Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 16(4): 100-109

scholarlinkinstitute.org/jeteraps

Professional Development and Teacher Performance in Public Secondary Schools in Mwala Sub-County, Machakos County, Kenya

Kelvin Kivinda Musango[a], Ahmed Osman Warfa[b], and Rosalia Mumo[c]
[a] M.Ed. Scholar, [b] Professor, [c] Senior Lecturer
Department of Educational Management and Curriculum Studies
School of Education, Arts and Social Sciences, Garissa University
P. O. BOX 1801-70100, Garissa, Kenya

ABSTRACT
This study examined the relationship between professional development and teacher performance in public secondary schools in Mwala Sub-County, Machakos County, Kenya. To investigate this relationship, four variables, that is, in-service training, teacher collegiality, mentorship, and differentiated learning as independent variables, were compared with teacher performance as the dependent variable. A survey research design was employed, utilizing a questionnaire as the data collection instrument. The target population of the study consisted of 471 teachers, out of whom 142 were selected as the sample using simple random sampling. Simple random sampling was used to select a sample of 142 teachers from a target population of 471 teachers. The reliability of the questionnaire was assessed using Cronbach's alpha index, which yielded a value of .94 for all items. The data collected were analyzed using Inferential statistics, specifically Spearman's rank correlation analysis, with the help of SPSS. Interpretations of the findings were based on the α (.05) observed Spearman's rho (ρ) coefficient and the corresponding probability level (p). The results of the study revealed that there was a positive and statistically significant relationship between various aspects of professional development and teacher performance: in-service training ($\rho = .440$, $p < .001$), teacher collegiality ($\rho = .368$, $p < .001$), mentorship ($\rho = .492$, $p < .001$), differentiated learning ($\rho = .404$, $p < .001$). The study then concluded that professional development programs, particularly those focused on in-service training and mentorship, are crucial for enhancing teacher performance. The recommendation was that the Ministry of Education should invest in structured and sustained teacher professional development programs that foster collaboration, peer learning, mentorship, content-focused active learning, reflection, and expert support.

Keywords: In-service training, Mentorship, Professional development, Quality education, Teacher collegiality, Teacher performance.

INTRODUCTION

Teachers are key pillars in educational systems globally, recognized as a linchpin upon which quality education hinges [1]. The effectiveness and quality of teaching are the prime duty of the teacher, with teacher performance being a key determinant of quality learning and student achievement [2]. In the pedagogical and practice literature, teacher performance, a cornerstone of educational quality and learner achievement, has garnered significant attention due to its impact on student learning outcomes and learning effectiveness [1] [3] [4]. However, it often falls short of expected standards, as it is constrained by poor teacher quality. Friedman [5] observed that most teachers struggle to apply the skills they have acquired, grasp the material, and utilize current pedagogical and instructional approaches. Popova et al. [3] established that "many teachers in low-and middle-income countries lack the skills to teach effectively" (p. 107). Teachers across seven African countries scored woefully low in pedagogical knowledge, the ability to prepare lessons, formulate questions to elicit student knowledge, and improve classroom performance. Martin [6] reports that teacher quality is low across Eastern and Southern African countries, with many teachers lacking the pedagogical and basic skills they attempt to impart to the learner.

Background to the Study

Teacher performance is punctuated by a trajectory akin to a "dual-lane highway." On one side, some teachers experience a smooth and well-paved journey (school-to-profession transition), equipped with strong foundational training, institutional support, and access to professional development opportunities [7]. These teachers evolve into high-performing educators who can create a conducive learning environment and foster critical thinking and problem-solving skills among students [8] and have a significant impact both during the school year and

into adulthood [3]. At best, their capacity enriches effective learning and long-term academic growth.

Conversely, a significant number of teachers face a journey fraught with potholes stemming from limited training, a lack of mentorship, and systemic constraints that hinder their ability to perform effectively [7]. This poor teacher performance results in subpar academic outcomes, classroom behavior, school effectiveness, and a compromised learning environment, challenges that most teachers grapple with [7] [9]. Without targeted interventions, the gap between high-and low-performing teachers will persist, ultimately limiting students' academic potential and the overall efficiency of the education system. At its worst, ineffective teacher performance is a hurdle to realizing quality education. Factors like unpreparedness to teach, insufficient subject-matter knowledge and pedagogical skills, ineffective classroom engagement, and lack of commitment to professional development (PD) hinder teacher effectiveness [10]. This demands more than just pre-service training, since, no matter how good it is, it cannot adequately equip teachers with the competencies for lifelong teaching.

Alive to these, teacher performance stems from high-quality teachers, a coveted status that cannot be attained by simply holding a teaching position [10] [11] but by having high-performing teachers in the classroom. In attaining this, the teacher must uphold the profession's dignity by demonstrating high-performance standards grounded in strong knowledge, skills, and attitudes that drive effective teaching and improved learning outcomes [4]. The teacher must stay abreast of the changes, be creative, use effective instruction, and meet the evolving needs and demands for new knowledge and skills [4]. Teacher professional development (TPD) is the "principal tool that countries across the income spectrum use to improve the knowledge and skills of their practicing teachers" [3] (p. 108). Through professional development, the teacher becomes more effective, overcomes the insecurity of inexperience, and remains technically competent. Wiliam [12] connotes that "every teacher needs to improve, not because they are not good enough, but because they can be even better…and the only way to improve teacher quality is to create a culture of continuous improvement". In today's fast-paced education landscape, teachers must adapt to changes, use innovative teaching methods, and address the learners' diverse needs [11].

The emphasis on teacher professional development stems from the assertion that a well-trained and continuously evolving teaching workforce can enhance student outcomes and deliver higher-quality instruction [9]. However, while PD should be ongoing and of high quality, there is a shortage of such programs, characterized by active learning, coherence, sufficient duration, reform, focus on content knowledge, and collective participation [1] [9] [13]. The existing programs fail to deliver meaningful professional growth or translate into improved teaching practices, hindering teacher effectiveness [14]. The absence of targeted and consistent PD programs leaves teachers ill-equipped to meet their students' diverse needs or adapt to new teaching methodologies and pedagogical advancements. A common question arises: To what extent does professional development enhance teacher performance if it is noncumulative, superficial, and fragmented?

Significance of the Study

This study provides valuable insights that can inform the formulation and revision of teacher professional development policies to improve teacher performance and educational outcomes. The Ministry of Education, Teachers Service Commission, and other stakeholders in the education sector can use the findings from this study to design empirically grounded TPD frameworks that prioritize strategies proven to enhance teaching quality and learner achievement.

The study is particularly significant as it addresses a critical gap in localized research by focusing on public secondary schools in Mwala Sub-County, an area with limited empirical data on the effectiveness of professional development practices, despite continued funding by educational stakeholders. Alive to this, the study offers both confirmatory and novel value. It confirms existing theories and literature on the positive relationship between teacher professional development and teacher performance. Still, it contributes to new and context-specific evidence that helps inform tailored interventions in underperforming regions.

The insights can guide strategic resource allocation by showcasing which professional development approaches have the highest impact on teacher performance and student outcomes. In addition, the study promotes a culture of evidence-based practice, encouraging sustained teacher support through practical, relevant, and ongoing professional development initiatives. Through this study, TSC, MOEST, and school administrators can identify teaching areas requiring retraining and utilize the insights to engage teachers in effective and purposeful professional learning.

Research Gap

As a caveat, this study did not seek to replicate the broad analyses of teacher professional development commonly found in national-level research. Instead, it focuses on the contextual gaps often overlooked, particularly the limited empirical inquiry into how

specific components of professional development influence teacher performance in Mwala Sub-County. In doing so, it refines and extends prior studies by disaggregating teacher professional development elements and offering localized evidence that clarifies inconsistencies and enriches the ongoing discourse on effective teacher support.

Statement of the Problem

Teacher professional development in Kenya is enshrined in the commitment to ensure teachers provide high-quality instruction. In Mwala Sub-County, as in other parts of the country, the inherent expectation is that engaging in PD would directly correlate with improved teacher performance and, by extension, student outcomes. However, the reality paints a different picture. Despite the efforts to improve teaching and learning outcomes, the teaching outcomes in the region remain suboptimal, as evidenced by consistently poor student performance in the KCSE. Between 2020 and 2022, Mwala Sub-County ranked 3rd among seven sub-counties as poorly performing in KCSE [15]. This concerns how PD translates into quantifiable improvements in teacher performance. Poor teacher performance significantly contributes to the region's educational challenges. Surprisingly, little has been done to assess PD's impact on teacher performance in the region, with the available studies presenting conflicting arguments. Some suggest that PD positively influences teacher performance; others argue that systemic issues like inadequate implementation and follow-up hinder its effectiveness. This piqued the researchers' interest in examining the extent to which professional development impacts teacher performance and why the outcomes remain underwhelming despite the efforts made to improve teacher performance.

Objectives of the study

i) To assess the relationship between in-service training and teacher performance in Mwala Sub-County, Machakos County, Kenya.
ii) To examine the relationship between teacher collegiality and teacher performance in Mwala Sub-County, Machakos County, Kenya.
iii) To investigate the relationship between mentorship and teacher performance in Mwala Sub-County, Machakos County, Kenya.
iv) To examine how differentiated learning influences teacher performance in Mwala Sub-County, Machakos County, Kenya.

Statement of Hypotheses

$H0_1$: There is no statistically significant relationship between in-service training and teacher performance in Mwala Sub-County, Machakos County, Kenya.

$H0_2$: There is no statistically significant relationship between teacher collegiality and teacher performance in Mwala Sub-County, Machakos County, Kenya.

$H0_3$: There is no statistically significant relationship between mentorship and teacher performance in Mwala Sub-County, Machakos County, Kenya.

$H0_4$: There is no statistically significant relationship between differentiated learning and teacher performance in Mwala Sub-County, Machakos County, Kenya.

RESEARCH METHODOLOGY

Research Design

This study utilized a survey research design to collect data on respondents' opinions of the influence of professional development on teacher performance. The survey research design was well-suited for this study because the study sought to describe the trends in attitudes, opinions, behaviors, and experiences of teachers in Mwala Sub-County on the relationship between PD and teacher performance. As observed by Cresswell [16], survey research design is a suitable approach for collecting information that describes a phenomenon by asking respondents about their opinions, providing a snapshot of opinions and trends within the target population, allowing the researcher to generalize the results and make informed conclusions.

Study Population

According to data from Mwala Sub-County office, there are 71 public secondary schools in the Sub-County, categorized as boys' secondary schools, girls' secondary schools, and mixed schools [15]. These schools have 471 teachers [15], who comprised the study's target population.

Sample Size

In selecting the sample size, Mugenda and Mugenda [17] recommend that a sample size of 10-30% of the target population is appropriate and representative of the population. To determine the sample size, the study used 30% of the target population, translating to 142 teachers. Selecting 30% of the target population as the sample size ensures sufficient representation of the population's diverse perspectives, provides adequate statistical power to observe relationships during analysis, and enhances the generalizability and robustness of the findings [18].

Sampling Procedure

To select the sample of 142 teachers, the study utilized a simple random sampling technique. Simple random sampling was preferred because: it guarantees the sample selected is representative of the target population, accounts for imbalances in population characteristics, facilitates rigorous

statistical analysis, enhances the validity of inferential statistics, prevents getting fewer participants than needed for rigorous statistical analysis, minimizes selection bias and allows results generalization to the entire population [19].

Research Instrument

A self-designed questionnaire was used to gather respondents' views on the relationship between various aspects of professional development (in-service training, teacher collegiality, mentorship, and differentiated learning) and teacher performance. Participants' demographic profiles (gender, age, highest level of education, and length of service) and professional profiles (number of professional development programs attended and type of professional development programs participated in) were also collected. The questionnaire was preferred because it facilitates data collection from a large population in a short time, ensures confidentiality, reduces interviewer bias, and is cost-effective [19].

Instrument's Reliability and Validity

The questionnaires' reliability was tested through piloting, using the Cronbach's Alpha index (α), and was found to be .94. α of .94 indicates a high level of internal consistency [20]. Fifteen teachers, selected randomly, participated in the piloting exercise, a threshold consistent with recommendations that a pilot study sample size should be approximately 10% of the projected sample size for the main study [21].

Data Analysis

The data collected were initially cleaned using Microsoft Excel and then transferred to the Statistical Package for the Social Sciences (SPSS) version 26 for analysis. Frequency distribution tables were generated to describe the socio-demographic characteristics of teachers and the distribution of their views. A Spearman's rank-order correlation analysis was conducted to examine the relationship between the four constructs of professional development (in-service training, teacher collegiality, mentorship, and differentiated learning) and teacher performance. Hypothesis testing assessed the statistical significance and direction of the relationships, while correlation coefficients provided estimates of effect size and strength, enabling confirmation or rejection of the null hypothesis.

RESULTS

Demographic Information

To contextualize the findings, respondents' demographic characteristics were collected and summarized in Table 2.

Table 2: Respondents' Socio-Demographic Characteristics

Variable	Frequency	%	Variable	Frequency	%
Gender			**Qualification**		
Male	71	51.8	Diploma	4	2.9
Female	66	48.2	Bachelor's Degree	131	95.6
Transgender	0	0	Master Degree	2	1.5
			PhD.	0	0
Age			**Years in service**		
0 - 25 Years	16	11.7	< 1 year	8	5.8
26 - 34 Years	58	42.3	1-5 years	55	40.1
35 - 44 Years	38	27.7	6-10 years	34	24.8
45 - 54 Years	23	16.8	11-15 years	23	16.8
> 55 Years	2	1.5	> 15 years	17	12.4

The sample consisted of 137 participants. The gender distribution was relatively balanced, with 51.8% male and 48.2% female respondents. There were no transgender participants.

In terms of age, the majority of respondents (42.3%) were aged between 26 and 34 years, followed by 27.7% in the 35–44 years bracket. Only 1.5% of the respondents were above 55 years old. Regarding educational qualifications, most respondents (95.6%) held a Bachelor's degree, while 2.9% had a Diploma and 1.5% had a Master's degree. None of the respondents reported holding a Ph.D. As for years of service, a significant proportion (40.1%) had 1–5 years of experience, followed by 24.8% with 6–10 years. Only 5.8% had less than one year of experience, and 12.4% had more than 15 years.

Correlation Analysis

A Spearman's rank-order correlation analysis was performed at a significance level of 0.05 to test the four hypotheses, and the results were presented in corresponding tables.

Hypothesis 1: There is no statistically significant relationship between in-service training and teacher performance in Mwala Sub-County, Machakos County, Kenya

Table 3: Relationship between In-service Training and Teacher Performance in Mwala Sub-County, Machakos County, Kenya

			Inservice Training	Teacher Performance
Spearman's rho	Inservice Training	Correlation Coefficient	1.000	.440**
		Sig. (2-tailed)	.	.000
		N	137	137
	Teacher Performance	Correlation Coefficient	.440**	1.000
		Sig. (2-tailed)	.000	.
		N	137	137

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 provides empirical evidence of a statistically significant relationship between in-service training and teacher performance. The Spearman's rho of 0.440 and a p-value of .000 at the $\alpha = .05$ level indicate a moderate positive correlation. Since the observed p-value is less than the significance threshold (.000 < .05), the null hypothesis ($H0_1$), which stated that there is no statistically significant relationship between in-service training and teacher performance, is thus rejected. The results confirm a statistically significant positive relationship between in-service training and teacher performance ($\rho = .440$, $p < .001$). This suggests that as teachers increasingly engage in in-service training programs, their instructional effectiveness and professional competencies improve correspondingly. It is hereby concluded that increased participation in in-service training programs is associated with improved teacher performance.

Hypothesis 2: There is no statistically significant relationship between teacher collegiality and teacher performance in Mwala Sub-County, Machakos County, Kenya.

Table 4: Relationship between Teacher Collegiality and Teacher Performance in Mwala Sub-County, Machakos County, Kenya

			Teacher Collegiality	Teacher Performance
Spearman's rho	Teacher Collegiality	Correlation Coefficient	1.000	.368**
		Sig. (2-tailed)	.	.000
		N	137	137
	Teacher Performance	Correlation Coefficient	.368**	1.000
		Sig. (2-tailed)	.000	.
		N	137	137

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 reveals that the calculated Spearman's rho (ρ) was .368, and the *p*-value of .000 at .05 level of significance. Since the obtained *p* is less than .05 (.000 < .05), then the null hypothesis ($H0_2$) was rejected. This indicates that there is a statistically significant relationship between teacher collegiality and teacher performance ($\rho = .368$, $p < .001$). This suggests that fostering a collaborative and supportive work environment among teachers can positively influence their effectiveness in the classroom. Hence, the study concluded that as teacher collegiality increases, there is a corresponding improvement in teacher performance.

Hypothesis 3: There is no statistically significant relationship between mentorship and teacher performance in Mwala Sub-County of Machakos County, Kenya.

Table 5: Relationship between Mentorship and Teacher Performance in Mwala Sub-County, Machakos County, Kenya

			Mentorship	Teacher Performance
Spearman's rho	Mentorship	Correlation Coefficient	1.000	.492**
		Sig. (2-tailed)	.	.000
		N	137	137
	Teacher Performance	Correlation Coefficient	.492**	1.000
		Sig. (2-tailed)	.000	.
		N	137	137

**. Correlation is significant at the 0.01 level (2-tailed).

Results in Table 5 show Spearman's rho of .492, and the corresponding *p*-value of .000, at α = .05. Since the obtained *p* is less than .05 (.000 < .05), then the null hypothesis ($H0_3$) was rejected. The results indicate a statistically significant positive relationship between mentorship and teacher performance in Mwala Sub-County, Machakos County, Kenya (ρ = .492, p < .001). This suggests that an increase in mentorship leads to an improvement in teacher performance, affirming that mentorship fosters effective teaching.

Hypothesis 4: There is no statistically significant relationship between differentiated learning and teacher performance in Mwala Sub-County, Machakos County, Kenya.

Table 6: Relationship between Differentiated Learning and Teacher Performance in Mwala Sub-County, Machakos County, Kenya

			Differentiated Learning	**Teacher Performance**
Spearman's rho	Differentiated Learning	Correlation Coefficient	1.000	.404**
		Sig. (2-tailed)	.	.000
		N	137	137
	Teacher Performance	Correlation Coefficient	.404**	1.000
		Sig. (2-tailed)	.000	.
		N	137	137

**. Correlation is significant at the 0.01 level (2-tailed).

The analysis in Table 6 shows a Spearman's rho of .404, and a corresponding *p*-value of .000, at the *α* = .05 level. With the observed *p* less than the set threshold of .05 (i.e., .000, .05), the null hypothesis H_{03} was rejected. The findings indicate there is a statistically significant positive relationship between differentiated learning and teacher performance in Mwala Sub-County, Machakos County, Kenya (ρ = .404, p < .001). This then implies that differentiated learning enhances teacher performance by promoting instructional effectiveness, learner engagement, and improved classroom outcomes.

DISCUSSION

Based on Hypothesis 1, it was observed that teachers who actively participated in in-service training programs demonstrated significantly higher levels of performance. This indicates that regular participation in in-service training programs equips teachers with updated pedagogical strategies, improves their content delivery, and fosters greater student engagement. This finding is consistent with those of Abakah [22] and Ehinola and Akomolafe [23], who reported that in-service training is positively associated with improved teacher performance, precisely in instructional planning and methodologies, student engagement, classroom management, subject matter expertise, and knowledge of teaching approaches, ultimately promoting teaching efficiency and effectiveness. To them, regular in-service training leads to improved instructional performance. Similarly, Anulika [24] and Mduma and Mkulu [25] observed a statistically significant positive correlation between in-service training and key teacher performance indicators like teaching strategies, instructional planning, lesson content delivery, student evaluation, and learner engagement. Gacinya [26] further affirmed that in-service training is significantly related to improved professional knowledge, classroom performance, skills, and teaching values and practices. However, Padilo et al. [27] believed that while teachers who engaged in PD activities improved their instructional planning and delivery, there was no significant relationship between PD activities and teaching competencies. Even though the positive relationship between in-service training and teacher performance is significant, its long-term impact ought to be evaluated within the context of the challenges confounding the sustainability of PD in Kenya. Mutua et al. [28] raise concerns regarding the sustainability and effectiveness of in-service training in Kenya, highlighting the need for regular retraining, targeted intervention strategies, and structured mentorship programs to enhance long-term teacher effectiveness. This perspective aligns with Darling-Hammond et al. [9], who contend that effective in-service training must be ongoing, job-embedded, and directly linked to teachers' instructional needs, rather than relying on one-time workshops.

On Hypothesis 2, the results indicated that there was a statistically significant relationship between teacher collegiality and teacher performance. This result is similar to that of Irene et al. [29], who established a statistically significant relationship between teacher collegiality and academic performance, a primary outcome of teacher performance in the classroom. Irene et al. [29] and Khasawneh et al. [30] report that when teachers engage in collegial relationships, they significantly improve their instructional practices and teaching methodologies, ultimately improving students' academic achievements. They benefit from peer support, knowledge exchange, and collective problem-solving, hence improved teaching practices. Similarly, Schwan et al. [31] found that teacher collaboration, structured as similar pairings (district-wise and in the same position), had a positive effect on improved instruction, collaboration, and positive

interaction. This resonates with Darling-Hammond et al. [9] that "by working collaboratively, teachers can create communities that positively change the culture and instruction of their entire grade level, department, school, and/or district" (p. 10). Xie et al., [32] further contend that teacher collaboration positively mediates teaching practices. This resonates with constructivism, which emphasizes the role of social interaction, collaboration, and shared experiences in learning, arguing that knowledge is actively constructed through meaningful engagement with peers [33]. Despite the positive correlation, the study acknowledged several challenges that could undermine the effectiveness of collegial collaboration. Macharia [34] warns that inadequate reflection, limited pedagogical content knowledge, student misconceptions, resource shortages, and an exam-focused teaching approach hinder effective professional growth and learning. Albeit the setback, evidence demonstrates that teacher collegiality is valuable for upskilling teachers.

On Hypothesis 3, in this study, it was observed that there was a statistically significant positive relationship between mentorship and teacher performance. The result of this study is similar to that of Parker et al. [35] and Cornelius et al. [36], who established that mentorship, particularly through peer support, collaboration, and specialized coaching, led to improvements in novice teachers' instructional practices. According to Toh et al. [37], mentorship fosters collaboration among educators, leading to overall organizational growth and improved learning outcomes. Collectively, the findings of the present study and those of prior studies. Similarly, Ehinola and Akomolafe [23] in Nigeria established a statistically significant positive relationship between mentorship strategies and teacher job performance. Their research indicated that teachers exposed to mentorship improved their teaching effectiveness, classroom management, and overall job satisfaction. Further, Mumo et al. [38] highlighted that mentorship programs provided opportunities to enhance the professional growth and development of student-teachers, but faced challenges such as inadequate mentor incentives and misaligned grades that did not accurately reflect their classroom performance. These findings align with constructionists, who posit that learning is an active, social process where knowledge is built through interaction and reflection [39] [33]. They hold that mentorship fosters a collaborative environment where teachers can exchange ideas, reflect on their practices, and apply new strategies in their classrooms. This agrees with Darling-Hammond et al. [35] that "coaching or other expert scaffolding can support the effective implementation of curricula, tools, and approaches…. teachers who receive coaching are more likely to enact desired teaching practices and apply them more appropriately…." (p. 13).

Based on Hypothesis 4, it was established that there was a statistically significant positive relationship between differentiated learning and teacher performance. The findings are consistent with those of Langelaan et al. [40], who reviewed preservice and in-service teacher programs that support differentiated instruction. Their study highlighted that effective programs incorporate active learning, collaboration, and reflection, which enhance teachers' ability to implement DI, ultimately improving instructional strategies and student engagement. Similarly, Bera and Mohalik [41] revealed that reflective practice enhances professional growth by fostering critical thinking, problem-solving skills, and continuous instructional improvement. Accordingly, the results are supported by Gudeta [42], who established that reflection and professional growth opportunities positively impact teacher performance. From a theoretical perspective, the findings align with the principles of adult learning theory, which emphasizes self-directed learning and the importance of tailoring professional development to meet the needs of adult learners [43]. Differentiated learning supports this theory by allowing teachers to engage in PD that aligns with their instructional goals. Similarly, constructivism further supports these findings by emphasizing that learning is an active, social process where teachers construct knowledge through collaborative and experiential learning opportunities [33] [39]. In addition, Macharia [34] found that reflective learning enabled chemistry teacher trainers to assess their teaching practices, identify gaps in pedagogical content knowledge, and adapt instructional methods to improve student learning.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The primary objective of this study was to investigate the relationship between professional development and teacher performance in public secondary schools in Mwala Sub-County, Machakos County, Kenya. A survey research design was used to conduct the study. Four hypotheses were formulated to guide the research. A self-designed questionnaire, whose reliability was found to be 0.94, was administered to 142 teachers sampled using simple random sampling from a targeted population of 471 teachers. Data analysis was done using Spearman's rank-order correlation (ρ) with the aid of SPSS software. Hypothesis testing was conducted to test the relationships between in-service training, teacher collegiality, mentorship, differentiated learning, and teacher performance. The study's results indicate a positive and statistically significant relationship between the four variables (in-service training, teacher collegiality, mentorship, and differentiated learning) and teacher performance in public secondary schools in Mwala Sub-County, Machakos County, Kenya.

The study established that teachers who participated in professional development programs demonstrated improvement in content delivery, classroom management, lesson planning, learner engagement, and overall instructional effectiveness. From the findings, the implication for practice is that for public secondary schools in the country to improve teacher performance, the key factor is not merely the availability of professional development programs, but the proper structuring, alignment, and utilization of development opportunities. This calls for a more structured, ongoing, and reflective approach to professional development. One-time training sessions may offer short-term benefits, but sustained, job-embedded learning opportunities are more likely to yield meaningful improvements in instructional practices.

RECOMMENDATIONS

Consistent with the findings of the study, four recommendations are derived for practice: First, the Ministry of Education and the Teachers Service Commission should revise the current teacher professional development policies to focus on structured and sustained in-service training programs. The programs should be informed by teacher performance needs and gaps, and implemented in a way that supports continuous growth.

Second, school and educational administrators should organize collaborative learning opportunities through expert-led workshops, mentorship, professional learning communities, retraining sessions, department/grade/school, and/or district-level workshops. Their implementation should be based on identified gaps in teachers' professional skills and knowledge, through a needs assessment to ensure the support is relevant and targeted.

Third, establishing independent monitoring and evaluation bodies to assess the effectiveness of TPD programs. These should follow the institutionalization of feedback mechanisms through tools such as performance reviews, classroom observations, teacher feedback surveys, and performance metrics, to assess what is working and provide timely improvements to training initiatives.

Finally, teachers should take an active role in their own professional growth by participating in mentorship relationships, peer mentoring programs, reflective practices, workshops, and enrolling in continuous learning opportunities. These activities create a supportive environment where teachers can discuss challenges, share strategies, and learn from one another, fostering a culture of collaborative growth within the school. In turn, this keeps them abreast of the evolving pedagogical practices, enabling them to respond effectively to the classroom needs.

AREAS OF FURTHER RESEARCH

i) A similar study should be conducted in other sub-counties to determine whether professional development continues to have an impact on teacher performance.

ii) Since the study focused on the impact of in-service training on teacher performance, a study should be conducted to examine how specific training types, such as seminars, subject-specific panels, and workshops, influence lesson planning, student engagement, and classroom management.

iii) A study should be conducted to explore the effectiveness of specific peer collaboration models, such as professional learning communities, on enhancing teacher performance across various subjects and teaching levels.

LIMITATIONS OF THE STUDY

Despite the relevance and rigor of this study, it is important to acknowledge several limitations. First, the study was limited to teachers from public secondary schools in Mwala Sub-County, and therefore, the findings may not be generalizable to teachers in private schools or other sub-counties with different contexts. Secondly, the study depended on respondents' honesty and cooperation. Although efforts were made to encourage openness, such as assuring anonymity and appealing for candid responses, the possibility of socially desirable answers cannot be ruled out. Thirdly, reliance on self-reported data introduces a potential risk of response bias, as the respondents may have underestimated or overestimated their professional development experiences or performance.

ETHICAL APPROVAL

Ethical approval for the study was obtained from the institutional scientific ethics review committee and the National Commission for Science, Technology and Innovation (NACOSTI). All research procedures adhered to established ethical standards and guidelines.

CONFLICT OF INTEREST

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

CONSENT TO PARTICIPANTS

Informed consent was obtained from all participants prior to their participation in the study. Participation was voluntary, and participants were assured of the confidentiality and anonymity of their responses.

FUNDING

The author(s) received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

[1] 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, 100304. https://doi.org/10.1016/j.ijedro.2023.100304

[2] Engida, M. A., Iyasu, A. S., & Fentie, Y. M. (2024). Impact of teaching quality on student achievement: student evidence. *Frontiers in Education*, *9*. https://doi.org/10.3389/feduc.2024.1367317

[3] Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2021). 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

[4] Thahir, M., Komariah, A., Kurniady, D. A., Suharto, N., Kurniatun, T. C., Widiawati, W., & Nurlatifah, S. (2021). Professional development and job satisfaction on teaching performance. *Linguistics and Culture Review*, *5*(S4), 2507–2522. https://doi.org/10.21744/lingcure.v5ns4.2046

[5] Friedman, A. (2018, October 4). *The Long-Term Effects of Ineffective Teachers*. Brooklyn Math Tutors. https://www.brooklynmathtutors.com/the-long-term-effects-of-ineffective-teachers

[6] Martin, J. (2018). Putting the spotlight on teacher performance. *The UNICEF education think piece series*, *35*.https://www.unicef.org/esa/sites/unicef.org.esa/files/2018-09/EducationThinkPieces_4_Teacher Performance.pdf

[7] Yariv, E. (2011). Deterioration in teachers' performance: Causes and some remedies. *World Journal of Education, 1*(1). https://doi.org/10.5430/wje.v1n1p81

[8] Yonas, V., Rupia, C., & Onyango, D. (2023). Classroom management Challenges facing teachers in enhancing students' academic achievement in public secondary schools in Tarime District. *East African Journal of Education Studies, 6*(1), 22–37. https://doi.org/10.37284/eajes.6.1.1048

[9] Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute. https://n9.cl/r5xib

[10] Kanya, N., Fathoni, A. B., & Ramdani, Z. (2021). Factors affecting teacher performance. *International Journal of Evaluation and Research in Education (IJERE), 10*(4), 1462. https://doi.org/10.11591/ijere.v10i4.21693

[11] Shikalepo, E. E. (2020). *Challenges facing teaching at Rural Schools: A review of related literature.* https://n9.cl/rwphu

[12] Wiliam, D. (2012). *How do we prepare our students for a world we cannot possibly imagine? Keynote speech*. SSAT National Conference, AAC Liverpool, UK, 4–5 December 2012

[13] Andafu, E. M. (2023). Evaluation of the teacher professional development (TPD) Programme in Kenya in the light of Knowles' conception of Andragogy. *Msingi Journal, 7*(1), 32–53. https://doi.org/10.33886/mj.v7i1.432

[14] Wafula, W. P (2023). *Challenges facing the implementation of effective teacher professional development programmes in Kenya.* https://www.researchgate.net/publication/369902982

[15] Mwove, P. N., Mwania, J. M., & Kasivu, G. M. (2023). The extent to which principals' use of transformational leadership style influences students' academic performance in public secondary schools in Kenya. *International Journal of Management Studies and Social Science Research, 05*(03), 56–64. https://doi.org/10.56293/ijmsssr.2022.4609

[16] Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.

[17], Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods, Quantitative and Qualitative Approaches*. ACT, Nairobi, 21(02), 2022.

[18] St. Olaf College (n.d). *Sample size. Institutional Effectiveness and Assessment*. https://n9.cl/wjtjun

[19] Terrell, S. R. (2022). *Writing a proposal for your dissertation: Guidelines and examples*. Guilford Publications.

[20] Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*. Sage Publications.

[21] Connelly, L. M. (2008). Pilot studies. *Medsurg nursing*, *17*(6), 411.

[22] 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/10.1016/j.ijedro.2023.100242

[23] Ehinola, G. B., & Akomolafe, B. B. (2022). In-service training programmes and mentoring for improving teachers' job performance in the North Senatorial District of Ondo State, Nigeria. *Int. J. Educ*. Res. Rev, 3, 1-7. https://n9.cl/b799t

[24] Anulika, A. G. (2020). In-service training as correlates of teachers' job performance in public secondary schools in Enugu State, Nigeria. *European Journal of Education Studies, 7*(11). https://doi.org/10.46827/ejes.v7i11.3363

[25] Mduma, E. R., & Mkulu, D. G. (2021). Influence of teachers' professional development practices on job performance in public secondary schools: A case of Nyamagana District, Mwanza - Tanzania. *International Journal of English Literature and Social Sciences, 6*(1), 215–230. https://doi.org/10.22161/ijels.61.26

[26] Gacinya, J. (2024). The influence of continuous in-service training and teachers' classroom performance. Case study of public secondary schools in Kicukiro District-Rwanda. *The Strategic Journal of Business & Change Management,* 11 (1), 468 – 482. http://dx.doi.org/10.61426/sjbcm.v11i1.2863

[27] Padillo, G. G., Manguilimotan, R. P., Capuno, R. G., & Espina, R. C. (2021). Professional development activities and teacher performance. *International Journal of Education and Practice*, *9*(3), 497–506. https://doi.org/10.18488/journal.61.2021.93.497.506

[28] Mutua, M. M., Koech, P. K., & Kimiti, R. P. (2022). Effects of principals' professional development practices on teachers' job performance in public secondary schools in Kathiani Sub-County. International *Journal of Innovative Research and Advanced Studies,* (09)01, 64–69. https://www.ijiras.com/2022/Vol_9-Issue_1/paper_10.pdf

[29] Irene, T. S., Chepkonga, S., & Gori, J. M. (2020). Relationship between Teachers Collegiality and Academic Performance of Pupils in KCPE in Central Division, Narok North Sub-County, Kenya. *International Journal of Research Publications, 65*(1). https://doi.org/10.47119/ijrp1006511120201580

[30] Khasawneh, Y. J. A., Alsarayreh, R., Ajlouni, A. a. A., Eyadat, H. M., Ayasrah, M. N., & Khasawneh, M. a. S. (2023). An examination of teacher collaboration in professional learning communities and collaborative teaching practices. *Journal of Education and e-Learning Research*, *10*(3), 446–452. https://doi.org/10.20448/jeelr.v10i3.4841

[31] Schwan, A., Wold, C., Moon, A., Neville, A., & Outka, J. (2020). Mentor and new teacher self-perceptions regarding the effectiveness of a statewide mentoring program. *Critical Questions in Education, 11*(3), 190–207. https://www.researchgate.net/publication/347932544

[32] Xie, W., Sui, Y., Liu, X., & Liu, S. (2023). Effects of teacher collaboration on teaching practices in China and England: A structural equation model with TALIS 2018 data. *SAGE Open, 13*(2), 215824402311779. https://doi.org/10.1177/21582440231177908

[33] Warfa, A. O., & Machyo, R. B. (2018). *Philosophy of education: A handbook for teachers*. East Africa: Falcon Books

[34] Macharia, M. W. (2020). *Professional learning and development through reflective practice: Lived experiences of Kenyan chemistry county teacher trainers*. https://doi.org/10.26199/acu.8vyvv

[35] Parker, A. K., Zenkov, K., & Glaser, H. (2021). Preparing school-based teacher educators: mentor teachers' perceptions of mentoring and mentor training. *Peabody Journal of Education, 96*(1), 65–75. https://doi.org/10.1080/0161956x.2021.1877027

[36] Cornelius, K. E., Rosenberg, M. S., & Sandmel, K. N. (2019). Examining the impact of professional development and coaching on mentoring of novice special educators. *Action in Teacher Education, 42*(3), 253–270. https://doi.org/10.1080/01626620.2019.1638847

[37] Toh, R. Q. E., Koh, K. K., Lua, J. K., Wong, R. S. M., Quah, E. L. Y., Panda, A., ... & Krishna, L. K. R. (2022). The role of mentoring, supervision, coaching, teaching, and instruction on professional identity formation: A systematic scoping review. *BMC Medical Education, 22*(1), 531. https://doi.org/10.1186/s12909-022-03589-z

[38] Mumo, R., Mwangangi, L., Warfa, A. O., Ondigi, S., & Bwire, A. (2024). Opportunities and Challenges in Developing the 21st Century Teacher: Case of Kenyatta University Mentorship Programme in Matungulu Sub-County, Machakos County-Kenya. *Journal of African Interdisciplinary Studies, 8*(4), 24–36.

[39] Mcleod, S. (2023). Constructivism learning theory & philosophy of education. *Simply Psychology.* https://www.simplypsychology.org/constructivism.html

[40] Langelaan, B. N., Gaikhorst, L., Smets, W., & Oostdam, R. J. (2024). Differentiating instruction: Understanding the key elements for successful teacher preparation and development. *Teaching and Teacher Education*, 140, 104464. https://doi.org/10.1016/j.tate.2023.104464

[41] Bera, S. & Mohalik, R. (2015). *Reflective practice in the professional development of teachers*. https://n9.cl/d7lzz

[42] Gudeta, D. (2022). Professional development through reflective practice: The case of Addis Ababa secondary school EFL in-service teachers. *Cogent Education, 9*(1). https://doi.org/10.1080/2331186x.2022.2030076

[43] Bouchrika, I. (2022). *The andragogy approach: Knowles' adult learning theory principles*. Research.com. https://research.com/education/the-andragogy-approach