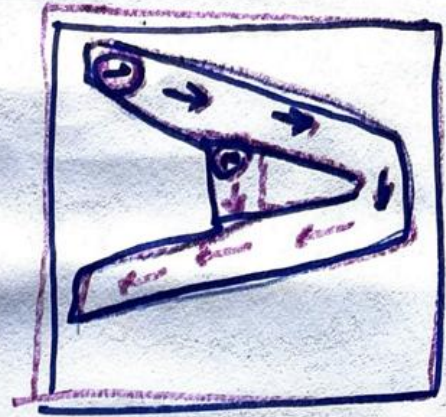


Light Box  
mirrors  
ink letters underneath  
Sand on top to make it harder different levels

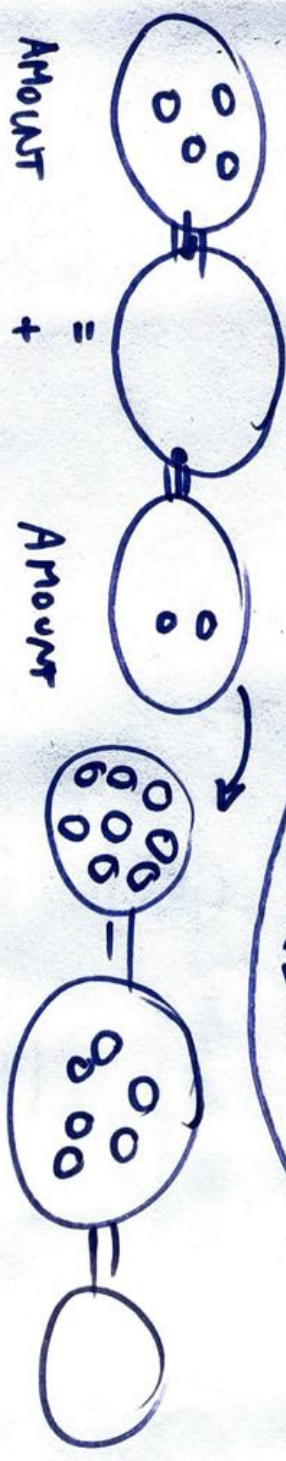
feeling shapes make it more interactive 3D  
-> associating letters Alphabet with colors  
-> music  
-> write a song with the statements  
-> make an "instrument" that comes with letters

types of stones it soft can carry own letters to + connect vision





MATH → ADDITION



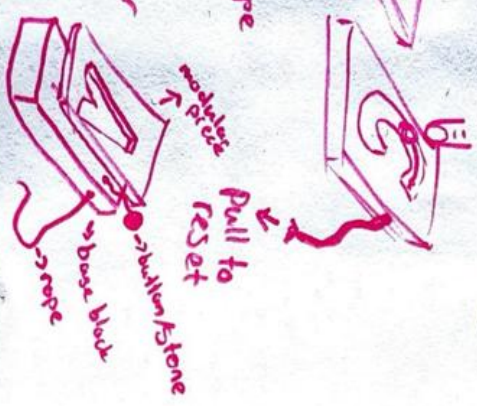
AMOUNT

=

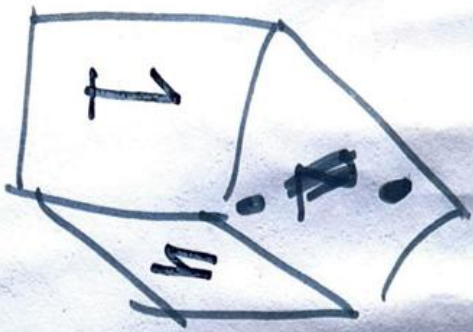
AMOUNT



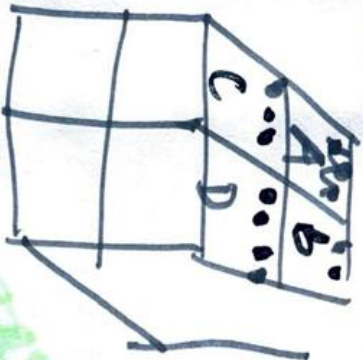
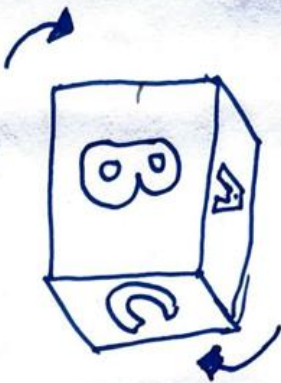
ribbon/colored rope follows the button, you color in the letter



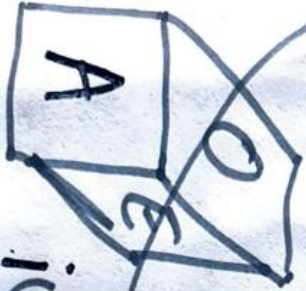
A.5



Apple



18 letters



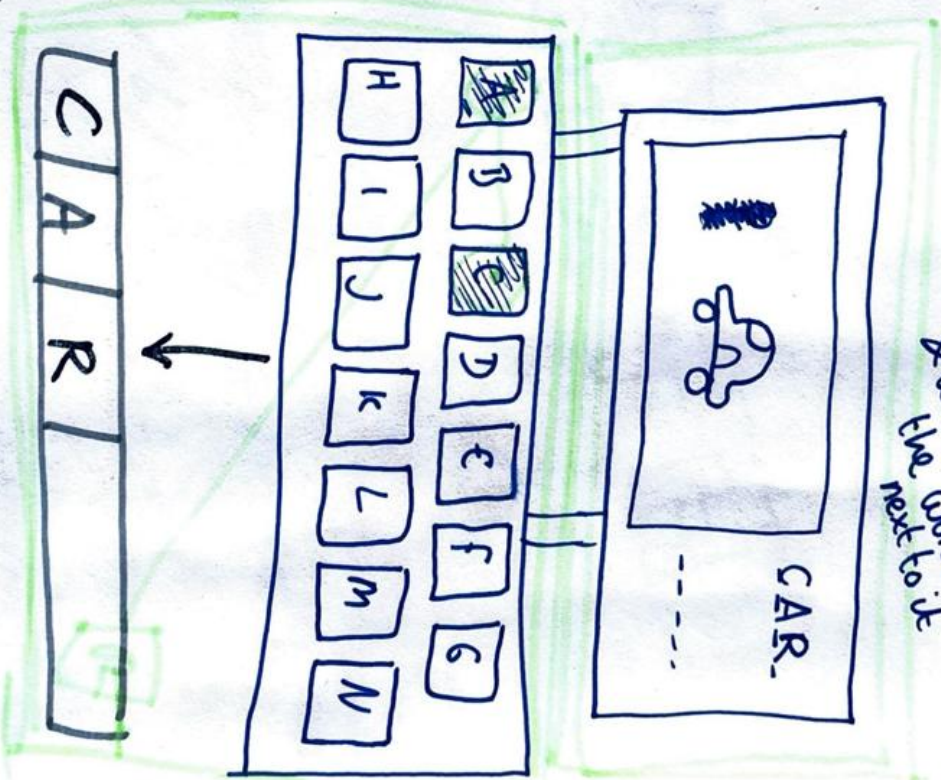
ix + 1 optional



u/s

(Teachers)  
Draw a picture  
& write down  
the word  
next to it.

SUN  
HOUSE  
FISH

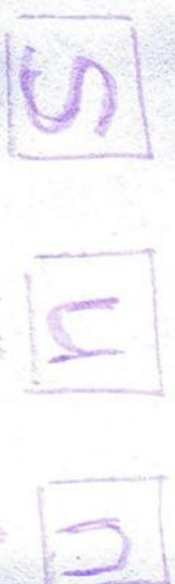
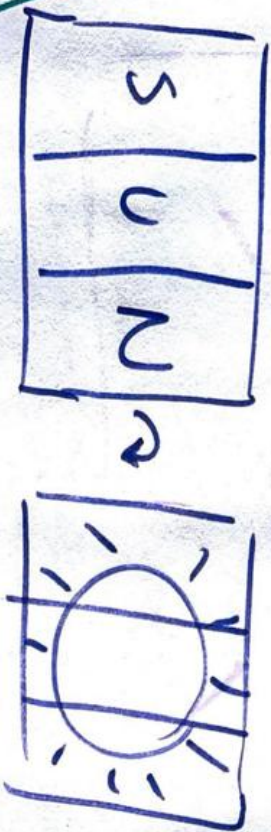


S - C - P - A - M - B → EXAMPLE

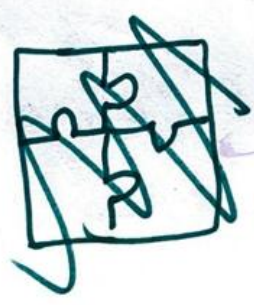
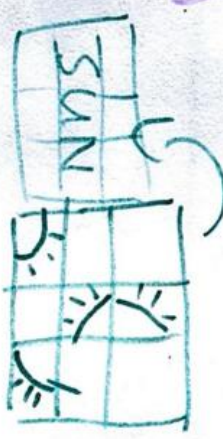
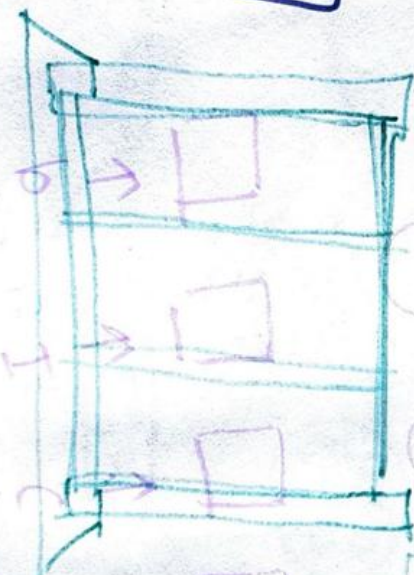
WORDS

# BOARD WITH VISUALS FRAMES WITH THE WORDS MATCH THE WORDS WITH VISUALS

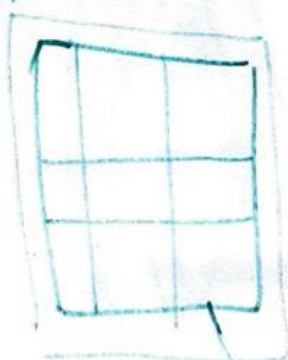
make it a puzzle



- interactive between kids
- How can you reuse?
- When they have mastered a letter how can they create their own words



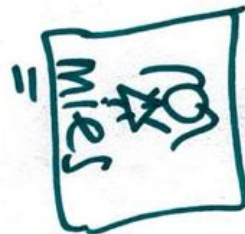
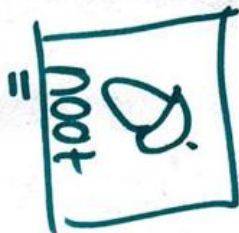
- challenge the children to make it themselves
- focus on teacher
- in wall or sand



- flat stone
- create your own
- clay coal
- chalk
- if lost just use a new flat stone

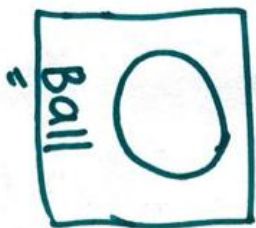
10 basic words

# Visualize the alphabet with focal visuals.



.....

for example



- o interaction
- o locally
- o ask children to create the visuals + words

# A.6 OBSERVATION NOTES

A.6

## Baraa primary school

Day 1 - Monday  
class B grade 1  
unstructured observation

Children drink porch from a cup. They stand in row and Sarah (teacher-volunteer) puts porch in their cup (filling only  $\frac{3}{4}$  to have enough for all 100 children in line).

~30 children have no cup (parents need to provide) so they wait, while their friends drink first. I see children giving their cup to the next one, Sarah is almost out of porch, not everyone get porch yet.

Lunch is no clear break as <sup>some</sup> children are still writing some things, some are sitting on the ground, some just sit in their bench and wait(?) some are sleeping.

Sarah starts singing → end of break?  
some children still eating.

There is little focus. But Sarah starts dancing while singing, you see the children copy the energy.

A.6

On the board is written: 'I woke up, in the morning... etc. They repeat and use body language. I hear some children next to me say completely different things but you can not hear. When Sarah stops children also stop but Sarah wants them to finish the sentence, they can not do that or do not understand the task.

3 other children come insight. Teacher closes the door for another one who can not go inside Child is looking through the window.

This classroom is completely decorated by colored paper with numbers, drawings and words. This is the initiative of the teacher herself. She bought & created the material herself. All other classrooms are completely empty.

Teacher holds a stick, she ticks on table to get the children more quiet, when she does you see the children getting alert immediately, as the bounce back. They seem afraid of the teacher. Teacher does not say anything, just 'quiet', so I don't know what the

children have to do. Most children also look clueless.

Some stand up and walk to the desk of teacher. Where Sarah & teacher ~~write~~ <sup>correct</sup> with a red pen the sentences & calculations that the children wrote down. Teacher only stripes through when wrong, no further explanation. Sarah tries to explain what went wrong & what is correct answer with her hands, child looks with empty eyes, don't understand it. For me, it was not clear at all what they should write, and for the children next to me also not. They just entertain themselves a bit.

Half of the children don't have notebooks and pencils, so they don't even have a chance to do the task. In total 10 ~~pop~~ children come to the desk, it takes a long time (~75 min) before they get feedback.

Sarah starts singing Head-Shoulder-Belly game. Teacher is laughing & playing along and children ~~are~~ are also enthusiastic again. This came out of nowhere again. There was no structure or clear goal/motivation of what they're going to do.



A.6

Some children's eyes almost closed, they look exhausted. Some have blue ~~pieces~~ bruises on their body ~~parts~~ is it from getting hit?

I see broken uniforms, different green buns. The parents have to buy the uniforms.

I see two little water bottles, no drinks to see further. The water pump at school is broken, so they cannot get new water.

Sarah stopped singing, again there is no clue what to do.

Children in front of me have a fight, they pull on each other's uniform.

I ask the children around me 'What do you like the most in school?' They have no clue what I am saying.

I ask 'What is your name?' After 5 repetitions a friend of the person next to the one I am asking translate to Swahili and now the whole group gets it. They start telling their names.

They also want me to write their names, They are so eager to learn.

Teacher shouts sleep on the desk! And hits stick on table. Children do it immediately, I don't know what's the goal of this.

A.6

Wietske  
Deborah  
Patricia

---

Grade 3 - Day 2 (class of Juliet  
& Marcus)

9:05 Stand up sit down, stand up sit down  
arms up down

Twinkle Twinkle Twinkle Little Star - loud  
Children singing new song very loud  
pointing towards each other, half  
are smiling, some do a small dance.

New song: about 'Brush my teeth'  
grow my hair? with hand signs  
wash my face

They pick their backpack → 'Bring my  
things'

This is the way I go to school: They  
are running through class.

This is the way I sit in C

Today is 'Tuesday' - takes 3 times  
before you can understand

still you hear half of children say  
something else → children say  
5th of nov. → Teacher

Girl ~~at~~ has to stand up and repeat the

sentence she is pulling her skirt with a little bit shakey hand.

A boy needs to do the same also pulling his trousers → nerves?

When they are correct the teacher lets the class clap their hands and scream 'woohoo'

All children are looking towards the teacher and are quiet and listening

teacher writes 'personal pronoun'

	<u>singular</u>	<u>plural</u>
she	I	we
explain	she	they
what is	he	they
what	it	they
with	you	you
body		
language		

pointing at student & making groups of students.

She lets ~~to~~ two students clap, she ask what they are doing.

Class has to answer while pointing so there's active interaction.

2 boys in the back right are not joining, the right one is hanging over his desk, almost sleeping.

The other boy closes his eyes every

A.6

minute, almost falling asleep.

Str Juliet keeps a letting children do something and keeps the class interacted by pointing & answering 2 children in front are sweeping, they have to answer, they say 'what I am doing?'

3 times wrong → teacher corrects by raising her voice & writing on board.

'last example'

children in front look shy.

Teacher walks out of class for 1 min → children immediately start talking and looking towards us.

child in the back is sleeping

She ends class by: 'If your happy and you know it clapp. - Children have to stand up. Boy next to boy who's sleeping, quickly wakes his friend up.

g:25 Plastic tanks are underneath benches. They fill that with water I think.

"Okay, open perbcous & get ready for 'excercise.'" Children start rumouring a bit and take out their notebooks. All children have a notebook!

time duration of personal pronouns: 20 min

A.6

### Exercise

USE I, we, you, she, it, they. he to complete the sentence

20/100  
Sometimes children stand up to see what teacher is writing, quite a lot of movement. They sit very close to each other, so normal that they can not read all spaces of chalkboard.

Teacher takes the sentences out of the workbook → does she have a plan for today?

A lot of sound outside → preschool & first grade is playing and windows are open.

3 children are pointing ~~their~~ their finger → they have question?

9:32 — Teacher is finished with writing 5 sentences on board 'If you're finished raise up your hand  
Hands go down.

~~Child~~ Teacher is walking through class looking what they wrote. half of children are working together in silence / peaking  
~~they are~~

A.6

g:58 Done with marking  
I helped teacher mark, it is way too much with 100 children

Half of children raised their hands to get marked,

30% of the children was not able to copy the sentences on paper.

30% copied the sentences completely & filled in something on each open space

60% copied half / answered half wrong.

→ klassikaal answering → every 10 people stand up eager to give the answer.

3 claps if they did correctly.

'Correct if you were wrong and then you can take a break.'

Interview Madame Juliette → afraid about english so don't want to be on camera

- Book helps me → visuals
- I need images to hang to the wall
- Interactive & body language
- I like teaching as it makes me feel like a child again.
- 95 children difficult! But I know where slow learners are sitting & how to get them involved

A.6

## Grade 5

10:30 Children are sitting in groups of 10 reading around 1 book because only 10 books for 100 children. They are reading out loud.

Boy has to read out → <sup>other</sup> Boy is quietly helping.

2 boys are sitting in the back of a group now standing up to look what they're missing. Not the whole group can see what they have to read.

When teacher asks something, half of children or less are answering with. Difficult to hear the child who is reading.

2 Boys are clapping hands & chatting it's too much energy to read with.

I has to read, he knows where to start reading?

'good clap for him'

'good, better, best' with claps.

Most children are looking another way than the book.

Girl next to us is sleeping on table, there is more and more rumour, more difficult to hear.

Teacher calls them 'you' 'you' 'you'

End of reading →

A.6

'So end of reading let's go to Q'

'When did ... celebrated?'

26 correct? YES (in choir)

'Where did ... take place?'

'At the ... stadium.' correct!

~~10:55 End of reading lesson~~

~~teacher walks to us and says next  
subject is social science in Sweden  
so we can better go to a different~~

~~10:55 class~~

~~10:55 class outside~~

Now the task for the children was to copy the 5 questions about the text they just read & answer them.

Teacher walks towards us, short interview (see film)

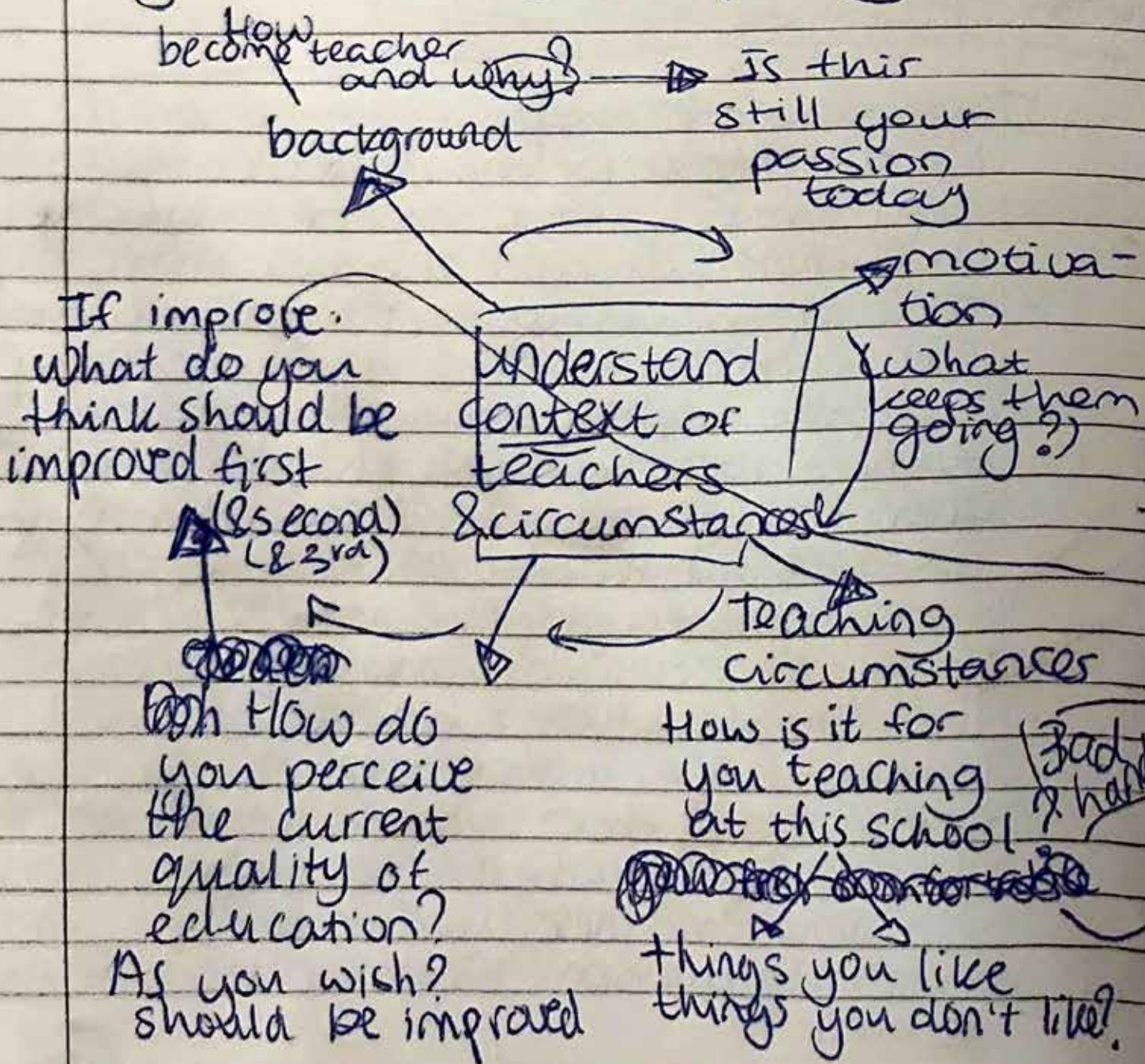
I propose to help mark the answers as there were so many children, she gave me her red pen. I started marking it stood out that some children (20%) weren't able to copy the sentence and no children answered more questions than the first two, which we answered klassikaal. So, it was more a copying/writing lesson than reading comprehension? Should the focus be different? expectation gap. How come these children cannot yet answer the questions? Or was it too little time (15 min)



Teacher tells us that lesson is over and we can better go to another class as she will teach in Swahili further.

We went outside. After 20 min we saw her walking away with her stuff. Done for the day?

~~Day 03 of 18/1/2018 Back to primary school~~



## A.6 Teacher Interview Questions

1. observed ✓ really like to ask you some questions, can we document it using film for research & publication purposes?

2. Allright, you already told me a bit but can you introduce yourself, who you are, where from, how long teach? what?  
↓ so, you've been...

3. How become teacher & why?  
→ still feel this passion? <sup>still</sup> motivated?

↓ That's so nice // I understand the di...  
4. Let's talk more about the teaching circumstances, how <sup>do you feel about</sup> the teaching circumstances for you at this school?

↳ specific things you appreciate?

↳ specific things you don't like?

↓ ~~Does~~ That sounds like a challenge.  
With the challenge of <sup>too</sup> big classroom

5. Drilling in mind, what are teaching methods you use to keep children involved? Do you feel this works?

↳ more ways to reward?

↳ what are ways you use to correct

How is the current quality of education?

Do many children struggle to pass grade or exams? Do many finish primary school?

↳ what you think are the main causes for struggles.

7. If you could magically improve things on this school, what would be the first thing you would do? & 2<sup>nd</sup> / 3<sup>rd</sup>

8. Let's end with future possibilities for the children  
↳ main goal to set

lack of student material

lack of teachers

big classroom

Drilling

rewards & punishments

winning product disappear

A.

A.6

Grade 3 - science Swahili - madame Tesha

children are bringing their notebooks. There is rumor as teacher writes on board. Teacher is done and starts explaining that children had to finish clock exercise.

break 9:20-10:20

break 12:20-1:20

end 2:40 3:30

We looked at the timetable.

We had an interview for 30 min children were looking around, doing nothing. 80% had already give their notebook to Tesha, so did not know what to do, but Tesha did not do anything about that, so they just had to wait half an hour.

→ see video in footage for interview with Tesha

Outstanding observations of today:

- \* 3 classrooms were 'orphaned'
- \* More teacher absence in the upcoming weeks bc of test weeks for the secondary schools
- \* Teacher took 1 bucket with beans that Sarah had donated: FOR THE CHILDREN, to eat themselves → while not all children learning: had <sup>food</sup> pushed yet.
- Teachers are lying right into your face. Don't trust them
- \* Children were beaten when standing in row for food as they were pushing too much.

A.6

LYIMO

Grade 3 - Madame ~~Violetta~~

11:15

Start Swahili lesson with a song

Teacher writing on board.

Continuous with drilling, children answer questions they remembered.

Teacher writes on board again, class is quiet. Someone throws a pen

1 child wears a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one?

child in the back is standing on bench to see what is written.

State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.

Teacher writes exercise on board, (5 min) takes long to write whole exercise & children have to copy

the whole sentences, takes long. Filling in is way faster

Teacher lets them drill a few sentences

Girl in skirt & brown jacket closes eyes whole time.

Teacher let them repeat the sentences they have to set them in the right order.

11:35

Teacher tells us she has to go to a funeral, lesson is over, children have to do 'self-directed learning' for the rest of the day...

## Design Ideas

Peyris

EBENEZER

SIMONI

DAIWO

Allen

BRIGHTON

PROSPER

INOCENT

ESTA

LULU

ELIAS

Wietske

Jens

- to make it
- Design principles: work in local
1. ~~Not~~ ~~Products~~ Teacher context:  
 should not be able to sell ~~to teachers~~ products in any way / or take it for own use  
 → how?  
 → chain to classroom  
 → make of no value  
 → partly attach to classroom
  2. Products should be able to use by a group instead of individual

A.6 Sarah

→ introduce...

2) How ~~your~~ mindshift during these weeks?  
3) Intentions when started to  
what it is now

1) ~~1st 2 weeks~~ First experiences  
on the school: what shocked  
you the most?

3) Can you tell about the fundraising  
you've done & the struggles  
you faced & still facing while  
doing so?

4) What are some of the Saddest  
things you've experienced at the  
school?

6) What gives you hope or makes  
you smile when thinking about  
the school?

7) What advice do you want to give  
people ~~when they~~ <sup>who</sup> want to do  
something good for the ~~developed~~  
world? developing

2) What are things you could not see  
in the first weeks but started  
noticing when you were in the  
context for longer?

## A.6 Sarah Interview

- 1) First experiences / impressions
- 2) Started noticing when there for longer
- 3) mindshift, change of intentions
- 4) personal stories that you felt were the most sad to see?
- 5) what gives hope / makes you smile?
- 6) fundraising → challenges → continuity
- 7) what advice to do good for the developing world?
- 8) our project goal was to design reusable student material that can stay in the classroom, what is your perspective on this, difficulties you see coming? ideas you might have?

A.6

Day 4 - Madame Teresha - Grade 1  
number & alphabet lesson

8:50

Teacher is correcting notebooks,  
5 children are in a row, they are  
leaning against each other

"Hallo children!" "Hallo teachers!"

bad pronunciation →

In the back of the class a boy is  
punching a muslim girl on her head.  
Now he's punching another boy  
boy walks away crying, later he  
punches a boy that's sitting on the ground  
in the corner.

Teacher begins singing boy that was  
hitting stands up with big smile and  
waves to us. He has no clue that  
he was doing something wrong.

Too many tasks for teacher to see  
what is happening.

Children sing songs some still standing  
in line. No clear structure.

Teacher starts correcting again,  
Sometimes she shouts a sentence  
and half of children react in choir.

3 groups are hitting each other,

Boy 1 is hitting the muslim girl who is  
sitting in the back.

We intervene: walking to boy,  
hugging girl saying with body language  
that hitting is bad and Girl is Rafiki (Friend)



A.6

Girl has tears in her eyes. Boy still a little smile.

Teacher is still marking, ~~and~~ she marks the book of a girl they are talking and smiling - this is probably the only 1-1 contact they ~~are~~ have.

2/3 times teacher randomly shouts 'Hello Children' and children say 'Hello teacher' - don't know what's the intention.

Teacher walks away from desk going to different groups saying 'ay ay ay weh weh weh'.

2 children open the door from outside coming into classroom, are they late?

Teacher walks away from ~~at~~ desk letting the children clap, they clap a few times then chaos goes on -

she lets 5 children outside maybe toilet - they run around the grass field. People are pulling on chairs.

Teacher sits at desk again, start grading, children still have nothing to do.

g:25

more & more children run out of the classroom.

~~children~~ teacher lets all children outside.

We walk outside too and see her teach in the classroom next to it, they had no teacher the whole morning.

A.6

Grade 2 - math lesson swahili  
madame Mela

she writes

$$\begin{array}{r} 324 \\ - 213 \\ \hline 111 \end{array}$$

1 left (klassikaa)

they shout the numbers

count how many minus  
(klassikaa)

After she writes another, then  
she explain that they're finished  
for today = 11:30

Grade 2 has school until 12:00

The classroom next was also  
correcting and finished for today.

To Do last day:

• interview Lulu

• interview

more teachers

video footage

- song

- drilling

## Midweek Reflectie

worries:

- implementation approach ???
  - disappearing
  - who to trust
  - break (big amount students)
  - big amount of students
  - who pays?
- mentality of teachers
  - eigen belang - victim role
  - continuity of implementation
  - sell products instead of use?
- should we start here?  
so many problems, how to prioritize
- how can product / concept work on itself without assist / explanation by involvement teacher.

Take into account

- learning levels
- make it a group thing

A.6

To do:

\* write clear tasks of what ~~teacher~~ teacher can quickly explain the children to do.

WKA

Focus → Tracing Board  
→ Whiteboard Stone Box  
→ Puzzle

Create setting:

\* a teacher ~~who~~ who can stay during whole test + short explanation beforehand.

\* 3 children → Tracing Board G1  
→ rest: G2

Tracing Board Tasks

1 write down a b c d e

A.6

Grade 2 Erethi primary school  
Private school  
children sing shake your booty

Teacher says to us: I'm coming  
I'm taking this one she's sick  
teacher walks out of class hand in  
hand with child.

Children go to us, start touching my  
hair. A child ~~says~~ says: "you're  
hair is very nice." - in very good  
english. I started a conversation  
to see if she understands more  
english, she did, I asked her to write  
her name, age, and the alphabet,  
impressive! Is this the best one of  
the class or just.

teacher writes exercise  
complete the words.

1 Bi \_\_\_\_\_

2 Mu \_\_\_\_\_

3 Ma \_\_\_\_\_

5 Zi \_\_\_\_\_

she begins with  
complete

children  
finish their

sentence on  
their own

write correctly  
ucp = cup  
ets = set

teacher says everything in english

A.6

Rebeka

JOHN

6

Aa

Bb

Cc

Dd

Ff



first impression private school.

children starts ~~exercise~~ exercise  
they pick crayon from their  
backpack, they all have a backpack  
Teacher picks a Staple notebooks  
& call names - they keep  
notebooks in school.  
Notebooks don't fall apart.  
Teacher checked every exercise  
Girls have beautiful their

Children are doing the exercise,  
walking to teacher when finished

n:

A.6

## Grade 1A

Sing a song with 'When I was a teacher/pilot with movement

They start 'writing occupation'

They start writing out loud.

Boy back next to me seems tired and cannot hear what he is saying. Other teacher (class has 2 teachers), walks to boy and makes him involved with the lesson.

~~Children~~

Children got an exercise, had to copy the 'occupation' sentences

Teachers are open for an interview.

Q2 Teacher 1A makes a writing than hitting movement, in 1B only writing

Q2 For porich the school has own cups, everyone gets.

A.6

Grade 1B - healthcare lesson

no child has no pencil.

teacher: 'Who has no pencil?' 5 children raise hand → 'okay, assist him please.'

Children are copying the sentences. Teacher walks through classroom saying 'copy, copy, copy.'

She helps some a child of which the tip of the pencil broken.

'Good handwriting please'

'can you stop in writing mathematics, (to child who writes in square notebook) close this book now.'

Teacher continuously walks through class and can correct at same time

'Attention - close book'

Sit like a boss

introduces lesson -



different kind of clothes? Children raise hand and knip their fingers.

- after: okay clap for you

'myself, I am good' - self-love clap.

Teacher has African English accent,

some words I cannot understand

'white clothes.'

Boy completely left is not really

involved, eyes at half ↑ now he is already more involved eye contact

teacher wants children to read everything.

who knows



A.6

children copy accent  
There's a mistake on board  
'clothers'

Children can't do it completely  
themselves, teacher takes  
over saying out loud all  
sentences and children copy.  
'Tomorrow practical in class'  
— repetition!

It is clear they follow a clear  
lesson plan as we saw same  
lessons at grade 1A & 1B

I am wondering how these  
children look older & bigger  
than the children in government  
grade 1. Is it because they  
are from less poor families here?  
I checked with teacher and  
she confirms the children are  
really 6 (max 7) y/o.

⊙ In teacher room <sup>assistant</sup> teacher was  
creating 'holiday workbooks'  
for children → paper, plastic  
sheet on top, ducttape together.

A.6

# Spontaneous Conversation

with Marion Hasselaar

& Mirjam

working at IBES

15 y. living in

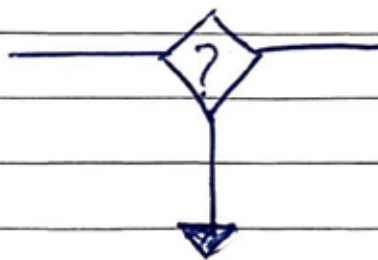
Tanzania

set up NGO that trains teachers.

They agree:

Government school too big difficulties to implement

Some private schools like Ereta - little struggles left, well-functioning



What is in between?

They know → starting daycares

struggling, cheaper private schools.

reusable language learning boards can function as step in between a fully functional school with learning material sufficient.

they tell us that in Tanzania children learn to write at 4 already 6/7 is late!

We show a sample product, they say: 'Yes, there's a big need for this, they have no money to start'

A.6

and now there are only some  
chines imported stuff from  
plastic that easily breaks.

Amazing if it can support local  
businesses. Creating jobs.

tomorrow we will visit IBES  
to take a look, and speak  
~~and~~ to 2 locals who visited  
almost 80 different private schools  
in the region.

### Reflection:

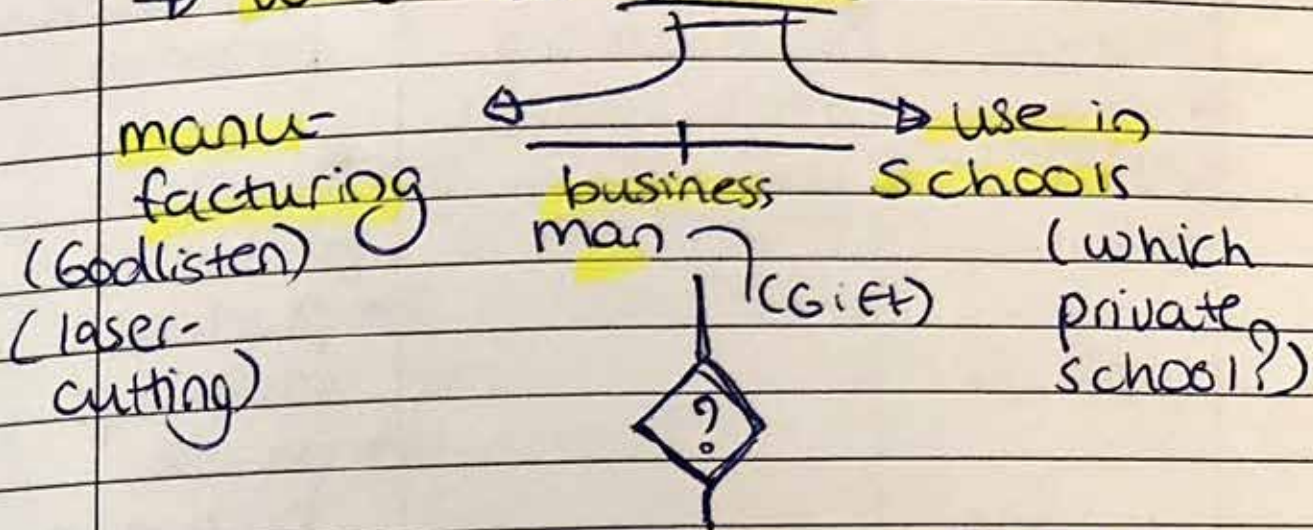
→ Amazing how this works —  
meeting people by coincidence  
learn from each other, being  
welcome the next day.

Tomorrow they're also going to  
give a clay workshop to teachers  
making alphabet letters.

3 prototypes are given to  
Godlisten (woodworker) who is  
going to remake them. Wow.  $\cup$   
 $\cup$  Everything seems possible!  
Gift has contact with a person  
who can do laser-cutting?  $\cup$  Macio  $\cup$   
also knows a person  $\cup$

A.6

Difficulty we're facing know:  
→ who to trust?



How to ensure project continuity?

To do's to provide answers to all my questions in the next 4 days:

- outcome Godlisten + price indication
- business talk with Gift
- outcome laser-cutting + price?
- ~~visit~~ interview IBES private schools researchers: which school to go to?
- visit 1 extra private school (hopefully the one!)
- interview / user testing the prototypes.
- interview / business talk with Marion (laser-cutting, contact person?)

A.6

## Young Roses - preschool (4-5 y/o)

Language lesson.

Classroom is empty, children sit with 2/3 on 1 bench

'read these words'

1 child has government school hat

They sing a alphabet song, they sound so sweet → I for Ink...

Teacher points at board →

● 2 children I hear saying

'read these words, rest doesn't know but after 3 repetitions they were all able to say it.

They start ~~to~~ reading the words out loud

□. Apple Axe Antelope

sometimes a child looks towards me, and when a new words

start: they can say it almost ~~a~~ immediately, so they either did this before or he/<sup>she</sup> ~~is~~ is good at copying others.

● Boy has to do it alone, the pace is way more slow, if it takes longer than 2 sec. the teacher says herself.

● But he can read 12/15 words

● A girl has to do it alone, 15/15 girl has to write 'antelope' ✓

A.6

girl has to write doll, writes Bol  
corrected by teacher

another: Ball ✓

another chair → char

after every child teacher says:

clap for him. And they do a clap

song. It sounds less drilling, the

attention of 20% of the children is gone,

they walk to window (now 50%)

they look around - stand up -

hang over each others table

But teacher stays calm.

Boy walks out of classroom.

clap for him → only 5 children

do it. ~~only 5 children~~

Children look to me a bit older than

4-5 years.

After teacher says very good you

see them smile - proud of themselves.

Children look like they are having

fun.

A.6

Grade 1 - Reading Skill

- on board: 26

19

- reading simple words

She ) out loud  
he )

Teacher has cards with words  
ask children to bring them the  
word. All children sit apart, 1 table  
~ 40 children in this class

kids are involved 50% ~~points~~ raises  
hand as they want to pick a word.  
She asks children to write on board  
And class to spell

↳ boy smiles  
after done, teacher  
smiles back

There are 4 3 posters in this classroom  
counting objects from 1-9  
reading numbers 1-1000  
number in words

- in between - 'sit down all of you'  
sit down, stand up.

Okay, now I want you to congratulate  
yourself, all of you

bigger focus  
on congratulation  
(reward)

## Head teacher

- introduce yourself, school  
how built up from scratch
- where do you look out for  
when choosing teachers
- ~~currently~~ things you want  
to improve at school?

Godlisten: woodworker

→ replica's of 3 samples.

Efficiency

1. Can you describe your work process  
for each of the ~~pro~~ samples?  
→ All the steps you took? ~~and~~ & how long  
it took?
2. How can we simplify each sample?  
~~to make the production more~~  
~~efficient?~~

Local production  
capabilities

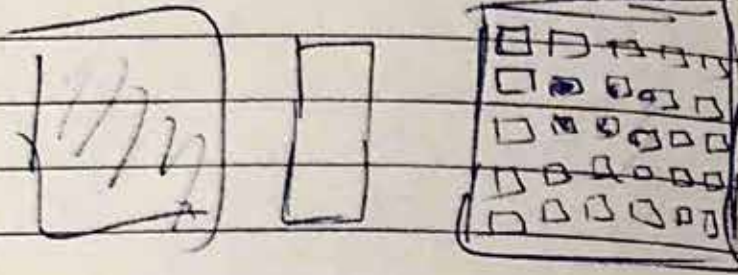
3. Did you use new techniques /  
materials than you normally do  
for your projects. Imagine  
~~Can you come up~~ If someone  
came to you and said:  
I want a <sup>wooden product</sup> ~~piece~~ painted with  
~~blackboard~~ paint, with which  
puzzle pieces  
~~to give~~ that teachers can use  
to give ~~the~~ children between 6-10  
different tasks

4. What advice would you give us to take  
into account the local produce



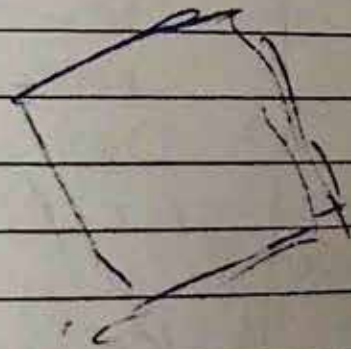
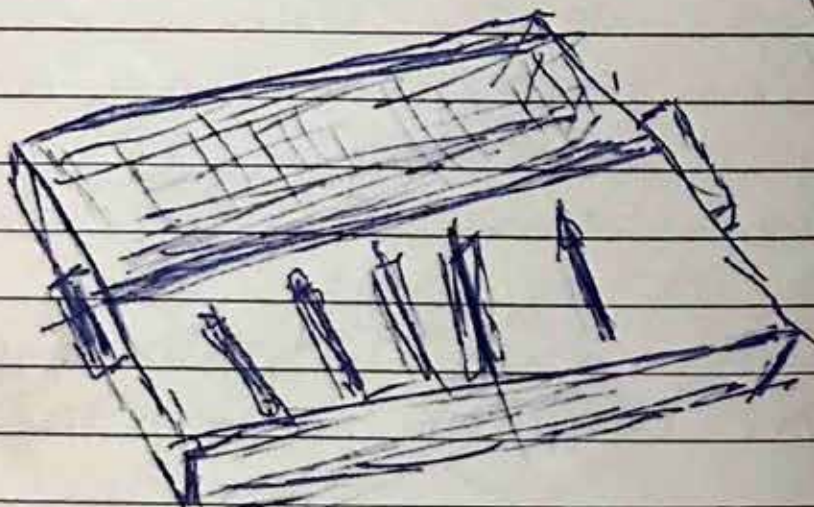
A.6

## IDEAS :



wooden puzzle board  
with double-sided, black-  
board painted puzzle  
pieces that teachers  
can use to give children  
between 6-10 y/o  
different ~~trans~~ educational tasks

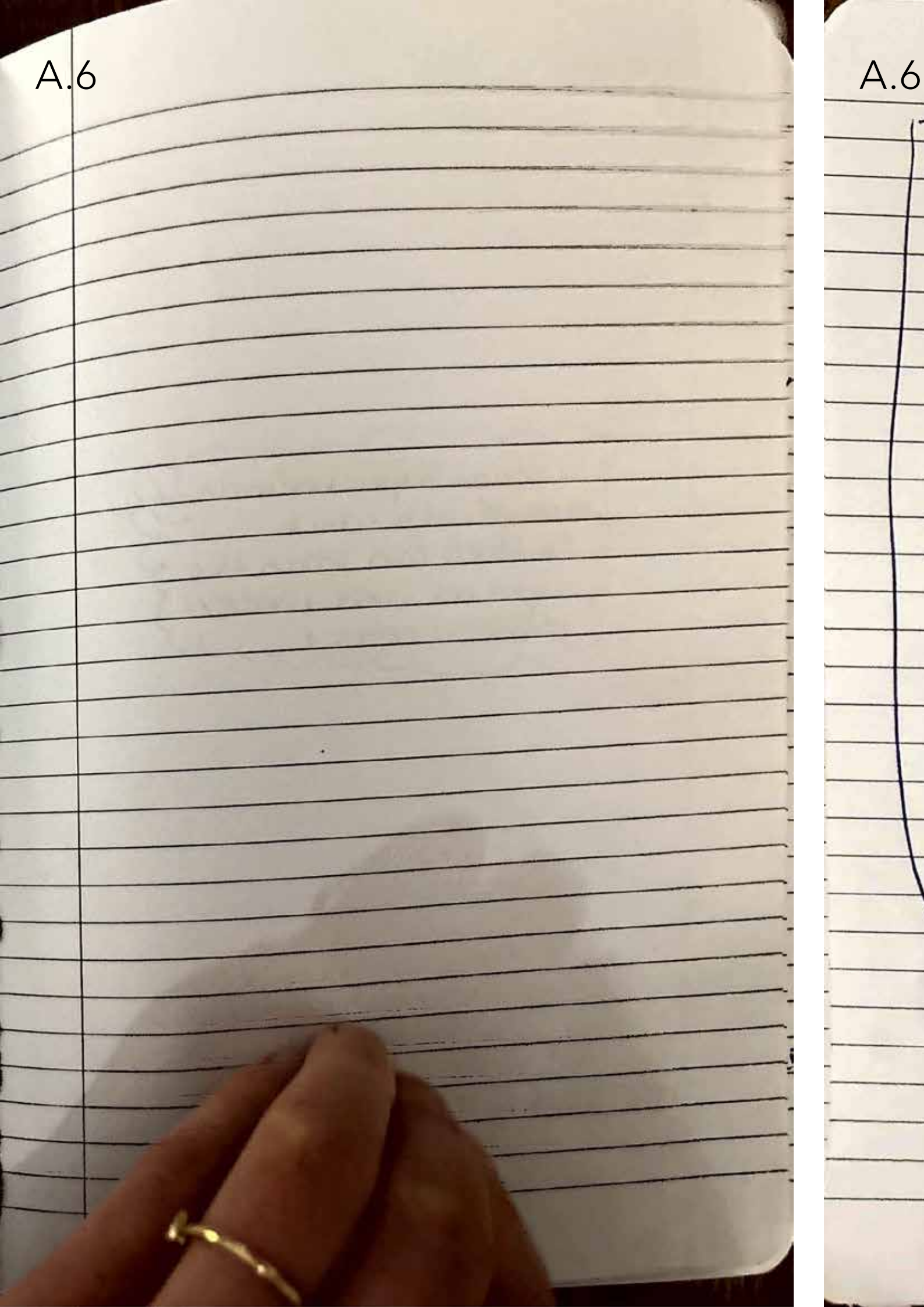
## SKETCH:



## MATERIALS & TECHNIQUES :

A.6

A.6



A.6

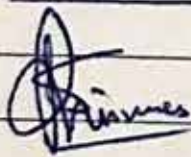
~~Questions~~

## Receipt Wood & Work Materials for 3 samples.

Location of purchase:

<u>Product:</u>	<u>Price (TSHs)</u>
MDF - 6mm (8ft x 4ft)	30,000
MDF - 3mm (8ft x 4ft)	24,000
Glue (1 litre)	15,000
Paint, - (1/2 litre), Thinner, Brush	15,000
Transport	10,000
labor charge (3 pieces)	90,000
<u>Purchase Date:</u>	179,000

Handsign:



upcoming  
8. In the future we hope to be able to produce 250 wooden boards that can be implemented on local primary schools. For this phase of the project we will come back to Tanzania.

A.6

Godlisten - woodworker - 3 samples

1. Describe work process for each of the samples.

→ all the steps you took and a time estimation.

2. How can we simplify each sample?  
→ remove unnecessary steps or redesign parts to make more simple

3. Did you use new techniques/materials than you normally do for your projects?

4. We want to take into account the local production capabilities of woodworkers in Tanzania.

What advice would you give us

~~to take this into account when redesigning a sample?~~

4B How much samples from the wood bought?

5. Co-creation brainstorm with Gift & Godlisten

Do you have an hour/ can you for yours?

6. I do a redesign back in the Netherlands & sent Gift/you a picture of it & a sketch with measurements, would you be able to ~~create~~ a ~~new~~ new sample?  
create

7. Gift, do you want to remain the communication person between us (the designers), Godlisten (woodworker) and potential

Efficiency

local production capabilities

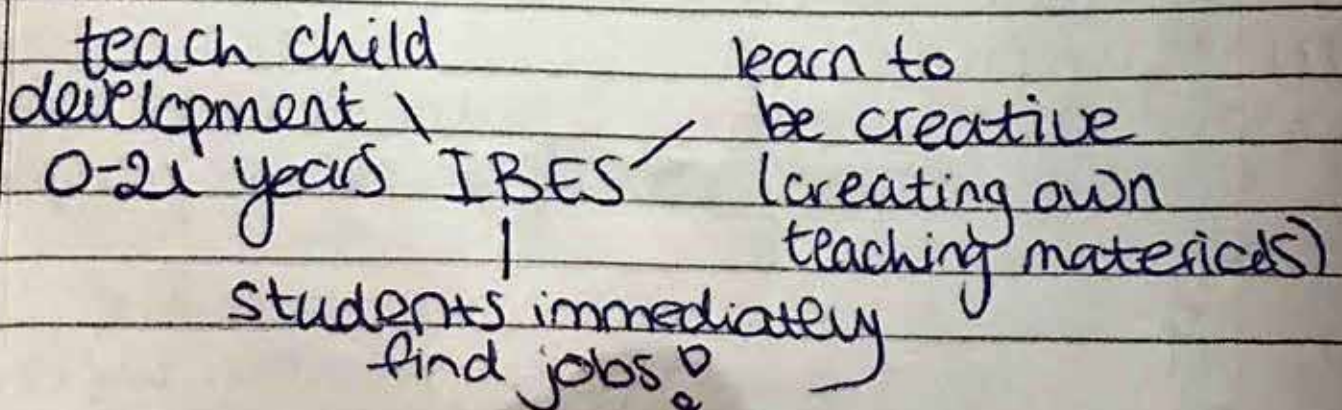
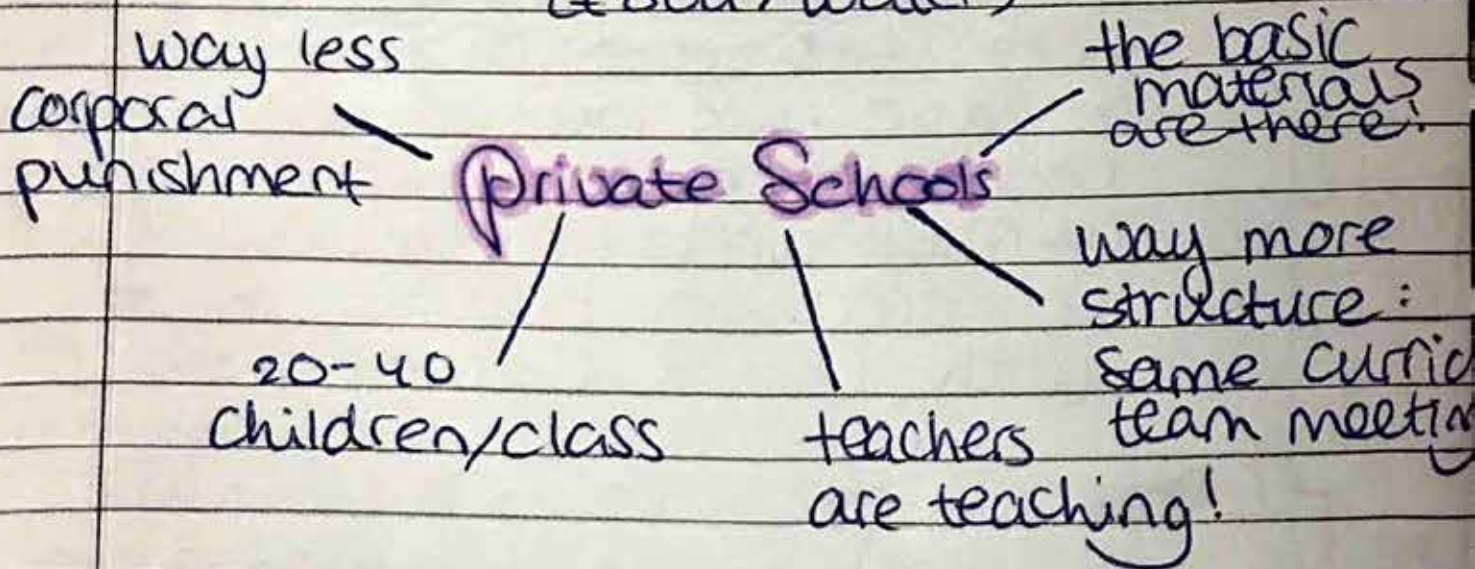
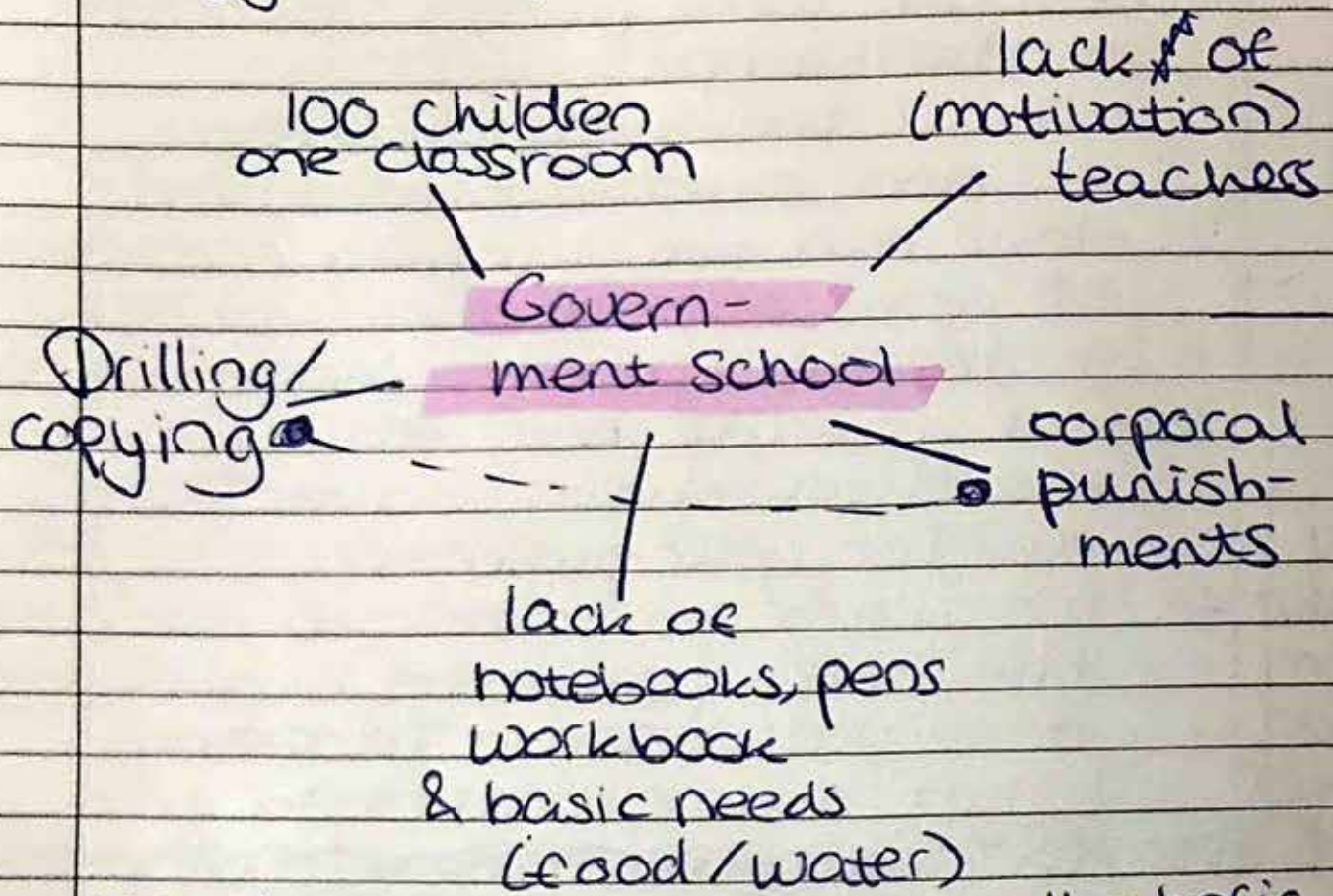
price

Next step

schools for implementation

A.6

# Biggest Topics



Biggest causes:

- Government doesn't employ more teachers, build more classrooms, buy more workbooks
- Teachers lack motivation. There is very little teaching happening. They don't care if the children learn something.

Learning Quality is really low.



Reusable Learning Books would be helpful

BUT: teachers sell them! & are not honest. also, government is not going to pay.

Big difference in learning quality.

6/7 y/o can write and read already.

So product would be nice to have but not necessary.

Implementation:

Institute of Business, Entrep. and <sup>social</sup> Pedagogical Studies  
 IBES - Marion, Social pedagogue

Since 2013 goal IBES: different teaching & creating jobs

Daycares: 6 months - 5 years  
 nutrition - activities - education

A.6

(IBES) Marion will ~~provide~~ provide a list with initiatives that the student they've trained started.

These initiatives start from scratch and without money. To keep parent fees as low as possible the reusable learning board can be a good starting investment to get children started with learning.

## Production Capabilities

- Everything possible.
- MDF / materials more expensive than Netherlands.  
looking at cheaper materials

- Gift

- \* helps people start businesses
- \* graphic tee designer studied smth. similar to ID in Kenya
- \* has workplace
- \* has connections

Godlisten

- \* woodworker
- \* learned himself to laser-cut in 2 days

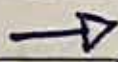
Visit

~~Visit~~ different

- Starting daycares / lower grades,
- See where are the biggest needs

My Dream :

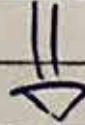
Direct Connection  
laser-cutter



Assembling  
(glueing)  
(2 wood-  
burning) in  
women rescue  
center.

OR

Easy to make  
by hand.



rescued from  
Masai villagers  
girls ~~born~~ between  
12-14 y/o with  
children with very  
severe health (mental  
& physical) issues  
due to continuous  
abuse & violence.

80% Female

~~POP~~ Genital Mutilation



A.6

## Exploring the Topic & Problem Causes

Government School

- very low quality
- \* 100 / class
- \* teachers not teaching & not honest
- \* traditional teaching methods: drilling, copying, 1 answer, corporal punishment
- \* lack of student material

BUT before product can be implemented first the circumstances & teaching attitude needs to change.

Start: government...

Private Schools

- world of difference!
- \* outcome matters so teachers teach!
- \* ~~more~~ way more structure: curriculum, teamwork, schedule, food = learning environment.

2 schools we've been: reusable learning boards would be nice to have but not necessary.

# Social pedagogue

A.6

IBES

founder: Marion

Daycares 6 months - 6 y/o

since 2013 - when every child needed to go to school

- ~~4 years~~ Training to school teachers including head teacher 'how to teach different'
- 1-year study to become (daycare) teacher.
- > somehow IBES became famous, students immediately find jobs
- 0% funding & ~~only~~ 100% from next year Run by Tanzania

provide list with starting initiatives of daycares - start from scratch

- no learning materials

Design low-cost reusable learning board that can form a starting investment for these daycares.

Production

\* possible  
\* more expensive materials

\* laser-cutting / handmade?

→ redesign

Dream:

\* assembling in women rescue centers...

create jobs for those who need it the most.

# A.7 INTERVIEW TRANSCRIPTS

## Interview transcripts:

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### Government Teacher 1



**Interviewer:** No? No, it's with mathematics. Yes, okay. We'll do it at 2 o'clock. Yes.

# A.7

**Teacher 1:** Yes. And 12 o'clock and 24 o'clock. Yes. Yes. 2 o'clock. So, first hour. First hour. 12 o'clock. Second hour. 24 hours. 24 hours.

**Interviewer:** So, you show people how to calculate time and how to count it up to 24 hours?

**Teacher 1:** Yes.

**Interviewer:** Everything is correct, so they know you're right?

**Teacher 1:** Yes, but they don't know how to count. That's the issue.

**Interviewer:** You're trying to make the lesson clear so that everyone understands?

**Teacher 1:** Yes, exactly.

**Interviewer:** Epid. Who's on the blackboard?

**Teacher 1:** Do you notice if some students copy? Like, do they buy answers from others? Or not? Because if they do, they copy from others?

**Interviewer:** Would they do that or not?

**Teacher 1:** No. Oh, from the books? Yes, from the books. We have a lot of books.

**Interviewer:** If you have many books, can you manage to make it work?

**Teacher 1:** That's it. That's it. We have 19 books or 15 books for each subject. Yes, they have to share them. When I have a period, they say the other teacher cannot borrow the period from other classes.

**Interviewer:** When you have a subject, you mean the period?

**Teacher 1:** Yes, my subject. On Monday, we have all the classes of 3A, BC, B during the period. It's mathematics. It's so hard. That's it. We have to write it on the blackboard. They can copy it into their notebooks.

**Interviewer:** So, the books are provided by the government, but they're too few?

**Teacher 1:** Yes, too few. That's the challenge.

**Interviewer:** In your country? Do you have many books in your country?

**Teacher 1:** Yes, we have many books.

**Interviewer:** What's the reason the library is closed? Is the library here closed?

**Teacher 1:** In this area? Yes. We have a blackboard there.

**Interviewer:** Next to the office, you have a library?

**Teacher 1:** Yes, but for Standard 3, we have a new syllabus.

# A.7

**Interviewer:** Standard 3 has a new syllabus?

**Teacher 1:** Yes. The government sent many books to our school, a whole lot of books for the subject.

**Interviewer:** Do you also use online resources to teach?

**Teacher 1:** Yes, we first used online resources. If you want to teach, you go online, then teach, and then copy from the textbooks.

**Interviewer:** Do you buy your own exercise books for teaching?

**Teacher 1:** Yes, I buy my own exercise books. My exercise book is for teaching. The other teacher will also say the same.

**Interviewer:** What's your name?

**Teacher 1:** Tasha. Madame Tasha.

**Interviewer:** How long have you been teaching here, and how did you become a teacher?

**Teacher 1:** I think 14 years. Since 2005 till now.

**Interviewer:** Wow, that's a long time. At this school?

**Teacher 1:** Yes, at the same school. Before that, I was at Burka Primary School.

**Interviewer:** Burka Primary School?

**Teacher 1:** Yes, in the center.

**Interviewer:** How long were you there?

**Teacher 1:** Until 2010. In October, I came here.

**Interviewer:** So, 14 years altogether?

**Teacher 1:** Yes, 14 years.

**Interviewer:** Why did you want to become a teacher? What was your passion?

**Teacher 1:** It was my dream to become a teacher. I wanted to help students and people improve their performance and grow.

**Interviewer:** That's wonderful. Do you think the system is working well now for children to advance to the next grade or secondary education?

**Teacher 1:** Yes, I think the students are doing well.

**Interviewer:** What do you think is the biggest challenge in your classroom?

# A.7

**Teacher 1:** The class is very large. For example, I have 97 students in Standard 1 and 2 combined. That makes it hard to teach effectively.

**Interviewer:** How do you ensure every student gets attention in such a large class?

**Teacher 1:** I divide them into groups, but it's still difficult. I check their work carefully and help those who need more assistance. It takes a lot of time.

**Interviewer:** Do you use group discussions or other teaching methods?

**Teacher 1:** Yes, we try group discussions, but it's challenging with so many students. We also use real-life examples and objects to make the lessons engaging.

**Interviewer:** What do you think the school needs most?

**Teacher 1:** More teachers and materials, like books and teaching aids. With better resources, we can manage the large classes and provide better education.

**Interviewer:** Thank you so much for sharing. It's very interesting to hear about your experiences.

**Teacher 1:** Thank you. I hope this helps you understand our situation better.

**Interviewer:** It certainly does. We appreciate your time. Thank you!

**Teacher 1:** Thank you. Have a good day!

## Government Teacher 2:



**Interviewer:** But if I'm there, everything is fine. Nice. Are you ready?

**Teacher 2:** Yes.

## A.7

**Interviewer:** All right. So we are doing a project for the university. This week we were researching; we asked teachers questions about how things are going in the classroom, to understand what your school needs the most. How can we even improve it?

**Teacher 2:** Okay.

**Interviewer:** So that's why we would really like to speak to you, to hear your perspective as a teacher.

**Teacher 2:** No problem.

**Interviewer:** Are you okay if we film this? It's for documentation purposes.

**Teacher 2:** Yes, no problem. But my English is not good; it's broken.

**Interviewer:** No problem at all. Take your time. We understand you very well.

**Teacher 2:** That's good.

**Interviewer:** We are Jens and Mitzka. Maybe you can introduce yourself again and tell us how long you've been teaching. Why did you become a teacher?

**Teacher 2:** Okay, I'm Madam Liza. I've been teaching at this school since 1996.

**Interviewer:** That's a long time!

**Teacher 2:** Yes, I have taught here for 38 years, I think. I thank God because other teachers don't stay at one school for so many years. Other teachers are moved from one school to another—maybe five schools.

**Interviewer:** The government moves them?

**Teacher 2:** Yes, the government transfers them to different schools. But for me, I thank God because I have been here for 38 years.

**Interviewer:** So you thank God for being able to stay here.

**Teacher 2:** Yes, and I know many things about this school because I've been here for so long.

**Interviewer:** And what made you decide to become a teacher? What is your passion?

**Teacher 2:** I love caring for children and teaching them. That's why I became a teacher.

**Interviewer:** Do you still feel the same passion every day while working in the classroom?

**Teacher 2:** Yes, I am okay.

**Interviewer:** That's good to hear. Wow, 38 years is a long time.

## A.7

**Teacher 2:** My firstborn, my daughter, was born in 1996. She is now 38 years old and works at Mount Mary Hospital.

**Interviewer:** Did she go to this primary school?

**Teacher 2:** Yes, she did. I also have a son named Preykot. He got his knowledge from this school as well.

**Interviewer:** What does he do now?

**Teacher 2:** He's an engineer in the aviation field.

**Interviewer:** That's impressive!

**Teacher 2:** Yes, but he hasn't found a job yet.

**Interviewer:** Still looking, I see. And your other children?

**Teacher 2:** I have another daughter named Neema. She's in her first year at university.

**Interviewer:** Wow, all your children have had the chance to study.

**Teacher 2:** Yes, I wanted them to be good mothers, good fathers, and successful in their lives.

**Interviewer:** Over the 38 years you've been at this school, how have you seen it improve?

**Teacher 2:** Many years ago, most students didn't pass exams. But last year, 350 students took the examination, and 391 students went on to secondary school.

**Interviewer:** That's a big improvement!

**Teacher 2:** Yes, even though there are few teachers and many students in each class, we try our best.

**Interviewer:** Have there been changes to the school buildings or materials during these years?

**Teacher 2:** Yes, many changes. A lot of sponsors and volunteers have come to help us improve the school.

**Interviewer:** Were these changes made by the government?

**Teacher 2:** No, most improvements were made through the efforts of sponsors, volunteers, and the school staff.

**Interviewer:** That's amazing. How have sponsors helped?



# A.7

**Teacher 2:** Many years ago, they provided food for all the students. But during the corona pandemic, many sponsors left. Now, only a few sponsors remain, and they focus on helping children in difficult situations—like those without parents.

**Interviewer:** Without this food, would most children eat during the school day?

**Teacher 2:** No, many children wouldn't eat. Some only get tea at home and come to school hungry, which makes it hard for them to concentrate.

**Interviewer:** The brain needs food to work properly.

**Teacher 2:** Yes, when the stomach is empty, the brain doesn't function.

**Interviewer:** What are the biggest challenges you face as a teacher?

**Teacher 2:** The large class sizes are the biggest challenge. It's hard to manage so many students alone.

**Interviewer:** Are there ever extra teachers or volunteers to help?

**Teacher 2:** Sometimes, volunteers help with marking or teaching. It's helpful to have more people in the classroom.

**Interviewer:** Do you have enough teaching materials?

**Teacher 2:** We need more. We mostly use books, but having visual aids like charts or projectors would help a lot.

**Interviewer:** Do you make any teaching aids yourself?

**Teacher 2:** Yes, we create some ourselves. Volunteers also help us make materials that are durable.

**Interviewer:** What teaching aids would you like to have?

**Teacher 2:** Strong, durable teaching aids that won't break easily. A projector would also be great for showing videos and visuals.

**Interviewer:** That would make a big difference. Do you use any unique teaching methods?

**Teacher 2:** We use singing a lot. Children remember lessons better when they sing.

**Interviewer:** That's a good way to make learning fun.

**Teacher 2:** Yes, they repeat the songs until they remember.

**Interviewer:** How do you give extra attention to struggling students?

**Teacher 2:** I stay with slow learners after class for an hour and talk to their parents. I try to help them improve.

# A.7

**Interviewer:** That's great. Do you feel you have a good connection with the parents?

**Teacher 2:** Yes, we call parents to discuss their children's progress. Some parents ask us for help because they can't support their children at home.

**Interviewer:** How many exams do students take each year?

**Teacher 2:** It depends on the grade. We have major exams in February, June, and November, plus monthly tests.

**Interviewer:** Is it hard to prevent students from copying during exams?

**Teacher 2:** Yes, it's difficult in crowded classrooms.

**Interviewer:** What are your hopes for the future of this school?

**Teacher 2:** My dream is for the school to improve even more. I want the children to succeed in life and avoid problems like crime or poverty.

**Interviewer:** That's a wonderful vision.

**Teacher 2:** Thank you.

**Interviewer:** Thank you for sharing your story with us.

**Teacher 2:** You're welcome. God bless you.

## Government Teacher 3



**Interviewer:** Okay, okay, let me check.

**Teacher 3:** Everything is okay.

**Interviewer:** Okay, just to start with, we are filming for research and also for educational purposes. So, just so you know, we are filming for the project we talked about.

**Teacher 3:** Okay.

## A.7

**Interviewer:** And it would be nice if we can have an honest opinion about the school and the education system. So please be very honest. We can work with the footage to create something meaningful.

**Teacher 3:** Of course, I'll be honest. I'm just listening to what kind of questions you're asking me, and I'll answer according to the questions.

**Interviewer:** That's great. If you don't want to answer something, no problem. The intention of the interview is to better understand the teachers' circumstances and the children's context.

**Teacher 3:** Okay, yeah.

**Interviewer:** Who are you and Bara?

**Teacher 3:** Am I starting?

**Interviewer:** Yes, that was just the intention of the interview.

**Teacher 3:** Okay, the goal of education in Tanzania is to elevate pupils to higher levels of knowledge. Here at Bara Primary School, which is a government school, our goal is to teach pupils how to read, write, and do mathematics. We prepare them for higher education levels.

**Interviewer:** So, the main goal is to prepare pupils for further education?

**Teacher 3:** Yes, our primary school curriculum in Tanzania has seven years: Standard One through Standard Seven. After that, pupils go to secondary education. Our goal at the primary level is to make them perform well so they can advance to secondary school.

**Interviewer:** And do you also cater to students with special needs?

**Teacher 3:** Yes, we do. We have a special needs education program. For example, here at Bara, we have a unit for children with intellectual impairments. We prepare them to acquire abilities that help them function and eventually integrate into mainstream classes.

**Interviewer:** That's impressive. Could you introduce yourself for the camera—your name and what you do at this school?

**Teacher 3:** My name is Alex Deda. I am the head of the special day unit here at Bara Primary School. We focus on students who are slow learners, have intellectual impairments, or other challenges.

**Interviewer:** What kind of activities do you focus on with these children?

**Teacher 3:** For students who cannot read or write, we prepare them for daily living activities like washing dishes, sweeping, and dusting.

# A.7

**Interviewer:** How long have you been teaching?

**Teacher 3:** I have been a teacher for 20 years and a special education teacher for 12 years.

**Interviewer:** What inspired you to become a teacher?

**Teacher 3:** My passion is helping children who were once isolated and giving them a place to belong. Many parents hide their children at home, but we encourage them to bring them to school to learn and interact.

**Interviewer:** That's amazing. What challenges do you face in teaching?

**Teacher 3:** Teaching requires a lot of passion and patience. Many children come to school with behaviors they've learned at home, like insulting or bullying others. Our job is to correct these behaviors and make them better individuals.

**Interviewer:** What teaching methods do you use to correct behavior?

**Teacher 3:** We primarily use talking as a method of correction. If that doesn't work, we use small, constructive punishments like walking or doing tasks around the school.

**Interviewer:** And for teaching methods in general?

**Teacher 3:** We reward good behavior and achievements, either with praise or small incentives. For example, we say, "You've done well. Keep it up."

**Interviewer:** Do you have sufficient teaching aids or materials?

**Teacher 3:** No, we lack many teaching aids. We need visual aids, audio aids, and projectors. Most teaching aids are created by teachers, but we don't have enough resources to make or buy them.

**Interviewer:** Are there enough teachers for the number of students?

**Teacher 3:** No, there is a significant shortage of teachers. For example, we have 2,400 students, and we are supposed to have 48 teachers, but we have far fewer.

**Interviewer:** That's a big challenge. Are there enough classrooms?

**Teacher 3:** No, we also lack enough classrooms. Each class has about 100 students, which is far too many.

**Interviewer:** How does this impact teaching?

**Teacher 3:** Large class sizes make it difficult to give individual attention to students. Some students fall behind, and it's hard to identify who needs extra help.

**Interviewer:** Do you think volunteers can help?

## A.7

**Teacher 3:** Yes, volunteers are very helpful. They reduce the burden on teachers and bring new methods and energy to the school.

**Interviewer:** What is your dream for this school?

**Teacher 3:** My dream is to make this school better—one where all children, including those with special needs, have access to quality education and resources.

**Interviewer:** That's a beautiful goal. Do you have anything else to add?

**Teacher 3:** Yes, if there's a chance to assist us, we need support in building classrooms, providing teaching aids, and creating a better environment for our children.

**Interviewer:** Thank you so much for sharing.

**Teacher 3:** Thank you.

**Interviewer:** Thank you. Have a nice day!

**Teacher 3:** Thank you.

## Government Teacher 4



**Interviewer:** Is it okay to film?

**Teacher 4:** Okay.

**Interviewer:** I will just film you a bit while you're talking.

**Teacher 4:** Okay.

**Interviewer:** I understand that's very difficult. It's definitely difficult.

**Teacher 4:** That's why there are certain groups. Yeah, I think. Right.

# A.7

**Teacher 4:** We have many people's.

**Teacher 4:** Yeah. So many, many groups.

**Interviewer:** Yeah. And you know that we read with everybody to get what we are reading?

**Teacher 4:** Yes.

**Interviewer:** You have a lot of different groups?

**Teacher 4:** Yeah, there is a group that provides the books.

**Interviewer:** And the group provides the books, or do the children have to buy the books?

**Teacher 4:** The government provides the books. But the... Yeah, the children do.

**Interviewer:** Yeah?

**Teacher 4:** Yes.

**Interviewer:** Okay. Because the notebooks, they have to buy themselves, right?

**Teacher 4:** Yeah.

**Interviewer:** Do all children have enough notebooks to write in?

**Teacher 4:** They... But they're doing it in the groups.

**Interviewer:** Yeah?

**Teacher 4:** They do it in the groups. But there is a group.

**Interviewer:** Yes. Okay.

**Interviewer:** What do you think the biggest challenges are for you?

**Teacher 4:** I'm thinking it is crowds.

**Interviewer:** Many groups?

**Teacher 4:** No, it's crowds. One person.

**Interviewer:** Yeah?

**Teacher 4:** Yeah.

**Interviewer:** It's like 100, maybe 100?

**Teacher 4:** 100. Yeah.

**Interviewer:** Yes.

**Teacher 4:** So, how do you mean? 100. 100.

# A.7

**Interviewer:** In one stream?

**Teacher 4:** One stream. Yeah.

**Interviewer:** Yes.

**Teacher 4:** But in 2005, we had like 298.

**Interviewer:** 100?

**Teacher 4:** 100.

**Interviewer:** And six, five, whatever.

**Teacher 4:** Okay. All three streams.

**Interviewer:** So, eight streams is about 2.9?

**Teacher 4:** Okay, atmospheric activity, so 3 streams.

**Interviewer:** Okay.

**Teacher 4:** So, each stream probably... Many children. Many children.

**Interviewer:** Why do you think there are so few teachers?

**Teacher 4:** Why? Because they need to get the right education.

**Interviewer:** The government?

**Teacher 4:** They need to give us or to add the teachers we have.

**Interviewer:** You mean they have to pay more for teaching?

**Teacher 4:** Yes, they have to pay.

**Interviewer:** How about salaries?

**Teacher 4:** Salaries?

**Interviewer:** Salaries?

**Teacher 4:** Sorry, I don't know what that means.

**Interviewer:** Payment.

**Teacher 4:** Yeah.

**Interviewer:** Payment?

**Teacher 4:** Yeah.

**Interviewer:** Is payment bad?

**Teacher 4:** Payment is not bad. It's not bad.

# A.7

**Interviewer:** Yes.

**Interviewer:** But what does the government need to do to get more teachers?

**Teacher 4:** The green-fly teachers.

**Interviewer:** There's many teachers in there?

**Teacher 4:** Yes.

**Interviewer:** So, they have a group?

**Teacher 4:** Two teachers.

**Interviewer:** Two English teachers?

**Teacher 4:** Yes.

**Interviewer:** There are many teachers on the street?

**Teacher 4:** Yes, they are just waiting to get employed.

**Interviewer:** So many people could be teachers?

**Teacher 4:** They don't get employed. Yes.

**Interviewer:** Okay.

**Teacher 4:** Okay.

**Interviewer:** Nice. If I can help you with correcting something. If it's too many children, I can do that.

**Teacher 4:** Yes, you can do this. I like it. It's interesting.

**Interviewer:** Yes. What was your name?

**Teacher 4:** My name is Anna Kaping.

**Interviewer:** Sorry, Anna?

**Teacher 4:** Anna Kaping.

**Interviewer:** Anna Kaping is...

**Teacher 4:** Madam, Anna Kaping is...

**Interviewer:** Can you help?

**Teacher 4:** Yes, of course.



## Government Teacher 5



**Interviewer:** Yeah? It's fine. Maybe? It's fine because we are going to weekend.

**Teacher 5:** That's good. Friday.

**Interviewer:** It's good for us.

**Teacher 5:** So you can rest in the weekends.

**Interviewer:** You have children yourself also? Children? You have also children yourself?

**Teacher 5:** Yes.

**Interviewer:** Yes?

**Teacher 5:** I have two children.

**Interviewer:** Two daughters?

**Teacher 5:** Two daughters. Yes.

**Interviewer:** How old?

**Teacher 5:** First one, nine years. Second, five years.

**Interviewer:** Yeah?

**Teacher 5:** I'm ready.

**Interviewer:** Nice. Yeah, you've already said you can just talk together. So don't ignore me. Don't look at the camera if you...

**Interviewer:** It's nice that we filmed this for the research so we can see and observe how the school... observation from the school and how you teach and also what kind of materials you use during teaching. So we're doing research about making a reusable education.

# A.7

**Teacher 5:** Reusable?

**Interviewer:** Teaching aids. Yeah, teaching aid. And it's nice if you're being honest about everything so then we have a good observation and then we can have like a... maybe Witske you can say what else. Then we know what to make and it's good to bring perspectives of different teachers. That's also why I asked you...

**Interviewer:** Alright. So you're fine with filming for the research, not also the publication of the video?

**Teacher 5:** Oh, thank you.

**Interviewer:** Yeah? Thank you. Okay.

**Interviewer:** Can you tell us first again your name? I know Madame Junior. But...

**Teacher 5:** I'm Junior. Junior. Junior. It's Frederick Junior.

**Interviewer:** Okay. And how long are your teaching ready?

**Teacher 5:** I'm about six years.

**Interviewer:** And before?

**Teacher 5:** Before three years from Canada to Virginia. I don't know how much from Virginia to Canada. Okay, so it's nine years. It's nine years.

**Interviewer:** Okay. And why did you become a teacher? What was your passion to become a teacher?

**Teacher 5:** Because I like...

**Interviewer:** But did you like?

**Teacher 5:** Yes, I like to be a teacher. I like to teach as students.

**Interviewer:** Okay. Yes. What do you like about teaching as students?

**Teacher 5:** Yes, I like to teach as students because really I know when I'm a teacher, but not all the students. Even when I'm in my home, I teach my children... children. Yes, when I'm a teacher, but also in my society. I'm a teacher because I'm a mirror of the society.

**Interviewer:** You're right. Also mirror of the society.

**Teacher 5:** All society would mean like I'm a teacher. If you respect me, I'm a teacher. I'm a teacher. I know everything. I know many things.

**Interviewer:** Do you have... In your daily life, if people know you're a teacher, they ask you more things. Or how do they look at you?

# A.7

**Teacher 5:** In society. Do you look at the society? No, you said also in society you feel you're a teacher.

**Teacher 5:** Yes, because when you do something good, they say, "Teacher, bring something good." "Teacher, have a good family." "The family of... the children come from the family of teacher, they have a display." No, some teachers have a display.

**Interviewer:** And how do you bring up the display?

**Teacher 5:** Yes, yes. Maybe not confident teacher have a display.

**Interviewer:** More like...

**Teacher 5:** Interesting.

**Interviewer:** Do you feel you have a discipline also in your daily life because you're a teacher?

**Teacher 5:** Yes. If you're a teacher, you have a good opinion, you have a good society meeting, you have a good opinion.

**Interviewer:** Did you study long and long time to become a teacher?

**Teacher 5:** Three years.

**Interviewer:** Three years. And you got directly employed by the government or you had to wait?

**Teacher 5:** I was employed. I was accepted to finish employment. I got a degree in government.

**Interviewer:** Yes. Because we heard also from Alex that there are many teachers who are graduated but they have to wait together.

**Teacher 5:** Yes, they're waiting for a job.

**Interviewer:** Yes. But you have a lack of teachers.

**Teacher 5:** Yes. You're in a lonely school, right?

**Interviewer:** Yeah, but like because the children are many.

**Teacher 5:** So many. It was over in the end. But maybe. Yeah. We have a lot but we are not enough. Because I think every class must have a two teacher. You say you have a same, you have 95 children. For one, teachers do you have a class?

**Teacher 5:** Yeah. For every student, make sure all students and family, students get a grant. Because you use 40 minutes to teach your students.

**Interviewer:** Sorry?

# A.7

**Teacher 5:** 40 minutes. You teach your students. After 40 minutes, you should give exercise. After exercise, you should mark. After 40 minutes, you have another period for another class.

**Teacher 5:** So. It's already 40 minutes. We are many but not enough. Yeah. It's already 40 minutes, I think, to mark all the new schools.

**Interviewer:** Yes, 40 minutes.

**Teacher 5:** Not five exercises. Yes. Yeah.

**Interviewer:** That's a lot of work.

**Teacher 5:** It's tricky. But, you know, if you have a job, how can you do this? And because. To me, it should be hard to hack a book, exercise, to go another class. Yes.

**Interviewer:** Okay. What subjects do you teach?

**Teacher 5:** English. History of Tanzania. Science. Arts and sports.

**Interviewer:** Yes. Okay. A lot of subjects for our teacher.

**Teacher 5:** Yes. Alright.

**Interviewer:** What's the time I ask?

**Teacher 5:** Yeah.

**Interviewer:** So, because of the big classrooms, are you okay?

**Teacher 5:** Thank you. So. Because the classrooms are big, what teaching methods do you use to make sure all the children are in full interest?

**Interviewer:** What teaching methods do you use?

**Teacher 5:** Myself? Yeah. What teaching methods do you use?

**Interviewer:** Teaching materials when I want to see.

**Teacher 5:** Sometimes you draw. You see this? You draw the picture. If you draw a picture, if you want to write, write, and turn the world for the student to be able to grade, if they know a teacher, to go to the office.

**Teacher 5:** Or sometimes you say. To read. Read. Maybe teacher, yeah, but at some schools, maybe when I want to teach, first of all, I come with boardroom, skateboard.

**Interviewer:** So you have real objects?

**Teacher 5:** Yes, real objects or other. Right, I prepare. And sometimes you use body language, right? With the combination of the children in front. Yes, in front of the class.

**Interviewer:** Sometimes you use song.

# A.7

**Teacher 5:** Song? Yes, you know, they like song. If the student understands the song, when they sing, they remember faster. Because when they are playing, they sing that song.

**Interviewer:** Yes.

**Teacher 5:** So it's made easier to remember. Does it work, you think, that they understand the song? Or is it just that they sing it because they don't understand what they are singing?

**Teacher 5:** You sing? When they sing, you show action. Maybe that's when you hear the song that's made up.

**Teacher 5:** No, you are not. You know, you heard, you know, this is hard. When you do like this, it's not working.

**Interviewer:** Yes, when this is finger.

**Interviewer:** And we saw, I'm sorry, a lot of children repeating sentences with the classroom. So the teacher says something and the children say the same. Do you do that a lot?

**Teacher 5:** Yes.

**Interviewer:** And why?

**Teacher 5:** When they are students.

**Interviewer:** Can you explain what you are doing then, that teaching method?

**Teacher 5:** Teaching method.

**Interviewer:** Can you explain what you do when the children have to copy you?

**Teacher 5:** I show, if it's teaching aid, I show the students and the students. Maybe, I don't know what to do. I mean the drilling or copy imitation. For the teacher, you show the man to teach. Yes, it's read a book. And the teacher does like, if it's so, you sing like, then you show like, it's able to make to know that you are talking about.

**Teacher 5:** So it means a slowing and it's easy for slowly to know what you are talking about.

**Interviewer:** And how do you reward the children when they do something correct?

**Teacher 5:** When writing or when we ask a question.

**Interviewer:** Yeah, or if you ask a question, clap for me.

**Interviewer:** Does that work?

# A.7

**Teacher 5:** If you do, answer a good question. Even the clapping is on the same rhythm I saw in the class. Yes, like, oh, sing good, better, best, or well done, well done, you are the best.

**Interviewer:** Yeah, we saw that. But in my class, when volunteer marks come to say, "Woo!"

**Interviewer:** And what do you also do the same things, but when they have better handwriting, for example? Give the wrong answer, or have better handwriting. Do you do something?

**Teacher 5:** If you do one question, just try again.

**Interviewer:** Try again? Okay. And does that work?

**Teacher 5:** If it's writing, like this, or like this, or like this, or like this, or like this, or like this.

**Interviewer:** So, until you turn off your recollection.

**Teacher 5:** Okay.

**Interviewer:** So you don't have, because we show other teachers when having a bad handwriting, say, "Let the class say, bad handwriting."

**Teacher 5:** Yes, it is such a good handwriting. Yes, right for them. Very good, excellent.

**Interviewer:** You draw like a small, like a little bit of face to show it's smiley. But he was bad, bad handwriting.

**Teacher 5:** Teacher let me put this in the order, right there.

**Interviewer:** Okay.

**Interviewer:** Do you have difficulties with getting more, keeping the whole class engaged? And make sure everyone keeps listening?

**Teacher 5:** I make sure. Because in the desk of the Lasset, in street, street students, I make sure. When I enter the class, it's my rule, you should not see proper anyone.

**Interviewer:** So they know, they should not see proper in the school.

**Teacher 5:** And when, they are afraid of me.

**Interviewer:** They are afraid of you.

**Teacher 5:** So when you come in the class, they are afraid of you. So they, they know what you do. Just like boss, just like boss, he was wrong. It was like this.

**Interviewer:** It's your appearance. So when I teach, I like them to do this. Because when they do this, they take this, they go this, but when they do this, like this.

# A.7

**Teacher 5:** And look at me, they look at me and tell us, "When you see somebody, not look at me, just look at the hand." If you don't listen to me in the first half of the hour, they ask, "Why do you not come in the desk like a boss?" They just sit like a boss.

**Interviewer:** Then you know who is not engaged.

**Teacher 5:** Yes, I know. Because I started with them from the start of one. I know all of them.

**Teacher 5:** And I know if the student is thinking, if the student is feeling bad, I know.

**Interviewer:** Because when you are teaching, a teacher must walk around when you are teaching.

**Teacher 5:** Yes, in order to make sure all are understanding you.

**Interviewer:** If somebody is sick, when you walk around, you will see.

**Teacher 5:** It is important to know someone is sick, someone is upset, or has other issues. So even though you have lots of children, you still know how they are feeling.

**Interviewer:** And everyone in the class, you know them?

**Teacher 5:** Yes, because we start from the start of one, and you are a teacher, teacher, teacher. So you grow with the child.

**Interviewer:** And you know everyone with their family?

**Teacher 5:** Also their family. Yes, because three years later.

**Interviewer:** Do you see the parents also sometimes?

**Teacher 5:** Yes, sometimes. They come to take results. The parents come.

**Interviewer:** And you talk to the parents?

**Teacher 5:** Yes. Because they are not scared of you, they are afraid of you. So you sit with the parents and say, "Here's where you are."

**Interviewer:** Are you staying?

**Teacher 5:** Yes, we will stay.

**Interviewer:** Yes?

**Teacher 5:** Yes, I will stay. Yes, I will stay. Yes, I will go with the children.

**Interviewer:** Do you want to talk?

**Teacher 5:** You don't have the camera.

# A.7

**Interviewer:** Alright. When you think about teaching every day, what do you think is the most difficult next thing that the classrooms face? What are the most difficult things you face?

**Teacher 5:** My class?

**Interviewer:** Yes.

**Teacher 5:** Or is everything fine? Nothing. Nothing is fine. Because the number of students is big. That's why we don't make everyone understand you.

**Interviewer:** Because it takes time?

**Teacher 5:** Yes, it takes time for 40 minutes. And we have the lack of material.

**Interviewer:** Material?

**Teacher 5:** Material for drawing. If you want to teach something, you should even draw. So you have the lack of material, my chalk, my little card for drawing.

**Interviewer:** Sometimes they want to play sports?

**Teacher 5:** Yes, like Friday. We should come to play. But we have no material for the ball, for some things to play. So that's why we are sitting in the class.

**Interviewer:** Is it like a day for sports?

**Teacher 5:** Yes, we are fighting, we are fighting.

**Interviewer:** But for example, the volunteers also brought footballs. But because of the big number, we don't know how, but then the balls disappear and other teaching aids disappear.

**Teacher 5:** That's important.

**Interviewer:** So the volunteers notice that the things that are donated to the school break quickly or they disappear. How do you look at that?

**Teacher 5:** After we finish playing, we store them. Because when the volunteers bring something like a ball, we give it to the sports teacher to keep it. The sports teacher then manages when it's time to play. After playing, it is brought back to the teacher to store again.

**Interviewer:** What teaching aids would you like to see the most? Like posters, or something else?

**Teacher 5:** Like this, something to draw myself or to write myself. Something good. It's a good teaching aid because it is easy to make and use. But these things are very expensive.



# A.7

**Interviewer:** I understand. And what about the current quality of education in the school? How many children go to secondary? What is the future of the children?

**Teacher 5:** All students here in our school, the rules of our school are hard-working. Teachers must work hard. Secondary school teachers say, when they start their first period in August, they work even on Saturdays. On Sundays, they only rest. They ensure all students pass.

**Interviewer:** That's a good effort. And you ensure that all children pass?

**Teacher 5:** Yes, we ensure. If a student struggles, we address it. Maybe the parents cannot pay for food, and the child is hungry. We talk to the parents to resolve this.

**Interviewer:** So you ensure all students are taken care of?

**Teacher 5:** Yes, every student. Even if we have one or two students lagging behind, we make sure they pass. We address problems with parents and ensure cooperation.

**Interviewer:** Does it happen a lot that children don't come to school?

**Teacher 5:** Yes, some children are absent. Sometimes it's because of bad company or poverty at home. Parents don't follow up, or children feel shy due to their circumstances. That's why teachers need to keep track and engage with every student.

**Interviewer:** That's a big goal, to support all these children.

**Teacher 5:** Yes, some parents drink too much, and children don't have support. They come to school without food, and you can see it in their behavior. When we notice, we engage parents to provide for their children before they come to school.

**Interviewer:** Do you meet parents often?

**Teacher 5:** Yes, every three months we call meetings with parents to ensure the children are doing well.

**Interviewer:** That's a lot of work.

**Teacher 5:** Yes, but it's important.

**Interviewer:** Do you think all teachers work hard every day?

**Teacher 5:** Some teachers don't. But if you are a teacher, it's your responsibility to teach. It's your job, and you should take it seriously.

**Interviewer:** It's everyone's own responsibility?

**Teacher 5:** Yes, everyone has their role.

**Interviewer:** What is your dream for this school in the next 10 years?

# A.7

**Teacher 5:** Increase the number of teachers and reduce the number of students in each class. If we have 45 or 50 students, it's better. But now, it's too many.

**Interviewer:** That makes sense. We noticed your classroom had good structure, and the children were engaged. That's impressive with so many students.

**Teacher 5:** Thank you.

**Interviewer:** Do you have advice for other teachers facing big classrooms?

**Teacher 5:** Use songs and teaching aids to ensure all students understand. Don't leave students alone during class time. Be present and engaged.

**Interviewer:** Good advice. Thank you. Anything else you want to say?

**Teacher 5:** No, but if you can help us with materials, that would be great.

**Interviewer:** We will consider it. Thank you for your time.

**Teacher 5:** Thank you. Bye-bye.

## Liechtenstein Teacher



**Interviewer:** Okay, but let's start. Hello Sarah.

**Liechtenstein Teacher:** Hi.

**Interviewer:** Take your breath. This conversation is with us.

**Liechtenstein Teacher:** Sure.

**Interviewer:** Can you introduce who you are, how long you've been volunteering, and why you want to do it? Just a little introduction.

**Liechtenstein Teacher:** My name is Sarah, I'm 22 years old, and I just graduated in summer. So I'm a teacher now and I'm volunteering for two months at a government school.

## A.7

**Interviewer:** And your first solution is also your work?

**Liechtenstein Teacher:** Yeah, that's good.

**Interviewer:** Maybe give us a little picture of the school.

**Liechtenstein Teacher:** In one class, we have around 100 students. My class has 90, my neighbor's class has 110, and another one has 105. And for every class, there's only one teacher.

**Interviewer:** That's a huge number.

**Liechtenstein Teacher:** Yeah, and the teacher is often alone. If she's not around, the children are left alone because there's no substitute teacher.

**Interviewer:** So the students are often just left in the classroom?

**Liechtenstein Teacher:** Yes, and with 100 students in one classroom, it's crazy.

**Interviewer:** I can imagine. That must have been your first impression when you walked into the school.

**Liechtenstein Teacher:** Yes. When I first got there, I thought, "How do they manage 100 students in one class?" I just wanted to observe and take it all in. It's overwhelming because how can you deliver a good lesson in that situation?

**Interviewer:** That's tough.

**Liechtenstein Teacher:** Yes, it's all frontal teaching, and it's hard for the teachers. They don't even have enough materials. Some kids can't afford pencils and have to borrow from their neighbors. The teacher just writes on the blackboard, and it's a lot of drilling—say something, and the students repeat.

**Interviewer:** Can you give an example?

**Liechtenstein Teacher:** Once, I walked into the classroom and said, "Hi children, how are you?" They all replied, "I'm fine, thank you." I tried something different, saying, "Are you ready for English?" But they just repeated, "I'm fine, thank you," because they didn't understand what I'd asked.

**Interviewer:** So they're just repeating without understanding?

**Liechtenstein Teacher:** Exactly. If you change the drill even slightly, they get lost and don't know how to respond.

**Interviewer:** So your first impression was large classrooms, a lack of materials, and heavy reliance on drills.

**Liechtenstein Teacher:** Yes. The parents have to buy notebooks and pencils themselves, and many can't afford it.

## A.7

**Interviewer:** Did you have expectations before coming to Tanzania?

**Liechtenstein Teacher:** Not really. I had never been to Africa, so I didn't know what to expect. I talked to a headteacher from a private school here, and she mentioned that corporal punishment is common in schools. That shocked me.

**Interviewer:** That must have been difficult to hear.

**Liechtenstein Teacher:** Yes, and it was even harder to see it firsthand. Teachers hit children to discipline them, and the kids are afraid. It creates a tense and silent classroom environment.

**Interviewer:** Do you have personal experiences that illustrate this?

**Liechtenstein Teacher:** On my birthday, I was late to school. When I arrived, I saw a boy kneeling on the floor, shivering, with a teacher standing behind him holding a stick. Another boy was sitting on a bench with a swollen eye.

**Interviewer:** That's horrible. What did you do?

**Liechtenstein Teacher:** I intervened. The teachers explained the boy on the floor had hit the other one, and they were going to punish him. I said, "How does punishing with violence solve the problem?" I took the injured boy to the hospital and brought the other boy along to show him the consequences of his actions.

**Interviewer:** That was a powerful decision.

**Liechtenstein Teacher:** Thank you. It's hard to change the cycle because the children see the teachers using violence and mimic it. They even walk around with sticks, hitting each other.

**Interviewer:** Why do you think the teachers rely on punishment?

**Liechtenstein Teacher:** It's partly because of the overwhelming number of students. In a class of 100, it's almost impossible to manage without some form of strict authority.

**Interviewer:** That's such a challenging dynamic.

**Liechtenstein Teacher:** Yes, and the system doesn't support alternatives. With fewer students, non-punitive methods would work, but with these numbers, it feels impossible.

**Interviewer:** Have you noticed anything else after spending more time there?

**Liechtenstein Teacher:** At first, I thought the teachers were all kind and wanted the best for the children. But I've since seen instances where they put themselves before the students.

**Interviewer:** Can you give an example?

## A.7

**Liechtenstein Teacher:** I donated porridge for the children. Later, I found out teachers were taking some for themselves. That was heartbreaking because the children often don't have enough to eat.

**Interviewer:** That's really disappointing. What do you think causes that behavior?

**Liechtenstein Teacher:** It's partly because the teachers themselves are underpaid and overworked. I understand their struggles, but it doesn't justify taking resources meant for the children.

**Interviewer:** What about the children's living situations?

**Liechtenstein Teacher:** Most children come from poor families. Government schools are free, but parents still have to pay for uniforms, books, and food. Many parents can't afford even the basics, so the children go hungry all day.

**Interviewer:** That's heartbreaking.

**Liechtenstein Teacher:** Yes, and I've seen children sharing lids or small containers to eat the porridge. Some even use their hands because they don't have cups.

**Interviewer:** How have you managed to fundraise for these resources?

**Liechtenstein Teacher:** I started a fundraiser on Instagram for my friends, and they were very generous. They said they trusted me to ensure the money would be used properly, unlike donating to an organization where the impact is less clear.

**Interviewer:** That's amazing. How did you distribute the resources?

**Liechtenstein Teacher:** I bought food, notebooks, and pencils and handed them directly to the children. I've learned not to give things to teachers because sometimes they sell them instead of using them for the kids.

**Interviewer:** That must have been a difficult realization.

**Liechtenstein Teacher:** It was. For example, I once brought a ball for the kids, and the next day it was gone. I later found out a teacher had taken it and sold it.

**Interviewer:** That's so frustrating.

**Liechtenstein Teacher:** Yes, but it taught me to give things directly to the children. They truly value what they receive.

**Interviewer:** What advice would you give to others wanting to volunteer in a similar context?

**Liechtenstein Teacher:** First, come to the country and work directly with the people affected. Don't try to help from a distance. Also, focus on small, meaningful changes, and always ensure your efforts directly benefit the children or community.

## A.7

**Interviewer:** That's excellent advice.

**Liechtenstein Teacher:** Thank you. It's not always easy, especially when dealing with corruption or resistance to change, but small steps can still make a difference.

**Interviewer:** How do you handle the cultural differences?

**Liechtenstein Teacher:** I've learned to respect the culture and work within its constraints. Change can't happen overnight, and you have to start with the younger generation to create lasting impact.

**Interviewer:** That makes sense.

**Liechtenstein Teacher:** Yes. For example, I wanted to run a workshop on women's health, but the government wouldn't approve it. It's hard to address these issues when there's so much resistance.

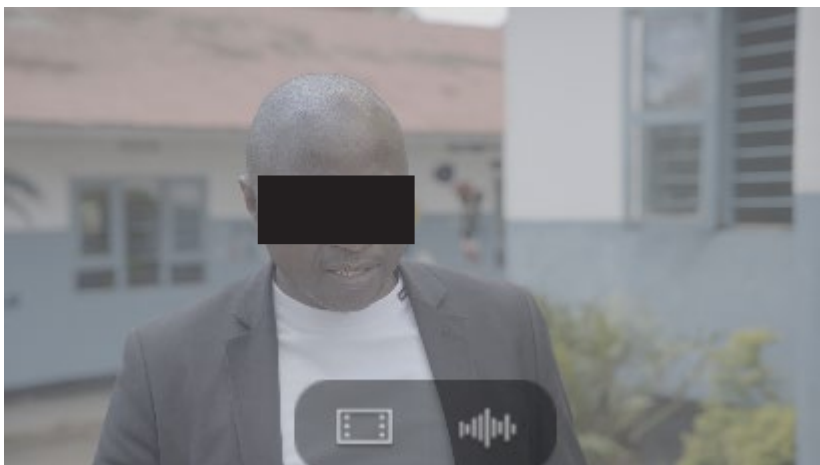
**Interviewer:** What's your biggest takeaway from this experience?

**Liechtenstein Teacher:** You can't change everything, but even small acts of kindness can have a ripple effect. A single smile or a simple hug can mean the world to a child.

**Interviewer:** That's beautiful.

**Liechtenstein Teacher:** Thank you. It's what keeps me going, even when the challenges feel overwhelming.

## Private school head



**Interviewer:** So I am ready. Is it okay for you to film the video?

**Private School Head:** No problem, no problem.

## A.7

**Interviewer:** Nice. So, you have an interview with Witzke, and it's also nice if you have a conversation. You can also look at Witzke and ignore the camera, so I'm not there. You just would do it here. You can also ask questions.

**Private School Head:** Yes, maybe I will ask questions as well.

**Interviewer:** Okay?

**Private School Head:** Okay.

**Interviewer:** So, we are Yann and Witzke. Maybe you can introduce yourself again and then say how long you've worked at the school and why you became a teacher.

**Private School Head:** Once again?

**Interviewer:** Yes.

**Private School Head:** Okay, my name is Ticha Celestine, Philipo Mshomba. I'm the academic master of Ereto Pre and Primary School. I've been working here now for about three months. I came here in August this year.

**Interviewer:** Okay. Thank you. And did you work somewhere else before?

**Private School Head:** Yes, I was working at another school.

**Interviewer:** It's called Dinka School?

**Private School Head:** Oh really? Yes, it's from Dutch people.

**Interviewer:** Dutch people?

**Private School Head:** Yes, Dutch people, yes. I worked there for one year. Then, from there, in January, I shifted to another school. It's called Tuishime Pre and Primary School. It's located in Teirusha, Main Town. So, this August, I decided to join Ereto Pre and Primary School, and now I'm working as the head in the academic department of the school.

**Interviewer:** Okay. And for all three schools you've mentioned, were they private schools?

**Private School Head:** Yes, private—all private schools.

**Interviewer:** Why did you choose to work in private schools and not in government schools?

**Private School Head:** Well, I was in government schools about seven years ago. Then I broke my contact with the government because I had plans to further my career. When I tried to return to government schools, I found that my contact had been terminated by the government. Since then, I've been working in private schools.

## A.7

**Interviewer:** So, you saw the difference between how they teach in government schools and how they teach in private schools?

**Private School Head:** Yes, there's quite a big difference because in private schools, people work very hard, and they really use English.

**Interviewer:** And in government schools?

**Private School Head:** In government schools, we use English, but not very strictly. In private schools, there's a lot of English, a lot of work, and many activities compared to government schools.

**Interviewer:** Do you think, apart from English, that Swahili provides a different learning outcome? Is the learning quality better in private schools, or is it the same in Swahili?

**Private School Head:** The quality is the same, but the difference is in the language. However, the quality in private schools is generally better because, as I mentioned, private school teachers work much harder than government school teachers.

**Interviewer:** Why do you think private school teachers work harder?

**Private School Head:** It depends. When you apply for a job in private schools, you sign a contract with the owner, and you must write your objectives and plans—what you're going to deliver. You commit yourself to show your performance and make an effort. In government schools, there's no such commitment.

**Interviewer:** So here, there are people who monitor and evaluate your teaching, unlike in government schools?

**Private School Head:** Yes, in private schools, management—like the owner, the manager, the school headmaster, and the academic master—all work closely to supervise and assess the staff. It creates a strong chain between workers and administrators.

**Interviewer:** That's very different from government schools.

**Private School Head:** Yes, in government schools, you just enter the classroom, perform your duties, and wait for your salary. It's very different from private sectors.

**Interviewer:** Do you like this way of working within the private school management system?

**Private School Head:** Yes, I like it. It ensures that the school's performance and academic system are well-organized.

**Interviewer:** Is the salary similar in private schools and government schools?



## A.7

**Private School Head:** No, it's quite different. Most private schools negotiate salaries, and they tend to pay more than government schools. Private schools need good results, so they are willing to invest in quality teachers.

**Interviewer:** And how do parents know about the quality of education in private schools?

**Private School Head:** Parents learn about the quality from their children's performance—monthly, annual, and terminal results, as well as national exams. They see that private schools generally provide better quality education.

**Interviewer:** Do you also have parent meetings to discuss these outcomes?

**Private School Head:** Yes, we conduct about four parent meetings per year, compared to one or two in government schools. These meetings help us address children's problems and administrative issues.

**Interviewer:** Can you give us an idea of how much parents have to pay for private school fees?

**Private School Head:** It varies. Some schools have donors, which can reduce the fees, while others don't. The fees depend on the school's management and the services provided.

**Interviewer:** What services are included in the school fees?

**Private School Head:** They include food, books, stationery, and sometimes transportation. However, the books are often not enough, as they're expensive.

**Interviewer:** Do you think paying these fees is a challenge for many parents?

**Private School Head:** Yes, it's challenging. Parents want to provide quality education for their children, so they work hard to save money little by little.

**Interviewer:** How do parents choose which private school to send their children to?

**Private School Head:** They often ask other parents or hear about schools through conversations in the community.

**Interviewer:** Can you tell us more about Dinka Schools?

**Private School Head:** Dinka Schools are very well-funded, with about 90% of their budget coming from sponsors. They have everything—computers, libraries, music programs, and more.

**Interviewer:** That sounds impressive.

**Private School Head:** Yes, but their fees are very high, about four million per year, which many local parents cannot afford.

# A.7

**Interviewer:** That's a significant amount.

**Private School Head:** Yes, and because of the high fees, the number of students is decreasing. That's one reason I left.

**Interviewer:** Do you have anything else you'd like to share with us?

**Private School Head:** No, just thank you for having this conversation. I appreciate it.

**Interviewer:** Thank you so much.

**Private School Head:** Thank you.

## Private School Teacher 1



**Interviewer:** What is your age? 5 to 6. It's preschool. It's right? It's the CCS.

**Teacher 1:** We're under school for research, for different kinds of quality, while teaching APS, while teaching A, you may need.

**Interviewer:** We are product design students, so we're designing reusable teaching aids. It's, for example, alphabet boards to help the children read their letters. So that's why we want to ask you some questions and get to know more information. Can you introduce yourself again, like what is your name and how do you teach in the school?

**Teacher 1:** My name is Jessica, and I'm going to pre-class you. I'm teaching pre-class 1. I'm teaching here for 10 to 12 years.

**Interviewer:** That's a long time.

**Teacher 1:** Yes, it is a long time.

**Interviewer:** Okay.

## A.7

Teacher 1: Yes, I'm teaching pre-class 1. The kids, they start the baby class. After baby class, they come here to pre-class 1. They stay here for 1 year. After 1 year, they go to class 1. Okay. So they have 6 subjects, 5 subjects. They have numerous. They have language and communication. They have relations. They have healthcare and environmental.

Interviewer: And they also teach them, in order to know how to communicate with them. Because our country is the language they use is Swahili. So they are supposed to know even Swahili, to read Swahili, to write and also Swahili. But here in the school, it is English medium.

Teacher 1: So all the 1 subjects we teach in Swahili, but the other subject we teach in English.

Interviewer: Alright. Have you always taught this class, like the pre-school class?

Teacher 1: Yes, the pre-school.

Interviewer: You always are a pre-school teacher?

Teacher 1: Yes.

Interviewer: Okay. And before you went to a young rosas, were you teaching at another school? Or is this your first?

Teacher 1: This is my first school.

Interviewer: Alright. So you stayed here for now, your career?

Teacher 1: Yes, I've been here since I was 18.

Interviewer: That's here?

Teacher 1: Yes, I'm still here.

Interviewer: Nice.

Teacher 1: Yes.

Interviewer: So you like it here?

Teacher 1: Yes, I do.

Interviewer: Yes. Alright. So you've been in private school or government school teacher? And why did you go to private school?

Teacher 1: Yes, I teach in private school, not in government. I didn't teach in government, I started in private school.

Interviewer: Is there a reason?

# A.7

Teacher 1: Yes.

Interviewer: Why?

Teacher 1: I didn't start teaching in government, because I didn't learn the college for government, I didn't learn the private. So when you went to private college, you're supposed to go to private school, because in government, they sent their teacher to their school. But in private, you're supposed to find yourself writing letters for yourself. Yes, to yourself. So what you learn is you learn to teach the kids like this in NASA.

Interviewer: So right away, I don't know the same thing. Is there a big difference between private school, educational school?

Teacher 1: Yes, private school, for example, this medium school, they taught the kids in English, but in government, they taught the kids in Swahili language. Only one subject is in English, they taught them English. But the other subject, they taught them in English, in Swahili.

Interviewer: And the study you did to become a private school teacher, is that study very different than the government school study? Like the academic background?

Teacher 1: Academic background, way. So you told us you went to private school because you studied to become a private school teacher, right?

Interviewer: Yes.

Teacher 1: And to become a government school teacher, it's a different study?

Interviewer: No, it's not a different study.

Teacher 1: Oh, sorry. Yes, it is the same study, but then the government, they choose them, they choose the teacher, they do them, and then also we apply it.

Interviewer: I understand. Okay. So would you rather teach at a government school or at a private school? Or do you just like to teach?

Teacher 1: Yes.

Interviewer: Alright. And about Young Roses School, what do you think about the current state of the school? Are there things you would like to see improved?

Teacher 1: Improvement is good. There are many, many things, and when you teach them, they are able to understand.

Interviewer: Yes.

Teacher 1: Yeah, I see. Yes. So I can already understand this.

Interviewer: Do you sometimes have difficulties that you have too little material?

# A.7

Teacher 1: Yes, I have to do material. Material, I don't have any. Yes. For example, the material for those real material, I don't have. The word books, yes, the books, see? And also those material for kids to play with it, they don't have. Like toys. And the kids show them, like, even those books for drawing picture, coloring.

Interviewer: Color in the light?

Teacher 1: Yes.

Interviewer: Do all children have enough books?

Teacher 1: Yes, they have them. The parents book.

Interviewer: Parents book?

Teacher 1: So when the parents book them, they use it in them. When the parents book is finished, they buy the materials.

Interviewer: Alright. So you know the parents of each child?

Teacher 1: Yes, they do.

Interviewer: Yes, they do?

Teacher 1: Sometimes speak to them.

Interviewer: Yes.

Teacher 1: And then you can tell them?

Interviewer: Yes.

Teacher 1: And sometimes they can tell them that the exercise book was finished?

Interviewer: Yes.

Teacher 1: All right.

Interviewer: Yes. And you have sometimes more difficult. For example, there are no posters in the classroom?

Teacher 1: Yes.

Interviewer: You need like visual material to show children, like images, letters.

Teacher 1: Letters.

Interviewer: Yes, letters.

Teacher 1: I have written. I keep with them the office because the classroom did some here. That's why we remove all the material. But then you can tell them. So it was action week.

# A.7

Interviewer: Yes.

Teacher 1: Yes.

Interviewer: Jess, do you have questions?

Teacher 1: I don't know.

Interviewer: I think it was a day in the sky.

Teacher 1: Yeah.

Interviewer: How do you... Because the children are very young. How do you learn them to write? How do you start learning to read them right?

Teacher 1: I start with them with letters. When they know letters, they start with the simple words. For example, the letters which start with letter A,

Teacher 1: We read all the letters letter A after letter Z. After that, we sound those letters. But letters in sound. You sound letter A sound.

Teacher 1: Letter B sound the word. Letter C sound the word. Yeah. And then we say, you know, we start with a word. For example, the word which is here is the sound of the app. We say that the apple acts, and then after that, we start with the small words. For example, a word which is here is the sound of the app.

Teacher 1: Apple, bag, mat, card. We start with A, bag, card, da, bag, gah, ha. Then after that in touch, we start with sound A. A, bag, cake, day, fe, gah. Then after that, they will be showing their words. After showing the words, when they are showing the words, they start reading. For example, card. Some, some the card and some the tea. Get the very card.

Teacher 1: Some the bag and some the, get the very ball. Yes. Some the dog and some the tea. Dogs. You get dog and tea dogs.

Interviewer: Nice.

Teacher 1: Yes.

Interviewer: So really step by step.

Teacher 1: Yes, by step.

Interviewer: And the teaching method for somebody sing a song about the letters, right?

Teacher 1: Yes. The I from Inc.

Interviewer: Yes.

Teacher 1: Yes. So they know that song.

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Interviewer: That song is starting singing at the festival, when they are teaching. As they are teaching them, they sing that song. Yes. You have other teaching methods and song?

Teacher 1: Yes.

Interviewer: So, for example, they do A.

Teacher 1: Yeah, they have that song. Yes. Yes. Yes.

Interviewer: All right. Very good. What you are doing?

Teacher 1: Yes. Yeah.

Interviewer: I am surprised that you are the same. You think? And that is your goal, right?

Teacher 1: Okay.

Interviewer: Thank you. All right. You have questions?

Teacher 1: No.

Interviewer: Okay. Thanks. Thank you for your time.

Teacher 1: Thank you very much.

Interviewer: I hope you didn't make you scared because we were dying.

Teacher 1: Okay. No problem.

Interviewer: Thank you very much.

Teacher 1: All right. Thank you.

Interviewer: Thank you for coming.

Teacher 1: Yeah. We enjoyed to see you. Thank you.

Interviewer: Have a nice day.

Teacher 1: Thank you.

Interviewer: All right. That is the day two. Thank you.

Teacher 1: Thank you.

Interviewer: Okay.

Teacher 1: What did I just say?

Interviewer: Pauze einde shot. We found our open paper, the thing in the scene.

Teacher 1: And we found a lot of stories about it.

Interviewer: Do you like it?

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Teacher 1: Yeah. Let's see. It's a pretty beautiful picture.

Interviewer: Can I ask you one more question?

Teacher 1: Yes.

Interviewer: So you made these, for example, with their reusable teaching material.

Teacher 1: Yes.

Interviewer: So this is chalkboard, they can trace the letters and small letters in the early stages of the weather.

Teacher 1: Yes.

Interviewer: And another one is you can put a stowage in the letters. It's small, you have stowage and you can put it in different backgrounds. It's a sign that you can apply and you can write it in the end.

Teacher 1: Thank you very much.

Interviewer: Oh no, it's just for asking you. These are examples. So it's not just a gift, sorry. It's your perspective on it. So this is, for example, you can write Simba or Lion. Then they can draw a lion.

Teacher 1: And you can put the pieces out. It's like a puzzle.

Interviewer: It's like a puzzle, yes. So if you see these.

Teacher 1: Yes.

Interviewer: Do you think it would help you teach?

Teacher 1: Yes. Yes, very nice.

Interviewer: And why do you think it would help you?

Teacher 1: Like why do you think it would help the children to make also...

Interviewer: They...

Teacher 1: Also they...

Interviewer: They set this balance.

Teacher 1: Yes. Something they say to find the balance.

Interviewer: Sorry?

Teacher 1: Some kids they think to know the balance.

Interviewer: Okay.



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Teacher 1: Yes. That is like this, which is having some balance.

Interviewer: Yes.

Teacher 1: To join the balance.

Interviewer: Yes.

Teacher 1: To join the color.

Interviewer: Yes. Oh, you make colors on this.

Teacher 1: Yes.

Interviewer: Ah, okay. Like a puzzle. And with the letters, do you think they need this or they don't need it? Because they can pass this.

Teacher 1: They can. They know it. When this kept the letters in.

Interviewer: So only...

Teacher 1: They know these things.

Interviewer: Yeah, so they don't need this? Or do you think it helps?

Teacher 1: Yes. They know. They know the letters. So this is... it's better for them.

Interviewer: Okay. Yes. You...

Teacher 1: Um...

Interviewer: Well, try to... it's okay.

Teacher 1: Um... Yeah.

Interviewer: Which my advice is...

Teacher 1: Yeah.

Interviewer: We'll try to do the slots.

Teacher 1: Yeah. Okay.

Interviewer: So, if we make another project from this?

Teacher 1: Yes.

Interviewer: Do you have an idea what it could be? What would be used depending on it? Do you have an idea how we could design it?

Teacher 1: Yes.

Interviewer: What would be useful for you?

Teacher 1: Now...

# A.7

Interviewer: Yes, if we're going to design another one. To start something... yeah, it can be a different idea. Something with woods, childhood patterns, letters.

Teacher 1: Yeah. Okay.

Interviewer: I can...

Teacher 1: They like it.

Interviewer: Okay.

Teacher 1: They're waiting here and draw a picture inside. They...

Interviewer: Yeah.

Teacher 1: Draw a picture back in the main. To start it, to start it removing this, and then they keep it to draw, to draw themselves.

Interviewer: Oh, I didn't see anything.

Teacher 1: Um...

Interviewer: This idea is you can... the children get it right over on one side.

Teacher 1: Yes.

Interviewer: And then drawing the other side.

Teacher 1: Yes.

Interviewer: And then you can put the pieces out.

Teacher 1: Yes.

Interviewer: Put it on the table.

Teacher 1: Yes.

Interviewer: And they can rearrange and put it down.

Teacher 1: Yes.

Interviewer: And put it down.

Teacher 1: Yes.

Interviewer: They can remove all the input.

Teacher 1: They can put the stone in there.

Interviewer: Take it to a range.

Teacher 1: To a range. Yeah.

Interviewer: They can call it a picture.

# A.7

Teacher 1: Yeah, of things.

Interviewer: But my question was...

Teacher 1: Yes.

Interviewer: If you see this and you think about another idea, if we can make some words to help...

Teacher 1: But what idea do you have?

Interviewer: I can write even in numbers. So, yeah. If, example, number one, two, three, four...

Teacher 1: One of my new ideas.

Teacher 1: Then you choose the letter to choose them. One of us is number. Here, for example, number one, two, three, four, five, six. And then here I write also five, one, two, three, four, five, six. Then you choose this. This number one, you put it there. And then to choose to put the numbers this side. Then to choose the numbers in which this side.

Interviewer: Yes. Alright.

Teacher 1: Yes. So the number one. Yes, number one. Yes, number one. In which number one. In which number in which is O and E. So a kind of...

Interviewer: Yes.

Teacher 1: Alright.

Interviewer: Yes. So you have ideas how you can use this.

Teacher 1: Yes.

Interviewer: That's interesting. We can make more. Do you think about the different variation of this? Like more puzzle pieces or different shape? You have ideas? What would be useful?

Teacher 1: Yes, a kind of idea. In many ideas.

Interviewer: Yeah. Do you look with this?

Teacher 1: Okay. Yes.

Interviewer: Interesting.

Teacher 1: Yes.

Interviewer: Then we show it to also the blade one picture.

Teacher 1: Yes.

# A.7

Interviewer: A comparison. So we take your ideas into a gallery.

Teacher 1: Yes.

Interviewer: Is that okay?

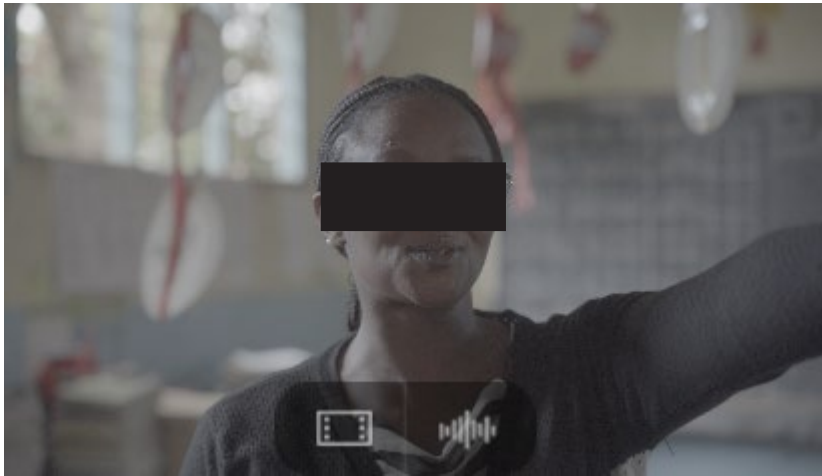
Teacher 1: Yes.

Interviewer: Alright. So we first show up today.

Teacher 1: Thank you.

Interviewer: No problem.

## Private School Teacher 2



**Teacher 2:** I teach in private schools because we have many private issues and it is... I don't know what to make it. I like it. Okay. Yeah. And the reason is we have enough time. We are serious teaching. We have many, many follow-ups. We are very serious and it is very... The first things, directors and teachers, they are very serious with their... With following the teachers. What are they teaching? What are they doing? And we know my teaching practical. Using teaching aids.

**Interviewer:** Okay. Lots of teaching aids so that children can understand well. Teaching aids like this?

**Teacher 2:** Yes. This is real teaching aids and this man-made things.

**Interviewer:** Okay. And real objects are like maybe you have an apple, you have mango, you can have a jebu, you have to teach things which are found maybe in the classroom. You can see the table, windows.

**Teacher 2:** So...

**Interviewer:** I understand. And who made all these nice things?

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**Teacher 2:** I am the one who made these.

**Interviewer:** You made them all?

**Teacher 2:** Yes. Except this one.

**Interviewer:** Wow.

**Teacher 2:** I'm the one who made these things all in this class.

**Interviewer:** So you also were the one that came up with what to make?

**Teacher 2:** Yeah.

**Interviewer:** Like what roles?

**Teacher 2:** Yeah.

**Interviewer:** Nice.

**Teacher 2:** But normally we are going according to the curriculum and syllabus. Yeah. You pick the topic there, maybe it is about the national flag. Then we draw the national flag. Then you teach children what is the national flag, how many colors, what do these colors represent.

**Interviewer:** Yeah.

**Teacher 2:** And so on.

**Interviewer:** Yeah. Because we also saw many children can write very good.

**Teacher 2:** Yeah.

**Interviewer:** And speak English already.

**Teacher 2:** Yeah.

**Interviewer:** How do you make sure that children get these skills? Because, for example, at government schools, we saw that children were not able to sing out of bed at seven years old or five. How do you think that this private school is able to do so?

**Teacher 2:** We are able to do so. Why? We use a lot of songs.

**Interviewer:** Uh-huh.

**Teacher 2:** We use pictures. We use also to play music.

**Interviewer:** Uh-huh.

**Teacher 2:** No, to play, to watch TV. Watch something on television. Can use laptop. So the children, they like to sing mostly. When they sing and say this is queen, they will

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never forget this is queen because they have sung with their eyes, they hear, and they speak.

**Interviewer:** Ah, interesting. So there is a computer book?

**Teacher 2:** Yeah.

**Interviewer:** You go there a lot with the children or not?

**Teacher 2:** Yeah.

**Interviewer:** You go there a lot with the children?

**Teacher 2:** Yeah.

**Interviewer:** Like every week?

**Teacher 2:** Yeah.

**Interviewer:** Yeah?

**Teacher 2:** Yeah.

**Interviewer:** Okay. And if you could improve things in the school, what do you want to see improved?

**Teacher 2:** The things which I'm improving is the school. We need a lot of laptops. Computers, computers, things which we need. Even this project.

**Interviewer:** Project?

**Teacher 2:** Yeah.

**Interviewer:** We need your projectors?

**Teacher 2:** It can help us.

**Interviewer:** What?

**Teacher 2:** Teaching.

**Interviewer:** It helps in teaching?

**Teacher 2:** Instead of using blackboard, we use projectors and children will see which our practice is there, then they will understand more. And they will never forget. If they see the picture of this, this, maybe a mat, they will never forget.

**Interviewer:** Makes sense.

**Teacher 2:** Yeah.

**Interviewer:** Because what do you think is still the biggest challenge?

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**Teacher 2:** The biggest challenge is the nature of the children.

**Interviewer:** Nature?

**Teacher 2:** The quality of the nature.

**Interviewer:** The biggest is the nature of the children?

**Teacher 2:** How he or she can receive what the teacher teaches.

**Interviewer:** You have examples?

**Teacher 2:** Exactly. I have them. This one, for example, the nature of the children. She is receiving slow, slow. Very slow. You can use very many, six, more than six months to make him or her understand. But there are fast learners. They can teach only one day, two days, then he or she can catch up.

**Interviewer:** Makes sense.

**Teacher 2:** And the last question I have is, if you compare the private schools to the government schools, what do you think is the biggest difference?

**Teacher 2:** The biggest difference is the number of schools. In government schools, they have a lot of children. But in private schools, they have children. That's why you can afford to teach them.

**Interviewer:** If you have 40, 50 children in your class, you can afford to teach them.

**Teacher 2:** But then you can meet one class of even 80 children. One teacher cannot afford to teach them. What can a teacher do before? Individual attention, correcting all the notebooks.

**Interviewer:** What do you think?

**Teacher 2:** Making follow-ups is difficult. But as we have fewer children, you can make follow-ups one by one. And he understands and he gets a problem with someone. You know he or she has this problem of reading, writing. So it is very simple to help.

**Interviewer:** Makes sense.

**Teacher 2:** Alright.

**Interviewer:** Thank you.

**Teacher 2:** Nice.

**Interviewer:** Thank you very much.

## Painter



**Interviewer:** Oh, so many children in one classroom, like 100 children, too few teachers for all the classes.

**Interviewer:** But it was nice to see that the children, it is a nice environment for the children to play outside and be together. And food was donated so they got lunch. So they were very happy about that. But like, there were...

**Painter:** Thank you. But there were too few teaching aids, I know. Huge pencils.

**Painter:** It's hard for the children to afford.

**Painter:** Can I say something before filming? Yeah, before filming I can say something. I think the main difference with the two systems of education, I think it's only the service.

**Interviewer:** Okay.

**Painter:** Because with the provision of education, I don't know, I'm not sure with the... Because we have many government schools, primary schools, and in each region, you know, I don't know how the local government system goes there. So I'm not sure, I haven't gone all around the government schools. So some of them are better, some of them are not better. And what I know, or what I think, it's not the quality because there are some students that have gone to private schools and have the worst outcomes like the marks.

**Painter:** And there's some students that have gone to the government school and have the best marks, like from the results of the exam.

**Painter:** So that's the proof. A student can stay... I'm not saying that the bad service is also good, no. But I think it's only the efforts of the student. Because what I know from our government, like that's the thing that we know, it cannot... That's how it is, it does not provide like the local, the government, everything that the hospitals, the schools, their services are not good.



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**Painter:** Because that's the government, that's how the system is. But when it comes to private hospitals, private... It's all the system like private hospitals, private education. That's somebody's money, people investing there. That means people, like can I say the parents, who have money, they can spend as much as they want, just for the same communication that a child can get from the government school. So it's about money. If people have money, then they think maybe they can provide better services or better education. Because I can say I'm not proud of myself that I have a good English. It's not the best thing that I can be proud of myself. There's so many things, like we don't learn English only in school. We have science, we have many, many, many other things that are more beneficial. Because even in the government school, they say, "Ah, you have to speak English, you have to be good in English right now." Yeah, you have to be good in it, but it's not the basic thing that you have, that you're going to carry along the whole of your other things that have many profits. So I don't know about you guys, how you think about it, but that's my opinion, how I see it.

**Painter:** So no matter, it's not about the only the education system, it's also the health system. You go in the rural areas, the health system from the government, it's not the same with the private. Because in private places, you have to pay money.

**Painter:** So in the government system, you pay less money. Yeah, so that's how it works.

**Interviewer:** So it's, you say, it's a difference of the...

## Woodworker

**Interviewer:** I'm not that excited like this one. Yeah. You see this here? Move this here.

**Woodworker:** Yeah, this is crazy. This is crazy. Like this track. Because this is that. I think it's so far. So what do you think?

**Interviewer:** This is enough for here. Okay.

**Woodworker:** Yeah, and this is not, yeah. No, it's better. Yeah. Oh, it's better. Yeah. That might be my sample. It's really good. It's taking like this. Yeah, I'm going to do it.

**Interviewer:** You said you don't, you want it to be loose.

**Woodworker:** Yeah. Because here that you can put a paper with different widths in the tree.

**Interviewer:** That's great!

**Woodworker:** So this is not cool.

**Interviewer:** Yeah, good. Okay, and the dirt. This one. Wow!

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**Woodworker:** This is 3 mm but 6 mm is in the area. So I bought the carla. 4 mm, 6 mm. Then after putting the carla, I come to stick the 4 mm carla in there. Blue. Yeah, that's why you see it. Lucky. Here it is.

**Interviewer:** Yeah, that's better. First paint.

**Woodworker:** Yeah. And then, here we go. Mmm.

**Interviewer:** Great. Oh, I know what this is done. Alright. Great. You're great, you feel that you're a pro player. Mmm.

**Interviewer:** Can you describe your work process? Like each step you took to have these end samples. So, for example, you default for the laser cutter, where did you start? And then each step.

**Woodworker:** Yeah? That is the computer. You put the measurements. And the computer, the computer, the computer. It's the perfect use.

**Interviewer:** What's the program that you use?

**Woodworker:** I don't remember.

**Interviewer:** You don't remember? So your friend taught you? Was it difficult?

**Woodworker:** So long as I looked, you processed it.

**Interviewer:** Yes, only on the computer for one day?

**Woodworker:** Yes, one day.

**Interviewer:** That's okay. I think if we can have the file ready for you, it's easier. You can just put it in the computer and make it. So maybe you can ask your friends. Does it use Illustrator or another program?

**Woodworker:** Yes, that's great.

**Interviewer:** Okay, and then the next step?

**Woodworker:** The next step, I call it this board. It's a bit bored. Then stick it. Yeah, you let it dry and then flip it.

**Interviewer:** Oh, you did two layers of paint?

**Woodworker:** Yes, two layers of paint.

**Interviewer:** How long did the painting and assembly, the gluing, take?

**Woodworker:** Yeah, the whole day.

**Interviewer:** So one prototype takes how long, do you think?

**Woodworker:** For this one? Yes, I could go all day for all three.

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**Interviewer:** Which one was the easiest?

**Woodworker:** This one.

**Interviewer:** Okay, why?

**Woodworker:** Because it's a simpler process.

**Interviewer:** Which one was the most difficult?

**Woodworker:** The gluing is difficult.

**Interviewer:** Alright. Can you describe your process for the turquoise? What steps did you take to assemble it?

**Woodworker:** We started this to take this for two weeks. For the defense, you put this to the cell for it. The fish are mixed. The fish are for the fish.

**Interviewer:** What steps did you take?

**Woodworker:** Stick it, then feed it open.

**Interviewer:** Right. Okay, great. Do you have ideas on how we can simplify the process for you to make these products easier or quicker? How can you make the assembling quicker?

**Woodworker:** So simple this one. No problem.

**Interviewer:** If you were to make 50 of these, how can it be done faster?

**Woodworker:** To make it quicker, I'd remove some parts of the process.

**Interviewer:** Like removing glass?

**Woodworker:** Yes, removing glass might make it easier.

**Interviewer:** Do you use new techniques or materials for these samples?

**Woodworker:** Yes, laser cutting was new.

**Interviewer:** Have you worked with these materials before?

**Woodworker:** Not like this. For shelves, yes. But now I see other uses.

**Interviewer:** Do you like this new direction?

**Woodworker:** Yes, it's good.

**Interviewer:** What are the disadvantages of laser cutting?

**Woodworker:** It's expensive and not common here.

**Interviewer:** How many products can you make from the leftover wood?

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**Woodworker:** Maybe five pieces of this one.

**Interviewer:** Which design uses the most wood?

**Woodworker:** This one uses the most wood, about eight pieces from a full sheet.

**Interviewer:** Interesting. Thank you for sharing all this information.

**Woodworker:** You're welcome. Let me know if there's more you need.

## IBES Leader



**Interviewer:** You said you were also going around different private schools, right?

**IBES Leader:** Yeah. To see the differences. That is very important for us to do that because we don't have our own premise school. So what we are doing, we need to learn from the people who have their own premise school. How are they doing? How are they assessing their own children? What is the life of class one? So at least we need to reach that level. That is very important for us to go around to each other. But also even management-wise, how do they manage, like maybe from class one up to seven? Because you never know. Today maybe we don't have a plan to start our own premise school, but maybe the demand might be higher. We must open the school. So that's why we used to go around, check the prep grammar schools. How are they making their own timetables? The nature of the teachers. The challenges. Other things we are doing to make everything okay. So that's why we have to learn also from each other. So we are doing research.

**Interviewer:** How many private schools have you seen?

**IBES Leader:** For me, I have visited more than 50.

**Interviewer:** That's a lot.

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**IBES Leader:** That's a lot because we also visited different kinds of schools because we have the training college for the students there. Yeah, for the teachers. We always also find jobs for them. So the aim of visiting different private schools is not only for us to learn about the private schools but also it's like kind of selling our teachers. That means we have teachers that can do. So in Arusha, I visited more than 30 schools. Kilimanjaro, I went to Dar es Salaam, more than 35 schools. So it's like more than 100 schools we have visited. That way, it makes it easier for our students once they have completed their studies. All of them do well.

**Interviewer:** And when you go to a private school, what do you look out for?

**IBES Leader:** Yes, I think for me, the first thing is the first impression. You know, the first impression is like everybody wants to see the good things. Even when I go anywhere, I just advise them about their first impression. Like when people come in, the first thing is what you see. You can see the nice colors, the gardens, that's the first thing. And then from there, we will see the levels. For example, maybe I want to see the pre-premise school in that class, how are they doing, teaching methodologies, to see their timetables. And also sometimes the challenges, because here we are dealing with parents, sometimes I ask them, do you meet difficulties, like parents who are hard to deal with? But also, we have the issue of the children. How long does it take for the children to get familiar with the new environment, with the new school? I mean the transition periods of each one.

**Interviewer:** Transition from preschool to primary?

**IBES Leader:** Yes, yes, that's what we are talking about. Because even here, it sometimes takes a lot of time for the children to get familiar with this.

**Interviewer:** Do you see a lot of differences between different types of schools?

**IBES Leader:** Yes, there is a lot of difference. That maybe also depends on the teacher's understanding. Because you know we have different kinds of colleges with different approaches. So you can see there are really different kinds of projects. Even the way you can see the classrooms. The way you see the IBES classroom is different from the way you see another school classroom. The way it's arranged is different. That's why I say we need to teach each other and learn from each other. I cannot say that we are 100% the best. But I can say many people have to learn so many things from us.

**Interviewer:** Can you give an example about private schools that are still struggling, starting up, and not delivering very good quality?

**IBES Leader:** Do you mean by mentioning the names?

**Interviewer:** No, not the names, but about the issues.

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**IBES Leader:** Ah, okay, the things which are really... I think number one for me is much like classroom setup. Because classroom setup is much related to child development. The way you arrange your class, the way you organize your class, also includes having good learning centers. You cannot teach the child from morning up to evening. You need at least time for the children to have fun. And also resources-wise, like books, toys, or materials that can help in teaching. Good teachers are also a key issue. And lastly, how you manage the school. How you transform the curriculum, translating it from writings to something that is really understandable.

**Interviewer:** Okay, good topics. Because we are doing a project designing reusable student materials, like wooden boards where they can learn the alphabet, for example.

**IBES Leader:** That sounds good.

**Interviewer:** We went to government schools. It's very difficult to implement because materials disappear or break, and there are too many children. We went to private schools this year, and we noticed there isn't really a lack of student materials there. They had a lot of notebooks. Do you think private schools have a lack of student materials?

**IBES Leader:** Not many. Not all. Some of them don't have enough, and some do, but they don't know how to use it. You know, even the issue of toys, for example. We have different shops selling toys, but you need knowledge on how to buy those toys. Toys need to match the age and level of the children. For instance, in a class with small babies, you need big toys.

**Interviewer:** Like educational toys?

**IBES Leader:** Yes, educational toys. That's what I'm talking about. People need to get a lot of education. The issue isn't having capital to start a school; it's about having knowledge. That's why I always advise directors or school heads to be part of teacher training. Teachers often move from one school to another, but if the director understands the school, they can bring change.

**Interviewer:** That's interesting. Do you have more questions?

**IBES Leader:** It's a clear story. You can talk very well.

**Interviewer:** We also spoke to one teacher from Dinka. I think you have a collaboration with Dinka as well. There's already a good foundation there, right?

**IBES Leader:** Yes, Dinka is good. It has a strong foundation.

**Interviewer:** What is your background? What did you study before working here?

**IBES Leader:** I have a bachelor's degree in linguistics. That means I studied languages. But I also spent a lot of time learning about education. I can teach language, but I also

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have a background in management, education, and psychology. When I joined here, I received a lot of training, especially from Maru, who used to coach us daily and implement new methods. She guided each person based on their strengths, whether it's education or finance.

**Interviewer:** Has Maru been a teacher?

**IBES Leader:** Yes, her background is as a general educator. She's versatile and has a lot of experience.

# A.8 REFLECTIVE DIARY FIELDTRIP

## Monday 04/11/24 Baraa Primary School (gov)

We went to government primary school together with a volunteer teacher from Liechtenstein, who is already teaching first grades there for two months. She prepared us that sometimes teachers hit students to punish them when they did something wrong. Last Friday she had a bad experience: when she arrived at school they were hitting a child so much that the child was completely shaking and had to go to the hospital.. We walked on the school area and I smiled at children, who seemed very happy. Then there was this immediate reality shock. Four 'big mama' teachers were standing on a platform with sticks in their hands, boys of around 12-16 should stand in line in front of them and they were hit one by one. They should stick out their hand palms and get hit there and also they got hit on the sides and on their bottoms and back. You saw the pain in their eyes, keeping themselves strong to not start crying. Liechtenstein teacher walked towards the teachers and they stopped, as she says that this is not what we want to see and they should stop. Weird that they listen to us, but Liechtenstein teacher told me that if she was away for a few minutes and she walked back in the classroom a child was crying, obviously because the teacher hit them. It is so weird to realize that this was also the case in the Netherlands. Only since 1982, it is forbidden to hit children without approval of the parents. I thought it was terrible to see. And it is difficult to not feel like you have to solve everything when you know that the children would not get hurt when you are around. But, I do not have this influence, they will just continue with their traditions in their own way. No outsider can solve that, it has to come from bottom up and inside out.

We met Teacher 1, the school head of the disabled children. He explained that the school really likes Jens to document everything we do, as they never had good footage of the school and it can also be used for fundraising if the state of the government schools would reach more people's eyes. He told us that there is a big scarcity of student materials as the government school is free BUT the parents need to pay for school uniforms, a cup for porch during lunch and notebook and pens. The children who go to government schools are from the poorest families, living in very bad circumstances that they cannot afford this.

Teacher starts the tour from the disability children, to preschool (starting from 4 y/o), grade 1 (starting from 6 y/o), grade 2, 3, 4, 5 and 6 (until 18 y/o). There was a disabled child who was sitting in a too small wheelchair, because of this his back was already starting to reshape in a wrong position. Liechtenstein Teacher raised money to make him a customized wheelchair. The child was so happy and so thankful, he did not want to sit in his new wheelchair as he was afraid it would get dirty. The disabled children were all in 1 class different ages. The teacher explained that they mainly do motoric exercises and singing songs.

We walked into every classroom and teacher introduced us to the teachers. Almost all teachers made their class stand up and sing songs. You notice that it is all about repetition. They sing the same riddle all the time: 'Goodmorning Teacher'- goodmorning class, how are you? 'I am fine, thank you teacher, and you?' – I am also fine, thank you. Sit down!. Sarah told us that if you react with something different like, I am fine, are you looking forward to English class? That half of them sit down, following the normal rhythm and the other half looks very confused and don't know what Liechtenstein teacher is talking about. In Grade 1 there was 1 classroom where the teacher had decorated every piece of the wall with teaching materials: colored paper with drawings and letters and numbers. teacher called it: it's just amazing, this is a piece of art. All the other classrooms we saw were plain, only a chalk board and old tables with benches.



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We went to 10 classrooms and in 4 of them there was no teacher. Children were just sitting in silence 'as they were trained' like Alex said. Or some classrooms were quite chaotic. Also in 2 other classrooms there was a replacing teacher as teacher told us that the real teacher has an 'excuse' for two weeks or something due to family difficulties or some other reasons. It was immediately clear that the absence of teachers is high and the classrooms are filled with around 100 children per classroom who not even all have a teacher...

All students are wearing the same uniform and they all had millimeter shaved hair, as teacher explained to not see differences between poor or poorest. Outside they have nothing to play with, they were playing soccer with very little broken balls where there were only 3 for 2400 children. teacher explained that when you give them something to play with it is broken or gone after 1 break as they are with so many. Liechtenstein teacher also donated pens and notebooks 1 to all the children, and half was gone the next day. A good chance is that the children had to give it to the parents and they were used for other things or were sold.

The water pump was broken, so there is no water on the schools. I wonder how the children can drink and I strongly think they only drink at home or on the way back somewhere? Alex explained that the pump should get cleaned once in a while or changed but they did not know how to. This water reservoir thus was not designed robust and intuitive enough to keep making a continuous impact as it was already out of service. teacher also showed the toilets. They were extremely dirty and holes in the ground. I have no idea how children who are having a menstruation are handling this here, as there are no ways to clean and no bins to throw stuff away?

We quickly saw the school head. He seemed disinterested in us and was dressed very formal, we had the feeling it was not a nice man. We went into the school head office where the female school head was sitting. There was a kill atmosphere at first, she only cared how long we were staying, there was not much more interaction. Sarah told me that she also went to the head teacher to ask about the hitting incident this morning, but she only replied with 'yes, they deserved it they did something bad'.

I wrote down the observations during the first class we joined in a notebook. I was sitting in the back of the classroom. As there were no chairs left I had to sit in the bench together with 2 children. Of course this was way too close to 'observe from a distance' as I am new and interesting for the children. They continuously wanted to interact with me. Tomorrow we will try to place ourselves on a better distance. However, these are my observations notes:

## Boraa primary school

Day 1 - Monday  
Class B grade 1  
unstructured observation

Children drink porch from a cup. They stand in row and Sarah (teacher-volunteer) puts porch in their cup (filling for only 3/4 to have enough for all 100 children in line).  
~ 30 children have no cup (parents need to provide) so they wait, while their friends drink first. I see children giving their cup to the next one, Sarah is almost out of porch, not everyone get porch yet.

Lunch is no clear break as <sup>some</sup> children are still writing some things, some are sitting on the ground, some just sit in their bench and wait(?)  
Some are sleeping  
Sarah starts singing → end of break?  
some children still eating.  
there is little focus. But Sarah starts dancing while singing, you see the children copy the energy.

On the board is written: 'I woke up in the morning... etc. They repeat and use body language. I hear some children not to me say completely different things but you can not hear. When Sarah stops children also stop but Sarah wants them to finish the sentence, they can not do that or do not understand the task.

3 other children come insight.  
Teacher closes the door for another one who can not go inside. Child is looking through the window.

This classroom is completely decorated by colored paper with numbers, drawings and words. This is the initiative of the teacher herself. She bought & created the material herself. All other classrooms are completely empty.

Teacher holds a stick, she hits on table to get the children more quiet, when she does you see the children getting alert immediately, as they bounce back. They seen afraid of the teacher. Teacher does not say anything. just 'quieter', so I don't know what the

children have to do. Most children also look clueless.

Some stand up and walk to the desk of teacher. Where Sarah & teacher ~~were~~ with a red pen the sentences of calculations that the children wrote down. Teacher only stripes through when wrong, no further explanation. Sarah tries to explain what went wrong & what is correct answer with her hands, child looks with empty eyes, don't understand. For me, it was not clear at all what they should write and for the children next to me also not. They just entertain themselves a bit. Half of the children don't have notebooks and pencils, so they don't even have a chance to do the test.

In total 10 ~~per~~ children come to the desk, it takes a long time (45 min) before they get feedback.

Sarah starts singing head-shoulder-belly game. Teacher is laughing & playing along and children ~~are~~ are also enthusiastic again. This comes out of nowhere again. There was no structure or clear goal/motivation of what they're going to do.

Some children's eyes almost closed, they look exhausted. Some have blue ~~streaks~~ bruises on their body ~~parts~~ is it from getting hit? I see broken uniforms, different green buns. The parents have to buy the uniforms.

I see two little water bottles, no drinks to see further. The water pump at school is broken, so they cannot get new water.

Sarah stopped singing, again there is no clue what to do.

Children in front of me have a fight, they pull on each other's uniforms. I ask the children around me 'What do u live the next in school?' They have no clue what I am saying. I ask 'What is your name?' After 5 repetitions a friend of the person next to the one I am asking translate to Swahili and now the whole group gets it. They start telling their names.

They also want me to write their names, They are so eager to learn.

Teacher shouts sleep on the desk! And kids stick on table. Children do it immediately, I don't know what's the goal of this.

## Tuesday 05/11/24 - Baraa Primary School (gov)

The second day that we went to the primary school. We arrived and went directly to Madame Juliette to observe at a Grade 3 English lesson. You can read the observation notes left. The lesson had a clear structure (begin, middle, end) and all children were participating. This time we were sitting in the back of the classroom, so really on a distance. My partner had the opportunity to film a lot. After the lesson we had an interview with Madame X, she was afraid to go on camera because of her 'bad English' she sad. In the interview she told that she really needs visuals to put on the walls. However, when we were back at the accommodation, Liechtenstein teacher told us that another volunteer filled the whole classroom with posters but now everything is gone.. Madame Juliette told Sarah that they took it down because of the test week period.. where did the posters go?

Next, we went to Grade 6 to a Reading Comprehension lesson with Madame X you can read the observation notes. Here it stood out that reading books needed to be shared by groups of 10 children as there were only 10 books and they were with 100 children. When the lesson was done (30 min) she told us she will teach the rest of the day in Swahili, so we can better come back tomorrow. After 20 min we saw her walking away from the school terrain with all her stuff, done for today? Grade 6 is obligatory to be in school around 3-4 p.m.

Teacher absences was a big topic today. One classroom full of children (Grade 3) had no teacher the whole day. Interesting that most did stay in classroom, but it was a chaos. Everyone was doing their own things, some were playing, some were fighting. Interesting to see that one child was holding a workbook for the other child to read what was inside and to copy it on the chalkboard. Were they trying to teach themselves? The front row of children was looking at how the girl wrote on the chalkboard, 5 had a notebook and were writing things down. When we entered to room to get a better view of what was going on, 1/3<sup>rd</sup> of them stood up to sing their drilled song when a teacher comes in, we kindly told them they could just sit down they don't have to do that for us... We tried to ask the students in front if they were trying to teach themselves, but the class was too enthusiastic that people had come to their classroom (finally)! So they started to sing their happy Hakuna Matata song very loudly.

We peaked into the classroom next to this one, where 20 min ago a teacher told us to not come in because she was going to teach in Swahili. The class was orphaned now and we saw her walking away with all her stuff. So... we decided to go in and ask the children where the teacher was going. It felt a bit wrong, like we were investigating or something and you saw that some children were afraid to 'snitch'. As 1 girl `wanted to explain (see video footage), however another child told her to stop.

So together with the classroom of the Reading Comprehension lesson 3 classrooms were or 'orphaned'. We went for a break and saw 100 children playing soccer (3 different fields) at 11:30 (no break time), we are wondering: do children see this as school to actually learn? Or is this just a (kind of) 'safe' place for them to be with friends and just chill in the benches and play outside when the teacher is away?

Tomorrow we're going to interview Liechtenstein teacher. Today she told us that she bought the porch and beans for the children herself. It was 800 euro's (200 porch and 600 beans) for 1 month food for 2400 children (2000 children x 20 days / 800 euros = 2 cent per meal). They had to buy the food herself otherwise the money would 'disappear' in the pockets of the school head.

Wietske

Deborah

Patricia

Grade 3 - Day 2 (Class of Juliet & Marcus)

9:05 stand up sit down, stand up sit down arms up down

Twinkle Twinkle Little Star - loud  
Children singing new song very loud pointing towards each other, half are smiling, some do a small dance.

New song: about 'Brush my teeth' grow my hair? with hand signals wash my face

They pick their backpack → 'Bring my things'

This is the way I go to school: They are running through class.

This is the way I sit in c  
Today is 'Tuesday' - takes 3-timer before you can understand

still you hear half of children say something else → children say 5th of now → Teacher

Girl has to stand up and repeat the

sentence: she is pulling her skirt with a little bit shakey head.

A boy needs to do the same also pulling his trousers → curves?

When they are correct the teacher lets the class clap their hands and scream 'woohoo'

All children are looking towards the teacher and are quiet and listening

Teacher writes 'personal pronoun'

she explain singular plural

I

we

she

they

he

they

it

they

you

you

body language

pointing at student & making groups of students.

Th She lets ~~to~~ two students sign, she ask what they are doing.

Class has to answer while pointing so there's active interaction.

2 boys in the back right are not joining, the right one is hanging over his desk, almost sleeping.

The other boy closes his eyes every

### Exercise

use I, we, you, she, it, they, he to complete the sentence

20/100

Sometimes children stand up to voice

what teacher is writing.

Quite a lot of movement. They sit

very close to each other, so normal that they can not read all spaces of chalkboard.

Teacher takes the sentences out of the workbook → does she have

a plan for today?

A lot of sound outside → preschool

& first grade is playing and windows are open.

3 children are pointing ~~to~~ their

fingers → they have question?

Teacher is finished with writing 5

sentences on board 'If you're

finished raise up your hand

hands go down.

Teacher is walking through

class looking what they write

half of children are walking to gether

in silence/peaking

~~things~~

minute, almost falling asleep.

She Juliet keeps letting children do something and keeps the class

interacted by pointing & answering

2 children in front are sweeping, they

have to answer, they say

'what I am doing'

3 times wrong → teacher corrects

by raising her voice & writing on

board. children in front look shy.

'last example'

Teacher walks out of class for 1

min → children immediately start

talking and looking towards us.

child in the back is sleeping

She ends class by: 'If you're happy

and you know it clap' - children

have to stand up. Boy next to

boy who's sleeping quickly wakes

his friend up.

Plastic tanks are underneath benches.

They fill that with water I think.

"Okay, open notebooks & get ready

for 'exercise'." Children start rummaging

a bit and take out their notebooks.

All children have a notebook!

time duration of personal pronouns: 20 mins

9:25



## Grade 5

10:30 Children are sitting in groups of 10 reading around a book because only 10 boys for 100 children. They are reading out loud. Boy has to read out <sup>other</sup> → Boy is quietly helping.

2 boys are sitting in the back of a group now standing up to look what they're missing. Not the whole group can see what they have to read.

When teacher asks something, half of children or less are answering with. Difficult to hear the child who is reading.

2 Boys are clapping harder & chatting it's too much energy to read with.

1 has to read, he knows where to start reading?

'good clap for him'

'good, better, best' with claps.

Most children are looking another way than the book.

Girl next to us is sleeping on table,

there is more and more rumour, more difficult to hear.

Teacher calls them 'you', 'you', 'you'

End of reading →

9:50 Done with marking

I helped teacher mark, it is way too much with 100 children

Half of children raised their hands to get marked,

30% of the children was not able to copy the sentences on paper.

30% copied the sentences completely & filled in something on each question 60% copied half/answered half wrong.

classical answering → every 10 people stand up eager to give the answer.

3 claps if they did correctly.

'Correct if you were wrong and then you ~~can~~ can take a break.'

Interview Madame Juliette <sup>afraid about</sup> <sup>with so</sup> <sup>don't</sup> <sup>want to be</sup> <sup>on camera</sup>

- Book helps me → visual to hang to the wall

- I need images & body language

- I like teaching as it makes me feel like a child again.

- 95 children difficult! But I know where slow learners are sitting & how to get them involved

Teacher tells us that lesson is over and we can better go to another class as she will teach in Swahili further.  
We went outside. After 20 min we saw her walking away with her stuff. Done for the day!

Day 3 (6/11/24) Basaa Primary School

'So end of reading let's go to Q.'  
'When did... celebrated?'

26 correct? YES (in choir)

'Where did... take place?'

'At the... stadium.' correct!

~~Teacher writes up of 5 questions next~~  
~~subject is social science in Swahili~~  
~~so we are to be given a different~~  
~~topic~~

~~Now the task for the children was to~~  
copy the 5 questions about the text they just read & answer them.

Teacher walks towards us, short interview (see film)

I propose to help mark the answers as there were so many children, she gave me her red pen. I started marking. It stood out that some children (20%) weren't able to copy the sentence and NO children answered more questions than the first two, which we answered. Klassikal. So, it was more a copying writing lesson than reading comprehension. Should the focus be different? expectation gap. How come these children can not yet answer the questions? Or was it too little time (15 min)



## Wednesday 06/11/24 - Baraa Primary School (gov)

Today we started observing at a class of madame X, grade 3. I could not make a lot of notes on paper as a lot of the time she was watching what I was writing. So, I put extra things in this reflection. Madame Tesha said she was going to give a science lesson in Swahili. However it was not clear what was happening. I think she told them in Swahili that the children had to finish a clock reading exercise and then bring their notebooks to the correcting staple. 50% of the children already were done with the exercise so were doing nothing. Madame X did not seem to care as she sat next to us and was wanted us to interview her, so we walked through our interview questions. After 10-15 minutes, 70% of the children were doing nothing as they already gave their notebooks, so I wanted to wrap up our conversation to make her start teaching again, but she told me "don't worry" and she wanted to talk more to us. We talked for 30 minutes... another 30 minutes of learning nothing. It was 10:00 and apparently the children had breaktime from 9:20-10:20 but they did not go outside until Tesha told them they can go outside at 10:00.

After the break, Madame X was planned to teach Swahili in the same classroom. She was nowhere to find so Madame X gave children the task to go find her. It happens a lot that teachers make students run errands for them, I even saw children buying shampoo or red pencils or food for the teacher. It is a sad image, as it looks like they are the slaves of the teachers in a way. Madame X finally came to the classroom at 10:45, complaining that she 'did not want to teach' and kept making a scene in Swahili in front of the whole class of students, who were eagerly sitting behind their desks to learn something new. Madame X translated to us what Madame X was saying, and it was just that she did not feel like teaching, because of no reason. We walked outside to go to different classrooms and a total of 3 out of 10 classrooms we peaked inside and there was no teacher. Interesting to see that in one classrooms a girl was writing on the chalkboard and another girl was holding a notebook where she copied all kind of exercises. The front row of the classroom was looking at what she was writing and held notebooks and pens. The children were grade 3 (around 10-12 y/o). I have never seen children of this age do self-study this eagerly. Impressive. We walked into another classroom where 20-30 grade 4 children were also self-studying. They already finished their exams so they were told to not come to school anymore, but they still come because they like to come. There was 1 boy who could speak English very good, because he went to an academy he told us. We asked him a few interesting questions – see camera footage – about how they are learning themselves (it's so impressive they only need a notebook where example exercises are written and a chalkboard to write on) and what keeps them so motivated to study (because of their future dreams, 2 wanted to become pilot, 1 teacher, 1 doctor...).

After around 20 minutes we went back to the classroom of Madame X, she was standing in front of the door and started to apologize to us why she did not want to start her lesson before. She said : 'I am sorry I was hangry, and I am not happy when I am happy, but now I am full so I can teach, come in!'. Why is she apologizing to us? She does not teach for us right? I was strongly wondering if she would have put herself together if we were not there. However, we went to the back of the classroom and her Swahili lesson began. It was 11:15, they started with a drilled song again and some drilled sentences. Then the teacher writes 5 sentences on the board and lets the children read them out loud. The exercise is that the children should put the sentences in the right order to make a story. Then she walks to us and says 'are you ready?' we were like 'Ready for what?' she was like 'do you have enough? Could you do your thing? Cause I have to go I have a funeral.' It was 11:35 and she left. So, basically from 10:00 (or 9:30 for half of the class) until 11:35 the children had 20 minutes of education. We asked what they have to do for the rest of the they? Madame Tesha said they

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have to study themselves until 15:00. There is no teacher for the rest of the day and next week is test week, so they should just keep learning themselves. I looked around and I thought: yeah, right. That's not going to happen, and I can't blame the children..

Another interesting happening today happened when giving out the beans meal to the children. The cooks prepare 4 buckets full of beans liquid for Grade 3 – 6. This is made from the food that Sarah donated and is meant to be for the children. Grade 3-5 we gave out ourselves: the children stand in rows with boxes, lids from boxes or other things that somehow can function like a plate and we give them all a little bit from the buckets. We walked to grade 6 where we wanted to start giving the beans too. We saw that most children were eating already but around 50 children came to us with the message 'we did not have food!'. Liechtenstein Teacher and I were searching for the empty buckets and we thought it was strange that 1 was missing. We walked into the teacher room and Surprise! There was a 3/4<sup>th</sup> filled bucket with beans and 2 children were preparing a big box full, we asked what they were doing, they answered: 'for the teacher!'. Liechtenstein Teacher stopped them from doing so and carried the bucket outside. She asked me to watch the bucket as she wanted to go to the head teacher to get an explanation. The children kindly waited with me around the bucket. Then I got punched by a quite angry teacher in my back, she was searching for a fight almost shouting at me like 'what are you doing it's for the teachers!' I was like 'calm down, this is not for the teachers, this is not yours this is not mine, this food is donated by Liechtenstein Teacher and Liechtenstein Teacher donated it for the children. If there is leftovers of course you can have it but all these children have had nothing yet. Let's wait for Liechtenstein Teacher.' She tried to dominate me by putting herself in a victim role, which we saw more often happening. Liechtenstein Teacher came with the head teacher – who was the main one hitting the children the first day – and Sarah started giving out the food to the children. There were 50 children with clearly clean plates, but the head teacher raised her voice in Swahili, probably telling the kids that they really can not go a second time and it would be praised if they leave some for the teachers. Half of the children walked away, literally scared. Liechtenstein Teacher made sure that she just gave the children a lot, so that the bucket was empty in the end. She was so frustrated and sad. It is so difficult if you want to help the children to make sure your help really targets the children and not persons in the leadership positions of the children. Because unfortunately, there are many people in leadership positions here who only want the best for themselves and literally don't care about the children and their future.

Grade 3 - Madame <sup>L71MD</sup> ~~Teacher~~  
 11:15 Start Swahili lesson with a song  
 Teacher writing on board.  
 Continuous with drilling, children answer questions they remembered.  
 Teacher writes on board again, class is quiet. Someone throws a pen  
 1 child wears a brown blazer instead of uniform, another a jacket. Broken but no money to buy new one.  
 child in the back is standing on bench to see what is written.  
 State of notebooks is very bad, they almost fall apart. Some are wrapped in plastic to have a longer lifetime.  
 Teacher writes exercise on board, (5 min) takes long to write whole exercise & children have to copy the whole sentences, takes long.  
 Filling in is way faster.  
 Teacher lets them drill a few sentences  
 girl in skirt & brown jacket closes eyes whole time.  
 Teacher let them repeat the sentences, they have to set them in the right order.  
 11:35 Teacher tells us she has to go to a funeral, lesson is over, children have to do 'self-directed learning' for the rest of the day...

Grade 3 - science Swahili - Madame ~~Tesha~~  
 children are bringing their notebooks. There is rumor as teacher writes on board. Teacher is done and starts explaining that children had to finish clock exercise.  
 break 9:20-10:20 } we looked at  
 break 12:10-1:20 } the timetable  
 end 2:40-3:30 }  
 We had an interview for 30 min children were looking around, doing nothing. 80% had already give their notebook to Tesha, so did not know what to do, but Tesha did not do anything about that, so they just had to wait half an hour.  
 → see video footage for interview with Tesha  
 \* 3 classrooms were 'exhausted'.  
 \* More teacher absence in the upcoming weeks bc of test weeks for the secondary school.  
 \* Teacher took 1 bucket with beans (that Sarah had donated: FOR THE CHILDREN) to eat themselves → while not all children learning: head ~~pushed~~ yet.  
 Teachers are lying right into your face. Don't trust them  
 \* Children were beaten when standing in row for food as they were pushing too much.

## Thursday 07/11/24 - Baraa Primary School (gov)

We started the day in Grade 1. We sat in the back in the classroom as Madame X was going to teach a number & alphabet lesson she said. It was 8:50. Teresha was correcting notebooks of children. The class was very chaotic. In the beginning of the week we were saying: oh so sweet, school is a nice place for children to be, be together and play together. However we had a reality check when sitting in the back of the classroom as we saw 3 groups of children fighting together. A boy was punching a muslim girl and afterwards looked at us, smiling, no clue that he was doing something wrong. We even felt we needed to intervene as the muslim girl was laying on the ground and he kept punching. The teacher, who was correcting didn't see anything. We also see children walking around with sticks, copying the behaviour of the teachers. After 30 min of correcting and no teaching the teachers lets the children outside to play. We also walked outside and a few minutes later we saw the teacher writing exercises on the chalkboard at the classroom next door. Apparently that class had no teacher, so Teresha was teaching 2 classrooms of 100 children by herself.

We went to Madame X, Grade 2. She proposed to give a math lesson she said. She did one equation with the classroom. Then she asked us 'you have it?', apparently she was only teaching for us. It seems like the teachers are more willing to teach for us then for the children.

We did a user test with the alphabet boards (see below) and held an interview with Alex (school head of special needs) and in the evening we interviewed Liechtenstein Teacher (video footage).

## Pilot User Test 1 - Alphabet Boards Grade 1 (age: 6-7)

Madame X knew 2 children who have difficulties to learn writing the alphabet. She asked us if we could introduce them to the alphabet boards. A third child joined but the teacher said 'she can already write good so maybe not needed'.

I will refer to the children as Child 1 (left), Child 2 (middle), Child 3 (right).

Child 2 was expected to be proper in writing the alphabet.

Alex, the school head helped us introduce the alphabet boards by translating to the children (who speak Swahili) what is the purpose.

Location: separate classroom for a more quiet environment and making sure no other children join.

Tasks:

Taks	Goal	Observations
Write down alphabet from A to Z in notebook.	Estimate starting level.	The children were (secretly) looking at the Alphabet flag that was hanging in the classroom. When they were told to not do that, Child 1 and 3 tried to do it themselves, they knew 1/3 <sup>rd</sup> of the letters and we had to help with almost all. Child 2 was very good at still looking quickly to the example alphabet and then coping a lot of letters.
Say out loud (in English or Swahili) the letter on tracing	Try to combine motoric skills with visual recognition	The children tried making it a challenge to finish the whole board as fastest, forgetting to say the letters out loud or wait for each other. We had to

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board while tracing. They had to do this at the same time on individual boards.	and verbal pronunciation.	intervene by putting my hand on the next letter and wait before they pronounced the letter and everyone was ready. The first and second round I had to say all letters and they just copied me (like they are used to do). The third round I waited longer to let them come up with the letters themselves. Child 3, who was very slow motorically tracing the letters and also in the first task, was actually the best at seeing a letter and knowing what it is called. Child 2, who was good at quickly copying and could finish the tracing board very quickly, was randomly guessing incorrect letters the whole time. So she could not link the letter to the meaning. After 4 rounds Child 1 and 3 were able to call half of the alphabet by name.
Write down alphabet from A to Z.	To see progression.	We made sure the children could not peak anymore. I saw a little bit progression, if I said the letter they could correctly write half of the alphabet. But they could not come up with the whole sequence themselves.

## Reflection:

- Begin level lower than expected so task too difficult. Should have focused on a few letters and immediately let them write the letter in own notebook after tracing.
- Make teacher explain the task more clearly beforehand, so we can take more distance and intervene only if it is really necessary.

Duration: 40 minutes

Girl has tears in her eyes. Boy still a little smile.  
 Teacher is still mad, in she moves the door of a girl they are talking and smiling - this is probably the only 1-1 contact they have.  
 2/3 times teacher randomly shouts 'Hello children' and children say 'Hello teacher' - don't know what's the intention.  
 Teacher walks away from desk going to different groups saying 'anybody weh weh weh'.  
 2 children open the door from outside coming into classroom, are they late?  
 Teacher walks away from desk letting the children clap, they clap a few times then chaos goes on - she lets 5 children outside maybe toilet - they run around the courtyard. People are pulling on chairs.  
 Teacher sits out desk again, start grading, children still have nothing to do.  
 9:25 more & more children run out of the classroom  
 children left teacher lets all children outside.  
 We walk outside too and see her teach in the classroom not to it, they had no teacher the whole morning.

8:50 Day 4 - Madame Teresha - Grade 1  
 number 2 alphabet lesson  
 Teacher is correcting notebooks, 5 children are in a row, they are leaning against each other  
 "Hullo children" "Hullo teachers!"  
 bad pronunciation → 7  
 In the back of the class a boy is punching a muslim girl on her head. Another punching another boy boy walks away crying, later he punches a boy that's sitting on the ground in the corner.  
 Teacher begins singing boy that was hitting stands up with big smile and waves to us. He has no clue that he was doing something wrong.  
 Too many tasks for teacher to see what is happening.  
 Children sing songs some still standing in line. No clear structure.  
 Teacher starts correcting again, sometimes she shouts a sentence and half of children react in choir.  
 3 groups are hitting each other,  
 Boy 1 is hitting the muslim girl who is sitting in the back.  
 We intervene: warning to boy, hugging girl saying with body language that hitting is bad and girl is Rafia's friend.

Grade 2 - math lesson swanile  
madame Mela

she writes 1 left (classroom)

$$\begin{array}{r} 32 \\ - 213 \\ \hline 111 \end{array}$$

they show the numbers

count how many minus  
(classroom)

After she writes another, then  
she explain that they're finished  
for today. 11:30

Grade 2 has school until 12:00  
The classroom next was also  
correcting and finished for today.

To Do last day:

- interview Lulu
- interview
- more teachers video footage
  - song
  - drifting

## Friday 08/11/24 - Baraa Primary School (gov)

This morning we first interviewed Madame X, who already teaches at government Primary School for 38 years. After, we did an user test with the same three children with the chalkboard puzzle, stone & whiteboard and the reflecting sandbox. Afterwards we held another interview with Madame X.

### Pilot User Test 2 - Alphabet Boards Grade 1 (age: 6-7)

Participants: Child 1, 2 and 3

No translator. So I explained the task with body language.

#### *Whiteboard and Letter Stones*

Task	Goal	Outcome	Time (min)
Put stones in the correct wholes.	See if they can link small letter to big letter.	They can not link small letter to big letter. They were searching for a long time looking if they can find a letter with the same shape. Sometimes I pointed to the image underneath the plastic frame as there was the whole alphabet with small and big letters, while pointing they understood half of the time where they had to put the letter. Some letters that look the same.	7
Take a stone put it in hole below and trace corresponding letter.	See if they can write the letter that they pick.	They were able to do this task. They liked to search for the letters and helped each other finding it. Funny to see that Child 3 traced the small letter A, Child 2 wanted to correct 3 as on the stone was the big letter and started to wipe out the letter Child 2 traced. I think she did not understand that small a was same as big A.	5
Further task can be taking out the alphabet paper underneath the plastic surface and let them create a word with the stones and draw the word or a visual that represents a word.	See if they can spell words with stones and write on their own.		-

#### *Chalkboard Puzzle*

Task	Goal	Outcome	Time (min)
The word 'simba' (lion in Swahili) was written on one	See if they can spell a word.	They were not able to. They just started putting the pieces back in randomly – it seemed that they liked the putting in. I turned the board around and the visual was incorrect, no simba. The children	5



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side of the chalkboard. And a lion was drawn on the other side. I took the pieces out and mixed them up. I gave children the task to recreate the word simba.		also were like 'no that's not correct'. I took the simba pieces out and the children started puzzling the lion in the correct order. 1 design mistake appeared: as my lion drawing did not reach the most right puzzle piece, so the children could not know where to put that one. But the children were able to do this second task.	
I removed all the letters and the drawing with a bit of water. And gave the children crayons. My intention was that they would draw something different and write the word on the back.	See if they understand the product concept.	All children started to draw a smaller version of a lion somewhere on the plate. They did not understand that they should write the word on the other side. I turned board around and asked them to write the word simba. Child 2 wrote simba (looking at the poster with the words simba that was hanging in the classroom), but she was able to do so. I started to take the pieces out again to let the children re-order. They were still not able to do so.	6

## Reflection:

- The product is not finished enough to 'let the children do it themselves' as it was quite difficult to put the pieces back in.
- The concept of the product was difficult to grasp for the children (better if it was explained in Swahili)
- Children were not able to puzzle a word in the correct order – only if copying
- Children liked the puzzling of the drawing
- How can the product itself give feedback if the action was right or wrong?
- How can the children themselves get inspiration what to draw further and how to spell what they drew or just target children from an older level?

## **Mirror Sandbox**

Task	Goal	Outcome	Time (min)
I drew a lion in the sand and wrote and asked Child 2 to write the word what she saw.	See if they can recognize the drawing in sand and spell the word.	She wrote Simba correctly on the chalkboard line.	3
I removed everything and	See what happens	Children started to draw lions again. I taught them the English word and showed how to spell.	4

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let the children free to interact.			
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Reflection:

- Make it clear that they should rotate tasks: first one draws the other guesses and writes what she sees.

## ***Overall pilot test reflection:***

- Explain product to a teacher and let him/her explain what is expected from the children. 3 tasks per product, let teacher explain one sentence per task in between.
- Don't intervene yourself.
- Adjust the level to more easy or test with Grade 2 instead of 1.
- Test all products separately or with a pause in between.

## **Sunday 10/11/24 - Interview Painter**

We went to a painter village and got in conversation with a painter. He is in his 30s and as a child he went both to government as private schools. It was interesting to hear his opinion (see video footage). He would not send his children to private school as he said in the end it is only about your last exam. The government only looks at the results from the last exam on secondary school and therefrom decides where you go for further education. And he argues that the results of the national exams are the same for government as private schools. He told us how he had to fight for a chair in government schools but he said that is good, it makes you ready for the challenges in life because life in Tanzania is full of challenges. However, about the physical punishments he said: Come on, that is outdated, there are better ways to make a child learn its lesson that does not physically hurt them. Also a child he experienced the hitting as useless, it did not make him better at school.

The painters do different recycling projects: they built the painters house 80% from plastic bottles filled with sand to replace using bricks and give a second life to the trash. Also they create slippers from car tiles and they have a hanging plant system with pots made from plastic bottles. Interesting!

## **Monday 11/11/24 - Private Primary School (1), workshop**

Today was the first day we went to a Private Primary School. First impressions: a small school with nice blue paint and visuals painted on the walls. The welcoming was structured, we went to the head office, explained the project, our goal and what exactly we wanted to do on the school. Then another teacher introduced us to other important people of the school. He also walked in all classrooms together with us to introduce us to the children and the teachers. The classrooms were colorful decorated with handcrafted posters, it seemed a nice learning environment. I noticed that at only 2 of the 15 desks I saw a stick in contrast to the government school where all teachers have multiple sticks on the desks to always be prepared to punish the children. I hope the sticks here are just for pointing at things on the board. It is also a difference that here the children have different hair styles. At government school they need to shave their hair also the girls, here I see girls with beautiful decorations in their hair and also I notice 20% has earrings. I think these are signs that the children here come from less poor families. I asked Gift, he said that parents have to pay 300 euros per child a year for this school. That is a lot if you look at the facts: on average people live under 1 dollar a day. Also directly we saw the class size is 20 – 30 children per classroom and they sit with 2 children per bench (where on government schools it was 3).

We started observations in Grade 1A. The teacher started a lesson and you immediately saw that these children can read. As they could finish the sentences from the chalkboard to which the teacher was pointing. The teacher stopped the lesson walking towards a girl in the back and saying to us. 'I'll be back in a moment, she is sick' walking hand in hand with the child out of the classroom. This would have never happened on the government school. First the fact that she noticed the sick child in the back of the classroom. Secondly the caring behavior of holding a child's hand and bringing her to a place where she can get care. When teacher was a way children of course came to us. They started touching my hair and as you can read in the observation notes I was surprised by the level of English, I held a full conversation with a 6 year old and she wrote the alphabet correctly at first try.

We went to Grade 2B to held another observation. Also the continuous drilling is apparently not a thing here, teachers give the children time to think and they walk through the class to check and give individual attention. What a world of difference!

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In the afternoon we went to two wood workshops to look for long-term partners who can produce the teaching modules. We did this together with Gift – he is quiet the business man we have the feeling. He has his own little t-shirt shop, studied graphic design in Kenia and set up the NGO where we're staying. Though it keeps being hard to trust someone here we feel. As we saw many times that if you're white, they only see your money. However Gift really thinks along and understand our project. He also does things pro-actively like we told the alphabet board was made with a laser-cutter, and then he starts asking his friends and finds a workshop who can laser cut.

We arrived at the first workshop – a furniture wood workshop. We held an interview getting to know the woodworkers' capabilities, working methods and have a good feeling as we show him pictures of the prototype and he says he's able to make samples of all 3 chosen concepts before we leave (in 6 days). Quite fast. He can buy all sorts of wood at a bigger store nearby, also blackboard paint. Only the woodburning he does not know. I would like to empower a woman making her more financial stable by learning her how to woodburn the alphabet and give her a machine to start (they cost 100 euro's and have a lifetime of around 5 years out of own experience with Wooddesign Berlicum, our little woodwork company at home). He speaks good English and has a humble attitude. Of course this is still a stranger to me. He has studied together with Graphic Designer, they are friends. During the time we were there (30 min) 4 people came by, 2 clients and 1 uncle and 1 friend that sometimes helps him. He does the work mostly alone but if he is busy friends help him. The workshop looks like a small bunker, it is a calm environment and he has the basic materials and machines. However, the products he makes are really beautiful, it looks like beds that could stand in castles of the middle ages. Amazing how much he can do, just by handcrafting.

We went to the second workshop. The vibe here was more chaotic but even as creative. The outside was full of graffiti and the people looked a bit younger and could not talk English – however Graphic Designer was there to translate. There were 5 men working / chilling. In total this work place is run by 8 Tanzanian men. They have quite a bit following on social media (1.255 followers on IG): STUNNA EMPIRE FURNITURE & DÉCOR. They also make furniture. They showed us what material they have, they have as much as the other workshop. Communication was difficult because of the language barrier but we will show them the physical prototypes later and ask them to make a sample.

## Tuesday 11/11/24 - Private Primary School (1), workshop

Today we went to the school in the morning. We observed at Grade 1B, to see if the level was as high as last time. I looked around and wondered why these children look older than Grade 1 on government school. I checked the age with the teacher and it was same age 6-7 years old. But especially the girls definitely looked taller and older! Could it be because they got better nutrition as babies? That would be insane. It would be so interesting to see them next to each other.. Also sad. The level is again very good at the lesson we observe. In the classroom there are even 2 teachers – one just started at this school so that's probably why. When the children did a task we shortly interviewed the teachers (video footage). At the end we show the prototypes and they directly involve 2 children to try. They say they see potential but for the beginning of the year because now they can already write, so it is a bit too easy for them. Wow, again what a difference, as at the first user test at government school we thought it was our mistake that we chose the wrong grade as it was way too difficult for the children...! Reflecting on the feedback from these teachers and the teaching aids we see in this school – notebooks enough pens enough colored paper and handcrafter and plastic posters – I do not see a reason to implement the wooden reusable boards into this school other than: it would be nice to have. And that is not the goal! We realized we had to search for a step in between. At the government school we feel like there our too many systematical problems we can not solve because it starts with the class size and that is literally because the government does not want to employ more teachers. Frustrating. Just a money question. But are there private school initiatives that are less expensive than this one, and are struggling with a scarcity of student materials? That is the biggest question we have now.

During lunch time we saw that on this school they have enough cups and plates for all children. I saw a men (teacher assistant?) hitting some children to go back to the classroom. Not good in my perspective but it was more like a push than a hit, so different than the shocking hitting I was used to.

We went to the workshop of Woodworker again to bring the physical prototypes. He says he can do it, only the alphabet letters will take a long time but he will do his ultimate best he said. Tomorrow morning he will give a price indication.

We more and more get a feeling of how it is to do business in Tanzania. You can just walk in a workshop, tell your plan, the creative thinks along and will make time for you. Also they can set everything aside to help you. So funny. I did not expect this, it just seems possible!?

Also for our big question about where to implement a miracle happened. We were doing a coffee at a random place and were discussing in Dutch what to do, looking back at the NGO's in Arusha that had replied to us to see if there's a private school with the criteria we are searching for. We say out loud the name Dinka Schools, a dutch initiative and two dutch women of around 40-50 started mixing in the conversations. 1 already lived for 15 years in Tanzania and 1 flies in now and then to help her organization: IBES. They give trainings to teachers to become better teachers. Tomorrow we can visit IBES, she told us there are 2 employees who travelled to 80 different private schools in the region so who can tell us all about the differences. Also the founder herself will give a clay workshop to teachers in the afternoon. They are going to clay alphabet letters! She does more workshops about creating your own teaching materials. Wow, this is perfect.

## Thursday 13/11/24 - IBES

Off to IBES! We were so hyped for this! And rightfully so—when we arrived, it immediately felt like a "happy place" for children amidst the chaos of Tanzania. It looked amazing, with a large playground where half the school was playing, and daycare classrooms equipped with play corners, sleeping areas, and learning spaces for the little ones! I immediately asked if much of it was sponsored, but apparently, 0% of it is sponsored. It was all built step by step through minimal fees for parents and careful financial management. Truly inspiring! However, the reality is that also IBES is struggling with scarcity of student materials as they want to keep parent fees as low as possible. Also, multiple ex-IBES teachers have set up their own schools further extending and carrying the mission. However these schools completely start from scratch. No student material and no external funding makes it hard to actually carry out the mission of interactive, collaborative learning.

Then came the clay workshop. The founder explained to us that her goal is to encourage teachers to be resourceful with limited materials because—to my surprise—most of them are not creative at all. From a young age, they are raised to repeat exactly what the teacher says, and there's only one correct answer; otherwise, they're punished. 'Their whole life, they've been taught that only one answer is right. This system creates young adults scared to think outside the box.' So the founder aims to unlearn some of these habits and teach more creative ones. I really didn't expect to see the teachers struggle with creating something in 3D clay—they kept sticking to 2D even though 3D was the new task. This creativity gets more and more attention as private schools start to see that this can improve child learning. 'Somehow IBES has become famous in the past 15 years. External schools come to us asking: how do you do this? Providing this quality education without any punishing methods?' she said. And she tells us that all students doing the 1-year education program find a job even before they finished the program. After the claying workshop we showed the founder the example prototypes and she was very impressed, 'wow is this really only 5 euros to make, as making things in Tanzania is always so expensive due to high import costs. The goal of IBES is to create jobs that do not exist yet, jobs that can transform ineffective or harmful practices. I see potential in your project as it creates new local jobs. I can use these products in interactive teaching trainings and I can be the middle person between woodworkers and external schools who would be very happy with these products. I see the most potential in the schoolboard pieces as you can use it for different levels and age groups, even though it's the same product.'" Afterwards, we drove back to Arusha in Marjon's cool safari jeep, feeling satisfied and exhausted. We had a quick bite at home and were in bed by 8 PM.

## Friday 14/11/24 - Young Roses Primary School , woodworkshop

Yesterday, we spoke with the manager of IBES, who has visited 80 different private schools in the region to assess which ones lack teaching materials. It was quite a journey—about an hour—in the Daladala (overcrowded minibuses, where just when you think no one else can fit, someone somehow squeezes in). We arrived at the school unannounced, but apparently, that's perfectly normal here. We explained our project in one sentence, and the head teacher was fine with it, directing us straight to the classrooms.

This school indeed had noticeably fewer materials than the previous private school, but even so, young children here could write, read, and speak English, and in every classroom, there

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was a teacher enthusiastically teaching. Impressive! We handed over the prototypes we made in the Netherlands to a teacher, who immediately came up with various ideas on how to use them in her lessons.

Then we headed to the woodworkshop because the woodworker had finished the prototypes. WHAT?? He had said he was going to make them by hand, but suddenly, he managed to laser cut them, exactly like our examples. He explained that it was a huge challenge working with the computer and using a laser cutter from a friend, as he had never done this before. What a talent! I asked if he liked to make this and he said “Yes, I didn’t know you could make these things with MDF; I only use it for bookshelves, I like this.” Together with the graphic designer, we made plans for the next steps of the project. I’ll create a redesign in the Netherlands, send it to the graphic designer, and the woodworker will produce it locally. AMAZING!

To:  
Wietske Zwinkels  
w.a.a.zwinkels@student.tue.nl

Cc:  
Aaqib Saeed  
a.saeed@tue.nl



Ethical Review Board

T +31 (0)40 247 6259  
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[intranet.tue.nl/ethics](http://intranet.tue.nl/ethics)

Date	Reference
October 29, 2024	ERB2024ID398

### Ethical review research proposal

Dear Wietske,

It is a pleasure to inform you that the Ethical Review Board (ERB) has discussed and approves your application.

Furthermore, the Board wants to draw your attention to the terms and conditions in the appendix.

Success with your research!

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Lakens', with a stylized arrow-like flourish at the beginning.

Dr. D. Lakens  
Chair Ethical Review Board TU/e

Enclosures  
1

The ERB retains the right to revise its decision regarding the implementation and the WMO<sup>1</sup>/WMH<sup>2</sup> status of any research study in response to changing regulations, research activities, or other unforeseen circumstances that are relevant to reviewing any such study. The ERB shall notify the principal researcher of its revised decision and of the reasons for having revised its decision.

<sup>1</sup>WMO: Law on Medical Scientific Research involving Human Beings (in Dutch: Wet medisch-wetenschappelijk onderzoek met mensen)

<sup>2</sup>WMH: Medical Device Directive (in Dutch: Wet op de medische hulpmiddelen)



## APPENDIX 1

Terms and conditions

### ***Amendments***

When considerable amendments are made to the design of the study or educational activity, or when the time period between ERB approval and start of the study is longer than one year, please consult the ERB.

### ***Privacy and research data management***

The ERB would like to point out that collecting, handling and storing personal information is subject to the General Data Protection Regulation. Please visit TU/e intranet for the latest information and regulations on [www.tue.nl/rdm](http://www.tue.nl/rdm)

# Ethical Review Form

## (Version 2.2)

This Ethical Review Form should be completed for every research study that involves human participants or personally identifiable personal data and should be submitted to [ethics@tue.nl](mailto:ethics@tue.nl). For more information about how this process works please click [here](#). Please check if you are using the correct form: Ethical Review Form (version 2.2). Please click [here](#) to obtain this latest version.

<b>Part 1: General Study Information</b>		
<b>1</b>	Project title / Study name	Educational Tool Tanzania – Industrial Design
<b>2</b>	Name of the researcher / student	Wietske Zwinkels
<b>3</b>	Email of the researcher / student	<a href="mailto:w.a.a.zwinkels@student.tue.nl">w.a.a.zwinkels@student.tue.nl</a>
<b>4</b>	Supervisor(s) name(s) <i>Additional explanation: Please write down the name of your direct supervisor. You can mention several supervisors if appropriate, but at least one supervisor should be mentioned.</i>	Aaqib Saeed
<b>5</b>	Supervisor(s) email address(es) <i>Additional explanation: Please give the email address of the supervisor(s) mentioned in question 4.</i>	<a href="mailto:a.saeed@tue.nl">a.saeed@tue.nl</a>
<b>6</b>	Department / Group <i>Additional explanation: Please specify group if relevant e.g. JADS or HTI</i>	Industrial Design Bachelor
<b>7</b>	What is the purpose of this application?	<input type="checkbox"/> Scientific study <input checked="" type="checkbox"/> Bachelor education. Course: DPB390 (FBP) <input type="checkbox"/> Master education. Course:..... <input type="checkbox"/> Other (e.g. external, following external regulations):.....
<b>8</b>	Research location <i>Additional explanation: Where will the data collection take place? On campus, in a company, in public space, online, etc.</i>	<input type="checkbox"/> Eindhoven University of Technology campus <input checked="" type="checkbox"/> Other, name organization(s): For this project I will travel to Arusha in Tanzania for 2,5 weeks, where the data collection will take place. <input type="checkbox"/> Public space <input type="checkbox"/> Online
<b>9</b>	Start date data collection <i>Additional explanation: Please state when your data collection will start. Please note that you do not have to provide information about your complete (PhD) project, but only on this particular sub-study that you are submitting for approval in this form.</i>	02/11/2024
<b>10</b>	End date data collection	02/05/2025
<b>11</b>	Does your project receive external funding (e.g., NWO, relevant for special regulations from funders)?	<input type="checkbox"/> Yes. Name Funder: <input checked="" type="checkbox"/> No

## Ethical Review Form

<b>12</b>	<p>Which internal and external parties are involved in the study? Think about sharing data or information between TU/e and other universities, commercial companies, hospitals, etc.</p> <p><i>Additional explanation: Describe all internal and external parties that are involved in the study or project, including:</i></p> <ul style="list-style-type: none"><li>• researchers or research groups at the TU/e who participate in the study;</li><li>• (Researchers at) other universities/institutions that provide data/services, help analyzing the data, etc.;</li></ul>	<p>Internal parties</p> <ul style="list-style-type: none"><li>• Researcher(s): -</li><li>• Supervisor: Aaqib Saeed</li></ul>
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## Ethical Review Form

	<ul style="list-style-type: none"> <li>(commercial) partners, companies, government bodies, municipalities, consultancy firms, hospitals or care institutions that provide data (e.g., contact details of participants, data for further analysis).</li> </ul> <p>Indicate which role each party plays: who defines the means and purposes in the study, who will supply the data (external parties?), who will process/handle the data, who will be able to access the data during and after research (only researchers at TU/e or also others)?</p>	<p>External parties</p> <ul style="list-style-type: none"> <li><b>Local Primary Schools in Tanzania</b> <b>Participants:</b> Students who will use the product. The school administration and NGO's will facilitate access and provide the necessary environment for the study. Contextual Interviews: Parents, local teachers and NGO volunteers will be interviewed for extra knowledge.</li> <li><b>Local NGO's:</b> <b>Collaboration Partners:</b> The following organizations help me in coordinating the project and providing insights on the local educational context: <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. <a href="#">Ace Africa</a></li> <li><input type="checkbox"/> 2. <a href="#">Giving Hands</a></li> <li>3. <a href="#">Viva Tanzania</a></li> <li>4. <a href="#">School of St. Jude</a></li> <li>5. <a href="#">Step Africa</a></li> <li>6. <a href="#">Tanzanian Children's Fund</a></li> <li>7. <a href="#">Natembelea</a></li> <li>8. <a href="#">Stichting Dinka</a></li> <li>9. <a href="#">Africa Amini</a></li> </ul> </li> <li><b>Local Workshops Suppliers:</b> Workshops in Arusha who are willing to produce the educational tool. They may provide data on materials and production capabilities.</li> </ul> <p><b>Data Handling and Access</b></p> <ul style="list-style-type: none"> <li><b>Data Definition and Collection:</b> Defined primarily by myself, with input from NGO's on local needs.</li> <li><b>Data Processing:</b> Handled by myself with no personal data collected from participants.</li> <li><b>Access to Data:</b> Only me will be able to access the data as I will save it securely on the OneDrive of the TU/e. No external parties will have access to identifiable data, ensuring confidentiality and adherence to ethical guidelines.</li> </ul>
13	<p>Have any special agreements already been made with an external party, such as a Non-Disclosure Agreement (NDA) or a data sharing agreement?</p>	<p><input type="checkbox"/> Yes, namely: <input checked="" type="checkbox"/> No</p>

## Ethical Review Form

14	<p>Has your proposal already been approved by an external Ethical Review Board or Medical Ethical Review Board?</p> <p><i>Additional explanation: For example, when you are collaborating with another university and the project has been approved by their Ethical Review Board, or when you received a WMO-waiver from a Medical Ethical Review Board.</i></p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15	<p>If yes: Please provide the name, date of approval and contact details of the ERB. Please also include the registered number for your project approval. Additionally, please send in the Ethical Review Form upon which ethical approval was granted together with this form.</p>	
16	<p>If you process personal data that are likely to result in high privacy risks for participants, you need to perform a Data Protection Impact Assessment (DPIA). Have you done this for this or a very similar project?</p> <p><b>Please read the information below: a DPIA is not the same as a regular privacy impact assessment. More detailed questions on privacy will follow in the section below.</b></p> <p><i>Additional explanation: A Data Protection Impact Assessment (DPIA) is a formal document that must be drafted under the guidelines of the General Data Protection Regulation (GDPR). Think of research with vulnerable people, high-risk medical research, The Dutch DPA (Autoriteit Persoonsgegevens) and our website provides more information about a DPIA.</i></p>	<input checked="" type="checkbox"/> Not applicable (no high privacy risks) <input type="checkbox"/> Yes (the form is attached to the application) <input type="checkbox"/> No

## Part 2: Medical study

1	<p>Does the study have a medical scientific research question or claim?</p> <p><i>Additional explanation: Medical/scientific research is research which is carried out with the aim of finding answers to a question in the field of illness and health (etiology, pathogenesis, signs/symptoms, diagnosis, prevention, outcome or treatment of illness), by systematically collecting and analyzing data. The research is carried out with the intention of contributing to medical knowledge which can also be applied to populations outside of the direct research population. If your research contains questions about health and health related parameters (such as well-being, vitality, feelings of anxiety or stress) but your research question is not primarily medical, then you can answer 'no' to this question.</i></p>	<input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No  <p>*If yes or in doubt, please contact Susan Hommerson via <a href="mailto:s.m.hommerson@tue.nl">s.m.hommerson@tue.nl</a></p>
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## Ethical Review Form

### Part 3: Use of (medical) devices in the study

1	<p>Does your research include a device?</p> <p><i>Additional explanation: A device is a complete piece of physical hardware that is used to compute or support computer functions within a larger system. Devices can be divided into input-, output-, storage-, internet of things-, or mobile device.</i></p>	<input type="checkbox"/> Yes, not self-made <input type="checkbox"/> Yes, self-made <input checked="" type="checkbox"/> No
2	<p>Please describe your device or link to an online description of the device</p>	
3a	<p>Will you use a device that is 'CE' certified for <b>unintended use</b> (meaning you will use existing CE certified devices for other things than they were originally intended for) or use a device that is not 'CE' certified?</p> <p><i>Additional explanation: You can find more information about CE certification <a href="#">here</a></i></p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <input type="checkbox"/>
3b	<p>If no: Please explain to what extent the device was assembled according to relevant standards and provide a risk assessment</p> <p><i>Additional explanation: You can find more information about a risk assessment <a href="#">here</a></i></p>	
3c	<p>If yes: Do you use a device or software that has a medical purpose such as diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease or injury?</p>	<input type="checkbox"/> Yes, my device or software currently has a medical purpose <input type="checkbox"/> Yes, my device or software could have a medical purpose in the near future <input checked="" type="checkbox"/> No <input type="checkbox"/> I'm not sure

### Part 4: Information about the study

1	<p>What are your main research questions?</p> <p><i>Additional explanation: You need to provide at least one clear research question.</i></p>	<p><b>Primary Research Question:</b></p> <ul style="list-style-type: none"> <li>How can a low-cost, reusable educational tool improve literacy skills among primary school students in Tanzania?</li> </ul> <p><b>Secondary Research Questions:</b></p> <ul style="list-style-type: none"> <li>What are the specific needs of teachers and students regarding educational materials in government schools?</li> <li>How do environmental factors and local production capabilities influence the design and sustainability of educational tools?</li> <li>What strategies can ensure the longevity and usability of educational tools in schools with limited resources?</li> </ul>
2a	<p>Please check the box that indicates the relevant study population</p> <p><i>Additional explanation: Please select which persons are eligible for your study.</i></p>	<input type="checkbox"/> Students <input checked="" type="checkbox"/> General healthy population <input type="checkbox"/> General population with specific feature, e.g., pregnancy, specifically ..... <input type="checkbox"/> Patients, specifically ..... <input type="checkbox"/> Other, specifically .....

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<b>2b</b>	Age category of participants	<input checked="" type="checkbox"/> Younger than 12 years of age <input checked="" type="checkbox"/> Older than 11 and younger than 16 years of age <input type="checkbox"/> 16 years or older
<b>3</b>	Description of the research method (select all that applies)	<input checked="" type="checkbox"/> (Semi-structured) interviews <input checked="" type="checkbox"/> Surveys

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	<p><i>Additional explanation: Please specify your research method. Note that you need to provide information about the research method in an additional file that you attach to the ERB form. E.g., for interviews you provide the interview questions, for surveys you provide the survey questions, etc.</i></p>	<input checked="" type="checkbox"/> Group workshops/roundtable discussions <input type="checkbox"/> Diary studies <input checked="" type="checkbox"/> Behavioral observations <input type="checkbox"/> Building sensor data <input type="checkbox"/> Wearable device (e.g. Fitbit watch, on-skin sensors) <input checked="" type="checkbox"/> User testing <input type="checkbox"/> Pilot study <input type="checkbox"/> GPS tracking/location data <input type="checkbox"/> Living Lab <input type="checkbox"/> Other, namely .....
4	<p><b>Description of the measurements and/or stimuli/treatments</b></p> <p><i>Additional explanation: Think about your outcome measures and the variables you will be collecting and describe them in a way such that another person understands what the participant will experience. For example: Participants will perform task A and see pictures from database B, and we measure validated Scale 1.</i></p>	<p><b>Data Collection Plan for Trip to Arusha, Tanzania</b></p> <p><b>Objective:</b> To gain insights into how reusable educational tools can improve language learning (English and Swahili) in primary schools. The plan includes classroom observations, interviews, co-creation sessions, and introducing pilot tools in classrooms.</p> <p><b>1. Description of Measurements and Stimuli/Treatments</b></p> <p><b>a) Observations in English/Swahili Lessons:</b></p> <ul style="list-style-type: none"> <li>• <b>Purpose:</b> To understand the current teaching methods and classroom environment in English and Swahili lessons.</li> <li>• <b>Procedure:</b> Observe a series of English and Swahili language lessons. Key factors to observe include: engagement, teaching methods, use of existing teaching materials, and the challenges faced by both students and teachers.</li> <li>• <b>Outcome Measures:</b> <ul style="list-style-type: none"> <li>○ Engagement level (e.g., participation, attentiveness).</li> <li>○ Teacher’s method (e.g., how they explain concepts, use of blackboards or textbooks).</li> <li>○ Classroom environment (e.g., size, availability of learning materials).</li> <li>○ Interaction between students and teachers.</li> </ul> </li> </ul> <p><b>b) Interviews with School Head and Teachers:</b></p> <ul style="list-style-type: none"> <li>• <b>Purpose:</b> To gain insights from school leadership and teachers about the educational challenges they face and their views on current and desired teaching tools.</li> <li>• <b>Procedure:</b> Conduct semi-structured interviews with school heads and teachers, covering topics such as the current state of language learning, teaching material shortages, and perspectives on current and desired teaching tools.</li> <li>• <b>Outcome Measures:</b> <ul style="list-style-type: none"> <li>○ Qualitative data on teaching challenges.</li> <li>○ Suggestions for desirable tools.</li> </ul> </li> </ul> <p><b>c) Co-creation Session with Local Workshop Creatives:</b></p> <ul style="list-style-type: none"> <li>• <b>Purpose:</b> To explore local manufacturing possibilities and collaborate on the design of reusable educational tools.</li> <li>• <b>Procedure:</b> Facilitate a co-creation session with local artisans and workshop creatives to understand what materials are accessible and how the pilot tools can be adapted for local production.</li> <li>• <b>Outcome Measures:</b> <ul style="list-style-type: none"> <li>○ Feasibility of local production (e.g., available materials, skills).</li> <li>○ Design iterations based on local constraints and feedback.</li> </ul> </li> </ul> <p><b>d) Classroom Testing of Pilot Tools:</b></p> <ul style="list-style-type: none"> <li>• <b>Purpose:</b> To pilot test different example versions of reusable educational tools and observe how children</li> </ul>



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		<p>interact with them.</p> <ul style="list-style-type: none"> <li>• <b>Procedure:</b> Teachers will introduce several prototype educational tools (e.g., alphabet boards) during lessons. I will observe student interactions, engagement, and ease of use from the back of a classroom.</li> <li>• <b>Outcome Measures:</b> <ul style="list-style-type: none"> <li>○ How students use the tools (e.g., correctly, independently, collaboratively).</li> <li>○ Level of engagement and enthusiasm.</li> <li>○ Teachers' feedback on the tools' effectiveness.</li> <li>○ Observed challenges in usability or understanding.</li> </ul> </li> </ul> <p><b>Extra note:</b></p> <p>It is not feasible to request parental approval for the children's participation in this research for several reasons, these reasons are set-up together with Giving Hands and Natembelea, the NGO's who are supporting the primary schools I will visit:</p> <ol style="list-style-type: none"> <li>1. <b>Remote and Rural Locations:</b> The majority of the parents live in rural, primitive areas where access to communication is extremely limited. Reaching these parents is logistically challenging because many families do not have a formal address, and direct contact is often not possible.</li> <li>2. <b>Low Literacy Rates:</b> A significant number of these parents cannot read or write, and many do not speak English. Crafting consent forms that they can understand and effectively engage with would be difficult and may not guarantee comprehension or informed decision-making. Additionally, even with translated documents, illiteracy would still present a barrier.</li> <li>3. <b>Culturally Normalized School Activities:</b> The pilot tools we are introducing will be framed as part of the normal educational activities. These tools aim to fit seamlessly within the existing curriculum, such as enhancing language learning (English and Swahili). Since this session is designed to be part of the natural learning process, it aligns with the type of activities children are already exposed to and does not represent an exceptional departure from their usual learning environment.</li> <li>4. <b>Approval from Teachers:</b> Teachers in these schools are well-versed in the curriculum and the needs of their students. They serve as trusted gatekeepers for student welfare and education. Gaining teacher approval ensures that the research remains focused on the best interests of the children, while respecting local norms and practices within the educational system. Teachers understand the local context and can give appropriate consent on behalf of the students for activities that are educational in nature.</li> </ol> <p>In conclusion, seeking parental approval would be logistically difficult, culturally challenging, and unnecessary, given the fact that the pilot sessions fit within the normal classroom environment. Teacher consent should be sufficient, as the activities are designed to be educational and aligned with the school's curriculum.</p> <p>Taking the information above into account, I ask the ERB board to choose between scenario approach A or B for my data collection process:</p> <p><b>Scenario A: Researcher Present in the Classroom</b></p> <p>In this scenario, I will be present in the back of the classroom during both the general observations of the English/Swahili</p>
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lessons and the introduction of the pilot educational tools. I will observe how the children currently learn language and how they interact with the pilot tools directly. My role will be passive, ensuring I do not interfere with the natural flow of the classroom but solely serve as an observer.

Justification:

- **Language Barrier and Time Limitations:** Many of the teachers may not be able to provide detailed feedback on how children interacted with the tools if we rely solely on their post-session reflections. The language barrier and the limited time frame of our visit may result in a loss of crucial insights if I cannot observe these interactions myself.
- **Teacher Workload:** Asking teachers to introduce the pilot tools, observe the children, and later report back to me is a significant cognitive load. Teachers are already busy managing the classroom, and it would be difficult for them to focus on both teaching and providing detailed observations.
- **Accuracy of Feedback:** Teachers may feel uncomfortable sharing the full extent of any challenges they encounter, possibly leading to overly positive feedback. My direct observation together with the Teacher's perspective afterwards would allow for a more objective and complete assessment of the children's interaction with the tools and any difficulties they may face.

Risks and Mitigation:

- **Disruption:** My presence might cause slight disruption in the classroom. To mitigate this, I will remain as unobtrusive as possible and position myself in a way that minimizes distraction for both the teacher and the students. I also have chosen to go to schools where also Western volunteers are present, assisting teachers, which makes my presence less noticeable.
- **Privacy:** I will ensure that all observations are anonymized and no personal identifiers are collected during the sessions.

### Scenario B: Researcher Not Present in the Classroom

In this scenario, I will not be present during the general observations or the introduction of the pilot tools. Teachers will introduce the tools themselves during their normal lessons, and I will follow up afterward with interviews to gather feedback about how the session went and how the children interacted with the tools.

Justification:

- **Reducing Disruption:** This scenario minimizes any disruption that my presence in the classroom might cause, allowing the lessons to proceed as naturally as possible.
- **Teacher Autonomy:** Teachers are the primary facilitators in the classroom and may feel more comfortable without a researcher present.

Risks and Mitigation:

- **Incomplete or Biased Feedback:** There is a risk that teachers may not provide detailed feedback on the current teaching methods and how children interacted with the tools, either due to time limitations or reluctance to share challenges openly. This could result in less valuable data for the project.

Conclusion:

Scenario A ensures direct observation and minimizes the risk of incomplete or biased feedback, though it carries a small risk of classroom disruption. Scenario B reduces potential disruptions but places more responsibility on the teachers and risks less

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		insightful or detailed data. I therefore strongly prefer scenario A.
<b>5</b>	<p>Describe and justify the number of participants you need for this study. Also justify the number of observations you need, taking into account the risks and benefits.</p> <p><i>Additional explanation: Think about if you need 3 or 30 participants for example, and why? Do they need to provide their input once, or several times, and why? If relevant, specify the duration of the study per participant and the compensation that is needed for the study.</i></p>	<p><b>a) Participants:</b></p> <ul style="list-style-type: none"> <li>• <b>Number of Schools:</b> 3 primary schools.</li> <li>• <b>Participants:</b> <ul style="list-style-type: none"> <li>○ 3 School heads.</li> <li>○ 5-6 teachers (2 per school on average).</li> <li>○ Approximately 60 students per school (about 20 per school (1 classroom)).</li> <li>○ 2-5 local workshop creatives.</li> </ul> </li> <li>• <b>Justification:</b> <ul style="list-style-type: none"> <li>○ <b>Schools:</b> I chose three schools to represent diverse educational settings, both governmental as private schools. This sample size allows for varied feedback while being realistic in a 2,5 week timeframe.</li> <li>○ <b>Teachers:</b> Input from at least two teachers per school ensures a range of perspectives on classroom challenges and tool desirability.</li> <li>○ <b>Students:</b> With approximately 20 students per class, I can gather observations on how different kind of children interact with the tools. Larger samples could dilute my ability to observe individual interactions.</li> <li>○ <b>Workshop Creatives:</b> Working with 2-5 local artisans allows us to find out about local production possibilities and adapt the tools accordingly.</li> </ul> </li> </ul> <p><b>b) Number of Observations:</b></p> <ul style="list-style-type: none"> <li>• <b>Lesson Observations:</b> 2-3 lessons per school (one Swahili, one English per school, and one extra lesson if needed for more data).</li> <li>• <b>Interviews:</b> 1 interview with each school head and 2 teachers per school.</li> <li>• <b>Classroom Testing:</b> The introduction to pilot tools session will be held in one class per school, ensuring at least 3 classroom sessions (one per school).</li> <li>• <b>Co-creation Sessions:</b> 1 co-creation session with local artisans at a workshop, totaling 1-3 sessions.</li> </ul> <p><b>c) Justification of Duration:</b></p> <ul style="list-style-type: none"> <li>• <b>Lesson Observations:</b> 1 hour per lesson, with a total of 6-9 lessons observed across all schools.</li> <li>• <b>Interviews:</b> 30-45 minutes per interview, totaling 9 interviews.</li> <li>• <b>Classroom Testing:</b> Each introduction to pilot tools session will last a maximum of 20 minutes, taking into account the short attention span of young children.</li> <li>• <b>Co-creation Sessions:</b> Each session will last 1-3 hours, depending on the complexity of the discussion and iteration.</li> </ul> <p><b>d) Compensation:</b></p> <ul style="list-style-type: none"> <li>• <b>Teachers and School Heads:</b> No monetary compensation is planned, but we will provide them with copies of our final report and prototypes they can</li> </ul>

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		<p>use.</p> <ul style="list-style-type: none"> <li>• <b>Workshop Creatives:</b> Payment for materials we need during the session.</li> </ul> <p>This test plan balances the need for in-depth qualitative data with practical time constraints, ensuring a thorough but efficient investigation into the potential of the reusable educational tools.</p>
6	<p>Explain why your research is societally important. What benefits and harm to society may result from the study?</p> <p><i>Additional explanation: What benefit will the results of your study have to society in general?</i></p>	<p>This research is societally important as it aims to improve literacy skills among children in Tanzania's underfunded government schools. By providing a low-cost, reusable educational tool, the study seeks to empower students with essential skills for their future, potentially helping to break the cycle of poverty. The benefits include enhanced language learning opportunities, while potential harms, such as theft or misappropriation of resources, can be mitigated through secure implementation. Secondly, to avoid imposing a Western perspective and the project being seen as 'invasive', it's essential to engage in thorough co-creation methods with local communities, ensuring their voices and insights shape the design process. Additionally, conducting participatory research will help identify and address issues that the community genuinely perceives as challenges, rather than imposing external viewpoints..</p>
7	<p>Describe the way participants will be recruited</p> <p><i>Additional explanation: How will you recruit participants for your study? For example, by using flyers, personal network, panels, etc.</i></p>	<p><input type="checkbox"/> Survey link posted online, e.g., social media platforms</p> <p><input type="checkbox"/> On campus flyers</p> <p><input type="checkbox"/> Personal network</p> <p><input type="checkbox"/> Via a company, namely .....</p> <p><input type="checkbox"/> Via a hospital, namely .....</p> <p><input checked="" type="checkbox"/> Via an organization: NGO named above</p> <p><input type="checkbox"/> By a Consortium Partner, namely .....</p> <p><input type="checkbox"/> Other, namely .....</p>
8	<p>Provide a brief statement of the risks you expect for the participants or others involved in the study and explain. Also take into consideration any personal data you may gather and associated privacy issues.</p> <p><i>Additional explanation: Risks for the participants can be anything from risk of data breach to risk of safety or well-being (think about stress, extreme emotions, visual or auditory discomfort). Describe these possible risks and describe the way these risks are mitigated.</i></p>	<p>Potential risks for teachers / school heads include emotional discomfort from discussing educational challenges and the stress of using new tools in their learning environment. To mitigate these risks, teachers will be informed about the study's purpose and their free to chose if and how much time they are willing to spend for the interviews and introducing pilot tools in the classroom, ensuring a respectful and supportive environment throughout the study.</p> <p>Potential risks for primary school children are that children have a short attention span, this is why we will limit the duration of introducing the pilot tools in a classroom to 20 minutes (= average acceptable attention span for children between 6 – 14 years old). Also, the children will get no specific tasks that they should accomplish, they can choose if and with which tools they want to interact and thus are not obliged to anything.</p> <p>Potential risks for workshop creatives is that if the project doesn't progress beyond the pilot stage, the investment of time can be seen as wasted effort. This risk will be minimized by clearly communicating that this is an early-stage design research project, with no guaranteed financial returns. Furthermore, if local creatives propose innovative designs, I will respect their ownership of these ideas and provide credit if used, ensuring transparency and fair recognition.</p>

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### Part 5: Self-assessment checklist

*Note: answers in the blue boxes indicate that your research is eligible for fast-track approval*

		Yes	No
<b>1a</b>	Does the study involve human material? (e.g., surgery waste material derived from non-commercial organizations such as hospitals)		No
<b>1b</b>	Will blood or other (bio)samples be obtained from participants? (e.g., hair, sweat, urine or other bodily fluids or secretions, also external imaging of the body)		No
<b>2</b>	Will the participants give their consent – on a voluntary basis – either digitally or on paper? Or have they given consent in the past for the purpose of education or for re-use in line with the current research question?	Yes	
<b>3</b>	Are the participants, outside the context of the research, in a dependent or subordinate position to the investigator? Additional explanation: Think about doing research on your own students or on your own employees. When there is a dependency or power imbalance between you and the research participants, you need to answer ‘yes’ to this question.		No
<b>4</b>	Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g., children (<16 years of age), people with learning difficulties, patients, people receiving counselling, people living in care or nursing homes, people recruited through self-help groups)	Yes, children < 16 years	
<b>5</b>	Will participating in the research be burdensome? (e.g., requiring participants to wear a device 24/7 for several weeks, to fill in questionnaires for hours, to travel long distances to a research location, to be interviewed multiple times)?		No
<b>6</b>	May the research procedure cause harm or discomfort to the participant in any way? (e.g., causing pain or more than mild discomfort, stress, anxiety or by administering drinks, foods, drugs, or showing explicit visual material)		No
<b>7</b>	Will financial inducement (other than reasonable expenses and compensation for time) be offered to participants? Additional explanation: For an explanation of what is considered a reasonable compensation, see the topic <a href="#">participant fees</a> from the HTI group		No
<b>8a</b>	Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g., covert observation of people)		No
<b>8b</b>	If yes: Will you be observing people without their knowledge in public space? (e.g. on the street, at a bus-stop)		No
<b>9</b>	Will the study involve actively deceiving the participants? (e.g., will participants be deliberately falsely informed, will information be withheld from them, or will they be misled in such a way that they are likely to object or show unease when debriefed about the study)		No
<b>10</b>	Will participants be asked to discuss or report sexual experiences, religion, alcohol or drug use, suicidal thoughts, or other topics that are highly personal or intimate? Additional explanation: Think about your research population. For some participants, particular topics can be considered sensitive or intimate, whereas the same topics will not be perceived as such by other participants.		No
<b>11</b>	Elaborate on all boxes answered outside of the blue boxes in part 5. Describe how you safeguard any potential risk for the research participant.	To safeguard potential risks for participants under 16, no personal data will be collected. The children will interact freely with the educational tool without any obligations, and their engagement will be observed solely to assess the tool's effectiveness. This approach ensures that participation is voluntary and respects the children's autonomy, creating a comfortable environment where they can explore the product without pressure. The only data gathered will be related to their interactions, ensuring their privacy and well-being throughout the study. The study will prioritize creating a supportive environment, focusing on the children's comfort and emotional well-being. Furthermore, participants will have the right to withdraw from the study at any time, reinforcing their autonomy and protection throughout the research process.	

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### Part 6: Self-assessment on privacy

The following questions (1-11) concern privacy issues, as laid down in the General Data Protection Regulation (GDPR). The Data Stewards and – if necessary – privacy team of TU/e will assess these questions. In some cases, more information is required to assess the privacy risks. If this is the case, you will be notified that the Data Stewards team will contact you.

The GDPR defines ‘personal data’ as any information relating to an identified or identifiable natural person (‘data subject’). Personal data also includes data that indirectly reveals something about a natural person. Personal data can lead to the physical, physiological, genetic, mental, economic, cultural or social identity of a natural person. There are two main categories of personal data: regular personal data and special category personal data.

If you are not sure whether some of these questions below should be answered with a Yes or No, please contact a Data Steward first through [rdmsupport@tue.nl](mailto:rdmsupport@tue.nl).

*Note: answers in the blue boxes indicate that your research is eligible for fast-track approval*

		Yes	No
<b>1</b>	Will the study involve discussion/collection/processing of <b>regular</b> personal data, or will you collect and (temporarily) store video or voice recordings for the purpose of conducting interviews?  <i>Additional explanation: For example, name, address, phone number, email address, IP address, gender, age, video or interview recordings? If you are not sure whether your data contains personal data, please contact the Data Stewards Team (<a href="mailto:rdmsupport@tue.nl">rdmsupport@tue.nl</a>).</i>		

<b>1A</b>	If yes: Please describe which regular personal data you will collect in this study?	I will temporarily store voice recordings when conducting interviews with NGO leaders, volunteers, parents and school leaders.
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<b>2</b>	Will the study involve discussion/collection/processing of <b>special category</b> personal data or other <b>sensitive data</b> ?  <i>Additional explanation: Examples of special category personal data are race, religion, health information, political views, genetic or biometric data for the unique identification of a person, sexual preference, etc. Health information concerns personal data of the physical or mental health of persons, including the provision of health care. Examples of other sensitive data is information such as communication data, financial records or credit scores, camera surveillance data, location/GPS data, internet-of-things data, employee monitoring, observing or influencing behaviour, criminal records, data of vulnerable persons (children, people with disabilities, refugees), BSN number etc. Please be aware that the use of special category personal data in research requires extra security measurements in order to safeguard the privacy of data subjects and to comply with the GDPR. Processing of this special category data is prohibited, except for specific purposes and under certain circumstances. If you need to process special category data, please consult the data stewards at <a href="mailto:rdmsupport@tue.nl">rdmsupport@tue.nl</a>.</i>		No
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<b>2A</b>	If yes: Please describe which special-category personal data and/or sensitive data you will collect in this study?	
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*If you answered yes to either question 1 or 2, please answer the questions below. If you answered no to both questions, you can skip this part and continue onto part 7. Also, if an answer to any of the following questions is ‘yes’, please contact a Data Steward at [rdmsupport@tue.nl](mailto:rdmsupport@tue.nl)*

		Yes	No
<b>3</b>	Will your project involve the processing of personal data on a <b>large scale</b> ?  <i>Additional explanation: In general, any processing that involves more than 10.000 data subjects should be considered “large scale”. However, if the data of approximately 1000 persons (or more) are involved, the data processing may still be considered large scale. In that case, besides the number of persons involved in the study, one should also assess (i) the amount of data collected from these persons taking into account the type/risk level of the personal data, (ii) the duration of the data processing, (iii) the geographic scope or extent of the processing. For example, if you would collect and process data across several European countries with 10+ socio-economic data items of 1200 individual persons for several years in a row, that is likely “large-scale processing”. Other examples of a large-scale processing activity are:</i> <ul style="list-style-type: none"> <li>• Monitoring driving behavior of road users on Dutch highways</li> <li>• Collecting data of Covid patients</li> <li>• A hospital that processes patient data as part of its usual operations</li> </ul>		

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	<ul style="list-style-type: none"> <li>A transport company that processes travel information of people who travel by public transport in a certain city. For example, by tracking them through travel maps.</li> </ul>		
4	<p><b>Does this processing activity involve the use of new or innovative technologies?</b></p> <p><i>Examples of a new technology: combining fingerprints and facial recognition for physical access control, the use of bodycams in public spaces, the use of new technical methods in conducting research such as AI. This question also refers to new technologies that have not been deployed by TU/e so far.</i></p>		No
5	<p><b>Does your study involve systematic (c.q. automated) monitoring of persons?</b></p> <p><i>Additional explanation: Consider data processing activities that have the purpose of observing, monitoring or controlling individuals, for example in circumstances where the individuals are not aware by whom their personal data is collected and how it is used. Examples of such activities are using camera systems to monitor driving behavior on highways, monitoring email inactivity or employee phone use, certain applications of machine learning and artificial intelligence.</i></p>		No
6	<p><b>Does the study involve collaborations (with third parties) in which data are shared or exchanged in order to link or combine data?</b></p> <p><i>Additional explanation: This may often apply in a collaboration between the university and a commercial party, contract research, etc. It is important to assess this for all data in the entire project, not just your own data. An important consideration in this situation is whether the person whose data is involved could have expected that data from these different databases or sources of information were to be combined. For example, it is less likely for data subjects to expect that databases from different parties will be combined and the results are used for different purposes than one could reasonably expect; this may apply for example in a collaboration between the university and a commercial party.</i></p>		No
7	<p><b>Will the study include data processing activities that prevent data subjects from exercising their rights or using a service or contract?</b></p> <p><i>Additional explanation: Examples include processing operations carried out in public places that people cannot avoid (train station, airport, shopping mall, public university premises, etc.) or processing operations whose purpose is to allow or not allow data subjects to use a service or enter into a contract (examples: by refusing to pay a benefit, not being able to apply for a loan, etc.).</i></p>		No
8	<p><b>Will the study process personal data to score, rank or profile persons?</b></p> <p><i>Additional explanation: Examples: monitoring (highway) roads to give road users a “score” based on their detected driving behavior, a bank assessing its customers based on their creditworthiness, or an organization building behavioral and marketing profiles based on use of their website or navigating their website.</i></p>		No
9	<p><b>Does your data processing include activities that involves composing “blacklists” – and, in particular, in relation to sensitive or special category data, such as communication data, financial records or credit scores, genetic data, biometric data, health data, camera surveillance data, location/GPS data, internet-of-things data, employee monitoring, observing or influencing behaviour, etc.</b></p> <p><i>Additional explanation: This situation will not be a common occurrence in research, but you may indirectly be involved in this. In general, this typically concerns processing operations involving personal data relating to criminal convictions and offences, data relating to unlawful acts, data concerning unlawful or annoying behaviour or data concerning bad payment behaviour by companies or individuals are processed and shared with third parties (blacklists or warning lists, as used, for example, by insurers, hospitality companies shopping companies, telecom providers as well as blacklists relating to unlawful behavior of employees, for example in the healthcare sector or by employment agencies, etc.).</i></p>		No
10	<p><b>Will personal data be transferred or shared outside the EU/EEA?</b>  <b>EU data protection rules apply to the European Economic Area (EEA), which includes all EU countries and non-EU countries Iceland, Liechtenstein and Norway.</b></p> <p><i>Additional explanation: The GDPR has drafted additional requirements for transfers data outside of the EU/EEA. Typically, additional safeguards must be implemented to protect the personal data of residents in the European Union. For example, if you collaborate with an American, Indian or Chinese university or other third party outside the EU/EEA, you must first check whether this is allowed and under which conditions this is allowed. Another typical example is storage of data on American providers of cloud (storage) services. Please contact the data stewards first to discuss this.</i></p>		No
11	<p><b>Will any raw or anonymized personal data or any other sensitive data or research results from the project possibly be transferred to a high-risk country*?</b></p> <p><b>*High risk countries: China, Russia, Iran, Turkey, and North Korea.</b>  <i>If personal data or other potentially sensitive data is exchanged with one of these countries, or if part of the data processing takes place in one of these countries: <b>an advice from the Data Protection Officer, the kennisveiligheidsteam (Knowledge Security team), and the CISO (Chief Information Security Officer) is ALWAYS required.</b></i></p>		No

## Ethical Review Form

### Part 7a: Processing of research data

<p><b>1</b></p>	<p>Is consent your legal basis for processing the personal data in your study?</p> <p><i>Additional explanation: What is a legal basis? One of main principles in the GDPR is to ensure that personal data is processed lawfully, fairly, and transparently. To comply with this principle, the processing of personal data also requires that you have a valid legal basis for the personal data processing activity.</i></p> <p><i>In research projects, the legal basis is often but not always consent. However, it is possible that it is not clear or not possible to establish whether to use consent as a legal basis.</i></p> <p><i>Some examples where consent may not be applicable as legal basis are covert research, data collection in public spaces, secondary data analysis of existing data, data that are transferred to you by a third party, consent is not possible or would require disproportionate effort, etc. In that case, please indicate which legal basis you think that applies or (preferably) contact a data steward first.</i></p>	<p><input checked="" type="checkbox"/> Yes and it will be obtained via an informed consent template An informed consent template* is attached to this application.</p> <p><input type="checkbox"/> No, I will use another legal basis to process the data. Namely, .....</p> <p>* You can download a suitable template <a href="#">here</a>.</p>
<p><b>2</b></p>	<p>Where will the data come from?</p>	<p><input checked="" type="checkbox"/> Data obtained from another party (secondary data use)</p> <p><input checked="" type="checkbox"/> New data collected only by my research team</p> <p><input type="checkbox"/> New data collected together with collaborators</p>
<p><b>3</b></p>	<p>Which of the following tools will you use to process personal data?</p>	<p><b>Surveys</b></p> <p><input type="checkbox"/> Qualtrics</p> <p><input type="checkbox"/> Limesurvey</p> <p><input checked="" type="checkbox"/> MS Forms</p> <p><input type="checkbox"/> Other, namely .....</p> <p><b>Interview/workshop recordings</b></p> <p><input checked="" type="checkbox"/> Voice/video recorder</p> <p><input type="checkbox"/> Phone in a flight mode</p> <p><input checked="" type="checkbox"/> MS Teams</p> <p><input type="checkbox"/> Other, namely .....</p> <p><b>Transcription</b></p> <p><input type="checkbox"/> Manual transcription</p> <p><input checked="" type="checkbox"/> Microsoft Office software (e.g. Word, Teams)</p> <p><input type="checkbox"/> Other, namely .....</p> <p><b>Statistical analysis</b></p> <p><input type="checkbox"/> SPSS</p> <p><input checked="" type="checkbox"/> R</p> <p><input type="checkbox"/> Other, namely .....</p> <p><b>Other tools, specifically: Miro Board for qualitative analysis</b></p>
<p><b>4</b></p>	<p>Where will the data and in particular the personal data be stored during and after completion of the study? If you have already uploaded your Data Management Plan, you can refer to your Data Management Plan.</p>	<p><input checked="" type="checkbox"/> Onedrive</p> <p><input type="checkbox"/> Research Drive</p> <p><input type="checkbox"/> Network Drive</p>

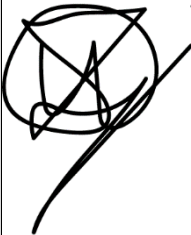



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	<p><i>Additional explanation: University supported-storage facilities are SURF Research Drive, Ceph, departmental drives (this includes BE Project Drive), and the TU/e instance of Microsoft OneDrive. For most personal data, the use of SURF Research Drive or departmental drives (including BE Project Drive) is required.</i></p>	<input type="checkbox"/> Research Manager <input type="checkbox"/> Other, namely .....
<b>Part 7b: Safety and security measures</b>		
1	<p>Will you pseudonymize/anonymize the data?</p> <p><i>Additional explanation:</i>  <i>Anonymization: remove all direct identifiers (name, address, telephone number etc.) but also indirect identifiers (age, place of birth, occupation, salary) that, linked with other information, can lead to a person's identification. Anonymization to the point that a data subject is no longer identifiable means that the anonymized data is not considered to be personal data anymore.</i>  <i>Pseudonymization: replacing the unique identifier of a data subject with an artificial pseudonym. This means that identification is still possible with the identification key. The identification key needs to be stored securely and separately from the pseudonymized data. If the data subject can be identified by combining data with additional information, the data is also called pseudonymous.</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  If yes, describe how: All direct identifiers, such as names, addresses, and any indirect identifiers (e.g., age, place of birth, or specific demographic information), will be removed to ensure that participants cannot be identified. The observational data will be aggregated, focusing solely on how children interact with the educational tool without linking it back to any individual. This approach guarantees that the data does not qualify as personal data and maintains the participants' privacy and confidentiality throughout the research process.
2	<p>Is access to (personal) data restricted? (Select all that apply)</p>	<input type="checkbox"/> No <input type="checkbox"/> Yes, via access control <input checked="" type="checkbox"/> Yes, via password protection <input type="checkbox"/> Yes, access only given to TU/e research team <input type="checkbox"/> Yes, access only given to research team, including non-TU/e collaborators <input type="checkbox"/> Other, specify.....
3	<p>Who will have access to the data during and after completion of the project? (Select all that apply)</p>	<input checked="" type="checkbox"/> Main researcher <input checked="" type="checkbox"/> TU/e supervisor(s) <input type="checkbox"/> External supervisors <input type="checkbox"/> TU/e research team <input type="checkbox"/> Other, specify.....
4	<p>Will you store data for future research?</p>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, in a public data repository <input type="checkbox"/> Yes, in a public data repository under restricted access <input type="checkbox"/> Yes, in a TU/e-recommended storage (SURF Research Drive, Network Drive)
5	<p>Will you share data outside the TU/e?</p>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, in a fully anonymized form <input type="checkbox"/> Yes, raw or pseudonymized data*  <p>*If you selected this box, make sure that a suitable <a href="#">data agreement</a> is put in place. You can contact the <a href="#">Data Stewards</a> for support in preparing such an agreement</p>
6	<p>How long will data be stored after the end of the project?</p>	<p>Half a year.</p>

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### Part 8: Closures and Signatures

1	Enclosures (tick if applicable and attach to this form):	<input type="checkbox"/> Informed consent form <input checked="" type="checkbox"/> Informed consent form for other agencies when the research is conducted at a location (such as a school) <input type="checkbox"/> Text used for ads (to find participants) <input type="checkbox"/> Text used for debriefings <input type="checkbox"/> Approval other research ethics committee <input type="checkbox"/> The survey the participants need to complete, or a description of other measurements <input type="checkbox"/> Data Protection Impact Assessment checked by the privacy officer <input type="checkbox"/> Data Management Plan checked by a data steward
2	Signature(s)	Signature(s) of applicant(s)
		
		Date: 20/10/2024
		Signature research supervisor
		
		Date: 25/10/2024