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Teacher motivation: Exploring non-financial incentives in school-based teacher professional development in Tanzania

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Abstract

High-income countries often use external incentives such as remuneration, professional pathways or accreditation to motivate teachers to engage in professional development. This paper reflects on the challenges of engaging teachers in school-based professional development in resource-scarce education environments where the use of such incentives is not feasible and explores practical strategies to motivate their engagement. In such contexts, where qualified teacher status and promotion are not tied to engagement in professional development, other means for encouraging teachers to take up professional learning opportunities are paramount. In this two-year, iterative, design-based implementation research study of a national teacher professional development initiative in Tanzania, non-financial incentives were tested in eight rural schools. Findings show that completion certificates motivated teachers; achievement certificates had mixed results due to doubt around the fairness of the peer-review process. Additionally, teachers were intrinsically motivated by other changes in the programme such as access to relevant digital modules which allowed for teacher agency, and by increased collegial relationships and collaboration.

Keywords

teacher motivation; school-based teacher professional development; design-based implementation research; Tanzania, non-financial incentives; intrinsic and extrinsic motivation

Introduction

Putting teachers at the centre of design for teacher professional development (TPD) has been highlighted as a key element for scaling effective and responsive TPD programs (↑Wolfenden, 2024). This includes recognizing teachers as professionals with experiential knowledge and insights with varying professional learning needs. Another aspect of centering teachers is understanding what motivates teachers to engage in TPD opportunities so that TPD programs can leverage these elements in program design and content. ↑O'Sullivan (2022) asserts, "Too many education interventions fail to fully bear in mind the human motivation aspect, a key part of theories of change (Fullan, 2015)" (p. 355). One way motivation for TPD has been addressed is by tying promotion or licensure to teachers' continued learning. This is a common strategy in high-income country settings; many education systems require teachers to periodically engage in a certain amount of professional development to maintain their teaching licensure. Isolated studies in Kenya and Zambia also suggest that tying promotion to professional development enhances teacher motivation (↑Kathombe, 2018; ↑Natalia, 2016) and a few African countries have linked performance appraisal, promotion and re-licensing processes to formal TPD (↑Mitchell et al., 2024). However, in the often resource-scarce environment of lower and middle-income

country (LMIC) education systems, where the teaching force comprises a substantial portion of the national civil service, introducing such policies has significant implications for a country's national budget. This takes the issue beyond a ministry of education's sphere of control. As such, stakeholders within the education system, e.g., policymakers and teacher educators, may find themselves in a position where mechanisms other than promotion or career progression are needed to increase teacher motivation to engage in TPD.

This article aims to report on and illustrate various non-financial incentives that can motivate teachers to participate in TPD, particularly in resource-constrained contexts. These non-financial incentives emerged from Design-Based Implementation Research on the school-based teacher professional development programme implemented nationally by the Tanzanian government. Like many other countries, Tanzania has been addressing the key issues of access and quality in basic education through several reforms over the past 10 years. Since implementing the Fee-Free Basic Education Policy in 2015, the gross enrolment rate in primary education rose from 93.2% in 2017 to 100.2%[1] in 2020, with a gender parity level of 1.0 throughout the same period (↑Ministry of Education, Science and Technology, 2021, p. 34). With more children in schools, improving the quality of teaching and learning through upskilling the teacher workforce has increasingly become the focus of attention. Lessons from this work have implications for TPD providers, program designers and policymakers in other LMICs who seek to maximize teachers' motivation to engage in professional development activities.

Context of teacher professional development reform in Tanzania

Studies on TPD in sub-Saharan Africa highlight numerous challenges which have also been noted in Tanzania, including a reliance on top-down, ineffective cascade models (↑Bett & Boylan, 2016; ↑Mitchell et al., 2024). These models, often based on a teacher-deficit view, provide little teacher autonomy and limit the number of teachers who can access TPD (↑Chachage, 2020; ↑Mitchell et al., 2024).

Although upskilling the teaching workforce is consistently cited in Tanzania's education sector development plans, outcomes are historically mixed. With ineffective TPD models often supported, teachers are taught skills they cannot practically apply in the classroom, and continuous support and input are rarely provided longitudinally (↑Hennessy et al., 2022; ↑McAleavy et al., 2018). In Tanzania, government reports indicate that less than 20% of primary and secondary teachers received professional development between 2015 and 2019 (↑National Audit Office, 2020); and a study in 2021 Koomar et al. (2022) reported that just 24% of the 774 teacher respondents to a national survey in Tanzania indicated they had taken part in any form of TPD over the previous 12 months. This was far lower than in many other LMICs.

[1] It is not uncommon for the gross enrollment rate to exceed 100%, since it includes children of all ages, including those above or below the official age range for a grade or school level. Actual attendance rates may be far lower, for many reasons.

In response to such evidence, the Tanzanian government developed a National Framework for Teacher Continuous Professional Development (↟Ministry of Education, Science and Technology, 2020), which laid the policy groundwork for ensuring all teachers regularly engage in TPD to improve their pedagogical skills and keep their content knowledge up to date. The national framework is being operationalized through an initiative known by its Swahili acronym – MEWAKA (Mafunzo Endelevu kwa Walimu Kazini, or Teachers' Continuous Professional Development:), which began rolling out in schools in 2022.

The main mechanism for TPD in the MEWAKA model is semi-structured school-based communities of learning (CoL), whereby all teachers are expected to participate in weekly one-hour CoL meetings. Depending on the size of the staff and teacher needs, there may be one CoL for the entire school, or multiple CoLs focused on different issues. Release time for MEWAKA is not specified in the school calendar; rather, the government directed school leaders to identify the most suitable time in their weekly timetable for CoLs. Among each school's staff, two teachers are identified and provided with a training workshop and manual to act as peer facilitators with the responsibility of preparing and facilitating the CoL meetings. School-level CoLs may be supplemented by cluster-level CoLs (connecting schools within a particular area) and/or occasional seminars and workshops, while attendance at the weekly CoL meetings within schools is mandatory for all teachers. The semi-structured aspect of the model manifests in the form of modules custom-designed to support CoLs by the Tanzania Institute of Education (TIE), the parastatal institution responsible for school and teacher training curricula and materials. These digital materials provide guidance on the content, processes and activities to be used in CoL meetings. School leaders and peer facilitators decide the CoL meeting topics based on contextual teacher needs, and then use a CoL module that addresses those needs or find other materials online; in each case, teachers ideally share their own experiences and expertise. It is notable that schools were directed to begin implementing CoLs before the CoL modules were ready; thus for 2022, schools were advised to draw on TIE's existing self-study modules and teachers' own expertise for CoL content.

MEWAKA also features an online Learning Management System (LMS) to provide schools with the aforementioned CoL and self-study modules, along with guidelines, discussion forums and other resources to support TPD. The LMS also links to TIE's online library of curriculum and teaching materials. Following the 2022 Population and Housing Census, the Government of Tanzania distributed the census tablets to all primary school teachers in the country, thus ensuring teachers, in principle, have a device with which to access online materials. Many teachers access the TIE LMS via their own phones, using the mobile phone application, in addition to or instead of using the ex-census tablets. Social media platforms (such as WhatsApp) are also widely utilized by teachers and CoL groups for sharing resources, strategies and information related to teaching and learning (anonymized for peer review purposes).

Research context

Our mixed-method design-based implementation research (DBIR) study, undertaken jointly between government, academic, and development consortium team members, followed the implementation of MEWAKA in 8 rural schools in southern Tanzania for two years, from the initial implementation of CoLs in March 2022, through November 2023. The objective was to inform and improve implementation as the initiative scaled.

In the first year of implementation, among other issues, ensuring teachers participated in CoLs emerged as a serious challenge to be addressed. During research Cycle 1, average attendance at CoL sessions was 88% per week, but this varied by school and session and dropped to as low as 69%. A lack of motivation to participate in CoLs alongside other duties was cited as an issue. This led to several non-financial incentives and other measures being tested in these schools during the second cycle of research. The research questions informing the analysis presented in this article[2] were:

RQ1: What are the enablers and barriers to teacher motivation influencing sustainable implementation of a decentralised, school-based TPD model in rural primary schools?
RQ2: What kinds of motivational factors, including low-cost incentives, can raise teachers' engagement in school-based communities of learning?

Factors affecting teacher motivation to engage in professional development

Numerous factors can affect how meaningfully teachers engage in professional development opportunities, ranging from relevance of the content to teachers' needs and contextual embeddedness to the timing of professional development sessions and the degree to which school leadership demonstrates TPD is important (↑Kelani & Khourey-Bowers, 2012; ↑O'Keefe-Foley, 2019; ↑O'Sullivan, 2022; ↑Tabulawa, 2013; ↑Tamanja, 2016; ↑Zhang et al., 2021). Research has shown that teacher motivation is one of the most important factors in professional development program success (↑Heystek & Terhoven, 2015). While in some contexts (including Tanzania), the term "motivation" is used as a euphemism for honorariums or per diems given to teachers attending professional development activities, here we refer to a wider concept of both intrinsic and extrinsic elements that make teachers amenable and even desire to engage in professional learning opportunities.

Theorists often differentiate between intrinsic and extrinsic motivation. Intrinsic motivation usually refers to psychological and cognitive factors, such as increased confidence, sense of autonomy, passion, or professional growth, e.g. gaining new

[2] Findings concerning other aspects of the study, including teacher motivation to use the LMS materials, will be presented in further forthcoming publications.

knowledge, feeling more competent and learning useful strategies that apply in their classroom (↑Forson et al., 2021; ↑Heystek & Terhoven, 2015; ↑Mitchell et al., 2024; ↑O'Keefe-Foley, 2019). On the other hand, extrinsic motivation derives from external outcomes, be they rewards (e.g. salary increase) or punishments (e.g. sanctions or ineligibility for opportunities)(↑Forson et al., 2021; ↑O'Keefe-Foley, 2019). Most financial and non-financial incentives, ranging from honoraria to certificates or relicensure, are forms of extrinsic motivation. When describing elements that affect motivation, the terms 'external' and 'internal' factors are often used.

External and internal motivation factors

Where licensure and promotion levers are not in place as external motivators for TPD, other financial incentives, such as cash bonuses, have been tested. The pairing of cash incentives and training has the potential advantage of improving teachers' skills and knowledge at the same time as increasing their motivation (↑World Bank, 2019). In a study in Kenya, ↑Kathombe (2018) found that financial rewards are a "strong predictor for employee [university lecturer] performance" (p. 54). Similarly, a study from Uganda found that merit pay impacted private secondary school teachers' performance by 69.2%, yet non-financial incentives, such as recognition and certificates, also had a significant positive impact of 61.6% on teachers' motivation to perform (↑Niwamanya, 2016).

Non-financial external motivators have also been found to have significant effects on increasing teachers' motivation for TPD. On a practical level, providing food or refreshments during school-based TPD activities is a strategy commonly used in many school contexts. A study on non-financial rewards in Kenya noted the most influential motivators for teachers were recognition strategies such as letters of appreciation and certification, followed by communication strategies encompassing verbal communication, official letters, internal memos, text messages, school bulletins, and job redesigning (↑Mochengo et al. (2016)). Effectively, multiple studies in numerous contexts emphasize the same factor recognition strategy — as the number one non-financial factor to increase teacher motivation for TPD and job commitment more broadly (↑Bawalla & Omolawal, 2022; ↑Mochengo et al., 2016; ↑Zhang et al., 2021).

Despite the importance of external motivation strategies, several other studies found "autonomous" or intrinsic motivation to be more strongly associated with high job performance among teachers. ↑Heystek & Terhoven (2015) assert that internal motivation leads to "peak performance" and "continual improvement". Intrinsic motivation for teachers to engage in TPD is most often associated with increased self-efficacy or teachers' perception that ideas and strategies they learn improve their classroom instruction (↑Kelani & Khourey-Bowers, 2012; ↑O'Keefe-Foley, 2019). Increased collaboration with colleagues as a result of TPD has also been shown to improve teacher motivation (↑IIEP, 2021; ↑Zhang et al., 2021). ↑Kelani and Khourey-Bowers (2012) note that some motivation strategies can operate as both external and intrinsic motivators. For example, "In African tradition, … sharing food with workers or guests constitutes a way of building

trust" (p. 14); thus, sharing refreshments during TPD may contribute toward internal sensibilities or attitudes that further incline teachers to continue engaging in professional learning opportunities. Even the types of materials used in TPD have been noted to impact teachers' intrinsic motivation (↑Hennessy et al., 2022). Overly scripted teacher guides and lesson plans have been found to result in poorer teacher learning outcomes (↑Piper et al., 2018) and may restrain teachers' creativity, potentially lessening intrinsic teacher motivation (↑Shohel & Kirkwood, 2012). Having a sense of (individual or collective) agency in the TPD process has also been shown to increase and sustain teacher motivation to develop more effective pedagogical practices (↑Calcagni et al., 2023), as in the OER4Schools programme in Zambia which identified emphasising local ownership and teacher voice as an important precondition for sustaining pedagogic change (↑Haßler et al., 2020).

Teacher agency is shaped by wider sociocultural and political contexts and structures at school, community, and education system levels (↑Biesta et al., 2017). These contextual factors also play a role in the general level of teachers' motivation toward their work and their motivation to engage with professional development. A study in Malawi found that poor salaries, accommodation and working conditions detracted from teachers' motivation to implement changes to their practices which they had learned in TPD (↑Meke, 2013). Similarly, ↑Heystek & Terhoven (2015) noted that the teachers who were most likely to have strong, internal motivation – "passion" — for continuous professional learning were those whose basic needs, in terms of personal needs and basic school inputs, had been met. ↑Kathombe (2018) and ↑Rainey (2000) also note that non-financial incentives are particularly motivating once a certain pay level has been established. This suggests that a degree of financial well-being must be reached before non-financial incentives become especially motivating for teachers.

Whether internal or external motivation factors are more effective in drawing teachers to TPD may also change over the course of an initiative or a teacher's career. A study of teacher motivation factors in South Africa that utilized teacher journaling for data collection found that while teachers initially joined professional development opportunities because of external pressure from their school principal, over time, they experienced a shift to intrinsic motivation (↑Heystek & Terhoven, 2015). The teachers became motivated to continue with professional learning because they gained efficacy from the professional development they had experienced and felt an obligation to continue improving their ability to deliver quality learning experiences to their students. ↑Hildebrandt & Eom (2011) add the important point that teachers' age or life stage can also influence which type of motivation is most important or influential. Given that any school or education system will have teachers of various ages, experiences and levels of teaching capability, a successful professional development initiative requires multiple forms of motivation if it is to engage all teachers within a system.

Methodology

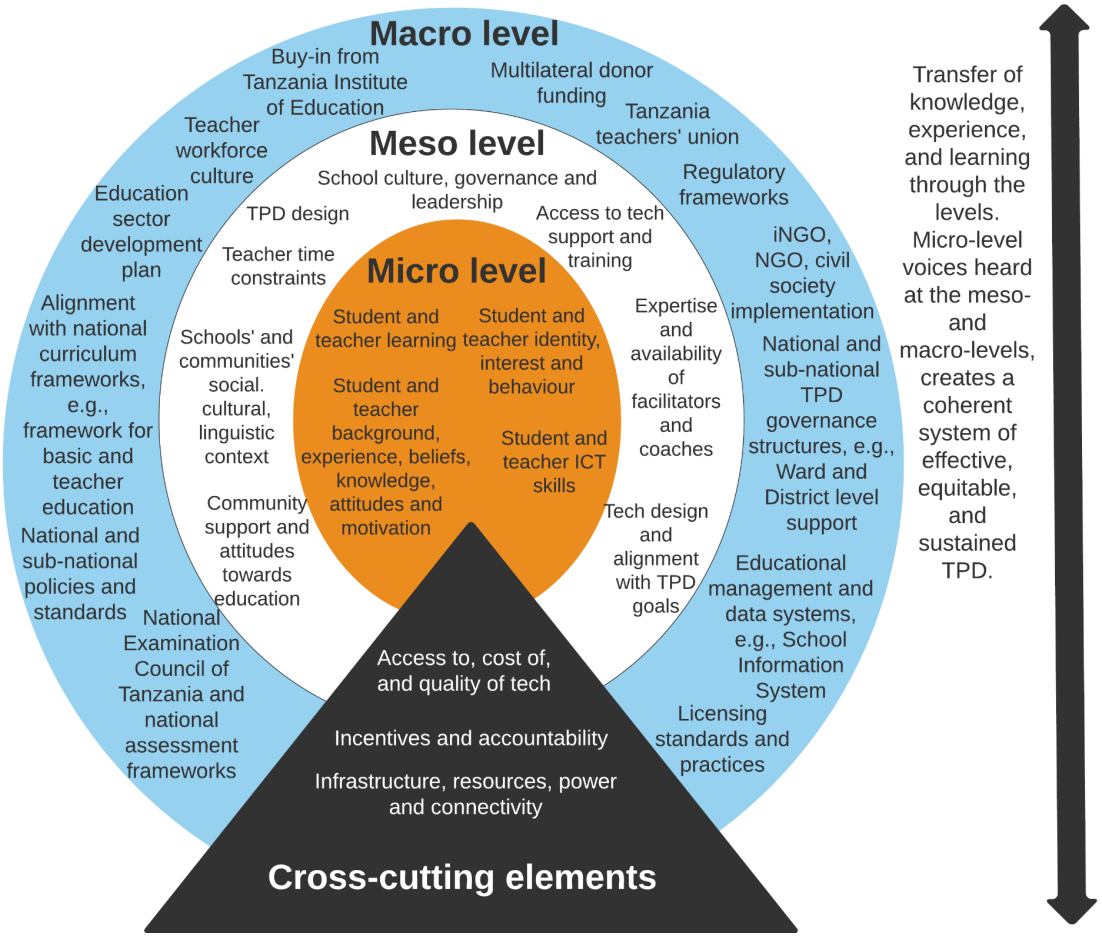
Design

The findings in this article come from a larger study that investigated the effectiveness and sustainability of the MEWAKA tech-supported, decentralised, and school-based TPD model to improve learning outcomes in rural Tanzanian primary schools (anonymized for peer review, 2024, 2023). The research aimed to test and iteratively improve the national MEWAKA model through Design-Based Implementation Research (DBIR), an "emerging approach to relating research and practice that is collaborative, iterative, and grounded in systematic inquiry" (↑University of Colorado School of Education, n.d.). The research team included researchers from an international consortium, a local university and a national institute for curriculum. The DBIR design allowed researchers to work with implementers to iteratively refine the MEWAKA model and its implementation and rectify teething issues in the initiative's rollout.

DBIR is distinguishable by four key elements: a focus on persistent problems of practice from multiple stakeholders' perspectives; a commitment to iterative, collaborative design; a concern with developing theory related to both classroom learning and implementation through systematic inquiry; and a concern with developing capacity for sustaining change in systems (↑Penuel et al., 2011). DBIR aims to develop theory and knowledge through a cyclical deductive-inductive process that allows for the boundaries of original ideas to be tested. In this study, co-design, iterative trial and refinement of new practices drew on existing theory and evidence regarding tech-mediated TPD, in conjunction with learning from the practical context, including about key stakeholders' needs.

The macro-, meso-, and micro-level factors in (technology-mediated) TPD (Figure 1) are used as an analytical framework to unpack ecosystem factors (including teacher motivation) at each level, as identified through our previous systematic literature review in this area.

Figure 1. *Technology-mediated TPD ecosystem factors (Source: Hennessy et al., 2022)*



Sample

Eight rural primary schools in one region (Lindi) were selected to participate in the DBIR study. Purposive sampling in collaboration with local partners helped identify the eight schools to ensure they differed in their levels of electrification, technology, and connectivity, as well as their rurality, based on distance from the district capital and road accessibility. The district as a whole is largely agricultural, with low population density and high teacher scarcity: Two schools had small class sizes (20–30 pupils on average), while two others had 60–80 students per class or teacher, and the remaining four schools had over 90 students per class or teacher. One school was a designated special needs school, with specialized teachers serving students with a wide variety of needs, ranging from hearing and vision impairment to physical and intellectual disabilities. As the study began, all teachers in each school were issued a tablet by the government, specifically for use in teaching and TPD. However, the distribution was not accompanied by training or maintenance.

Following the DBIR methodology (↑Penuel et al., 2011) of starting with a small number of schools and scaling up as the implementation proceeds, a sub-sample

of four schools participated in the first cycle, while all eight schools participated in the second cycle. The four Cycle 1 schools were selected based on their varied specific conditions. For example, one school was the most rural / remote and had no electricity, while another was the designated "special needs" school. The small sample allowed for in-depth data collection over time and relationship building between researchers and teachers, which lowered the risk of teachers changing their behavior during observations. However, because the data were collected in a small number of schools in one district of Tanzania, contextual factors should be taken into account, to fairly evaluate the transferability of the findings to other contexts.

Data collection and analysis

The DBIR had two 4-month cycles, one per school year. Each research cycle included fortnightly CoL session observations over 2–3 months. These were followed by an end-of-cycle evaluation during which the research team held final CoL session observations, surveyed teachers, and conducted focus group discussions and interviews with teachers, school leaders and education officers at various levels (i.e., ward, district, regional, national). The data presented in this paper were derived from data from each of these sources. Research approval and permissions were obtained from the national research ethics review board (Commission for Science and Technology) and local government authorities. Informed consent was obtained from all study participants, including the parents/guardians of children who participated in observed classroom lessons. Research tools were piloted during the baseline phase of the research. The tools have been iterated and improved since this initial pilot several times, in particular during the end-of-cycle evaluations.

Survey data were captured using *mWater* — an offline data collection tool — while focus group and interview data were transcribed and then coded using *Atlas.ti*. The codebook was developed through a combination of deductive coding, based on the research questions and protocols, and inductive coding arising from identifying patterns and themes in the data. The same codebook was used in both research cycles.

Table 1. Data sources

Instrument	Cycle 1 Sample (4 schools)	Cycle 2 Sample (8 schools)
CoL meeting observations	15	40
Teacher survey	25 respondents, 76% of total sample*	52 respondents, 76% of total sample
Teacher focus groups	3	7
MEWAKA team	4	8

focus groups (Headteacher, Academic teacher, Internal School Quality Assurance Officer, Peer facilitator)		
Government stakeholder interviews	12	12

*All teachers available at each school during the data collection visits were surveyed.

The research team analysed the results with the aim of producing recommendations to the government on improving the TPD implementation and generating evidence that can inform the broader evidence base on TPD in LMICs. After the first cycle of data collection and analysis, the research team worked with national implementation leaders responsible for educational policy and administration to prioritize a subset of recommendations (anonymized for peer review). These priorities were used to redesign components of the MEWAKA plan to iteratively improve it and to identify areas to be further investigated in the second cycle.

Findings

Cycle 1 findings: Barriers to motivation

While there were positive findings from the initial MEWAKA rollout which indicated increased teacher confidence, collaboration and problem-solving, DBIR Cycle 1 revealed lower-than-expected teacher attendance at CoL sessions and concerns about motivation from teachers and education officers. Although all teachers were mandated to participate in the weekly school-based CoL meetings, actual attendance was as low as 69-70% in 2 out of 15 observations at different schools. Most teachers in these schools stayed after hours without compensation to participate in CoLs, with varying commitment levels among schools. For example, at School 3, observers noted that teachers were eager, prepared, and started CoL sessions on time even if the headteacher was not present. At School 1, it was observed that when the headteacher was absent, the CoL session was delayed and less organised, but attendance was still high. In contrast, at School 5, attendance was lower than in other schools, teachers more often vocalised a need for remuneration (incentives), and some teachers resisted requests for them to lead CoL sessions because they had not attended peer facilitator training workshops[3]. Numerous studies have noted that teacher absenteeism is a response to their "difficult conditions" and low motivation (↑O'Sullivan, 2022, p. 348); these findings indicated that it could apply to teachers' absence from TPD sessions as well.

[3] The issues noted at School 5 may have been due to it being a special needs school which was described as "over researched" by various stakeholders, in that teachers might expect remuneration for participation in (even nationally mandated) activities more than teachers from schools which are not engaged in wider education projects.

Several specific factors were identified by participating teachers and education leaders as motivation barriers in Cycle 1. At the school level this included logistical issues, such as scheduling CoL meetings when all teachers could attend. In the majority of schools in Cycle 1, CoLs were scheduled during teachers' lunch breaks or after school hours. Several teachers also reported that other duties assigned by the district caused them to miss CoL sessions, while other teachers and educational leaders reported that some teachers opted to leave school during the CoL sessions to attend to personal matters. At the teacher level, the fact that many teachers in Tanzania, as elsewhere in Africa, rely on additional income-generating activities and/or have family responsibilities and tutoring (↑Kelani & Khourey-Bowers, 2012; ↑Tao, 2019) must also be taken into account. The burden of staying late without compensation was likely compounded by the fact that often in rural schools in Tanzania, teachers need to return home to eat a midday meal. This highlights a second logistical challenge at the school level: while MEWAKA guidelines encourage schools to provide refreshments to teachers during CoL sessions, most wards and schools in the study did not have a budget set aside for CoLs, and refreshments were rarely provided. Furthermore, several system-level barriers were evident: attendance at CoLs was not formally linked with teachers' promotion, and there was no official recognition of TPD-related achievements or development of practice or knowledge. Given the importance of teacher motivation to engage in CoLs, it was prioritized by stakeholders for further investigation and intervention in DBIR Cycle 2.

Setting up Cycle 2: Testing non-financial incentives

Based on a rapid review of evidence regarding non-financial incentives to promote teachers' TPD engagement, the government decided to trial different forms of recognition for teachers in Cycle 2. Thus, the research team tested school-level and system-level incentives aimed at improving motivation. This included suggesting to headteachers and ward education officers in the study various non-financial strategies such as recognising teachers' CoL/MEWAKA engagement at public meetings and via notice boards or letters; and piloting official certificates produced by the government in half of the schools during Cycle 2. Two certificate types were tested. The first was a completion certificate awarded to all teachers who attended at least 70% of the CoL sessions for a particular CoL module. The second type, a "certificate of outstanding achievement" was to be awarded to teachers who showed the greatest application of ideas, strategies and lessons learned from MEWAKA in their daily practices, as evidenced in their teacher portfolio. Drawing on the government's past experience that the process for awarding teachers can become contentious, a peer assessment approach was chosen. Evaluation of portfolios and application of new knowledge was done by all the teachers in a school, thus the awardees were selected by their peers to avoid potential favouritism if senior staff were to do the evaluation. An explanation and criteria for each certificate were shared with schools at the start of the DBIR cycle, and certificates were awarded to all teachers who met the criteria by the DBIR end-of-cycle evaluation at the end of the school year. The findings in Cycle 2 suggest that these and other system- and

school-level factors positively influenced teachers' motivation for engaging in MEWAKA.

Cycle 2 findings: Expected and unexpected enablers

In the DBIR end-of-Cycle-2 evaluation, there was a notable increase in motivation and decrease in resistance toward attending weekly CoLs expressed by teachers via surveys and focus group discussions. Only 13% mentioned compensation (financial incentives) as an issue in the Cycle 2 teacher surveys compared to 20% in Cycle 1, while the number of teachers who requested more time for CoLs and/or more frequent CoL meetings increased to 44% in Cycle 2 (compared to 16% in the first cycle). In interviews and focus group discussions, participants were asked what brought about this positive shift in teacher motivation. School leaders and education officers attributed it partly to teachers getting used to the mandated system of weekly meetings, which had by then reached all primary schools. They also felt teachers had increased intrinsic motivation; a hunch that was corroborated by feedback from teachers themselves.

At the end of Cycle 2, teachers reported seeing the strategies and skills they learned in CoLs actually helping them in their classrooms, a teacher-level factor which increased their intrinsic motivation to engage in MEWAKA:

> "[CoLs] help us gain skills of self learning as well as how to teach, for example gaining teaching strategies and also getting access to various texts and materials relevant to the subjects we teach." (Teacher survey response, School 6)

Teachers also noted that the combination of a sense of agency in choosing the topics of professional learning discussions and having access to relevant materials increased the initiative's meaningfulness. This was encapsulated in one teacher's explanation:

> "What I enjoyed in the CoL was having freedom in learning as a teacher; that is the freedom we had to choose what … to learn from the module/materials. This led me to feel ownership of MEWAKA". (Teacher FGD, School 4, November 2023).

Teachers especially reported increased confidence in teaching difficult topics and feeling less isolated due to collaborative problem-solving with peers:

> "MEWAKA is motivating to me as it has made me add more friends at the level of social interactions. Also, I am conversant with some topics that were difficult to teach. As a result, I am confident in my teaching career." (Teacher survey response, School 4)

> "MEWAKA and CoLs have increased our social interaction with other teachers. Through it, we gain new knowledge and skills such as

> strategies of teaching and handling large classes." (Teacher survey response, school 6)
>
> "Something that has been effective is the teachers' self-confidence. As the teachers meet in CoLs and share various teaching and learning strategies and knowledge, teachers' competence in teaching has increased to the extent of building their self-confidence." (Education officer, interview)

Moreover, this increased collaboration has extended across schools. In all the wards in the study, teachers had WhatsApp groups, sometimes initiated by an education officer and other times by teachers themselves. Within these groups, teachers reported sharing challenges, resources, and ideas with their peers.

Teachers also expressed excitement around their increased skills in using technology and the increased access to materials and ideas for the classroom afforded to them through technology. Through using the LMS and CoL modules, exchanges with other teachers via social media, and CoL activities involving use of web-based resources, teachers were not only gaining strategies to use in their classes, but were also broadening their understanding and ability to use technology in general. In addition, they perceived that bringing some technology into the classroom led to increased student engagement, attendance and performance.

An additional system-level factor in Cycle 2 that was different from Cycle 1 was that the eight schools in the study were given access to pilot versions of CoL modules. Though the modules were not introduced with the aim of affecting teacher motivation, teachers reported that the CoL modules substantially increased their motivation to attend CoLs. 77% of teacher survey respondents believed that sessions with modules were more relevant than those without modules, while 23% thought they were equally relevant. *"These days teachers are even more motivated to attend CoL sessions because of using these modules" (Teacher, DBIR School 1, Nov. 2023).* Teachers said the modules helped them to learn more new ideas and stay focused during sessions because they could review the material outside the CoL sessions**:**

> **Teacher 1:** *"...using the modules enabled us to understand more and to get enough information. Even on your own you can read and to understand, compared to [before having the materials] ..."* ***Teacher 2:*** *"The TIE CoL materials have increased our sources of information and guidance and keep us on topic according to the guidance." (Teacher FGD, School 1)*

Provision of certificates was the system-level input tested in Cycle 2 that was specifically expected to address motivation. Average teachers' CoL attendance at the four schools who received certificates was not significantly higher than the four schools without certificates (77 percent compared to 71 percent). Nonetheless, teachers and education officers viewed the completion certificates as highly effective in motivating teachers. Participants expressed that teachers

felt "seen", i.e. they felt their efforts to improve their pedagogical practices were recognized by others.

> *"Even though it is just a paper and not money, it has a large significance for teacher performance and participation; it differentiates you from a teacher who didn't get a certificate. It encourages participation, spirit and enthusiasm for MEWAKA activities." (Teacher FGD, School 7)*

> *"To value a teacher doesn't only mean to give them money … Teachers are very encouraged when receiving a certificate … because they see that they have been recognized by the national headquarters in the capital. They … will see that these teachers are recognized at ministry level, not only within their district." (Local education officer interview)*

The achievement certificates were slightly more contentious. Though a rubric was provided to guide the evaluation of teacher achievement, some teachers felt wary that personal biases would affect teachers' application of the rubric to their own and their colleagues' work. Complicating matters, most teachers did not keep personal portfolios, so the criteria had to be applied to general practices. Teachers also expressed discomfort in having to evaluate their peers. The consensus among participants was that the straightforward completion certificates avoided potential controversy and provided adequate motivation to encourage teacher participation in CoLs.

The school-level motivation factors were less consistently implemented across sites, and thus analysing their impact was not possible. A few headteachers and education officers reported using recognition at meetings to encourage teachers, but they did not feel this had very much impact. Feedback from education officers indicated they combined encouragement and enforcement:

> *The first strategy is to recognize and acknowledge their efforts. Another one is to lay emphasis on teachers' involvement in MEWAKA; that is why we are regularly checking whether the COL periods are attended as scheduled. (Education officer interview)*

The emphasis on monitoring whether teachers followed mandates and attended "as scheduled" was common in education officer responses. High-level education officials also expressed doubt concerning teachers' internal motivation and felt that "*Consequently, it is imperative for stakeholders to prioritize initiatives aimed at reshaping attitudes and fostering self-motivation*" (Education officer interview). Nevertheless, high-level officials also recognized that the system must meet teachers' basic needs.

> "*Our teachers still don't have houses to live in. They live in very difficult circumstances and have to travel quite a distance to get to school, so sometimes if you tell them "come, let's do professional learning together"…*

> *they decide they better miss some PD so that they can reach home at a reasonable hour" (Education officer interview).*

An additional finding in Round 2 was school leaders' innovating to provide refreshments, to attract teachers to CoL sessions. Two schools took their own initiative to cover CoL refreshment costs using funds generated by a school garden. Where a school income-generating project is in place, its use for TPD refreshments may better support teachers' basic needs and provide an extrinsic incentive to engage in CoL sessions. However, teachers wanted refreshments to be provided to all schools by those administering the program.

Discussion

Teacher motivation is a key aspect of change management (↑O'Sullivan, 2022) and, thus, a vital consideration in TPD intervention design. Although linking TPD to teacher promotion or maintaining teaching licenses may be the most sustainable, systemic solution, it is often unaffordable for LMIC governments, and given its impact on the national civil service budget, it requires political will and mandates far above individual education ministries. Non-financial incentives such as certificates, providing relevant TPD materials and innovative means to provide CoL refreshments provide an important and feasible alternative.

Non-financial incentives that gain external recognition for teacher efforts in professional learning, particularly in the form of straightforward completion certificates, garnered sufficient response from teachers in the study to warrant further exploration of its use and effects on teacher motivation to engage with TPD. These findings are consistent with findings in other LMIC contexts, including Nigeria (↑Bawalla & Omolawal, 2022) and Kenya (↑Mochengo et al., 2016). Going forward, scaling such certificates requires carefully considering feasible cost and logistical factors as well as how to maintain the value of accumulated certificates over time. Digital certificates that could address the cost and logistical factors should be further explored to ascertain if they will garner similar affordances as printed ones.

Fostering agency and equipping teachers with relevant content was found to be an important intrinsic motivator in MEWAKA, as evidenced through teachers' appreciation of the government's provision of relevant, supportive CoL modules and materials. The semi-structured CoLs provided flexibility and teacher agency to choose the CoL meeting focus. These inputs highly increase the likelihood that teachers will feel the internal benefits of TPD and be motivated to continue. Agency as an intrinsic motivator was similarly found to be important in other countries/studies (↑Biesta et al., 2017; ↑ Haßler et al., 2020; ↑Imants & Van der Wal, 2020) This has implications for differentiated, context-sensitive and adaptable TPD content, to meet the needs of teachers with varying strengths, school contexts, knowledge and experience levels.

Similarly, creating spaces for teachers to bond, build a community, and learn from and inspire each other served as a key intrinsic motivator to engaging with TPD.

These spaces were both in-person during the weekly CoLs, and virtual through WhatsApp groups. Development of a collegial community helped teachers realise that they are not alone, and that they can problem-solve together. This increases teachers' PD through, for example, personalised resource sharing as well as their sense of wellbeing, for example, through eliminating feelings of isolation and increasing self-confidence. These findings build on existing evidence (see, for example,↑Heystek & Terhoven, 2015; ↑IIEP, 2021;↑O'Keefe-Foley, 2019) regarding collegial collaboration and a supportive learning community as intrinsic motivators. Further research can be done on the effectiveness of organically arising virtual communities, as well as structured district-level subject-specific or thematic communities to increase intrinsic motivation.

As adult learners, if teachers see intrinsic benefit from TPD in the form of increased agency, collegial collaboration, and most importantly improved instruction and student learning outcomes, most teachers will engage (↑Hildebrandt & Eom, 2011). Moreover, new habits that teachers develop through establishing collective learning also become intrinsically motivating if they feel that they are part of a supportive team building towards the same goal (↑Teledahl et al., 2024). In our study, this was evident in teachers' enthusiasm for knowledge exchanges which they took the initiative to establish via social media and their appreciation of the "social interactions" and collaboration afforded to them through MEWAKA. In order to create this positive learning loop, TPD providers must ensure that teachers continually find PD relevant, flexible, adaptable to various experience levels, and effective in meeting their needs.

Beyond the discussion on incentives, barriers that limit teachers' ability to thrive need to be considered. Even with high-quality content and teacher agency built into the system, teacher motivation for TPD may not be sustainable for long if teachers' and schools' needs are unmet. The time and effort exerted by teachers to engage in TPD during lunch breaks, before or after school, with no compensation, is often unacknowledged by policymakers. As illustrated by the quote that "teachers don't have houses to live in", TPD programmes need to consider teachers' financial difficulties and competing responsibilities in their homes and communities. It is vital for policymakers to recognize the interplay of external and internal motivation factors in the wider context of teachers' lives and well-being (see also ↑Heystek & Terhoven, 2015; ↑O'Sullivan, 2022; ↑Tao, 2013; 2019). Mandated, national programs such as MEWAKA's weekly CoL meetings should be officially scheduled into regular school timetables to ensure all teachers can equitably participate rather than relying too heavily on exploiting teachers' intrinsic motivation.

This study has illustrated that non-financial external incentives, such as certificates as well as careful TPD design to promote intrinsic motivation, can positively impact teachers' experience of and engagement with TPD. Inculcating collegial collaboration, teacher agency, and TPD content that teachers find relevant and applicable were especially effective at increasing internal motivations. These findings are especially significant in low-resource contexts

where financial incentives are not a viable option. Sustaining engagement, however, will require that policymakers address teachers' socio-economic needs and ensure their overall wellbeing for them to truly leverage the benefits of TPD offerings.

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