



Clear evidence, better decisions, more learning.

“The impact of a tech-supported, school-based Teacher Continuous Professional Development on learning outcomes in Tanzania”

Internal Reference: HLR 4

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Purpose of the study: Our goal

To investigate the effectiveness, cost-effectiveness and sustainability of technology-supported, decentralised, and school-based Teacher Continuous Professional Development (TCPD) models to improve learning outcomes at the primary level in rural schools in Tanzania.

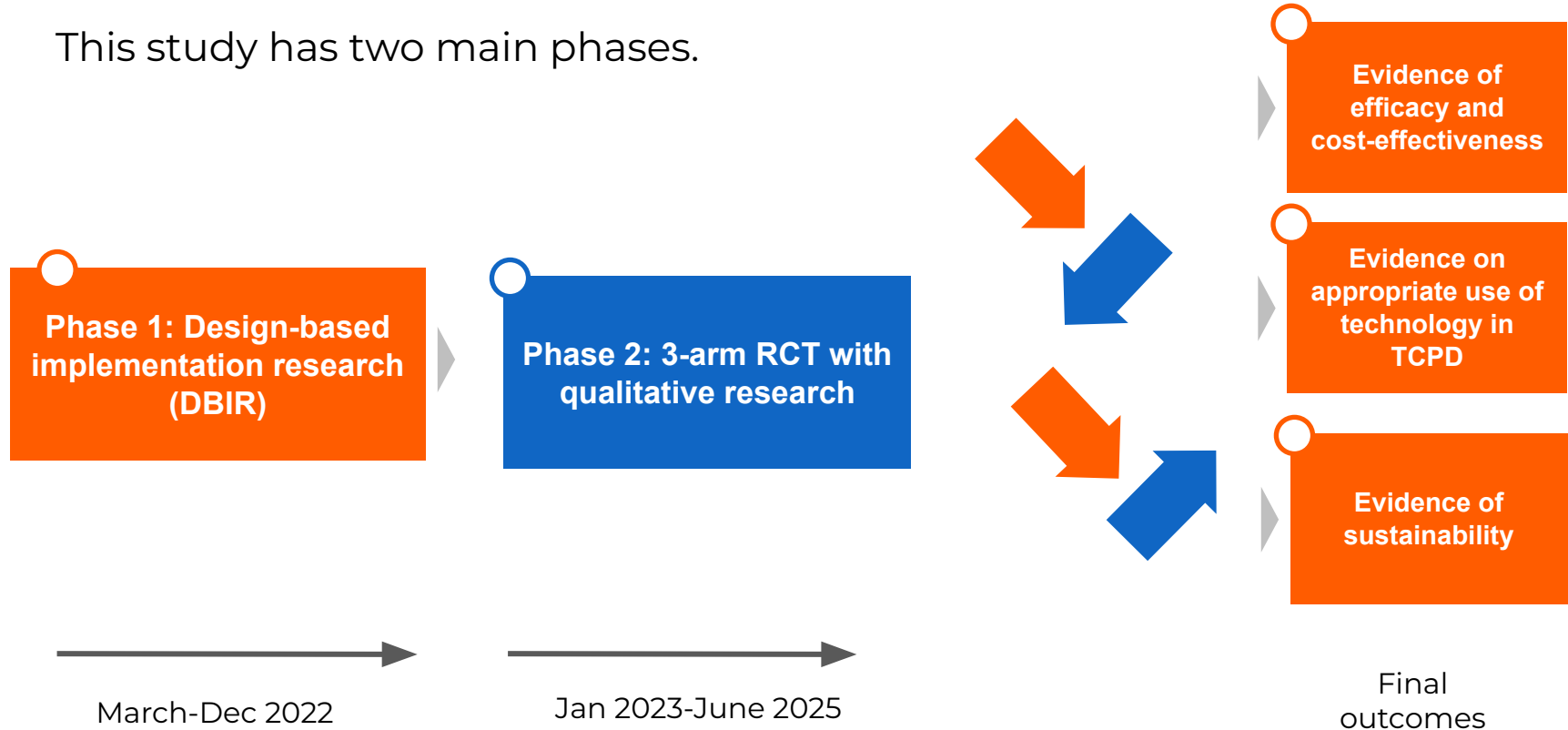
The study will hone in on what is the added value of exploiting technologies such as tablets, phones, videos, OER, LMS in supporting teacher learning.

Purpose of this study: Our rationale

- **Problem:** Previous interventions to upskill the teaching workforce in Tanzania have resulted in mixed outcomes. Little rigorous research exists.
- **The intervention:** The government is rolling out a decentralised, school-based, technology-supported TCPD model that attempts to address the challenges that previous ineffective models faced ... *but this model is yet to be evaluated.*
- **Evaluation:** The study will be key to evaluating and enhancing the TCPD implementation in Tanzania, in addition to assessing the added value of a technology-supported model.
- **Shared learning:** Such research on decentralised TCPD has yet to be done *at scale* in an LMIC. This study will provide insights to improve TCPD models in other LMICs

Methodology

This study has two main phases.



Phase 2 design - RCT with qual research

The cluster RCT will be conducted using 3 arms, each with 48 schools:

1. **control group (no intervention)**
2. **TCPD intervention only (including any naturalistic technology access through personal devices: “business as usual”)**
3. **TCPD intervention + technology provided**

Significance

By evaluating

the **effectiveness** of a **decentralised, school-based TCPD model** in rural contexts in Tanzania



the study will...

provide evidence for **whether and how such interventions should be designed and implemented** in Tanzania and other LMICs.

the **appropriate uses of technology** in rural school contexts that can support effective TCPD



recommend appropriate uses of technology in TCPD e.g., for effective communication, critical reflection, creating/curating open resources, monitoring and evaluation.

the **relative costs** of the TCPD intervention **with and without technology** mediation



determine the **most cost-effective ways** of using technology in a decentralised TCPD model.

Study outputs

The study will deliver both **academic** outputs as well as influence **policy and practice**.

Journal articles in peer-reviewed international journals

Field reports, working papers/technical reports and multi-language blogs

Dissemination via high-profile events and conferences

Produce OER TPD resources, CPD modules and lesson plans

Policy briefs, participant/educator briefs, workshops on school-based TCPD

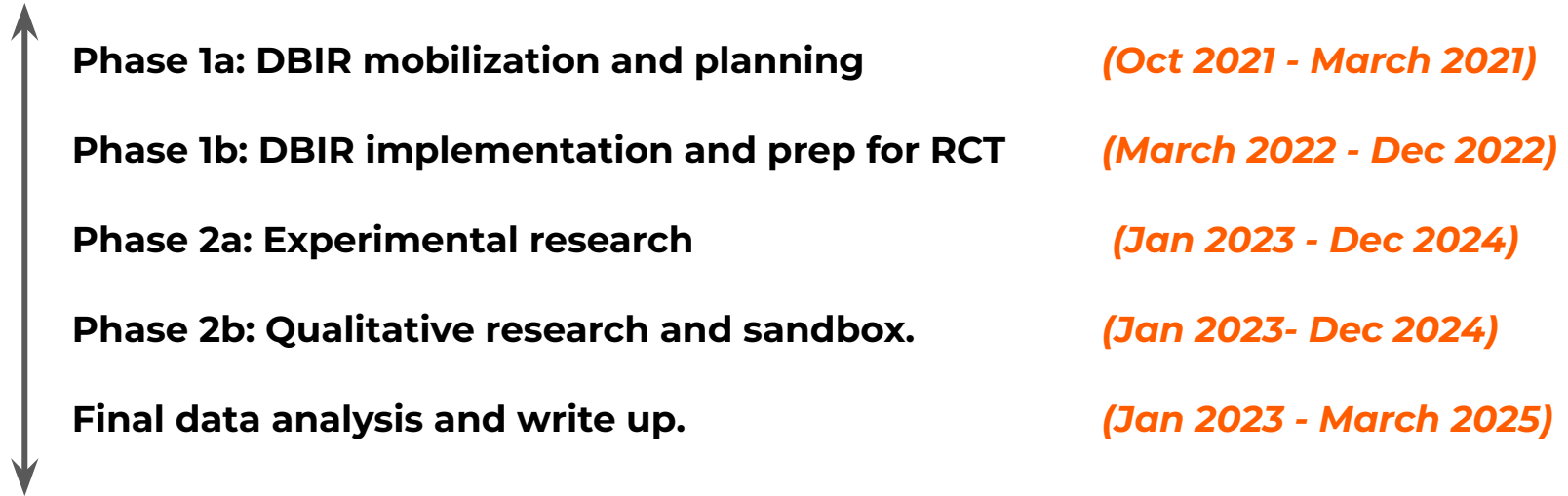
Pathways to Impact

Our aim is for **maximum reach, take-up by key stakeholders**, and **change** – particularly in policy and practice at the national level. **Collaboration with government** is key.

Impact strategies include:

- **Identifying actors at national universities** and research institutes **to disseminate findings with — and promote national interest** in — the research areas.
- **Recruit Tanzanian researchers to conduct the research** and increase credibility with government.
- Ensure all methodology and research instruments, interim and final findings, and data are **openly available for secondary analysis, comment and collaboration**.
- Conduct **workshops to provide guidance to national stakeholders in using research** (e.g., data) and tools in order to build capacity at the government level.
- **Annual country and regional events** to promote the evidence generated in Tanzania.

Timeline



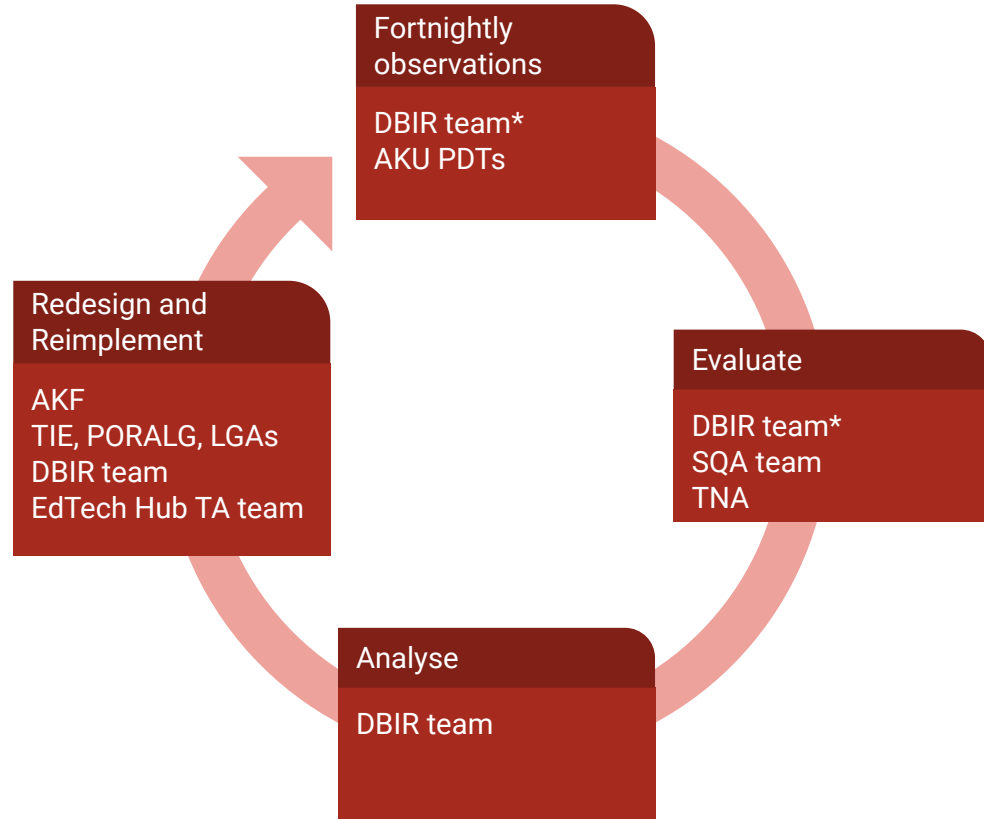
2 DBIR cycles

The plan

- Baseline data collection - **March 2022**
- Cycle 1 **April - mid August** (4 schools)
- Cycle 2 **Sept - end of Oct** (8 schools)

Update

The EdTech Hub TA team will be running their school-level testing of the LMS and servers at the same time as baseline tests.



*DBIR team = the team formed from EdTech Hub research team, Sandbox team, AKU researchers, TIE researchers

4 Tech Profiles

Profile	Cycle 1	Cycle 2
Profile 1: Personal devices (+ mobile data)	School #1 - control	School #1 - control School #2 - mobile credit provided
Profile 2 Limited tech - (facilitator tablet only) One tablet per school	School #3 - 1 high-spec tablet provided for online server	School #3 - 1 high-spec tablet provided for online server + projector School #4 - 1 high-spec tablet provided for offline server + projector
Profile 3 Shared tech 1 device per 3 or 4 teachers	School #5 - 1 high-spec tablet provided for offline server + 3 medium-spec tablets	School #5 - 1 high-spec tablet provided for server + 3 medium-spec tablets School #6 - 1 high-spec tablet provided for server + 3 low-spec tablets School #7 - 1 high-spec tablet provided for server + 3 medium-spec phones
Profile 4 Shared tech + individual tech provided)	School #8 - 1 high-spec tablet provided for online server + 3 medium-spec tablets + 12 individual smart feature phones	School #8 - 1 high-spec tablet provided for online server + 3 medium-spec tablets + 12 individual smart feature phones + mobile credit

Partnerships & Funding

Developing partnerships with government and local researchers has been our main focus this quarter.



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PO-RALG's (President's Office- Regional Administration and Local Government) are the main implementers of the TCPD intervention

TIE (Tanzania Institute of Education) has been strongly involved in the development of the TCPD plans and materials.

PO-RALG and TIE's role in this research is to ensuring the study aligns with the national plans and provides contextual, useful and effective feedback to the government in order to iteratively improve the TCPD.

In Partnership with:

The **Aga Khan University** is an international university with a campus in Tanzania. They have very experienced TCPD researchers who will co-lead the research process and provide Tanzania-specific TCPD expertise.



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The **University of Dar Es Saaam** and other universities will provide expertise on ICT for education and instructional design. They will also develop the learning management system and research ways to improve access to the LMS alongside facilitating the relationship with PO-RALG



Aligning with:

World Bank DIME team in partnership with the **Georgetown University** will provide learning and evaluation under the Shule Bora Programme. We will strategically align to avoid duplication and catalyse impact.



Georgetown
University

Appendix

Research questions - Phase 1 - DBIR

RQ1 relates to the decententralised, school-based **TCPD model and implementation:**

- **(RQ1-A) [systems]** What are the *system-level enablers and barriers* to sustainable implementation of a school-based TCPD model in rural primary schools? How do key national-, district- and ward-level stakeholders perceive that barriers might be mitigated?
- **(RQ1-B) [schools]** What are the key *school-level enablers and barriers* to making peer facilitators and headteachers effective in implementing the school-based TCPD? How do key stakeholders perceive that barriers might be mitigated?
- **(RQ1-C) [teachers]** What are the key *teacher-level enablers and barriers* to implementing the school-based TCPD? How do key stakeholders perceive that barriers might be mitigated?

RQ2 specifically looks at the **tech-mediation** within the TCPD model and implementation:

- **(RQ2-A) [technology]** What are the appropriate uses of technology in rural school contexts with limited access to technology that can support effective TCPD?
- **(RQ2-B) [cost effectiveness]** What are the relative costs of the different Phase 2 intervention arms (i.e., with and without technology mediation)?

Research questions - Phase 2 - RCT with qual research

The cluster RCT will be conducted using three arms, each with 48 schools:

1. **control (no intervention) group**
2. **TCPD intervention only (including any naturalistic technology access through personal devices: “business as usual”)**
3. **TCPD intervention + technology provided at the school level**

- **(RQ3 -A)** What are the main benefits and shortfalls of the tech-supported TCPD model (arm 3) over the TCPD-only model (arm 2)?
- **(RQ3-B)** What are the most effective and cost-effective models for using digital technology at scale in school-based TCPD to improve learning outcomes for learners in rural primary schools in Tanzania?
- **(RQ3-C)** What are the conditions fostering sustainable TCPD for this purpose?
- **(RQ3-D)** What are the recommendations for rolling out tech-supported TCPD nationally?

Methodology

The study has two main phases:

Phase 1: Design-Based Implementation Research (DBIR)

which works with implementers to iteratively refine the TCPD model and implementation, and rectify teething issues in addition to determining appropriate technology uses in TCPD for schools with different levels of technology access;

Phase 2: Systematic Concurrent Mixed Methods (Cluster RCT with qualitative research)

then tests this refined model at scale to evaluate the (cost)-effectiveness (through the RCT) and explain the 'how' and 'why' (through the qualitative research)



TAMISEMI

PO-RALG's (President's Office- Regional Administration and Local Government)_unique role in this research is to:

- Guide and shape the research aims and process, ensuring the study aligns with the national plans and provides contextual, useful and effective feedback to the government in order to iteratively improve the TCPD;
- Keep the team up to date with the latest changes in the TCPD plans and implementation to ensure continued alignment;
- Support on the 'Reimplement' phase of DBIR;
- Assist in connecting the research team to LGA officers, WEOS and TRCs to conduct stakeholder interviews;
- Assist in obtaining the school data needed to select and allocate schools for the RCT.



TIE's (Tanzania Institute of Education) unique role in the research is to:

- Guide and shape the research aims and process, ensuring the study aligns with the national plans and provides contextual, useful and effective feedback to the government in order to iteratively improve the TCPD;
- Keep the team up to date with the latest changes in the TCPD plans and implementation to ensure continued alignment;
- Support on the 'Redesign' phase of DBIR;
- Assist in obtaining research permissions at the national and district levels;
- Assist in obtaining school participation in the research;
- Assist in writing reports and publications as well as disseminating findings through policy dialogues, briefs and workshops.

In Partnership with:



AGA KHAN FOUNDATION



THE AGA KHAN UNIVERSITY

The [Aga Khan University](#) has very experienced TCPD researchers in Tanzania, and will become our primary in-country partner organisation.

AKU's role will be to:

- co-lead the research process, ensuring that the work is contextual, high quality and produced in a format that will have a high impact in Tanzania;
- provide Tanzania-specific TCPD expertise to ensure our research aligns with the context;
- provide on-the-ground in-person support (e.g., logistics, stakeholder meetings) where remote support from out-of-country researchers is insufficient;
- provide local researcher capacity to conduct school visits and data analysis in Swahili.
- Assist in writing reports and publications as well as disseminating findings through policy dialogues, briefs and workshops.

University of Dar Es Salaam and other universities



Currently, the main interaction with the University of Dar Es Salaam has been through the College of ICT and Associate Professor Joel Mtebe through his work on EdTech Hub's TA team. Prof Mtebe's role is to:

- Provide expertise on ICT for education and instructional design;
- Develop the learning management system and research ways to improve access to the LMS through innovative design methods;
- Facilitate the relationship and communication with PO-RALG on behalf of EdTech Hub.

Further relationships with departments related to TCPD and teacher education research are being sought within the University of Dar Es Salaam (including Dar es Salaam University College of Education and Mkwawa University College of Education) and University of Dodoma. The role of these researchers will be to:

- Provide a pool of TCPD expertise within the Tanzanian context to be advisors and reviewers on the study;
Ensure that this research aligns with other TCPD research within the country and that this research supports and catalyses local res



**Georgetown
University**

Shule Bora Learning and Evaluation Component - World Bank DIME and University of Georgetown

As part of the Shule Bora programme, a separate learning and evaluation component was included. This component was awarded to the World Bank DIME team in partnership with the University of Georgetown. The component will include both research and more learning focused evaluation. EdTech Hub research will come ‘under the banner’ of this wider research work - and align with these research efforts as they develop.

The purpose of this strategic alignment will be to ensure coordination of efforts to avoid duplication and catalyse impact.