



Clear evidence, better decisions, more learning.

Session 4: How can I rapidly upskill my large teacher workforce?

November 2022

About this document

Recommended citation Koomar, S., & Proctor, J. (2022, November 7). *Session 4: How can I rapidly upskill my large teacher workforce?* [EdTech Hub Presentation]. <https://doi.org/10.53832/edtechhub.0138>. Available at <https://docs.edtechhub.org/lib/E7C9MN3V>. Available under Creative Commons Attribution 4.0 International, <https://creativecommons.org/licenses/by/4.0/>.

License Creative Commons Attribution 4.0 International <https://creativecommons.org/licenses/by/4.0/>.
You are free to share (copy and redistribute the material in any medium or format) and adapt (remix, transform, and build upon the material) for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

Notes EdTech Hub is supported by UK aid (Foreign, Commonwealth and Development Office), Bill & Melinda Gates Foundation, World Bank, and UNICEF. The views expressed in this document do not necessarily reflect the views of UK aid (Foreign, Commonwealth and Development Office), Bill & Melinda Gates Foundation, World Bank, and UNICEF.

Background

The Strategic Choices for Education Reform workshop held in Zimbabwe in November 2022 aimed to provide a forum for senior government officials to reflect and consider the strategic reform options for their countries. The objective was to convene officials in key positions in the ministries of education, higher education, finance, and planning to learn about important issues and approaches in education; exchange experiences and lessons; develop an understanding of what is necessary to reconstruct better and more resilient education systems; and to transform the large potential of young people, through human capital investments, into development and prosperity.

EdTech Hub was invited to facilitate the day of the workshop focused on harnessing ICT for better teaching and learning. This presentation is one of several used in the workshop to promote learning, discussion, and problem solving among the participants. We have published four presentations. Details are on the next slide.

Published presentations from the workshop

We have published four presentations from the workshop, you can access these in our Evidence Library using the following links

- [Session 3: How can I develop an aligned and actionable EdTech strategy](#)
- [Session 4: How can I rapidly upskill my large teacher workforce?](#)
- [Session 5: How can I use EdTech to ensure that students are provided with quality educational content, at the right level?](#)
- [Session 6: How do I ensure my EdTech investments are cost effective](#)

Teacher Professional Development (TPD)

Definition: 'TPD' encompasses **all forms** of pre- and in-service teacher development that support teaching and student learning and on-/off-site provision including formal programmes, mentoring and coaching, as well as informal teacher learning, for instance, through online peer communities of practice.

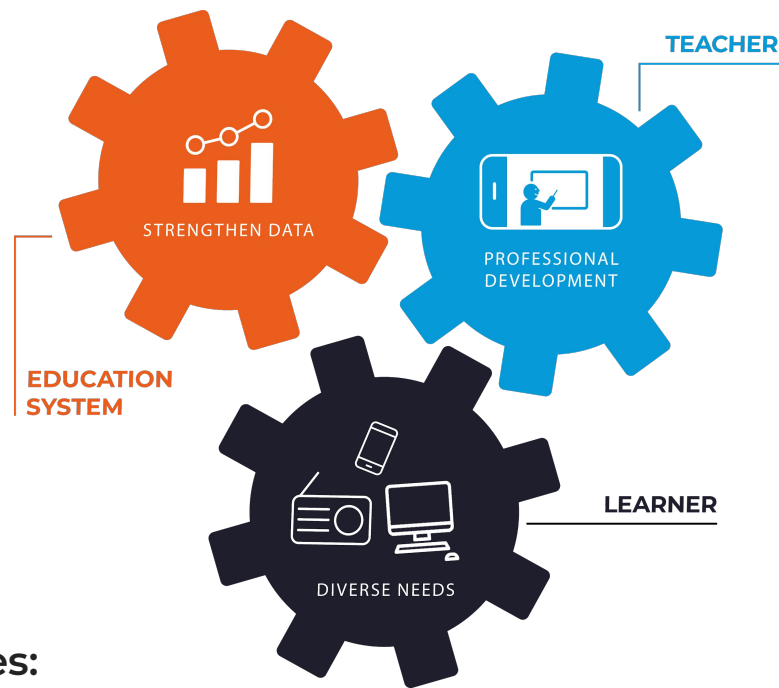
For the purpose of this talk:

- The focus is on *Continuous* Professional Development for Teachers
- Also referred to as 'in-service TPD' or TCPD
- However, most of the content is relevant for pre-service TPD. Pre and in-service approaches need to be coherent and considered together

The situation

“Teacher quality is the most important determinant of learning outcomes at the school level, but in many countries teachers are in short supply, isolated, and not supported to provide effective teaching and learning”

(↑[Education Commission, 2019](#), p. 6)

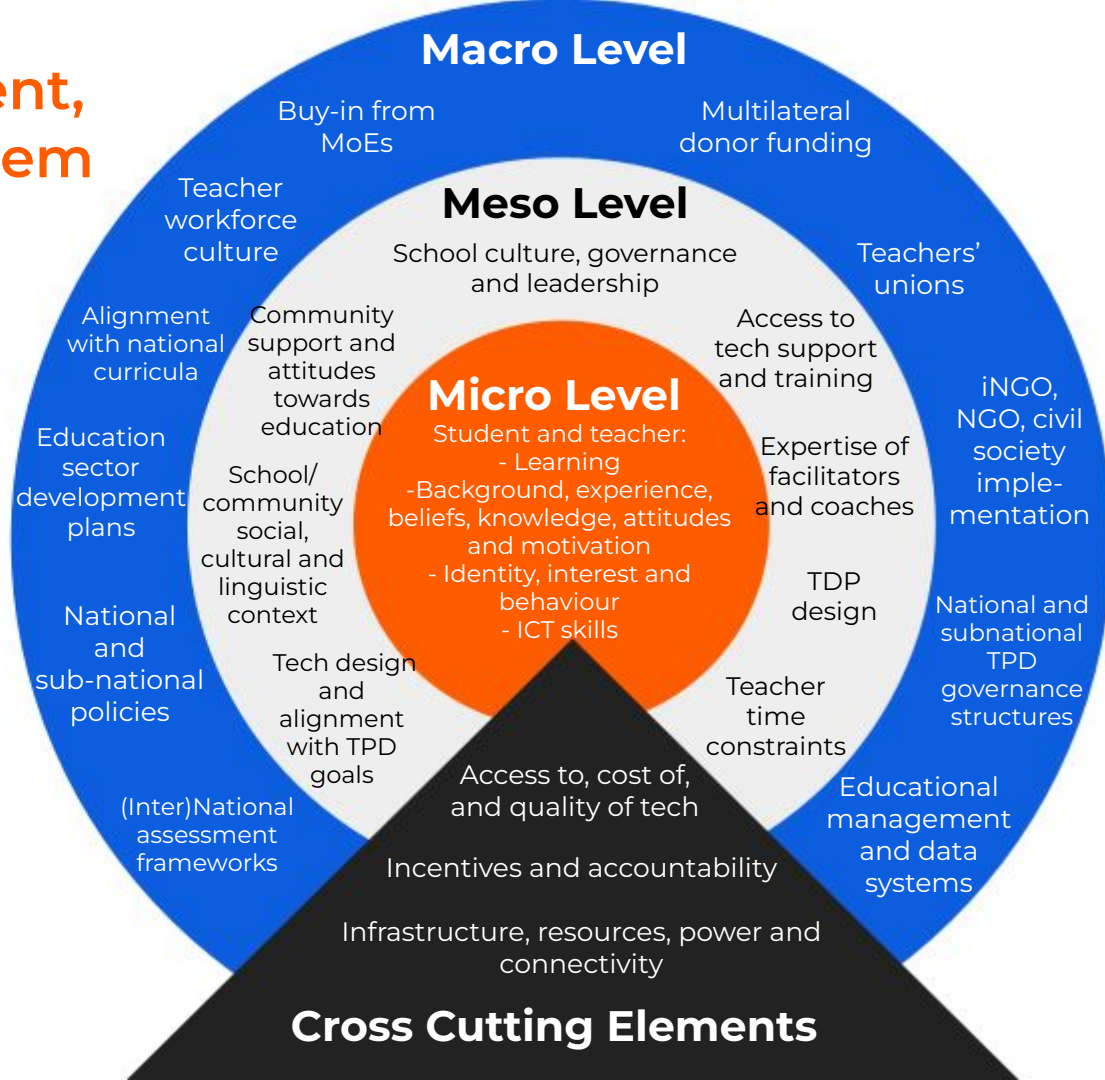


Critical issues:

- TPD is often top-down, neglecting teachers' voices
- ... and therefore can lack practical application
- We therefore need a **culturally responsive, inclusive and coherent TPD system**. Technology can help with this!

The ambition: a coherent, multilevel TPD ecosystem

Transfer learning and input through all levels, creating a coherent system of effective, equitable, and sustained TPD



Key trends in the global tech4TPD literature

Findings from a systematic review (↑[Hennessy et al., 2022](#))

1. Potential uses of tech to support teacher learning (& facilitators / coaches)

- **Social media / messaging** can foster remote / informal peer learning in *communities of practice* — essential for teacher well-being
- **Blended & distance learning** options to access formal learning modules and support, e.g. learning management systems and virtual learning environments (LMS / VLEs)
- **Videos** can act as powerful tools for modelling and reflection
- **Open Educational Resources (OER)** allow teachers to create, adapt and re-use content
- **Mobile phones / tablets**, pre-loaded with semi-structured lesson plans / teaching content



Recommendation:

Consider which technology is most appropriate to catalyse **teacher reflection and peer learning** in specific contexts.

Interventions normally need to layer different technology and **avoid** adopting a 'one-size-fits-all' approach

2: Outcomes

- [↑Bruns et al. \(2018: Brazil\)](#) found that providing teachers with **classroom observation feedback and virtual coaching produced significant and cost-effective student learning gains** in mathematics and Portuguese.
- Kenya Primary Math and Reading Initiative also found statistically significant positive impacts on literacy and mathematics learning outcomes ([↑Piper et al., 2015](#)).
- **However, only a minority of studies focus on changing teaching practices and improving student learning outcomes.** Literacy outcomes, in particular, are often missing.

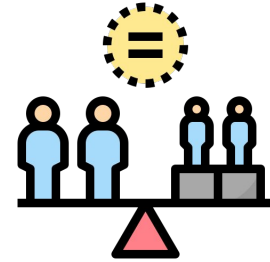


Recommendation:

Ensure technology-enabled TCPD is linked to tangible **impacts on classroom practice and student learning**; measure these systematically and rigorously.

3: Equity & participatory approaches

- Tech can provide greater TCPD **access and agency** for teachers, enabling marginalised voices to be heard ...
- ... But little granular data on **how initiatives impact certain groups** (e.g., women, teachers with SEND and / or teachers of SEND learners, teachers in remote / rural areas).
- Tech-supported TCPD needs to **adapt to teachers' needs**: Mobile mentoring via WhatsApp on phones for teachers in a Kenyan refugee camp provided real-time responses to challenges ([↑Mendenhall et al., 2018](#)).



Recommendation:

Co-design TCPD with teachers and others so that it is relevant, contextualised and **appropriate for diverse needs** of teachers / learners, including marginalised groups & low connectivity contexts

4: Cost-effectiveness: virtual and blended models

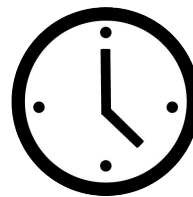
- **Text messages from coaches / mentors** can offer cheap, timely, and easily accessible reminders (nudges) to powerfully reinforce learning (↑[Slade et al., 2018](#): Malawi)
- ↑[Kotze et al. \(2018\): South Africa](#)) found significant improvements in students' literacy outcomes after 1 year of **virtual coaching** compared to the face-to-face (F2F) mode ...
- ... However, a seminal study showed this virtual coaching proved **less cost-effective after 3 years** (↑[Cilliers et al., 2020](#): S. Africa).



Recommendation:

Use blended models to optimally support critically important human relationships and maintain cost effectiveness over time

5: Sustainability



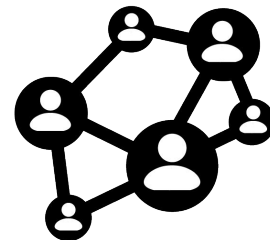
- ↑Cilliers et al. (2020) highlights the importance of sustainability, yet **less than 1 in 10 studies incorporated it into design, and less than 1 in 5 were longitudinal or followed up later.**
- School and teacher **agency** is crucial for local uptake. The semi-structured OER4Schools programme was followed up after 18 months (↑Haßler et al., 2020: Zambia). The programme developed pedagogical strategies further and became **self-sustaining**; previous participants became peer facilitators.

Recommendations:

Design for sustainability through local contextualisation.

Follow teachers for at least a year after their TPD ends (↑Kennedy, 2016 review)

6: Scalability



- **Scalability** is critical for the significant impact of initiatives. However, [↑ Kraft et al. \(2018 review\)](#) show that smaller coaching programmes are more effective than larger-scale ones.
- [↑ Kennedy & Laurillard \(2019: Syria and Lebanon\)](#) found that **blended learning MOOCs** were effective due to their co-design components. The MOOC was scaled beyond existing partners and new course content was embedded.

Recommendation:

Consider how large-scale interventions can **reach teachers without reliable or continuous access to smart devices or connectivity.**

Snapshot of tech4TPD in the region

EdTech Hub tech4TPD work across the region



Madagascar

EdTech Hub developed a [curated list of initiatives](#) for effective teacher education in low-connectivity settings and is now providing technical assistance to the Ministry of Education, supporting the roll out of a national-scale TPD initiative aimed at improving the teaching of foundational skills ([Koomar et al., 2020](#))



Tanzania

Supporting the government to develop, test, and implement a national-scale technology-supported, school-based, decentralised TPD programme, including costed guides for Local Government Area (LGA) implementation and ongoing teacher needs assessments; and supporting government to roll out the plans in schools nationally. Now conducting research to understand the impact of the TPD model on primary learning outcomes.



Malawi

EdTech Hub is supporting the implementation of a national-scale National Numeracy Programme, focusing on primary mathematics teaching and learning outcomes.

Key features of a new TCPD model in Tanzania

Decentralised -

planned & managed at LGA level; different LGAs may focus on different topics based on context and need

Semi-Structured Communities of Learning (CoL) in each school as main TCPD modality

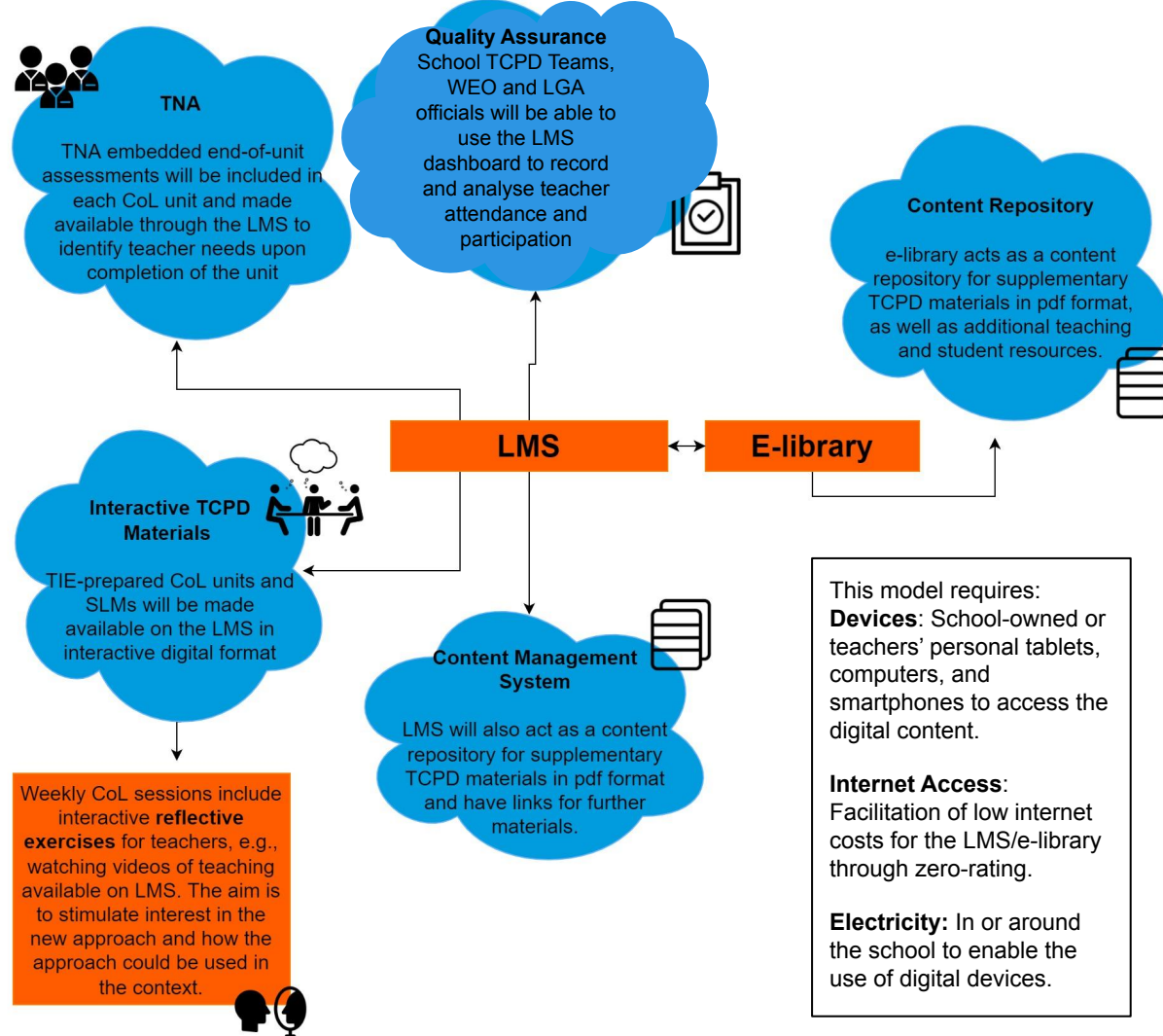
Mandatory participation for all teachers - CoL to be part of weekly school timetable.

Clear career paths -

Teachers will have new opportunities to move through stages and gain recognition

Accessible - CoL units and other modules will be available in multiple formats (print and digital)

The use of tech in a TCPD model in Tanzania



Legend:
 SLM — Self Learning Modules
 TIE — Tanzania Institute of Education
 TNA — Teacher Needs Assessment
 WEO — Ward Education Officer

This model requires:
Devices: School-owned or teachers' personal tablets, computers, and smartphones to access the digital content.

Internet Access:
 Facilitation of low internet costs for the LMS/e-library through zero-rating.

Electricity: In or around the school to enable the use of digital devices.

Lessons learnt from ongoing research in Tanzania

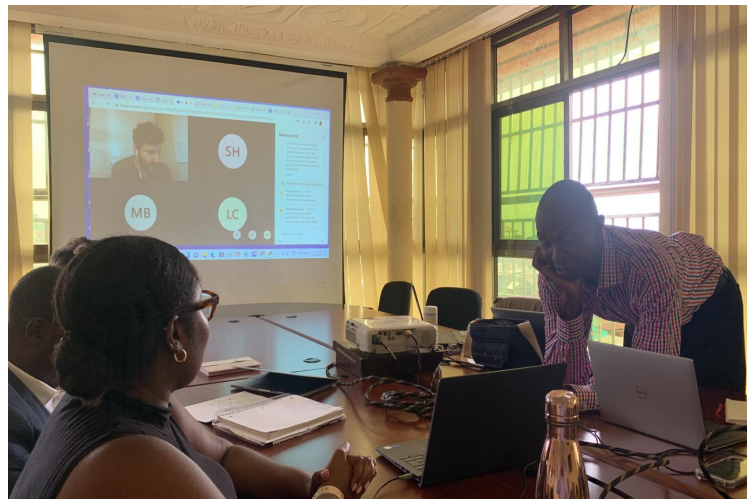
- Ensuring time to engage in TCPD is protected for teachers has been a commonly reported concern by teachers themselves. Continuing to communicate that TCPD is mandatory, and that teachers have protected time to engage in it is crucial.
- Costs for hosting TCPD in schools were a concern among head teachers and ward education officers. Schools reported needing financial allowances when hosting TCPD to cover money for refreshments during sessions, fuel for WEOs to follow up on activities, etc.
- Many teachers have access to mobile devices (smartphones / basic phones) in the rural schools we are working in, understanding this tech ownership helps to target the intervention to the tech people already have.

Example from Sierra Leone

Objective: to define and test a model for tech-enabled continuous professional development (CPD) to reach primary school teachers throughout the country and improve foundational learning

Key findings:

- Teachers intuitively used the tablets provided, without additional training.
- Teachers responded very well to video and audio content (90%).
- Teachers stressed the importance contextually appropriate content
- Despite not having previous experience, most teachers quickly learnt how to use the LMS for TCPD
- Peer facilitators felt comfortable in their roles while Head teachers tended to prefer oversight roles



Conclusions

Conclusions for TCPD design, practice, and research

- **Pilot, evaluate, and iterate** all new materials / approaches; use a proof of concept before rollout to mitigate risks and address the many **challenges** that arise during implementation
- Rigorous assessments of **impacts on very specific teaching practices and student learning outcomes** are needed to truly understand the impact of TPD
- Consider **teachers' needs, well-being, motivation, and professional agency** — teachers are critical actors within the TPD ecosystem.
- **Coordinate stakeholders and promote collaboration and learning from mistakes and successes across the wider TPCD ecosystem** — at classroom, school, district, regional, and national levels.
- **Co-designing TPD** with key school-level actors can help work through critical detail issues around costs, time, expectations for school-based TPD.
- **Map existing technology** owned by teachers and leverage those devices that are prevalent during the TPD, while acknowledging the infrastructural constraints present.

References

These references are available digitally in our evidence library at <https://docs.edtechhub.org/lib/E7C9MN3V>

Bruns, B., Costa, L., & Cunha, N. (2018). Through the looking glass: can classroom observation and coaching improve teacher performance in Brazil? *Economics of Education Review*, 64, 214–250.

<https://doi.org/10.1016/j.econedurev.2018.03.003>. Available from

https://www.researchgate.net/publication/323850707_Through_the_Looking_Glass_Can_Classroom_Observation_and_Coaching_Improve_Teacher_Performance_in_Brazil. (details)

Chuang, R., & Proctor, J. (2022). *Session 6: How do I ensure my EdTech investments are cost effective* [EdTech Hub Presentation]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0140>. Available from <https://docs.edtechhub.org/lib/CWKPJ8R>. Available under Creative Commons Attribution 4.0 International. (details)

Cilliers, J., Fleisch, B., Kotz, J., Mohohlwan, N., Taylor, S., & Thulare, T. (2020). *Can Virtual Replace In-person Coaching? Experimental Evidence on Teacher Professional Development and Student Learning in South Africa*.

<https://riseprogramme.org/sites/default/files/inline-files/Virtual%20vs%20InPerson%20Coaching%20Working%20Paper.pdf>. (details)

References

- Education Commission. (2019). *Transforming the Education Workforce: Learning Teams for a Learning Generation*. Education Commission.
<https://educationcommission.org/wp-content/uploads/2019/09/Transforming-the-Education-Workforce-Executive-Summary.pdf>. (details)
- Haßler, B., Hennessy, S., Hofmann, R., & Makonga, A. (2020b). OER4Schools: outcomes of a sustained professional development intervention in sub-Saharan Africa. *Frontiers in Education*, 5(146).
<https://doi.org/10.3389/feduc.2020.00146>. Available from
<https://www.frontiersin.org/articles/10.3389/feduc.2020.00146/full>. (details)
- Hennessy, S., D'Angelo, S., McIntyre, N., Koomar, S., Kreimeia, A., Cao, L., Brugha, M., & Zubairi, A. (2022). Technology Use for Teacher Professional Development in Low- and Middle-Income Countries: A systematic review. *Computers and Education Open*. <https://doi.org/10.1016/j.caeo.2022.100080>. Available from
<https://www.sciencedirect.com/science/article/pii/S2666557322000088>. (details)
- Kennedy, E., & Laurillard, D. (2019). The potential of MOOCs for large-scale teacher professional development in contexts of mass displacement. *London Review of Education*, 17(2), 141–158.
<https://doi.org/10.18546/lre.17.2.04>. Available from
<https://www.scienceopen.com/hosted-document?doi=10.18546/LRE.17.2.04>. (details)

References

- Kennedy, M. M. (2016). How does professional development improve teaching? *Review of Educational Research*, 86(4), 945–980. <https://doi.org/10.3102/0034654315626800>. Available from https://www.researchgate.net/publication/292675761_How_Does_Professional_Development_Improve_Teaching. (details)
- Koomar, S., & Proctor, J. (2022). *Session 4: How can I rapidly upskill my large teacher workforce?* [EdTech Hub Presentation]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0138>. Available from <https://docs.edtechhub.org/lib/E7C9MN3V>. Available under Creative Commons Attribution 4.0 International. (details)
- Kotze, J., Taylor, S., & Fleisch, B. (2018). *Moving towards cost-effective delivery models of teacher coaching: evidence from field experiments in South Africa*. RISE. <https://riseprogramme.org/sites/default/files/inline-files/Kotze.pdf>. (details)
- Kraft, M. A., Blazar, D., & Hogan, D. (2018). The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Effect. *Review of Educational Research*, 88(4), 547–588. <https://doi.org/10.3102/0034654318759268>. Available from https://scholar.harvard.edu/files/mkraft/files/kraft_blazar_hogan_2018_teacher_coaching.pdf. (details)

References

Mazari, H., & Kaye, T. (2022). *Session 5: How can I use EdTech to ensure that students are provided with quality educational content, at the right level?* [EdTech Hub Presentation]. EdTech Hub.

<https://doi.org/10.53832/edtechhub.0139>. Available from <https://docs.edtechhub.org/lib/PPRW2NTQ>. Available under Creative Commons Attribution 4.0 International. ([details](#))

Mendenhall, M., Skinner, M., Collas, S., & French, S. (2018). Expanding Teacher Support through Mobile Mentoring in Kakuma Refugee Camp: Benefits and Challenges. *Current Issues in Comparative Education*, 20(2), 9–23. <https://files.eric.ed.gov/fulltext/EJ1205676.pdf>. ([details](#))

Piper, B., Jepkemei, E., Kwayumba, D., & Kibukho, K. (2015). Kenya's ICT policy in practice: The effectiveness of tablets and e-readers in improving student outcomes. *FIRE: Forum for International Research in Education*, 2(1/2), 3–18. <https://doi.org/10.18275/fire201502011025>. Available from <https://preserve.lehigh.edu/fire/vol2/iss1/2/>. ([details](#))

Slade, T. S., Kipp, S., Cummings, S., & Nyirongo, K. (2018). Short message service (SMS)–based remote support and teacher retention of training gains in Malawi. In S. Pouezevara (Ed.), *Cultivating dynamic educators: case studies in teacher behavior change in Africa and Asia* (pp. 131–167). RTI Press. <https://bit.ly/3r82ePY>. ([details](#))

Wyss, N., Mbugua, W., & Kaye, T. (2022). *Session 3: How can I develop an aligned and actionable EdTech strategy* [EdTech Hub Presentation]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0137>. Available from <https://docs.edtechhub.org/lib/VVT2BI9M>. Available under Creative Commons Attribution 4.0 International. ([details](#))