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Abstract

Purpose: The persistent academic underperformance in public secondary schools in Kenyan rural areas has raised concerns among educators, policymakers, and local communities. The purpose of the study is to evaluate how teacher professional training and development influence academic performance. One of the key factors believed to have contributed to this challenge is the lack of sufficient and effective professional training and development programs for teachers. There is a growing need to examine how teachers' professional training and development influence students' academic outcomes. The problem this study seeks to address is the unclear and under-researched relationship between teachers' professional development and students' academic performance in Ndhiwa Sub-County.

Methodology: The study used descriptive research design and 15 public secondary schools, 113 teachers and 522 students were involved in the study as study respondents. The study used document analysis and semi structured questionnaires to collect the quantitative data, which was analyzed through descriptive statistics (frequencies and percentages).

Findings: The study reveals that teachers' professional training and development have a significant impact on students' academic performance in public secondary schools in Ndhiwa Sub-County. The findings also indicated that teachers who undergo continuous professional development are better equipped with modern teaching strategies, content knowledge, and student engagement techniques, which in turn positively influence students' academic outcomes. Teachers with higher levels of training and access to ongoing professional development demonstrate improved classroom management, increased use of learner-centered methodologies, and more effective assessment technique.

Unique Contribution to Theory, Practice and Policy: From the study findings, the study recommends that schools and educational authorities should develop more structured and regular Continuous Professional Development (CPD) programs that focus on subject-specific training, pedagogical skills, and updated teaching methodologies. This is because the study findings likely indicate that teachers who engage in regular training and development show better performance in student outcomes. The education policy makers should come up with the programs that forge partnerships between secondary schools and local universities or teacher training colleges to provide advanced training opportunities and access to educational research.

Keywords: *Teachers, Professional Training, Development, Students, Academic Performance, Public Secondary Schools*

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INTRODUCTION

A school is the optimal environment for students to acquire and refine their social, emotional, and educational competencies. In order to provide students with a high-quality education, educational institutions endeavor to recruit qualified personnel. Teachers, parents, pupils, and administrators are all profoundly concerned about the efficacy of schools. In the views of Martinez (2007) academic performance is the outcome of the learners' efforts, which is also depicted in school's overall performance. Performance is influenced by a variety of variables, including qualifications and experience of the teaching staff (Griggs, 2009). Teachers play a critical role in shaping students' academic outcomes, particularly through their professional competence. In Kenya, there has been increasing concern over the quality of education, especially in rural regions like Ndhiwa Sub-County, Homa Bay County. Ndhiwa Sub-County, located in Homa Bay County, has witnessed fluctuating student academic performance, particularly in secondary schools.

The performance of Ndhiwa Sub County within Homabay County in the Kenya Certificate of Secondary Education has been subpar for the past four consecutive years, as indicated by the K.C.S.E Result analysis on July 5, 2019, page 3. The analysis indicates that for the past four years, the mean result in 75% of the 52 secondary schools in Ndhiwa Sub County has not exceeded the pass mark. Therefore, the NGOs, political societies, religious organizations, and economic institutions have been at the forefront of efforts to guarantee optimal performance (Ndhiwa, 2018). The free Secondary Education Funds have been utilized to acquire instructional and other educational provisions, as well as to conduct workshops for teachers to enhance their capacity to deliver quality teaching (Ndhiwa Sub County F.S.E. performance, 2023).

Despite these endeavors, the performance of this sub-county has never improved, and it is therefore believed that certain institutional factors are at play. Moreover, the government and various stakeholders have attempted to improve performance through infrastructural development and curriculum reforms. However, one of the overlooked aspects of educational reform is the professional development and continuous training of teachers. A review of studies conducted in various regions of Kenya reveals a positive correlation between teachers' professional development and students' academic performance.

Studies by Kamindo, (2008) and Waweru and Orodho, (2014) show that teachers who engage in continuous professional development programs are more effective in delivering curriculum content and managing classrooms, leading to better student performance. This study is motivated by the need to examine how professional training and development of teacher affect student achievement.

Problem Statement

The performance of Ndhiwa Sub County within Homabay County in the Kenya Certificate of Secondary Education has been subpar for the past four consecutive years, as indicated by the K.C.S.E Result analysis on July 5, 2019, page 3. Through this analysis, the mean result in 75% of the 52 secondary schools in Ndhiwa Sub County has not exceeded the pass mark. Consequently, the government and various stakeholders have attempted to improve performance through infrastructural development and curriculum reforms. Despite the ongoing efforts to improve educational outcomes in Kenya, public secondary schools in Ndhiwa Sub-County, Homa Bay County, continue to exhibit below-average academic performance, particularly in national examinations such as the Kenya Certificate of Secondary Education

(KCSE). The persistent underperformance has raised concerns among educators, policymakers, and local communities. One of the key factors believed to contribute to this challenge is insufficient and effective professional training and development programs for teachers. Many teachers in the region have limited access to continuous professional development opportunities, such as in-service training, workshops, and mentorship programs, which are essential for enhancing their pedagogical skills, subject mastery, and overall teaching effectiveness. The result findings are indicated in the table below:

Table 1: Principals / Teachers Level of Education

Teacher category/level	N	Diploma	degree	Masters	PhD
Principals	15	4	9	2	-
Teachers	113	21	90	2	-
Total	126	25	99	4	

Source: Author

Table 2: Attendance of Professional Training and Development

Teacher category/level	N	Seminars	Workshops	CEMASTE A
Principals	15	9	13	3
Teachers	113	13	21	14
Total	126	22	34	17

Source: Author

From table 2 above there is need for professional training and development for teachers,

Consequently, students' academic performance has remained suboptimal, with low pass rates and minimal progression to higher education institutions. There is a growing need to examine how teachers' professional training and development influence students' academic outcomes. The problem this study seeks to address is the unclear and under-researched relationship between teachers' professional development and students' academic performance in Ndhiwa Sub-County.

LITERATURE REVIEW

The primary objective of professional development is to enhance the teachers' content knowledge and that of their students (Weiss, 2009). Based on Bennel & Akyeampong (2007), career structures are rendered more appealing and advantageous to educators through professional training and development. At the same time, In-service training (INSET) enhances the self-efficacy and morale of teachers. The introduction of FPE necessitated the provision of seminars or short-term courses to head teachers, as they were transformed into administrators, accountants, record keepers, and supervisors (Kamindo, 2008). Professional development and training necessitate adequate time, which must be allocated for the purpose of organizing, directing, and purposefully controlling the subject matter and pedagogy (Guskey & Yoon, 2009).

Bennel and Akyeampong (2007) contend that teachers do seem to possess a greater sense of self-assurance in their abilities. Professional training and development were implemented in New Zealand to address the disparity between the excellent and dismal performance of students. During each week, facilitators, who were referred to as trainers, conducted classroom observations at schools. Additionally, the facilitators instructed school leaders who rendered

additional assistance to their counterparts (Meissel, Parr & Timperley, 2016). For a period of two years, elementary school science instructors engaged in professional training & development. Additionally, numerous seminars were conducted on pertinent pedagogy. This enhanced scientific performance (Johnson & Fargo, 2014). Akiba and Liang (2016) contend that professional development necessitates the coordination of conferences, informal communication, and teacher collaboration. In accordance with Campbell and Malkus (2011), professional training entails the provision of specialized training to teachers on Mathematics content and its pedagogy, as well as educational leadership. This training is subsequently conveyed to students, thereby enhancing math standards.

Numerous studies have demonstrated that productivity and retention are positively correlated with professional training and development, (Walsh and Taylor 2007). Quality output and development are typically associated with the utilization of official trainings and courses. It is crucial to acknowledge that the likelihood of teachers remaining in the profession may be significantly increased by high-quality professional development, particularly in the areas of mentoring or induction (TALIS, 2013). Students' academic performance is significantly influenced by their teachers (Musau & Migosi, 2015). The academic performance of students in a school is significantly influenced by the availability of professionally trained instructors (Akinsolu, 2010). Consequently, it is crucial for any organization to recruit and employ competent personnel. According to Olowoyeye and Alonge (2014), teachers who possess subject mastery improve the academic performance of their students. This is because a teacher who is knowledgeable about the subject matter can confidently present the correct content to learners with a proper explanation as a result of receiving adequate training.

LinkedIn's (2018), claimed that professional training and development helps to overcome performance gaps, succession planning, recruitment and retention. Same LinkedIn's (2021), asserts that professional training and development help companies retain employees for twice as long. In my own opinion, professional training and development is very important to all teachers and therefore, there is need for all teachers to attend trainings. Different scholars have different views on this professional training and development and therefore, more research needed.

The investigation is directed by Watson's theory of learning. The theorist emphasizes the significance of comprehending the brain and its operations, as well as the explanation of learning. This theory posits that individuals acquire their behavior through their interactions with external environmental stimuli. He was of the opinion that the reactions of individuals in a variety of circumstances were predetermined by the overall experiences that had shaped their reactions. Teachers are cognizant of the fact that they will encounter students who are challenging to manage at any given moment. However, through appropriate training and development, teachers acquire the ability to manage the conduct of these students, which can occasionally be exceedingly challenging to manage. This is accomplished by undergoing training in psychology, counseling, and guidance.

METHODOLOGY

Research Design

The study designs that were used were descriptive research design. For the purpose of investigating one or more variables, descriptive research employs a broad range of research methodologies. It provides a description of a population condition or occurrence that is both accurate and methodical. Also, descriptive research is a usual method for carrying out a study

in a wide variety of fields, including education. On the other hand, survey research design involved questionnaires, which allowed the researcher to obtain information about the various institutional aspects that predict the academic progress of students.

Study Location

This study was carried out in Ndhiwa Sub-County, which forms one of the eight sub counties that make up Homabay County. These public secondary schools in Ndhiwa Sub County served as the research site for the study. According to the data shown in table 3.2 of the appendices, the reason why it was carried out in Ndhiwa was given that the Sub County has been reporting low performance in academics since 2015 to present. The researcher is a resident in Ndhiwa, and as a result, they are quite familiar with the environment there.

Target Population

The study focused on 50 public secondary schools, which employed a total of 376 teachers from the TSC in the sub county. The researcher selected 5 schools from every division as they are the primary contributors to academic performance in Ndhiwa Sub County.

Sampling Procedure and Techniques

The sample involved in the study consisted of 30% of the total population of 50 students in public secondary schools (15), 30% of the total population of 376 teachers in the sub county (113), and 30% of the total population of 1740 students (522). These individuals are educators who are employed by the TSC and exclusively teach students in their fourth year of secondary school. The researcher administered both open-ended and closed questionnaires to both teachers and students. These questionnaires were later collected for analysis.

Table 3: Sampling Matrix

Categories	Target	Sample size
Principal	50	15
Teachers	376	113
Students	1740	522
	Total	650

Source: SCDE, Ndhiwa Sub County.

Data Collection Instruments

Document analysis was employed by the researcher to examine the principal. The systematic procedure for reviewing or evaluating documents is a fundamental aspect of research. The examination and interpretation of data is necessary in order to derive meaning and understanding from it (Bowen, 2009). The researcher also utilized both open-ended and closed questionnaires to gather data from teachers. Open-ended questions allow participants to provide unrestricted responses, while closed-ended questions typically require a yes or no answer and are commonly used in survey research.

Piloting of the Instruments

The pilot study was conducted in the neighboring sub-counties of Homabay and Suba North. The participants in the study were selected from public secondary schools. This was done to guarantee that the data collection tools are free from any nature of misunderstanding and to

help identify and address any problems that may arise during the process of filling out the questionnaire.

Validity of the Instruments

The validity of the research tool was assessed by sharing the questionnaire with the researcher's supervisor and other stakeholders who have expertise in the study area. The researchers assessed whether the items in the questionnaires were either Relevant (R) or Irrelevant (IR). The content was then calculated to obtain Content Validity Index (CVI), therefore,

$$CVI = (RT1 + TR2) / 2$$

Where;

CVI = Content Validity Index

TR1 – Total items marked as relevant by 1st expert

TR2 – Total items marked as relevant by 2nd expert.

Amin, (2005), posit that if the CVI for both questionnaires exceeds 0.5, then it implies that the research tool is valid.

Reliability of the Instrument

Instrument reliability refers to the extent to which a research instrument produces consistent results (Orodho, 2009). A Spearman Brown Formula was employed to determine the correlation. According to our research, a correlation coefficient of $r > 0.8$ is considered to be sufficiently high to determine the reliability of the instrument being studied. The following formula was applied:

Correlation = $2 * \text{split-half correlation} / 1 + \text{split-half correlation}$

$$r = 2r / 1 + r$$

Where; r = reliability of the coefficient resulting from the correlation scores of the odds items with the scores of the even items.

Source: Marija (2005) statistical procedures companion.

Data Analysis

To provide the data, data analysis included compiling and analyzing all of the information gathered. To ensure that each questionnaire was comprehensive, the researcher reviewed each one. Both quantitative and qualitative analysis was done on it. The statistical software for social sciences (SPSS) was used to input and code the data into the computer for analysis. This was

significant since it aided in quickly summarizing and interpreting the data. According to Muji (2007), SPSS has the capacity to provide broad data management. Descriptive statistics, particularly the measure of central tendency, were used to assess the data that was gathered. Following analysis, the data were shown using percentages, frequency distribution tables, and bar graphs. After being categorized, patterns, and themes identified, the qualitative data was examined and evaluated.

RESULTS AND DISSCUSSION

Professional Training and Development of a Teacher and Students' Academic Performance

The study's primary goal was to determine if a teacher's professional growth and training affect their students' academic achievement. The results are shown in tables 2 and 3, which represent the opinions of principals, teachers, and students, respectively.

Table 4: Principal's Response on Professional Training and Development and Student Academic Performance

Adequacy availability	N	Min	Max	Mean
Take part in hiring and recruiting qualified personnel	15	1	5	2.5
Organize workshops and training for non-teaching staff	15	1	3	3.75
Undertake training to improve working environment through good managerial skills	15	1	4	3
Principal possess the required skills in managing teachers and students in my school	15	1	2	5
Every teacher in the school attend seminars, workshops or training associated with quality output and development once a term	15	1	2	5
Teachers carryout their duties and responsibility as stipulated in the code of conduct	15	1	4	3

Key: S.A-Strongly agree (5), A- Agree (4), UD-Undecided (3), D-Disagree (2), SD-Strongly disagree.

Based on Table 4's findings, relatively few principals support the notion of recruiting and employing competent staff members, holding workshops, and providing training for teachers. However, relatively few principals really pursue training to improve their managing abilities.

Table 5: Teachers' Response on Professional Training and Development and Student Academic Performance

Adequacy availability	N	Min	Max	Mean
It enhances teachers' knowledge and skills, teacher morale and self-efficacy	107	3	103	2.89
Training improves teacher performance	107	1	105	0.98
Make career structure attractive and beneficial to teachers	107	2	100	1.87
It increases teacher content knowledge and pedagogical content knowledge	107	2	103	1.93
Many teachers would like to take more professional training and development activities given opportunities	107	2	90	1.68

According to the majority of teachers who responded to Table 5, professional growth and training increase morale, teachers' knowledge, and self-efficacy; training boosts teacher performance; training makes career structures more appealing; and training increases teachers' content and pedagogical content knowledge.

Table 6: Students View on Professional Training and Development of a Teacher

Adequacy availability	N	Min	Max	Mean
How the teacher handles a class	496	3	490	2.96
How the teacher handles conflict among learners	496	3	487	2.96
The manner in which a teacher handles indiscipline cases	496	2	486	1.96
The teacher approaches to different learning areas in class	496	2	483	1.95

According to table 3's findings, the majority of students believe that teacher growth and professional training are crucial. According to the respondents, instructors with professional training manage their classrooms well, deal with situations of indiscipline more skillfully, resolve student disagreement effectively, and tackle various subject areas in the classroom properly.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The study reveals that teachers' professional training and development have a significant impact on students' academic performance in public secondary schools in Ndhiwa Sub-County. The findings indicate that teachers who undergo continuous professional development are better equipped with modern teaching strategies, content knowledge, and student engagement techniques, which in turn positively influence students' academic outcomes. Teachers with higher levels of training and access to ongoing professional development demonstrate improved classroom management, increased use of learner-centered methodologies, and more effective assessment techniques. This, consequently, leads to higher student motivation, better understanding of the curriculum, and improved performance in national examinations. Moreover, the study highlights that schools with a strong focus on teacher development programs experience overall improvement in the academic environment, as well as a reduction in teacher turnover. It also points to the necessity for structured, government-supported professional development programs that are accessible to all teachers to ensure consistency in

academic performance across the region. In conclusion, investing in teachers' professional training and development is a critical factor in improving student academic performance. It is recommended that policymakers, school administrators, and other stakeholders prioritize professional development opportunities as a means to foster academic excellence in secondary schools in Ndhiwa Sub-County and similar context

Recommendations

From the study findings, the study recommends that schools and educational authorities should develop more structured and regular Continuous Professional Development (CPD) programs that focus on subject-specific training, pedagogical skills, and updated teaching methodologies. This is because the study findings likely indicate that teachers who engage in regular training and development show better performance in student outcomes. The education policy makers should come up with the programs that forge partnerships between secondary schools and local universities or teacher training colleges to provide advanced training opportunities and access to educational research. This is because leveraging higher institutions' resources and expertise can elevate the quality of teacher education, which in turn can positively influence students' academic performance. Schools should also invest in creating training opportunities within the school environment such as workshops, seminars, and peer learning groups. Easy access to professional development within schools can ensure continuous learning and allow teachers to immediately apply new techniques in their classrooms.

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