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Factors Affecting Teacher Professional Development in Somalia

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Abstract

This study examines the factors affecting teacher professional development in Somalia, focusing on resource availability and training programs. The study employs a quantitative research design, analyzing survey data from 96 teachers across various regions. The findings indicate a significant positive relationship between resource availability and teacher professional development, with a beta coefficient of .305 ($p < 0.01$). Additionally, training programs demonstrate a substantial contribution to professional development, with a beta coefficient of .544 (p

< 0.01). These results underscore the importance of adequate resources and well-structured training programs in enhancing teachers' professional growth. Despite these positive correlations, the study highlights challenges such as limited resources and inconsistent access to training, which hinder effective professional development. The study concludes with recommendations for policymakers to prioritize resource allocation and the development of high-quality training programs tailored to teachers' needs.

Keywords: Teacher Professional Development, Training Programs, Resource Availability, Policy Marker, Attitude, Competence

1. Introduction

Teacher professional development is crucial for enhancing educational systems worldwide. It plays a pivotal role in empowering teachers to become change agents in their communities (McCormack, 2019), inspiring students, improving performance, and impacting student learning and behavior (Duran *et al.*, 2020) ^[10]. Teachers are key in shaping society and fostering sustainable development (Brandenburg & Gervasoni, 2016) ^[9]. Continuous professional development is essential in the knowledge economy era, where teachers need to constantly update their skills and knowledge to guide students effectively (Polly, 2017) ^[12]. The system of professional development for teachers focuses on their personal and professional growth, aiming to deepen their understanding of socio-cultural and educational contexts (Prasko, 2017) ^[13]. By providing dynamic professional development with a strong content focus, active learning, collaboration, and ongoing support, teachers can be better equipped to meet the evolving demands of education and positively influence student outcomes.

In-service teacher training programs have been shown to enhance teachers' professional competencies, emphasizing the need for continuous training to improve skills and meet current needs (Primary MFL teachers – education, training and professional development, 2012) ^[14]. Pedagogical training programs in higher education institutions lead to high satisfaction among teachers and positively influence their perceptions of teaching practices and professional development (Sylenko, 2023) ^[15]. Additionally, the National Teacher Training Project in China highlights the importance of both local and nonlocal programs in providing teachers with context-specific knowledge and skills for immediate application, as well as ensuring continuous professional development in the long term ("undefined," 2012) ^[16]. Furthermore, a training program for early education teachers resulted in a significant increase in knowledge, skills, work motivation, and self-efficacy, showcasing the multiple benefits of professional training in supporting teachers' personal and professional growth, improving teaching practices, and enhancing early education settings (Jain *et al.*, 2010) ^[11].

Resource availability significantly impacts teacher training effectiveness. Studies in Nigeria and Sri Lanka highlight the importance of adequate physical resources like internet, libraries, and laboratories in enhancing the attainment of training institute goals and facilitating online teacher training courses (Chamani Gunasekera & R. Balasubramani, 2020). Additionally, the availability of teaching resources such as play toys, nursery books, and classrooms positively influences teachers' job

performance in early childhood schools, emphasizing the need for consistent evaluation and donation of resources by government and NGOs (Wanyina, 2015). Furthermore, the challenges posed by inadequate resources, especially in rural areas, lead to a lack of trained teachers and poor acquisition of competencies by learners, underscoring the critical role of resource availability in ensuring effective teacher training and education outcomes (Sharon Kim, Mahjabeen Raza & and Edward Seidman, 2019).

Teacher professional development in Africa is crucial for enhancing educational practices and adapting to the evolving demands of the 21st-century learning environment. Studies emphasize the significance of quality professional development programs in promoting effective technology integration (Pashmforoosh, 2022), addressing the challenges faced by educators in implementing new teaching methods ("The case of a teacher education college," 2022), and preparing academics for online teaching and learning (Modise & Zawacki-Richter, 2023). Initiatives like the TESSA MOOC have shown the potential of online platforms in providing practical teaching support to educators in sub-Saharan Africa (Robinson *et al.*, 2019). The need for continuous professionalization of teachers to meet the higher standards of learning in the 21st century, especially in the context of the Fourth Industrial Revolution, underscores the importance of ongoing professional development efforts (Teo, T., Unwin, S., Scherer, R., & Gardiner, V. (2021). By focusing on tailored training interventions and innovative approaches, African educational institutions can empower teachers to excel in their roles and positively impact student learning outcomes. Therefore, the study aims to reach these two objectives: **(1) To evaluate the impact of the training programs on teacher professional development (2) To assess the effectiveness of availability of resources on teacher professional development.**

2. Literature Review

The professional development of teachers in Africa is influenced by a myriad of factors that intersect at individual, institutional, and systemic levels. A critical examination of the literature reveals several key themes: resource availability, training needs assessment.

2.1 Resource availability on teacher professional development

Resource constraints are a pervasive issue impacting teacher professional development across the continent. For instance, Wilson & Frances (2019) highlighted that continuing professional development (CPD) for primary care doctors in Uganda is hampered by inadequate resources and infrastructure. This scenario mirrors the challenges faced by educators who often lack access to essential teaching materials and modern educational technologies. Similarly, Sarobidy, R. R., McIvor, C., Commons, P., Chamberlain, M. A., & O'Connor, R. J. (2020). identified limited staff capacity and treatment space as significant barriers in Madagascar's healthcare system, which can be extrapolated to educational settings where overcrowded classrooms and insufficient teaching aids are common.

The impact of resource availability on teacher professional development is multifaceted, encompassing access to educational materials, technological tools, mentorship programs, and institutional support. A critical analysis of the

literature reveals several key themes: the importance of digital resources, the role of mentorship and peer interaction, and the influence of institutional frameworks on professional growth. Digital resources have emerged as a pivotal element in teacher professional development. Faggioni *et al.* (ISMIRAWATI *et al.*, 2018,) highlighted the scarcity yet potential utility of free immunology educational software for enhancing learning among health professionals. Similarly, (Cooksey *et al.*, 2023) ^[18] demonstrated that an online continuing professional development (CPD) program significantly improved pharmacy preceptors' teaching abilities, with 92% reporting positive impacts on their clinical teaching practices. This underscores the transformative potential of well-designed digital resources in fostering effective teaching methodologies.

In low- and middle-income countries (LMICs), digital platforms are particularly valuable due to limited access to traditional CPD opportunities. Guillaume *et al.* (2022) ^[19] found that mobile-social learning platforms facilitated virtual peer-to-peer and mentor interactions, leading to improved knowledge sharing and clinical skills among healthcare workers in LMICs. This suggests that mobile technology can bridge gaps in resource availability by providing accessible and interactive learning environments. Mentorship is another critical factor influencing teacher professional development. (Sim *et al.*, 2022) conducted a needs assessment within an academic psychiatry department and found that mentorship quality was significantly correlated with academic self-efficacy ($r = .33$; $p < .01$), which in turn was associated with higher academic productivity ($r = .44$; $p < .001$) and career satisfaction ($r = .29$; $p < .05$). These findings highlight the importance of structured mentorship programs in enhancing teachers' confidence and professional output. Institutional support also plays a crucial role in resource availability for teacher development. Han *et al.* (Guient, n.d) explored faculty experiences related to career advancement in academic medicine and identified unequal access to resources as a significant barrier to career progression for clinical faculty compared to their research-focused counterparts. This disparity underscores the need for equitable distribution of resources within institutions to ensure all faculty members have opportunities for professional growth. Moreover, (Berndt *et al.*, 2017) ^[22] systematic review on distance learning strategies for rural allied health practitioners revealed that technology-based CPD options are highly valued but often face challenges related to interactivity, cost, and educational design quality. Despite these challenges, distance learning remains a viable solution for overcoming geographical barriers to professional development.

The effectiveness of peer-review systems in evaluating teaching performance further illustrates the impact of resource availability on teacher development. (Gandomkar & Rooholamini, 2023) analyzed peer-review practices in Canadian and Australian universities and found that well-structured peer-review systems can provide comprehensive evaluations that enhance teaching quality by identifying areas needing improvement. Analyzed peer-review practices in Canadian and Australian universities and found that well-structured peer-review systems can provide comprehensive evaluations that enhance teaching quality by identifying areas needing improvement.

Lastly, (ERDEMÇİ & ELÇİÇEK, 2022) study on online teaching during the COVID-19 pandemic emphasized the

importance of support services for both teachers and students in maintaining high-quality education under constrained conditions. The study's findings suggest that robust support mechanisms are essential for maximizing the benefits of available resources.

To conclude the availability of resources significantly impacts teacher professional development across various dimensions including digital tools, mentorship programs, institutional support, and evaluation systems. Digital platforms offer scalable solutions for CPD but require careful design to ensure interactivity and relevance. Mentorship enhances self-efficacy and productivity among educators while equitable resource distribution within institutions is crucial for fostering inclusive professional growth environments. Peer-review systems provide valuable feedback mechanisms that can improve teaching quality when effectively implemented.

2.2 Training program on teacher professional development

Programs are essential for enhancing educators' knowledge bases, which include content knowledge, pedagogical content knowledge, and procedural knowledge (Quilapio & Callo, 2022) ^[4]. These programs are tailored to meet the specific needs of teachers, students, and schools, ensuring personalized and effective development initiatives (Bandara, 2018) ^[1]. However, not all training programs are equally effective in improving teacher professionalism, with some, like Continuous Professional Development activities, requiring further enhancement (Budiwati, 2019) ^[2].

In recent years, there has been a shift towards more learner-centered approaches in professional development, such as the implementation of online, open-learning courses like SMART Teaching 3.0, which emphasize bottom-up, self-directed learning for EFL teachers (Lee & Heyoung, 2016) ^[3]. Effective professional development should incorporate elements like content focus, active learning, coherence, duration, and collective participation to significantly impact teachers' knowledge, skills, attitudes, beliefs, and ultimately, student learning outcomes (Ubit, 2022) ^[6].

Successful professional development programs are characterized by being sustained, collaborative, subject-specific, drawing on external expertise, and practice-based, with the active involvement of teachers being vital for their success (Sims & Fletcher-Wood, 2020) ^[5]. Understanding teachers' attitudes towards various training modes, including online programs, is crucial for tailoring effective career development initiatives that align with their expectations and enhance program effectiveness (Van *et al.*, 2022) ^[7].

Training needs assessments are crucial for tailoring CPD programs to address specific gaps in knowledge and skills. (Masresha *et al.*, 2021) ^[27] conducted a survey across nine African countries revealing that nearly all respondents identified skill gaps requiring training. This finding underscores the importance of systematic needs assessments to inform CPD initiatives effectively. In line with this, (Nicol *et al.*, 2019) ^[28] emphasized the necessity for pre- and in-service training to enhance data management competencies among healthcare workers in LMICs—a principle equally applicable to teacher training programs.

2.3 The effectiveness of teacher professional development

The literature surrounding teacher professional development (PD) reveals a complex interplay of factors influencing its

effectiveness. Central to this discourse is the recognition that organizational support plays a pivotal role in shaping PD outcomes. Nwoko *et al.* (2023) ^[33] emphasize that teachers' occupational wellbeing significantly impacts their professional performance and retention, suggesting that supportive work environments are essential for fostering effective teaching practices. This finding is corroborated by Marufu *et al.* (2021) ^[34], who identify the organizational environment as a critical domain influencing nurse retention, paralleling the challenges faced by educators. Furthermore, Almarwani and Alzahrani (2023) ^[35] provide a systematic review highlighting how various factors—including years of experience, workplace environment, and educational level—affect clinical competence among nurses (Chang E., Li H., Zheng W., Zhou L., Jia Y., Gu W., Cao Y., Zhu X., Xu J., Liu B., You M., Liu K., Wang M., Huang W. (2024) ^[36]. This analysis can be extrapolated to teaching, where experience and educational background similarly shape teachers' competencies and confidence levels in delivering quality education.

Socio-emotional competence emerges as another significant factor affecting teacher PD. The need for teachers to possess strong emotional intelligence to manage classroom dynamics effectively is well-documented. Nwoko *et al.* (2023) ^[33] assert that teachers' self-efficacy in managing behavior directly correlates with their occupational wellbeing (Forsetlund L., O'Brien M.A., Forsén L., Reinart L.M., Okwen M.P., Horsley T., Rose C.J. (2021) ^[38]. This correlation underscores the importance of integrating socio-emotional learning into PD programs to enhance teachers' abilities to create conducive learning environments.

Moreover, Chang *et al.* (2024) ^[36] explore the economic implications of educational interventions, suggesting that cost-effective strategies can lead to improved educational outcomes. This highlights the necessity for policymakers to invest in targeted PD initiatives that not only improve teacher competencies but also consider budgetary constraints.

In terms of methodological rigor, many studies reviewed employ robust systematic approaches or meta-analyses, ensuring high-quality evidence is presented. For instance, Zhang *et al.* (2014) ^[37] conducted a meta-analysis examining health literacy's impact on medication adherence, revealing a statistically significant relationship albeit with weak effect sizes. Similarly, systematic reviews focusing on educational interventions provide nuanced insights into what constitutes effective PD.

The synthesis of these findings suggests that effective PD must be multifaceted addressing not only instructional strategies but also the emotional and organizational contexts in which teachers operate. Forsetlund *et al.* (2021) ^[38] further argue that educational meetings can lead to improved compliance with desired practices among healthcare professionals, which may have analogous implications for teaching practices when PD is structured effectively.

In conclusion, the synthesis of current literature indicates that several interrelated factors influence teacher professional development. Organizational support is paramount; without it, even the most well-designed PD programs may falter in their implementation and effectiveness. Furthermore, enhancing teachers' socio-emotional competencies should be an integral part of PD initiatives to foster resilience and adaptability in increasingly challenging educational environments.

The evidence suggests a pressing need for tailored PD strategies that recognize individual teacher needs while also addressing systemic barriers within educational institutions. Future research should continue to explore these dynamics further, particularly focusing on longitudinal studies that assess the long-term impacts of various PD models on teacher efficacy and student outcomes.

Based on the above discussion the study proposed the following two hypotheses:

H1- There is statistical significance between resource availability and teacher's professional development (at p -value < 0.05).

H2- There is statistical significance between training programs and teacher's professional development (at p -value < 0.05).

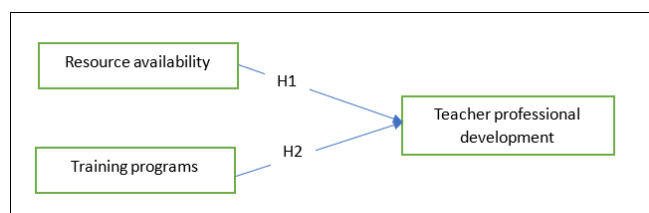


Fig 1: Research model

3. Methods

This study employed a cross - sectional research design to investigate the factors affecting teacher professional development in Somalia. A cross-sectional study is a type of observational research that analyzes data of variables collected at one given point in time across a sample population or a pre-defined subset. The study targeted teachers and lecturers across various educational institutions in Somalia. A total of 96 teachers participated in the study, providing responses at multiple points over a specified period. The sample was selected using a stratified random sampling method to ensure representation from different regions and school types within Somalia. A survey questionnaire was developed as the instrument for data collection. Items used related to resource availability, training program and teacher's professional development. A five-point Likert scale was used for those items where 5 represented strongly agree and 1 represented strongly disagree responses using Google forms. In ensuring reliability, the study found 0.945 which is high reliable. Data was analysis using linear regression.

4. Result and discussion

4.1 Profile Data

The majority of the respondents are male (91.7%). There are only a small number of females (8.3%). Most of the teachers have a Bachelor's degree (62.5%), followed by Master's degree (31.3%), PhD (5.2%), and Diploma (1.0%). The largest age group is 20-35 years old (63.5%), followed by 36-45 years old (30.2%) and above 45 years old (6.3%). Almost half of the teachers have 3-9 years of experience (43.8%), with a similar number having 10-20 years (44.8%). Only a small number have more than 20 years of experience (11.5%). The most common subject areas are scientific and math subjects (54.2%), followed by Islamic subjects (17.7%), Languages (15.6%), and Geopgraphy and history (12.5%).

Table 1: Profile data

		Frequency	Percentage (%)
Gender	Male	88	91.7%
	Female	8	8.3%
Educational level of the students	Diploma	1	1.0%
	Bachelor degree	60	62.5%
	Master degree	30	31.3%
	PhD	5	5.2%
Age or respondents	20-35 years	61	63.5%
	36-45 years	29	30.2%
	Above 45 years	6	6.3%
What is the teacher experience?	3-9 Years	42	43.8%
	10-20 years	43	44.8%
	More than 20 years	11	11.5%
What is the subject do you teach?	Scientific and math subjects	52	54.2%
	Languages	15	15.6%
	Islamic subjects	17	17.7%
	Geopgraphy and history	12	12.5%

4.2 Descriptive Statistics

The study's findings on factors affecting teacher professional development in Somalia. It shows that resource availability has a low average score of 2.17, indicating limited resources for professional development, with minimal variability among respondents. In contrast, training programs have a moderate average score of 3.53, suggesting they are more accessible, though there is greater variability, indicating differences in access or perception. Teacher professional development itself has an average score of 3.17, reflecting moderate engagement in development activities, with some variability. Overall, the results suggest a need to improve resource availability and ensure equitable access to training programs to enhance teacher professional development across the region.

Table 2: descriptive statistics of resource availability, Training programs and teacher professional

	N	Minimum	Maximum	Mean	Std. Deviation
Resource availability	96	1.00	5.00	2.1689	.72267
Training programs	96	1.00	5.00	3.5279	.89066
Teacher professional development	96	1.00	5.00	3.1658	.75621

4.3 Hypotheses Test Results

Hypothesis 1 proposes that there is a positive relationship between resource availability and teacher professional development. resource availability contributes teacher professional development ($\beta = .305$; $p < 0.01$), thus supporting Hypothesis1. The findings are consistent with existing literature that emphasizes the critical role of resources in facilitating effective professional development. Resources such as financial support, educational materials, infrastructure, and skilled human resources are essential for creating an environment conducive to continuous learning and professional growth (Desimone, 2009; Darling-Hammond *et al.*, 2017). The positive impact of resource availability suggests that when teachers have access to necessary resources, they are better equipped to engage in professional development activities that enhance their teaching skills and knowledge.

Hypothesis 2 proposes a positive relationship between training programs and teacher professional development. Training programs had a strong contribution to teacher's professional development ($\beta = .544$; $p < 0.01$); thus, supporting Hypothesis 2. Training programs are a critical component of professional development for teachers. They provide structured opportunities for teachers to acquire new skills, knowledge, and teaching methodologies that are essential for adapting to evolving educational demands (Desimone, 2009). The strong contribution of training programs to professional development, as evidenced by the study, underscores their role in enhancing teachers' instructional practices and their ability to meet diverse student needs (Guskey, 2002).

Table 3: Regression analysis

Model	R	R Square	Beta	t	Sig.
Resource	0.725	0.525	.305	3.880	.000
Training			.544	6.918	.000

a. Dependent Variable: Teacher

Table 4: Summary of support hypotheses

Hypothesis	Findings
H1- There is statistical significance between resource availability and teacher's professional development (at p-value <0.05).	Supported
H2- There is statistical significance between training programs and teacher's professional development (at p-value <0.05).	Supported

5. Conclusion and Recommendations

The study highlights significant disparities in the factors influencing teacher professional development in Somalia. Resource availability is notably low, suggesting that teachers often lack the necessary materials and infrastructure to support their professional growth effectively. Although training programs are relatively more accessible, there is substantial variability, indicating inconsistent availability or quality of training across different regions or institutions. This variability may affect teachers' ability to participate in professional development activities, as evidenced by the moderate average score in this area. Overall, while there are some opportunities for training and development, the limited resources and variability in training access could hinder the overall professional growth of teachers in Somalia. The study suggests the following recommendations:

1. **Increase Resource Allocation:** To enhance teacher professional development, it is crucial to improve the availability of resources. This could involve increasing funding for educational materials, infrastructure, and technological tools that support teacher development.
2. **Standardize Training Programs:** Implementing standardized training programs across the country can help reduce variability and ensure that all teachers have access to high-quality professional development opportunities, regardless of their location.
3. **Enhance Policy Support:** Strengthening policy frameworks that prioritize teacher professional development can help ensure sustained investment and attention to this critical area. Policies should focus on both resource provision and the creation of comprehensive training curricula.
4. **Leverage Technology:** Utilizing digital platforms and online resources can provide teachers with flexible and

accessible professional development opportunities, particularly in areas where physical resources are scarce.

5. **Engage Stakeholders:** Collaborate with local and international stakeholders, including government agencies, non-governmental organizations, and educational institutions, to support and finance initiatives aimed at improving teacher development.

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