

In-Service Teachers' Perceptions of the Effectiveness of the Cascading Model for Continuous Professional Development in Tanzania

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Abstract

Despite the increasing number of teachers seeking to meet learning needs and ensure quality education for all, opportunities to access continuing professional development (CPD) are dwindling due to scarce resources. Education authorities have then prioritised the use of the Cascading Model (CM) for implementing continuous professional development due to its cost-effectiveness and its multiplier effect in reaching a large number of teachers. Therefore, this article explored teachers' perceptions of the effectiveness of a cascading model for implementing continuous professional development under the lens of sociocultural learning theory. The study employed a case study design and involved 10 selected in-service teachers who consented to participate. Data were collected through in-depth interviews and focus group discussions, and a thematic analysis method was employed. The findings suggest that educators perceive the cascading model of ongoing professional growth as inadequate, as they tend to engage sporadically in initiatives that lack consistency and significance. The findings further reveal that the cascading model is not worth providing professional development outcomes that align with their pedagogical practices. This results from multiple factors, such as scheduling issues, insufficient administrative support, or a discrepancy between available programs and teachers' specific requirements. The study recommends that professional development programs be designed to benefit teachers, particularly in upgrading their knowledge to achieve educational goals through effective pedagogical practices.

Keywords: *Teachers' perceptions, cascading model, CPD, pedagogical practices*

Introduction

Continuous professional development (CPD) opportunities are crucial for teachers to update their skills, knowledge, and professional competencies in response to socioeconomic dynamics that directly impact the education system (Ambon *et al.*, 2024; Goodwin, 2021). Countries are striving to provide CPD

for in-service teachers, such as seminars and workshops, or by designing appropriate initial teacher preparation programs (Antonov & Ivanova, 2021; Hennessy *et al.*, 2022; Sancar *et al.*, 2021). However, due to financial limitations, shortage of skilled personnel, and resource scarcity, cost-effective models and approaches have been a choice for many developing countries (Mwinuka & Farrelly, 2023). One widely used cost-effective approach is the cascading model (CM), which provides teachers with opportunities to learn and update their professional competencies (Brodeur *et al.*, 2024). The CM is a structured framework for CPD in which professional training and knowledge are disseminated from higher to lower tiers of the educational hierarchy, generally beginning at the national or regional level and flowing down to district, school, and individual teacher levels (Popova *et al.*, 2022). The dissemination encounters misconceptions, dilution, and distortion of information, making it challenging to achieve its goal of a multiplier effect. Therefore, this study draws on this context to understand how service teachers perceive the CM.

Although Tanzania, like other countries, struggles to provide CPD to all in-service teachers, the lack of structured and compulsory CPD leaves teachers without updated teaching skills and knowledge to meet current socioeconomic challenges (George *et al.*, 2024; Mwinuka & Farrelly, 2023). The situation is linked to persisting low performance in secondary school (Mazana *et al.*, 2023). Studies show that many Tanzanian teachers work for up to 10 years without engaging in CPD to advance their professional expertise (Koda, 2014; Matiba, 2024). The situation has prompted Tanzania to adopt the CM as part of the government's broader plan to improve educational quality by providing CPD to in-service teachers (Kibona *et al.*, 2020). At this juncture, the Ministry of Education, Science, and Technology in Tanzania employs a CM to identify experts as master trainers nationally, who subsequently pass the training on to district-level facilitators (Mollel, 2019). Given the significance of CM, little is known about teachers' perceptions of its effectiveness, as the method relies on a few selected experts serving as master trainers or essential facilitators who share knowledge and skills with a broader group of teachers (Palloff & Pratt, 2011). Therefore, this study aimed to investigate teachers' perceptions of the CM's effectiveness in enhancing their Continuing Professional Development (CPD) and pedagogical practices.

Philosophical Underpinning of the CM

The philosophical underpinning of the CM is its efficiency and effectiveness. Studies have reported that it is cost-effective in facilitating, delivering, and reaching out to many beneficiaries (Koomar, 2024; Smith & Tillema, 2001; Lawrent, 2025; Mgaiwa & Milinga, 2024), enabling uniform implementation of professional development initiatives, guaranteeing uniformity across

various areas, and being flexible in using andragogical approaches to suit adult learners (Iftikhar *et al.*, 2022). Although the CM shows considerable potential, it faces several obstacles that may limit its effectiveness. One key issue is the accuracy of execution and capability, as some facilitators may lack context-specific knowledge to transform teachers (Garone *et al.*, 2022; Komba & Nkumbi, 2008). As training progresses from one level to another, there is a chance that it may distort the content, leading to misinterpretation or dilution and resulting in inconsistent provision of professional development (Kennedy, 2005). This problem is particularly challenging in expansive, varied educational systems with differing skills and resources. Ngeze *et al.* (2018) propose that the CM's effectiveness depends significantly on the quality of training across all levels and on ongoing teacher assistance following training sessions.

Mugisha (2018) reports that the Ministry of Education and Vocational Training utilises CM to disseminate policies and directs implementation downwards through regional and district authorities to affect individual schools ultimately. Gökmenoglu *et al.* (2021) note that although the CM guarantees that policies reach even the most remote regions, it frequently misrepresents the original purpose due to the disconnect between national policies and local circumstances. Nĩmante *et al.* (2025) report that the model has enhanced teacher involvement in professional development; however, its effects on real teaching practices are variable. Other studies have discussed the use of CM in implementing educational reforms and CPD, highlighting common challenges such as poor communication, reluctance to adapt, insufficient resources at the community level, bureaucratic hold-ups, training's quality and relevance, inadequate resources and trainers' capabilities (Leong & Rethinasamy, 2023; Komba & Mwakabenga, 2019; Konrad, 2018; Ngeze & Iyer, 2023). The model's success largely depends on the ability of mid-level administrators.

Continuous Professional Development

Recent advancements in science and technology have significantly impacted education, prompting authorities to seek more effective ways to empower teachers by providing a range of cost-effective continuing professional development (CPD). Stronge (2018) and Perry *et al.* (2022) explain that, despite strong teacher preparation in universities and colleges, it is insufficient to overcome the challenges they may encounter throughout their careers. Designing a successful CPD program is challenging as it requires considering teachers' working environment and context-specific needs while also aligning with national policies and requirements (de Groot-Reuvekamp, 2018). Teacher professional development is an ongoing process in the education system that provides instruction, training, and support to improve teachers' knowledge and professional skills (Ávalos, 2023; Bautista & Ortega-Ruiz, 2015; López-

Estrada, 2023). Participating in CPD enables teachers to update their pedagogical and content knowledge, as well as practices, to help students achieve their learning goals.

Mgaiwa and Milinga (2024) discussed the importance of professional development for in-service teachers, emphasising its role in their lifelong careers. It is essential for teachers' motivation and improved student outcomes (Gemeda *et al.*, 2014). The OECD (2011) has been instrumental in understanding the importance of professional development to teachers' pedagogical skills. The OECD further argued that professional development programs can potentially improve the education system. Teachers play a crucial role in enhancing students' improvement and knowledge, leading to positive outcomes. Avidov-Ungar (2016) added that professional development refines schools by enhancing teaching quality and improving students' educational outcomes. Teachers require new skills, values, understanding, and attitudes to apply strategies that help students build their knowledge from what they know to what they do not know. Hence, the introduction of the National Curriculum Framework for Teacher Education (NCFTE). Well-designed programs are necessary to enhance teachers' knowledge and instructional practices, thereby updating their knowledge and skills (Isa *et al.*, 2024). This will help teachers become aware of technological changes, leading to the reformulation of the curriculum in the education system, unlike Tallvid (2016), who found that most teachers are reluctant to integrate technology into teaching. Johnson and Golombek (2011) certified educators in three specific areas: content, context, and process of the reform's implementation, in which teachers' perceptions play no role. Still, those areas impact students' outcomes, calling for a thorough review of professional development programs.

For this reason, researchers have highlighted several key notions regarding teachers' professional development and their pedagogical practices: (i) Awareness and perception of teachers towards professional development. Ivanova (2017) describes how teachers' awareness will help them identify new skills through professional development and apply them in their pedagogical practices. Professional development is an essential part of teachers' pedagogical practices; hence, for high-quality and sustainable development in education, (ii) benefits of professional development to teachers' pedagogical practice, and (iii) professional development for in-service teachers. Avalos (2011) shows that education has progressed from the outdated in-service teacher training (INSET) model to a new teacher professional development model, in which teaching is now in-network and informal experiences are formalised across schools. Bautista and Ortega-Ruiz (2015) maintained that professional development for teachers can be considered a crucial tool for enhancing teachers' knowledge and instructional practices through carefully

designed programs. Ramírez-Montoya *et al.* (2021) opined that professional development programs are essential for addressing new teachers' skill gaps and helping them become career experts. In that case, Smith and Lynch (2010) elucidated that the tenacity of professional development is fourfold: educating teachers, summing external standards, internal drive to study and advance, and reinforcing the professional status conferred by higher education.

Proper planning and teacher collaboration can be considered valuable tools for the professional development of permanent teachers and for confirming students' lasting understanding (Doğan & Yurtseven, 2018; Mugisha *et al.*, 2023). Suarez (2022) argued that teachers held a favourable view of professional development programs that would facilitate critical reflection in thinking and problem-solving, which, in turn, would help teachers address school issues. Abakah *et al.* (2023) and Cordingley (2015) reinforce these observations, suggesting that teachers can enhance their reflection on teaching by engaging in research activities, thereby improving their practice, which serves as one avenue for continuing professional development (CPD) activities. Ivanova (2017) emphasised that professional development aims to modify teachers' classroom training, their attitudes and views on learning, and student success outcomes. For many years, Tanzania struggled to provide professional development for teachers, who were often unprepared to address changes, leading to the reformulation of curricula in response to advancements in science and technology. Hardman *et al.* (2015) asserted that pedagogical content knowledge, abilities, and attitudes are necessary for facilitating the delivery of new knowledge, which is a combination of theory and practice. They further emphasised that teachers must apply their competence to meet students' needs. Namamba and Rao (2017) proposed that trainers' teacher preparation should be well-designed and enhanced through practical professional development activities and opportunities. This study will investigate the relationship between teachers' involvement in professional development and the development of their pedagogical skills and practices.

These studies collectively highlight that although the CM has aided the CPD of teachers and enhanced teaching methods, its effectiveness depends on multiple factors. These encompass the standard of training across all tiers, the sufficiency of resources, and the necessity for ongoing assistance and guidance for educators. Additionally, tailoring the model to local situations, especially in rural and underprivileged regions, is crucial for enhancing its effectiveness in improving teaching quality. Given that the Tanzanian government prefers using CM to implement various education reforms, understanding the perceptions of key beneficiaries of the training is crucial for fostering critical reflection and improvement. This study aimed to investigate teachers' perceptions of the effectiveness of the cascading method (CM) in enhancing

their professional development (CPD) and pedagogical skills. Specifically, the study aimed to answer the following question: (1) How do teachers perceive the effectiveness of the CM for CPD? (2) How does the CM enhance pedagogical practices among teachers?

Theoretical Framework

The study draws on sociocultural learning theory (SCLT), originating in the work of Lev Vygotsky (1962). The SCLT suggests that learning is a social process moulded by interactions with more knowledgeable others within a cultural context (Dawson, 2013). The theory emphasises that successful human learning and development require social interaction, zone of proximal development (ZPD), scaffolding, cultural tools (artefacts), and social context. These principles are fundamental in designing and implementing CPD programs through a CM. The framework aided data collection by developing tools to examine how teachers interact, the assistance they receive from trainers, how learning under CM is tailored and customised to their contextual needs, and whether a training needs assessment was conducted. Again, the theoretical assumptions guided the interpretation of findings regarding teachers' perceptions of the CM. Mercadal (2021) argues that the SCLT framework fosters learning through collaborative mentorship from experienced others, which scaffolds professional growth while considering cultural and contextual realities. Guided by this theoretical framework, designing and implementing CPD programs through a CM, sometimes referred to as a multiplier model. This requires consideration of the teachers' learning needs based on their context (the ZPD), which they cannot acquire without assistance and the support they receive (Scaffolding) by attending to CM, allows them to socially interact with knowledgeable peers within their social and cultural contexts (Bakuza *et al.*, 2025). Based on these facts, teachers' knowledge is obtained from experienced colleagues and top authorities and then disseminated to the broader teacher community (Ngeze *et al.*, 2018). Therefore, the framework provides a foundation for assessing teachers' perceptions of the effectiveness of a cascading model for continuous professional development and its contribution to their pedagogical practices.

Methodology

Research Approach and Design

The study uses a qualitative research approach under a case study design. Qualitative research is vital in education, as it addresses the 'how' and 'why' research questions, facilitating a more profound understanding of phenomena, experiences, and contexts (Cleland, 2017). The approach helps capture in-depth insights into in-service teachers' perceptions of CM's effectiveness for CPD in developing their pedagogical practices, based on their pedagogical needs (Hennink *et al.*, 2020). This is achieved through case study design, as

employed in qualitative research, as noted by Bacon (2025). The researcher preferred a case study because it thoroughly analyses the detailed steps within each specific case of individual units or units based on the researcher's focus (Denzin & Lincoln, 2018). Furthermore, Lapan *et al.* (2012) and Creswell (2014) explained that a case study is a qualitative method that allows a researcher to discover cases using various data-collection methods and to present comprehensive descriptions of the collected data through developed themes. In this regard, the qualitative research suggests asking questions that cannot be precisely quantified to recognise human understanding.

Area of Study

The study was conducted at Mzumbe University's main campus in Morogoro, Tanzania. The university offers teacher education programmes and has enrolled in-service teachers who have obtained diplomas in teacher education and are now upgrading to bachelor's degrees. It also offers short courses, seminars, workshops, and conferences, as well as training, to enhance teachers' continuing professional development (CPD). The availability of in-service teachers at Mzumbe University makes it convenient to conduct a study of their perceptions of the CMs they attended to improve their professional development.

Participants

Participants in this study are in-service teachers with experience in secondary school teaching and those who have attended CPD programs delivered through CM. Their involvement in these CPD programs makes them ideal for contributing to how they perceive the model used, the effectiveness of these CPDs, and how to improve them. Therefore, the study observes teachers for all subjects. This is because the study examines general pedagogical practices, not those specific to a particular subject; researchers did not mention the subjects that participants teach to maintain anonymity. The study included ten purposively selected teachers from the population of 38 in-service teachers in their third year at Mzumbe University. Participants were selected purposively based on their teaching experience, ranging from 4 to 28 years, and on their attendance at CPD delivered through CM (See Table 1). This is because those participants have worked for many years and provided extensive information about professional development and its impact on pedagogical practices, drawing on their own experiences.

Data Collection Method

To address the research questions and ensure the study's validity, data were collected through in-depth interviews and focus group discussions, as recommended by Tisdell *et al.* (2025) (see Table 1). Interviews enable the investigators to probe and ask follow-up questions to gather detailed data. The research reached out to 6 participants who agreed to participate in in-depth

interviews at their convenience. A focus group discussion was conducted, guided by Silverman (2016), and involved four teachers who agreed to participate in the evening after class hours. Cohen *et al.* (2017) insisted that using multiplicity methods functions to prove the truthfulness of data from single sources, therefore improving the validity of instruments.

Table 1:
Interviews and Focus Group Discussion Descriptions

S/N	Respondent name	Sex	Work Experience	No. of CPD attended	Method	Time used
1.	Teacher A	Female	15 Years	4	Interview	45 Min
2.	Teacher B	Female	20 Years	3	Interview	50 Min
3.	Teacher C	Male	10 Years	3	Interview	46 Min
4.	Teacher D	Male	25 Years	7	Interview	34 Min
5.	Teacher E	Male	28 Years	5	Interview	35 Min
6.	Teacher F	Male	06 Years	2	Interview	33 Min
7.	Teacher G	Male	08 Years	1	FGD	56 Min
8.	Teacher H	Female	06 Years	1	FGD	56 Min
9.	Teacher I	Female	08 Years	2	FGD	56 Min
10.	Teacher J	Male	04 Years	0	FGD	56 Min

Data Analysis

The data obtained from the interviews and focus group discussions were transcribed by the researcher during the data analysis process before other procedures, and the data were then subjected to thematic analysis involving six concurrent processes (Braun & Clarke, 2019; Mertler, 2024). Initially, researchers read the transcripts repeatedly to familiarise themselves with the data; then, the data were coded for emerging concepts and codes related to teachers' perceptions of CM for CPD, and similar data were categorised into themes and sub-themes according to the research objectives. Finally, researchers reported the themes obtained, supported by participant quotes from interviews and group discussions (Rockmann & Vough, 2024).

Ethical Considerations

Drolet *et al.* (2023) clarify that researchers should consider ethical issues in their research by adhering to established research ethics principles, such as those related to anonymity and confidentiality. The researcher asked 38 teachers to participate in the study, and only 10 agreed to do so voluntarily, outside class hours. We obtained their oral consent to participate in the study and informed them of its purpose, as recommended by Auerbach and Silverstein (2003) and Creswell and Creswell (2023).

Findings

The study investigates teachers' perceptions of the effectiveness of the cascading model (CM) in enhancing their Continuing Professional

Development (CPD) and pedagogical practices. The findings are grouped into three thematic areas: Teachers' Perceptions of the CM towards CPD, how the CM contributes to improving pedagogical practices, and how to improve the CM for effective CPD. These are described in the following sections.

Teachers' Perceptions of the CM for CPD

The study reveals that teachers have different views on the concept of continuous professional development (CPD) in Tanzania, focusing on its effectiveness and impact on classroom practices to enhance understanding of its influence on educational outcomes in the area. Teachers view the CM of ongoing professional growth as inadequate, engaging sporadically in initiatives that lack consistency and significance. They believe that these programs, typically associated with curriculum modifications and reforms, do not enhance their teaching methods or career development and frequently fail to improve their professional growth and classroom effectiveness. It is because they are made, or when outside programs require their presence. These sporadic experiences do not ensure steady professional development, leaving teachers feeling ill-equipped for ongoing enhancement. They occur during curricular changes.

Teachers who participated in the CPD programs noted that the material and content used in CM-based programs do not align with their pedagogical needs. Where teachers are not facing the same pedagogical difficulties as they do in other districts. In confirming this, Teacher I said:

"The seminars we often participate in focus on topics unrelated to our everyday classroom challenges. For example, they emphasise the proper utilisation of resources, but at our school, we lack those resources".

This highlights a significant problem with the structure of the cascading CPD model. Another participant added that:

I attended some professional development trainings. Our trainers taught very well. My challenge was that the training was based on something I did not have a problem with. Yes, some might have benefited, but it was as if I had escorted them and gained nothing! I think authorities should prepare these professional development trainings based on teachers' needs, unless the issue is the implementation of a new curriculum (Teacher C, 2024).

The findings indicate that teacher involvement in cascaded professional development programs raises serious concerns regarding the overall efficacy of these initiatives in addressing their educational and contextual issues. The inconsistent pattern of involvement suggests that, when professional development opportunities arise, they may not be fully utilised or adequately address the wide range of subjects required to support teachers effectively. In this era of science and technology, it is essential to keep teachers' knowledge and skills up to date. By participating in professional development programs that truly meet their pedagogical needs, not by learning what is decided for

them by the top authorities. Often, these programs focus only on problematic issues. When teachers from all districts gather for seminars, the challenges faced by other teachers may not align with our problems and specific context. As a result, teachers feel that attending these programs is a waste of time, as they already know the information. Failing to meet their pedagogical needs makes them gain nothing and continue with old pedagogies in their teaching, as one participant explained:

"I did not see any pedagogical difference between those who attended professional development programs and those who did not participate; we are teaching in the same way... no need to attend CPD".

Teachers expect that attending CPD will have a positive impact on their pedagogical practices, which, in turn, will improve students' learning outcomes. Based on this, teachers did not see the worth of those programs. Again, the study reveals that teachers lack motivation to participate in professional development initiatives, likely due to the nature of CM. As participants explained their feelings;

There is no motivation to attend these cascaded professional development programs, as they are not required for promotion, and I don't see any difference between those who attended and those who did not. Why should I bother myself to do that? (Teacher A, 2024).

Financial challenges demotivate some teachers to participate in the programs, as teacher H explained.

The last seminar I attended was very beneficial. Still, my problem was the cost of going and returning due to school commitments. At the workshop, we were given soft-copy materials, but there was no Wi-Fi, and my network was not supportive. Again, I had to print. So, I suggest that the seminar venue have at least full Wi-Fi to simplify things for us, as we are in a digital era. Additionally, as in the past, the government should cover all costs for seminars or other professional development training (Teacher F, 2024).

This suggests that teachers might not recognise the benefits of involvement without strong reasons or incentives, such as improved teaching outcomes, personal development, or acknowledgement, because the approach is unidirectional. This presents a challenge for educational institutions aiming to promote additional professional development. The lack of promotion requirements for professional growth means there are no direct career advantages to involvement. This circumstance can lead to indifference among educators, who might believe their existing qualifications and performance are adequate for their positions and do not require further training. As Teacher G says:

"I am not interested in those trainings; they just force us to use our time without having a clear goal. Imagine science and language teachers being mixed."

Participants reported an unwillingness to attend CPD through CM in schools. They perceive that their professional development is being imposed on an

already packed schedule, hindering their ability to concentrate on their current classroom duties. Also, the issue of financial compensation exacerbates the challenges of engaging in professional development. As Teacher H said,

"Sometimes I find it difficult; we are asked to stay in school until late hours without being paid. We are taught by the one who was paid, but for us, it's not the case. This discourages our participation."

Nonetheless, the reference to eternal promises of payment suggests a systemic issue where commitments made to educators regarding financial reimbursements often remain unfulfilled. Based on teachers' experience, for CM to be effective, it must be well structured to meet their pedagogical needs, aligned with their context, and include initiatives and activities conducted within working hours.

The Contribution of CM to Pedagogical Practices as Part of CPD

The research explored the contribution of the cascading method (CM) to continuous professional development programs that enhance pedagogical practices. From the focus group discussion, the findings reveal that teachers attend cascaded professional development to widen their understanding and skills and to stay updated to cope with changes in education through curriculum reform. Some participants reported observable outcomes in their pedagogical practices and in their students' achievement.

For instance, teacher D shared that:

"the program I attended was concerning the implementation of a new curriculum, and of course, in my 28 years of working, competence-based learning was challenging me. But now confidently, I plan lessons, scheme of work, and teaching aids".

Another participant added that:

Previously, our students were not active in classes. I believed they knew a few things, and I preferred to lecture in my teaching to help them understand. Yes, I learned the participatory method. However, I expected to solve difficult topics that challenged me in teaching from CPD. I feel shy whenever I ask my colleagues to teach on my behalf concerning the training I attended (Teacher F, 2024).

Teachers wish to attend CM to develop their professional skills and knowledge to help them cope with the difficulties they encounter in teaching. As Teacher J confesses:

"I wish to attend professional development programs to expand my understanding and become more competent in teaching, as some of the topics in my subject are particularly challenging."

Those changes necessitate the development of new teaching methodologies to address teachers' challenges during teaching and learning. Also, Teacher H says,

"My desire to attend a professional development program is to become knowledgeable enough to prepare science practicals in my subject, as there are no longer laboratory technicians in most of our schools".

The conversations show that teachers are not only required to participate in professional development programs, but they also genuinely wish to enhance their skills and knowledge. This inherent motivation indicates that educators understand the value of continuous learning and career advancement. Recognising the evolving nature of education, they view professional development as an opportunity to stay up to date on contemporary trends, teaching methods, and educational regulations. Teachers view professional development as a means to acquire new skills and refine existing ones. This is crucial in a rapidly evolving educational environment where new technologies and methods are constantly emerging. Teachers express their appreciation for CM, which enables them to access CPD activities, but they expect much more from programs to meet their needs and interests. Another teacher went so far as to explain that they did not find it beneficial to their pedagogical practices by comparing the performance of teachers who participated in CPD with those who did not, as they found no difference in their students' performance. Teachers themselves must perceive professional development positively and find alternatives to training through interactions with teachers from other schools and self-reading, rather than relying solely on government programs for professionals. A teacher who perceives the value of positive professional development is eager to acquire new knowledge, skills, attitudes, values, and dispositions. Such dispositions include pride, self-esteem, team spirit, commitment, drive, adventure, creativity, and vision. Findings show teachers highlight challenges they face in attending and implementing these programs. Challenges include the availability of resources versus those required for practical training. Lacking such vital resources fosters resentment and disengagement, as educators might view these programs as exploitative rather than supportive, with their efforts and sacrifices not being sufficiently acknowledged or compensated. As a result, training fails to achieve meaningful learning among teachers.

Discussion

Although teachers indicated participation in cascaded professional development programs, the results suggest that the impact on their teaching practices remains insufficient. This may stem from various factors, such as a lack of relevance, broader or general approaches that are not well-suited to teachers' current classroom situations or the unique student groups they work with. The challenges hindering the effective implementation of CPD include multiple factors, such as scheduling issues, insufficient administrative support, and mismatches between available programs and teachers' specific requirements. Teachers require CPD programs that consider their unique and

contextual needs, preferences, and experiences, which they acquire through the CM, to help them tackle the particular obstacles they encounter. Mgaiwa and Milinga (2024) report similar findings that CPD that did not reflect specific teacher needs and context proved to be less effective. Educational authorities can cultivate a more motivated and efficient teaching workforce by creating relevant programs that align with teachers' immediate challenges. As Abakah (2023) insists, effective CPD should align with teachers' specific needs in their specific context. Educators may find it challenging to implement new practices when a program does not directly align with their teaching environment. The findings align with Laddunuri (2012), who noted that teachers often use outdated instructional strategies because they rarely attend professional development programs to update their professional knowledge. Effective professional development should also encompass follow-up support and opportunities for teachers to collaborate and exchange experiences, as recommended by Ma *et al.* (2018) and Mugisha *et al.* (2023). Various curricula reforms require teachers to learn new teaching strategies to be competent in implementing them and to enhance students' learning achievement. Based on teachers' experience in CM, there is a need to rethink and restructure the CM to determine whether it meets teachers' demands (Atilya & Mafumiko, 2010). Also, Dinh and Lan (2023) added that reflection is crucial and the most important element for making CPD successful, providing teachers with an opportunity for self-assessment and the development of their critical thinking. Doing this will help determine the extent to which the program succeeded in meeting teachers' pedagogical needs. This aligns with the SCLT assumptions of ZPD, interaction, and social context.

Teachers may find it challenging to adapt to these changes without proper training and support, which could ultimately impact the quality of education students receive. Additional studies by Isa *et al.* (2024) highlight the range of abilities, including classroom management, teaching methods, assessment strategies, and the school environment. Again, the findings reveal that teachers do not see the benefits of professional development programs that employ a CM approach, either pedagogically or economically. Teachers view CPD programs that employ CM as overly dense, offering limited opportunities for authentic engagement or for significant reflection on the material. When professional development sessions are packed with information, educators often feel overwhelmed, leading to frustration and exhaustion rather than motivation. Presenting new ideas, methods, and practices briefly can overwhelm them, hindering their ability to fully understand and utilise the knowledge they have acquired. This sense of being overwhelmed may reduce motivation to engage in future training, as teachers and educators view these sessions as an additional obligation rather than a development opportunity. Given the challenging nature of these programs, educators indicate they need

to make significant changes to their schedules to participate. This often involves adjusting their current responsibilities, such as lesson planning, grading, or personal commitments, to incorporate professional development into their busy schedules. In this, teachers should change their attitude, not only seeking economic benefits but also being prepared to participate in cascaded programs to enhance their pedagogical activities, which will lead to positive student outcomes.

Koda (2014) emphasised that professional development aims to enhance new teachers' skills, keep them up to date, and refine existing skills, ultimately providing significant benefits for lifelong learning. Moreover, Popova *et al.* (2022) suggest that successful teacher professional development programs should invite schools to participate, focus on teaching and learning, create school networking, and have an evaluation to map the preparations for upcoming professional development programs. These findings indicate that teachers are generally aware of professional development programs, which means they understand their benefits in the education sector. However, findings reveal that these programs are not regularly offered to teachers and do not adequately reflect their contextual needs, as Komba and Mwakabenga (2019) reported. This is due to insufficient budgets allocated to the education sector. Second, teachers perceive professional development as a waste of time because the program offers no benefits. Teachers believe there are no changes in pedagogical practices or student achievement among those who attended those programs compared to those who did not (Namamba & Rao, 2017). This means neither professionally bound nor motivated teachers attend professional development programs. For that reason, teachers do not consider those development programmes worthy because they lack motivation for themselves and their students.

Additionally, they do not see any benefit associated with it. In reality, these professional developments greatly impact teachers and students due to changes in our societies, with increasing demands for new things that lead to changes in the curriculum. For this reason, professional development programs are crucial for all teachers to enhance their teaching practice and improve students' achievements.

Conclusion

This study explored in-service teachers' perceptions of the CM for CPD. While the findings show that CM is a commonly adopted approach due to its viability to reach a large population, teachers perceive it as lacking sharpness in impacting their pedagogical practices. Factors contributing to this perception include the CM approach's seclusion design within the CPD, limited administrative support, unfriendly implementation schedules, and detachment from specific working contexts, resulting in periodic, inconsistent CPD.

Additionally, the multiplier effect of trainers, from top to bottom, results in misrepresentation and weakening of information, hindering its effectiveness. Teachers suggest that, despite adopting the CM for CPD implementation, it should be customised to meet evolving needs and interests, and be relevant to local contexts to enhance its effectiveness and sustainability. Therefore, despite its cost-effectiveness, the current use of CM hardly supports teachers' advancement of their pedagogical practices, hence limiting the learning outcomes. The study recommends vigorous CPD that are contextually relevant, responsive to teacher-specific needs, and scheduled to meet the needs of participating teachers. Education authorities should re-examine the preference for using CM for CPD and prioritise approaches that take relevant contexts into account, meet specific needs, and ensure sustainability in elevating teachers' pedagogical practices. Ongoing CPD programs should be redesigned and customised to meet the specific needs of teachers in their relevant working contexts, addressing their unique needs and enhancing the transformation of their pedagogical practices. On the same note, the program should treat teachers as lifelong learners with diverse needs. They need to acquire innovative pedagogical skills through expert collaboration and long-term engagement to update and engage with relevant content to meet contemporary challenges. The study recommends broader studies involving diverse education stakeholders and various learning contexts to validate the findings and inform practical interventions for effective CPD programs.

References

- Abakah, E. (2023). Teacher learning from continuing professional development (CPD) participation: A sociocultural perspective. *International Journal of Educational Research Open*, 4, 100242. <https://doi.org/https://doi.org/10.1016/j.ijedro.2023.100242>
- Abakah, E., Addae, D., & Amuzu, D. (2023). Continuing professional development (CPD) at a distance: Teachers' reflections on enhancing distance education (DE) provision. *International Journal of Educational Research Open*, 5(2023), 100304. <https://doi.org/10.1016/j.ijedro.2023.100304>
- Ambon, J., Alias, B., Komariah, A., & Mansor, A. (2024). The impact of continuous professional development on teaching quality: a systematic review. *International Journal of Evaluation and Research in Education (IJERE)*, 13(6), 3838-3847. <https://doi.org/10.11591/ijere.v13i6.30427>
- Antonov, N. V., & Ivanova, O. A. (2021). Professional development of teachers in the context of digitalisation of education: from conceptual ideas to practice. *Bulletin of Nizhnevartovsk State University* 4, 5-15. <http://dx.doi.org/10.36906/2311-4444/21-4/01>
- Auerbach, C., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis (Vol. 21)*. NYU Press.

- Avalos, B. (2023). Teacher professional development: Revisiting critical issues. In Craig, C.J., Mena, J. & Kane, R.G. (Ed.), *Approaches to teaching and teacher education: Advances in research on teaching, Vol. 43*(pp. 59-71). Emerald Publishing Limited. <https://doi.org/10.1108/S1479-368720230000043009>
- Avidov-Ungar, O. (2016). A model of professional development: Teachers' perceptions of their professional development. *Teachers and Teaching, 22*(6), 653-669. <https://doi.org/10.1080/13540602.2016.1158955>
- Bacon, H. (2025). Book review: Qualitative research: A guide to design and implementation by E. J. Tisdell, S. B. Merriam, & H. L. Stuckey-Peyrot Tisdell E. J. Merriam S. B. Stuckey-Peyrot H. L. (2025). *Qualitative Research: A Guide to Design and Implementation (5th ed.)*. Jossey-Bass. 448 pp, \$55 (paperback), ISBN 978-1-394-26645-6. Adult Education Quarterly. <https://doi.org/10.1177/07417136251356470>
- Bakuza, F. R., Wango, N. C. & Rarieya, J. F. A. (2025). Cascade approach on teachers' continuous professional development to improve learning outcomes in pre-primary and primary education: Experience in the implementation of the F4L project in East Africa. *Journal of Education and Practice, 16*(1), 25-35. <https://doi.org/10.7176/JEP/16-1-03>
- Bautista, A., & Ortega-Ruiz, R. (2015). Teacher professional development: International perspectives and approaches. *Psychology, Society and Education, 7*(3), 240-251. <https://doi.org/10.25115/psye.v7i3.1020>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589-597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Brodeur, K., Mrachko, A., Phillips, D., & Compton, B. (2024). Preparing to coach pre-service teachers: professional learning of novice coaches. *Teacher Development, 28*(1), 104-121. <https://doi.org/10.1080/13664530.2023.2269904>
- Cleland, J. A. (2017). The qualitative orientation in medical education research. *Korean Journal of Medical Education, 29*(2), 61-71. <https://doi.org/10.3946/kjme.2017.53>
- Cohen, L., Manion, L., & Morrison, K. (2017). Approaches to qualitative data analysis. In Cohen, L., Manion, L., & Morrison, K. (Eds.) *Research methods in education (8th Ed.)* (pp. 643-656). Routledge. <https://doi.org/10.4324/9781315456539-32>
- Cordingley, P. (2015). The contribution of research to teachers' professional learning and development. *Oxford Review of Education, 41*(2), 234-252. <http://dx.doi.org/10.1080/03054985.2015.1020105>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative and mixed methods approach (6th Ed.)*. SAGE Publications
- Dawson, K. A. (2013). *Sociocultural theory and its educational application. Education 589 Projects 3*. (Master's Thesis, University of Mary

- Washington). Eagle Scholar. Available at https://scholar.umw.edu/education_589/3
- de Groot-Reuvekamp, M., Ros, A., & van Boxtel, C. (2018). A successful professional development program in history: What matters? *Teaching and Teacher Education*, 75, 290-301. <https://doi.org/10.1016/j.tate.2018.07.005>
- Dinh, H., & Lan, N. (2023). Teacher-practitioner inquiry in professional development: A case of adaptation and resistance to genre-based systemic functional linguistics as a new writing instruction. *Journal on Efficiency and Responsibility in Education and Science*, 16, 65-80. <https://doi.org/10.7160/eriesj.2023.160107>
- Doğan, S., & Yurtseven, N. (2018). Professional learning as a predictor for instructional quality: a secondary analysis of TALIS. *School Effectiveness and School Improvement*, 29(1), 64-90. <https://doi.org/10.1080/09243453.2017.1383274>
- Drolet, M.-J., Rose-Derouin, E., Leblanc, J.-C., Ruest, M., & Williams-Jones, B. (2023). Ethical issues in research: Perceptions of researchers, research ethics board members and research ethics experts. *Journal of Academic Ethics*, 21(2), 269-292. <https://doi.org/10.1007/s10805-022-09455-3>
- Garone, A., Bruggeman, B., Philipsen, B., Pynoo, B., Tondeur, J., & Struyven, K. (2022). Evaluating professional development for blended learning in higher education: a synthesis of qualitative evidence. *Education and Information Technologies*, 27(6), 7599-7628. <https://doi.org/10.1007/s10639-022-10928-6>
- Gemeda, F. T., Fiorucci, M., & Catarci, M. (2014). Teachers' professional development in schools: Rhetoric versus reality. *Professional development in education*, 40(1), 71-88. <http://dx.doi.org/10.1080/19415257.2012.759988>
- George, M. F., Qian, X., & Charles, K. (2024). Systematic review on the impact of instructional leadership on implementing teachers' continuous professional development program in Tanzania: A case study of primary schools in Mkuranga District. *East African Journal of Education Studies*, 7(4), 742-756. <https://doi.org/10.37284/eajes.7.4.2483>
- Gökmenoglu, T., Sönmez, E. D., & Yavuz, İ. (2021). A cascade teacher training model in disaster education: A case of Turkey. *International Journal of Curriculum and Instructional Studies*, 11(1), 23-42. <http://dx.doi.org/10.31704/ijocis.2021.002>
- Goodwin, A. L. (2021). Teaching standards, globalisation, and conceptions of teacher professionalism. *European Journal of Teacher Education*, 44(1), 5-19. <https://doi.org/10.1080/02619768.2020.1833855>
- Hardman, F., Hardman, J., Dachi, H., Elliott, L., Ihebuzor, N., Ntekim, M., & Tibuhinda, A. (2015). Implementing school-based teacher development

- in Tanzania. *Professional Development in Education*, 41(4), 602-623. <https://doi.org/10.1080/19415257.2015.1026453>
- 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*, 3, 100080. <https://doi.org/10.1016/j.caeo.2022.100080>
- Hennink, M., Hutter, I., & Bailey, A. (2020). *Qualitative research methods*. Sage.
- Iftikhar, S., Fu, Y., Naureen, S., Cao, Y., & Zhou, C. (2022). Cascading of teachers training at higher education in Pakistan: An evaluation of a faculty professional development program. *Evaluation and Program Planning*, 94, 102130. <https://doi.org/10.1016/j.evalprogplan.2022.102130>
- Isa, M., Neliwati, N., & Hadijaya, Y. (2024). Quality improvement management in teacher professional development. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, 5(2), 136-147.
- Ivanova, I. N. (2017). Teachers' awareness of the benefits of continuing professional development. *Studies in Linguistics, Culture, and FLT*, 2(1), 205-218. <http://dx.doi.org/10.46687/SILC.2017.v02.017>
- Johnson, K. E., & Golombek, P. R. (2011). *Research on second language teacher education: A sociocultural perspective on professional development*. Routledge. <https://doi.org/10.4324/9780203844991>
- Kennedy, A. (2005). Models of continuing professional development: A framework for analysis. *Journal of In-Service Education*, 31(2), 235-250. <https://doi.org/10.1080/13674580500200277>
- Kibona, C. E., Ndabi, J. S., & Kibona, I. E. (2020). Professional development needs to improve teaching science in secondary schools: case study of Mbeya, Tanzania. *Asian Journal of Probability and Statistics*, 9(3), 5-24. <https://doi.org/10.9734/ajpas/2020/v9i330227>
- Koda, G. M. (2014). Professional development for science and mathematics teachers in Tanzanian secondary schools. *Papers in Education and Development*, 32, 1-17.
- Komba, S. C., & Mwakabenga, R. J. (2019). Teacher professional development in Tanzania: Challenges and opportunities. *Educational Leadership*, 27(1). <http://dx.doi.org/10.5772/intechopen.90564>
- Komba, W. L., & Nkumbi, E. (2008). Teacher professional development in Tanzania: Perceptions and practices. *Journal of International Cooperation in Education*, 11(3), 67-83.
- Konrad, L. S. (2018). *Cascading turbulence: teachers' perceptions of policy implementation in the school district of Philadelphia during the fall of 2013*. (Doctoral Dissertation, Temple University). Scholar Share.

<https://scholarshare.temple.edu/server/api/core/bitstreams/6fe4a0ad-817c-4a64-951b-23b499ee1c11/content>

- Koomar, S. (2024). *How Can Participatory Methods Centre Teachers Within Education Policy?* [Learning Brief]. EdTech Hub. <https://doi.org/10.53832/edtechhub.1005>
- Laddunuri, M. M. (2012). Status of school education in present Tanzania and emerging issues. *International Journal of Educational Research and Technology*, 3(1), 15-20.
- Lawrent, G. (2025). Initial teacher education under new school development: False policy promises and their implications. *Social Sciences & Humanities Open*, 11, 101240. <https://doi.org/10.1016/j.ssaho.2024.101240>
- Leong, H., & Rethinasamy, S. (2023). Continuous professional development: Assessing teachers' experiences with the cascading training model. *Journal of English Language Teaching Innovations and Materials (Jeltim)*, 5(2), 160-175. <http://dx.doi.org/10.26418/jeltim.v5i2.71219>
- López-Estrada, P. (2023). Professional growth: a reflective and motivational practice toward an endless journey in education. In Barrantes-Elizondo, L. & Olivares-Garita, C. (Eds.), *Language identity, learning, and teaching in Costa Rica: Core theoretical elements and practices in EFL* (pp. 157-173). Routledge. <https://doi.org/10.4324/9781003360025>
- Ma, N., Xin, S., & Du, J.-Y. (2018). A peer coaching-based professional development approach to improving the learning participation and learning design skills of in-service teachers. *Journal of Educational Technology & Society*, 21(2), 291-304.
- Matiba, F. M. (2024). Motivational factors and barriers to participation in professional development programmes: perspectives from Tanzania higher education faculties. *Current Psychology*, 43(1), 437-448. <https://doi.org/10.1007/s12144-023-04310-z>
- Mazana, M. Y., Montero, C. S., & Casmir, R. O. (2020). Assessing students' performance in mathematics in Tanzania: the teacher's perspective. *International Electronic Journal of Mathematics Education*, 15(3), em0589. <http://dx.doi.org/10.29333/iejme/7994>
- Mazana, M. Y., Montero, C. S., & Njotto, L. L. (2023). Exploring mathematics teaching approaches in Tanzanian higher education institutions: Lecturers' perspectives. *International Journal of Research in Undergraduate Mathematics Education*, 9(2), 269-294. <https://doi.org/10.1007/s40753-023-00212-4>
- Mercadal, T. (2021). *Sociocultural Theory*. EBSCO. Available at <https://www.ebsco.com/research-starters/education/sociocultural-theory>
- Mertler, C. A. (2024). *Introduction to educational research (4th Ed.)*. Sage.
- Mgaiwa, S. J., & Milinga, J. R. (2024). Teacher preparation and continuous professional development: A review of 'missing links'. *Social Sciences*

- & *Humanities Open*, 10, 100990.
<https://doi.org/10.1016/j.ssaho.2024.100990>
- Mollel, E. S. (2019). *Influence of professional development on performance of public secondary school teachers in Tanzania* [Doctorate Thesis, The Open University of Tanzania]. OUT Repository.
- Mugisha, C. (2018). *The impact of teachers' attitudes on the performance of students with disabilities: A case study of Group Scolaire Saint Dominique Gihara, in Kamonyi district*. (Master Dissertation, College of Education, University of Rwanda). University of Rwanda Digital Repository.
- Mugisha, G. G., Komba, A. A., & Magosho, H. J. (2023). Collaborative practices as a teacher professional development pathway: a study of selected secondary schools in Tanzania. *Papers in Education and Development*, 41(2), 91-112. <https://dx.doi.org/10.56279/ped.v41i2.6>
- Mwakabenga, R. J., & Paine, L. (2023). The potential of professional learning communities for competence-based teaching in Tanzanian secondary schools. *Papers in Education and Development*, 41(2), 185-204. <https://dx.doi.org/10.56279/ped.v41i2.11>
- Mwinuka, W., & Farrelly, R. (2023). Continuing Professional Development in Tanzania: Best Practices and Challenges. In A. Cirocki, R. Farrelly, & H. Buchanan (Eds.), *Continuing Professional Development of TESOL Practitioners: A Global Landscape* (pp. 365-392). Springer. https://doi.org/10.1007/978-3-031-42675-9_16
- Namamba, A., & Rao, C. (2017). Preparation and professional development of teacher educators in Tanzania: current practices and prospects. *Journal of Education and Practice*, 8(8), 136-145.
- Ngeze, L. V. (2023). *A Model to Improve the Effectiveness of Secondary Trainers in Cascaded Teacher Professional Development Programmes*. (Doctoral Thesis, Indian Institute of Technology Bombay). Bombay.
- Ngeze, L. V., Khwaja, U & Iyer, S. (2018). Cascade model of teacher professional development: qualitative study of the desirable characteristics of secondary trainers and role of primary trainers. In Yang, J. C. (Ed.). *Proceedings of the 26th International Conference on Computers in Education*. (pp. 755-760). Asia-Pacific Society for Computers in Education. Philippines.
- Nimante, D., Kokare, M., Baranova, S., & Surikova, S. (2025). Transferring Results of Professional Development into Practice: A Scoping Review. *Education Sciences*, 15(1), 95. <https://doi.org/10.3390/educsci15010095>
- OECD. (2011). *Building a high-quality teaching profession: Lessons from around the world*. OECD Publishing.
- Palloff, R. M., & Pratt, K. (2011). *The excellent online instructor: Strategies for professional development*. John Wiley & Sons.

- Perry, E., Halliday, J., Higginson, J., & Patel, S. (2022). *Meeting the challenge of providing high-quality continuing professional development for teachers: The Wellcome CPD Challenge Pilot Delivery Report*.
- Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2022). Teacher professional development around the world: The gap between evidence and practice. *The World Bank Research Observer*, 37(1), 107-136. <https://doi.org/10.1093/wbro/lkab006>
- Ramírez-Montoya, M. S., Andrade-Vargas, L., Rivera-Rogel, D., & Portuguese-Castro, M. (2021). Trends for the future of education programs for professional development. *Sustainability*, 13(13), 7244. <https://doi.org/10.3390/su13137244>
- Rockmann, K. W., & Vough, H. C. (2024). Using quotes to present claims: Practices for the writing stages of qualitative research. *Organisational Research Methods*, 27(4), 621-649. <https://doi.org/10.1177/10944281231210558>
- Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. *Teaching and Teacher Education*, 101, 103305. <https://doi.org/10.1016/j.tate.2021.103305>
- Silverman, D. (2016). Introducing qualitative research. In Silverman, D. (Ed.), *Qualitative research*, (pp. 14-25). SAGE.
- Smith, K., & Tillema, H. (2001). Long-term influences of portfolios on professional development. *Scandinavian Journal of Educational Research*, 45(2), 183-203. <https://doi.org/10.1080/00313830120052750>
- Smith, R., & Lynch, D. (2010). *Rethinking teacher education: Teacher education in a knowledge age*. AACLM. <https://doi.org/10.53333/AACLM/440245>
- Stronge, J. H. (2018). *Qualities of effective teachers*. ASCD.
- Suarez, N. A. (2022). *Exploring lesson study as a model of professional development for higher education chemistry instructional teams*. (Doctoral Thesis, San Diego State University). ProQuest
- Tallvid, M. (2016). Understanding teachers' reluctance to the pedagogical use of ICT in the 1:1 classroom. *Education and Information Technologies*, 21, 503-519. <https://doi.org/10.1007/s10639-014-9335-7>
- Tilya, F., & Mafumiko, F. (2010). The compatibility between teaching methods and competence-based curriculum in Tanzania. *Papers in Education and Development*, 29, 1-19.
- Tisdell, E. J., Merriam, S. B., & Stuckey-Peyrot, H. L. (2025). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.