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In-service training and teacher job performance in selected public primary schools in Maiwut County. A cross-sectional study.

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Abstract

Background

Globally, teacher professional development has evolved from occasional in-service training toward continuous and structured professional learning aimed at improving teachers' knowledge, skills and classroom practices. The study aims to assess the relationship between in-service training and teacher job performance in selected public primary schools in Maiwut County.

Methodology

A cross-sectional study. Qualitative data were collected from head teachers and county education officials through interviews to explain the quantitative findings and to provide insight into how professional development is organised and experienced. Documentary review was used to corroborate both. The combination of approaches allowed triangulation and a more complete understanding of the problem.

Results

The study found that in-service training was implemented to a moderate extent (mean = 2.88). Training was irregular, with 28.4% of teachers having attended no professional development activity in three years; it was not well matched to teachers' classroom challenges (mean = 2.75); it rarely equipped teachers with new teaching methods (mean = 2.66, the lowest-rated item); and it was poorly followed up (mean = 2.92). In-service training had a moderate, positive and significant relationship with teacher job performance ($r = 0.365$, $p < 0.01$), and the null hypothesis H_{01} was rejected. It was the strongest predictor of performance in the regression model ($\beta = 0.388$) and of lesson preparation, classroom management and professional conduct. Key informants reported that training depends on partners and funding, is unequally distributed and lacks follow-up.

Conclusion

Training in Maiwut County is irregular, unequally distributed, often not matched to teachers' classroom challenges and rarely followed up, so its contribution to performance is well below its potential.

Recommendation

To reduce the cost and difficulty of travel, more training should be delivered at cluster or school level rather than at distant central venues.

Keywords: In-service training, Teacher job performance, Classroom management and professional conduct, Public primary schools in Maiwut County

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Background

Globally, teacher professional development has evolved from occasional in-service training toward continuous and structured professional learning aimed at improving teachers' knowledge, skills and classroom practices. In the mid-twentieth century, the dominant model was the short course or workshop, delivered away from the school by experts and intended to address immediate curriculum needs (OECD, 2020). From the 1980s, research on how teachers change their practice began to question this model. Joyce and Showers (2002), summarising two decades of studies, found that teachers who received only presentations of theory rarely transferred new skills to their classrooms, while those who also received demonstration, practice with feedback and peer coaching were far more likely to use the new skills. Guskey (2002) showed that teachers change their beliefs mainly after they see that new practices improve their learners' results, which implies that professional development must be followed by support in the classroom.

In South Sudan, teacher professional development has developed within an exceptionally challenging environment. Decades of conflict before and after independence in 2011 disrupted schooling, displaced teachers and left the country with a large proportion of untrained or under-qualified teachers (Kiriri, 2014). The General Education Act of 2012 (Republic of South Sudan, 2012) assigned responsibility for teacher training and

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professional development to the national and state ministries of education, and successive education sector plans have identified teacher development as a priority. The General Education Strategic Plan 2023–2027 emphasises in-service training, school-based support and the strengthening of teaching quality as central to improving education outcomes (Ministry of General Education and Instruction [MoGEI], 2023). In practice, much in-service training has been delivered through projects supported by development partners and non-governmental organisations, and access to regular professional development remains uneven, particularly in rural and hard-to-reach counties (Corwith & Ali, 2022).

The study aims to assess the relationship between in-service training and teacher job performance in selected public primary schools in Maiwut County.

Methodology

Research Design

The study adopted a correlational cross-sectional research design using a mixed-methods approach. The correlational design was used to establish the direction, strength and significance of the relationship between professional development practices and teacher job performance without manipulating any variable (Creswell & Poth, 2018). The cross-sectional design enabled the researcher to collect data from respondents at a single point in time, which was suitable for examining the existing situation in the selected schools within the time and resources available.

The mixed-methods approach combined quantitative and qualitative methods. Quantitative data were collected from teachers using a structured questionnaire and analysed statistically to determine the relationships between the variables. Qualitative data were collected from head teachers and county education officials through interviews to explain the quantitative findings and to provide insight into how professional development is organised and experienced. Documentary review was used to corroborate both. The combination of approaches allowed triangulation and a more complete understanding of the problem.

Study Population

The study population comprised 180 people drawn from eight selected public primary schools in Maiwut County and the County Education Office (MCLG, 2025). It included 162 teachers, 8 head teachers, 1 County Education Officer, 3 Inspectors of Schools and 6 other County Education Administrators. Teachers were included because they participate in professional development activities and perform the teaching duties examined in the study. Head teachers and county education officials were included because they organise or supervise professional development and monitor teacher performance. The selected schools were Kulong, Gainen, Jekow, Pagak, Biyen, Pinythor, SDA and Malek Primary Schools.

Sample Size

The study had a total sample of 126 respondents, comprising 113 teachers and 13 key informants.

Table 1: Study Population, Sample Size and Sampling Techniques

Category of respondents	Population (N)	Sample size (n)	Sampling technique	Method of data collection
Teachers	162	113	Proportionate stratified and simple random sampling	Questionnaire
Head teachers	8	6	Purposive sampling	Interview
County Education Officer	1	1	Purposive sampling	Interview
Inspectors of Schools	3	2	Purposive sampling	Interview
Other County Education Administrators	6	4	Purposive sampling	Interview
Total	**180**	**126**		

Source: Maiwut County Local Government (2025); Krejcie and Morgan (1970).

Quantitative Sample

The sample size for teachers was determined using the Krejcie and Morgan (1970) table for determining sample size, which gives a sample of 113 for a population of 162 at a 95% confidence level and a 5% margin of error.

Qualitative Sample

The qualitative sample of 13 key informants was determined using the principle of data saturation, the point at which additional interviews no longer produce new information or themes (Guest, Bunce, & Johnson, 2006). Following Francis et al. (2010), the researcher set an initial analysis sample of

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10 interviews and a stopping criterion of three further consecutive interviews producing no new themes, giving a minimum sample of 13. This is consistent with the finding of Guest et al. (2006) that saturation is usually reached within about 12 interviews in a relatively homogeneous group. The 13 key informants were distributed across the four categories of officials to cover both school-level and county-level perspectives, using the inclusion criteria in Table 3.2.

Table 2: Qualitative Sample and Selection Criteria for Key Informants

Category	Population	Sample	Inclusion criteria
Head teachers	8	6	Head teacher of the school for at least two years; school conducted in-service training, mentoring or peer-learning activities during 2020–2025; large and small schools included
County Education Officer	1	1	Sole officer responsible for primary education and teacher management in the county
Inspectors of Schools	3	2	Responsible for inspecting the selected schools; at least one year of service in the county
Other County Education Administrators	6	4	Responsible for teacher training or CPD, teacher management, or education planning and monitoring; at least one year of service
Total	**18**	**13**	

Source: Researcher (2026), based on Francis et al. (2010) and Guest et al. (2006).

Sampling Techniques

Sampling of Teachers

Proportionate stratified sampling was used to distribute the 113 teachers across the eight schools according to the number of teachers in each school, using the formula:

$$n_i = (N_i \div N) \times n$$

where n_i is the sample from school i, N_i is the number of teachers in school i, N is the total number of teachers (162) and n is the total sample (113). The resulting allocation is shown in Table 3.3.

Table 3: Distribution of the Sample of Teachers by School

School	Number of teachers (N_i)	Sample of teachers (n_i)
Kulong Primary School	24	17
Gainen Primary School	18	13
Jekow Primary School	22	15
Pagak Primary School	26	18
Biyen Primary School	16	11
Pinythor Primary School	20	14
SDA Primary School	19	13
Malek Primary School	17	12
Total	**162**	**113**

Source: Maiwut County Local Government (2025); computed using $n_i = (N_i \div N) \times n$.

Within each school, simple random sampling by the lottery method was used to select teachers from the staff list, giving each teacher an equal chance of selection and reducing selection bias.

Sampling of Key Informants

Purposive sampling was used to select the 13 key informants using the inclusion criteria. These respondents were selected because their supervisory and administrative positions give them relevant information about professional development and teacher performance.

Interviews were analysed as they were conducted, and themes were recorded in a saturation grid.

Data Sources

Primary data were obtained directly from teachers through questionnaires and from head teachers and county education officials through interviews.

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Secondary data were obtained from school and County Education Office records, including teacher attendance registers, lesson plans, schemes of work, teacher appraisal reports, professional development and in-service training records, mentoring records, staff meeting minutes, school inspection reports, classroom observation records, duty rosters, learner discipline records and county education performance reports.

Data Collection Methods

Questionnaire survey: A structured questionnaire was administered to the sampled teachers to collect standardised quantitative data on professional development practices and job performance from a relatively large number of respondents.

Interviews: Semi-structured face-to-face interviews were conducted with head teachers, the County Education Officer, Inspectors of Schools and other County Education Administrators to obtain in-depth information on professional development practices, teacher performance and the challenges affecting both.

Documentary review: School and county records were reviewed to corroborate information from questionnaires and interviews.

Data Collection Instruments

Structured questionnaire: The self-administered questionnaire contained five sections. Section A collected demographic information (sex, age, education, teaching experience, professional qualification, position, school and number of professional development activities attended in the previous three years). Section B contained 10 items on in-service training, Section C 11 items on mentoring and coaching, Section D 11 items on peer learning and collaboration, and Section E 19 items on teacher job performance: lesson preparation (E1–E4), classroom management (E5–E9), punctuality (E10–E13) and professional conduct (E14–E19). Items were rated on a five-point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, and 5 = Strongly Agree.

Interview guide: A semi-structured interview guide (Appendix III) with 12 open-ended questions covered professional development opportunities (question 1), in-service training (2–3), mentoring and coaching (4–5), peer learning and collaboration (6–7), teacher job performance and its monitoring (8–9), challenges (10–11) and recommendations (12).

Documentary review checklist: The checklist covered 14 categories of documents.

Data Collection Procedures

The researcher obtained an introductory letter from Team University and permission from the Maiwut County Education Office. The selected schools were then contacted, and data collection dates were agreed with the head teachers. Before administering the instruments, the researcher explained the purpose of the study and obtained informed consent. Questionnaires were distributed to the sampled teachers and collected after completion. Interviews were held at agreed times in locations that ensured privacy. School and county records were reviewed with permission. Completed questionnaires and interview notes were checked for completeness and consistency, after which quantitative data were coded and entered for analysis and qualitative data were organised by objective and theme.

Measurement of Variables

The variables were measured using indicators derived from the objectives and the literature. Composite scores were computed as the mean of the items in each dimension. The overall professional development score was the mean of the 32 items in Sections B to D, and the overall teacher job performance score was the mean of the 19 items in Section E. Higher scores indicate stronger professional development practices and better job performance.

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Table 4: Measurement of Variables

Variable	Dimension	Indicators	Measurement
Professional development practices (IV)	In-service training	Frequency and relevance of training, new teaching methods, curriculum knowledge, practice, feedback, follow-up	Section B (B1–B10), Likert 1–5
	Mentoring and coaching	Guidance from experienced teachers, lesson observation, constructive feedback, reflection, leadership support	Section C (C1–C11), Likert 1–5
	Peer learning and collaboration	Sharing experiences and materials, joint lesson preparation, peer observation, learning groups, leadership support	Section D (D1–D11), Likert 1–5
Teacher job performance (DV)	Lesson preparation	Lesson plans, teaching materials, curriculum alignment, schemes of work	E1–E4; lesson plans and schemes of work
	Classroom management	Learner discipline, classroom organisation, learner engagement, use of instructional time	E5–E9; inspection and observation records
	Punctuality	Regular attendance, arrival on time, starting and ending lessons on time	E10–E13; attendance registers
	Professional conduct	Staff meetings, assigned duties, cooperation, professional standards, records, relations	E14–E19; appraisal reports, minutes

Source: Researcher (2026), adapted from Darling-Hammond et al. (2020) and MoGEI (2023).

Mean scores were interpreted as shown in Table 3.5.

Table 5: Interpretation of Mean Scores

Mean score range	Response	Interpretation
4.21–5.00	Strongly agree	Very high
3.41–4.20	Agree	High
2.61–3.40	Not sure	Moderate
1.81–2.60	Disagree	Low
1.00–1.80	Strongly disagree	Very low

Source: Researcher (2026).

Validity and Reliability of Instruments

Validity of Instruments

The questionnaire and interview guide were reviewed by the research supervisor and experts in education management and research methods for clarity, relevance, adequacy and consistency with the objectives, and were revised on the basis of their comments. The Content Validity Index (CVI) was computed as:

$$CVI = \text{Number of items rated relevant} \div \text{Total number of items}$$

A CVI of 0.70 or above was considered acceptable. The CVI obtained was [insert CVI value from expert ratings].

Reliability of Instruments

The questionnaire was pre-tested with teachers from a public primary school not included in the main study, and internal consistency was assessed using Cronbach's alpha, with 0.70 as the threshold (Taber, 2018). Table 3.6 presents the reliability coefficients computed on the final data.

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Table 6: Reliability Results (Cronbach's Alpha), n = 109

Scale	Number of items	Cronbach's alpha	Decision
In-service training	10	0.858	Reliable
Mentoring and coaching	11	0.881	Reliable
Peer learning and collaboration	11	0.859	Reliable
Professional development practices (overall)	32	0.796	Reliable
Lesson preparation	4	0.679	Acceptable
Classroom management	5	0.731	Reliable
Punctuality	4	0.692	Acceptable
Professional conduct	6	0.704	Reliable
Teacher job performance (overall)	19	0.903	Reliable

Source: Primary data.

Table 6 shows that the three professional development scales and the overall teacher job performance scale had coefficients well above 0.70, ranging from 0.796 to 0.903. Two performance sub-scales, lesson preparation (0.679) and punctuality (0.692), were marginally below 0.70. Because Cronbach's alpha is sensitive to the number of items and these sub-scales have only four items each, coefficients close to 0.70 are generally regarded as acceptable for short scales (Taber, 2018). The instrument was therefore considered reliable, and results for these two sub-scales are interpreted with some caution.

Reliability of the interview data was enhanced by asking the same core questions of all key informants, and the credibility of findings was strengthened by comparing questionnaire, interview and documentary evidence.

Data Analysis

Quantitative Data Analysis

Questionnaire data were coded, entered and analysed using the Statistical Package for the Social Sciences (SPSS). Frequencies and percentages described respondents' characteristics, while percentages, means and standard deviations described professional development practices and teacher job performance, interpreted using Table 3.5.

Pearson's product-moment correlation coefficient (r) was used to test the hypotheses on the relationship between each professional development practice and teacher job performance at the 0.05 level of significance, with strength interpreted as weak ($|r| < 0.30$), moderate ($0.30 \leq |r| < 0.70$) or strong ($|r| \geq 0.70$). Multiple linear regression was used to establish the combined and relative effect of the three practices, using the model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where Y is teacher job performance; X_1 is in-service training; X_2 is mentoring and coaching; X_3 is peer learning and collaboration; β_0 is the constant; β_1 to β_3 are the regression coefficients; and ε is the error term. The model was repeated for each dimension of performance. Multicollinearity, independence of residuals and normality of residuals were checked using the variance inflation factor, the Durbin–Watson statistic and the Shapiro–Wilk test, respectively (Field, 2018). One-way ANOVA and t-tests were used to compare performance across schools and respondent characteristics.

Qualitative Data Analysis

Interview data were analysed thematically, concurrently with data collection so that saturation could be monitored. Following Braun and Clarke (2006), responses were coded, grouped into themes linked to the objectives, reviewed and named, and the number of informants raising each theme was recorded. Illustrative responses are presented in Chapter Four, with informants identified by codes (KI-01 to KI-11). Documentary data were analysed by content and compared with questionnaire and interview findings.

Ethical Considerations

The researcher obtained an introductory letter from Team University and permission from the Maiwut County education authorities before collecting data. Participation was voluntary, and respondents were informed of the purpose of the study, their rights and the use of the information before giving informed consent. Confidentiality and anonymity were maintained by not recording names and by using codes. Information was used only for academic purposes and stored securely. Respondents were free to decline or withdraw at any stage without penalty. Data collection was arranged so as not to disrupt school activities, permission was obtained before reviewing records, and only relevant information was extracted. The findings are reported honestly, without fabrication or manipulation.

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Results

Demographic Characteristics of Respondents

Table 7: Demographic Characteristics of Teacher Respondents (n = 109)

Characteristic	Category	Frequency	Percentage (%)
Sex	Male	66	60.6
	Female	43	39.4
Age group	Below 25 years	11	10.1
	25–34 years	27	24.8
	35–44 years	34	31.2
	45–54 years	30	27.5
	55 years and above	7	6.4
Highest level of education	Certificate	12	11.0
	Diploma	52	47.7
	Bachelor's degree	38	34.9
	Master's degree	4	3.7
	Other	3	2.8
Teaching experience	Less than 5 years	9	8.3
	5–9 years	34	31.2
	10–14 years	23	21.1
	15–19 years	25	22.9
	20 years and above	18	16.5
Professional qualification	Grade III Teacher Certificate	25	22.9
	Diploma in Education	32	29.4
	Bachelor of Education	47	43.1
	Postgraduate qualification	2	1.8
	Other	3	2.8
Current position	Classroom Teacher	81	74.3
	Deputy Head Teacher	19	17.4
	Head Teacher	6	5.5
	Other	3	2.8
PD activities attended in last three years	None	31	28.4
	1–2	33	30.3
	3–4	23	21.1
	5–6	13	11.9
	More than 6	9	8.3

Source: Primary data.

Sex

Table 7 shows that 60.6% of the teacher respondents were male and 39.4% female, reflecting the predominance of male teachers in public primary schools in the county. Women were nevertheless well represented. There was no significant difference between male and female teachers in their job performance ratings ($t = -0.30$, $p = 0.768$).

Age

Most teachers were aged between 25 and 54 years (83.5%), with the largest group aged 35–44 years (31.2%). Only 10.1% were below 25 years and 6.4% were 55 years and above. The teaching force in the selected schools is therefore mainly made up of mature adults in the middle of their careers, which is consistent with the assumptions of Adult Learning Theory that teachers bring considerable experience to professional learning.

Education and qualification

Nearly half of the teachers (47.7%) held a diploma and 34.9% a bachelor's degree, while 11.0% held a certificate. In terms of professional teaching qualification, 43.1% held a Bachelor of Education, 29.4% a Diploma in Education and 22.9% a Grade III Teacher Certificate. Most respondents were therefore professionally trained, and job performance

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did not differ significantly by qualification (F = 0.41, p = 0.799).

Teaching experience

Most teachers (60.5%) had at least ten years of teaching experience, and only 8.3% had less than five years. This suggests that most respondents were well placed to judge the professional development practices in their schools and their own performance over time. Performance did not differ significantly by teaching experience (F = 1.83, p = 0.128).

Position

Three quarters of the respondents (74.3%) were classroom teachers, 17.4% deputy head teachers and 5.5% head teachers who also teach.

Teacher Job Performance

Participation in professional development

A striking finding is that 28.4% of the teachers had attended no professional development activity in the previous three years, and a further 30.3% had attended only one or two. Only 20.2% had attended five or more activities. This confirms that access to professional development in the selected schools is limited and uneven.

The 11 key informants comprised five head teachers (KI-01 to KI-05), the County Education Officer (KI-06), two Inspectors of Schools (KI-07 and KI-08) and three other County Education Administrators (KI-09 to KI-11). Together they represented the school-level and county-level officials responsible for organising professional development and supervising teachers.

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Table 8: Teachers' Views on Their Job Performance (n = 109)

Code	Statement	SD (%)	D (%)	NS (%)	A (%)	SA (%)	Mean	Std. Dev.	Remark
	Lesson preparation								
E1	I prepare lesson plans before teaching	1.8	20.2	45.0	16.5	16.5	3.26	1.02	Moderate
E2	I prepare teaching materials before lessons	5.5	19.3	30.3	33.0	11.9	3.27	1.08	Moderate
E3	I prepare lessons according to the required curriculum	1.8	11.0	36.7	36.7	13.8	3.50	0.93	High
E4	I prepare schemes of work at the beginning of each term	4.6	16.5	38.5	24.8	15.6	3.30	1.07	Moderate
	Lesson preparation (sub-total)						**3.33**	**0.73**	**Moderate**
	Classroom management								
E5	I maintain discipline among learners during lessons	3.7	21.1	34.9	27.5	12.8	3.25	1.05	Moderate
E6	I organise my classroom in a way that supports learning	6.4	19.3	24.8	31.2	18.3	3.36	1.17	Moderate
E7	I keep learners engaged throughout the lesson	6.4	17.4	34.9	25.7	15.6	3.27	1.12	Moderate
E8	I use instructional time effectively	4.6	12.8	35.8	28.4	18.3	3.43	1.07	High
E9	I handle learners' misbehaviour promptly and fairly	4.6	11.0	32.1	34.9	17.4	3.50	1.05	High
	Classroom management (sub-total)						**3.36**	**0.76**	**Moderate**
	Punctuality								
E10	I attend school regularly as required	3.7	24.8	23.9	31.2	16.5	3.32	1.13	Moderate
E11	I arrive at school on time	4.6	10.1	36.7	30.3	18.3	3.48	1.05	High
E12	I attend lessons at the scheduled time	3.7	12.8	38.5	33.9	11.0	3.36	0.97	Moderate
E13	I end my lessons at the scheduled time	2.8	19.3	33.0	32.1	12.8	3.33	1.02	Moderate
	Punctuality (sub-total)						**3.37**	**0.75**	**Moderate**
	Professional conduct								
E14	I participate in staff meetings when required	0.9	15.6	37.6	32.1	13.8	3.42	0.95	High
E15	I complete assigned school duties on time	2.8	13.8	37.6	33.0	12.8	3.39	0.97	Moderate
E16	I cooperate with other teachers in carrying out school activities	2.8	18.3	36.7	30.3	11.9	3.30	1.00	Moderate
E17	I follow professional standards expected of teachers	2.8	11.0	37.6	34.9	13.8	3.46	0.96	High
E18	I complete required teaching and assessment records	6.4	18.3	36.7	24.8	13.8	3.21	1.10	Moderate
E19	I relate respectfully with learners, parents and colleagues	2.8	17.4	34.9	27.5	17.4	3.39	1.05	Moderate
	Professional conduct (sub-total)						**3.36**	**0.64**	**Moderate**
	Teacher job performance (overall)						**3.36**	**0.63**	**Moderate**

Source: Primary data. SD = Strongly disagree; D = Disagree; NS = Not sure; A = Agree; SA = Strongly agree.

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Lesson Preparation

Lesson preparation was rated moderate (mean = 3.33, SD = 0.73). Half of the teachers (50.5%) agreed that they prepare lessons according to the required curriculum (E3, mean = 3.50, high), and 45.0% that they prepare teaching materials before lessons (E2, mean = 3.27). However, only 33.0% agreed that they prepare lesson plans before teaching (E1, mean = 3.26), while 45.0% were not sure and 22.0% disagreed, and 40.4% agreed that they prepare schemes of work at the beginning of each term (E4, mean = 3.30). These self-reports are broadly consistent with the county's finding that only 42% of teachers prepare lesson plans consistently (MCED, 2024), and show that written lesson planning is the weakest aspect of lesson preparation.

Classroom Management

Classroom management was rated moderate (mean = 3.36, SD = 0.76). More than half of the teachers (52.3%) agreed that they handle learners' misbehaviour promptly and fairly (E9, mean = 3.50, high), and 46.8% that they use instructional time effectively (E8, mean = 3.43, high). Fewer agreed that they maintain discipline among learners during lessons (E5, 40.4%; mean = 3.25) or keep learners engaged throughout the lesson (E7, 41.3%; mean = 3.27). Around a quarter of teachers disagreed with each of these statements, indicating that a significant minority have difficulty managing their classes, which is likely to be aggravated by the large classes reported by key informants.

Punctuality

Punctuality was rated moderate (mean = 3.37, SD = 0.75). Nearly half of the teachers agreed that they arrive at school on time (E11, 48.6%; mean = 3.48, high) and attend school regularly (E10, 47.7%; mean = 3.32). However, 28.4% disagreed that they attend school regularly as required, the highest level of disagreement on any performance item. This supports the county's finding that about 37% of teachers have irregular attendance (MCLG, 2025).

Professional Conduct

Professional conduct was rated moderate (mean = 3.36, SD = 0.64). Teachers rated most highly their adherence to professional standards (E17, mean = 3.46, high) and participation in staff meetings (E14, mean = 3.42, high). The weakest aspect was the completion of required teaching and assessment records (E18, mean = 3.21), with which only 38.5% agreed and 24.8% disagreed.

Overall, teacher job performance was rated moderate (mean = 3.36, SD = 0.63). Although 48.6% of the teachers had an overall performance score in the high band (3.41 and above), the large proportions of "not sure" responses (between 24% and 45% per item) and the gap between these self-ratings and the county's monitoring reports suggest that teachers' self-assessments may be somewhat generous. Even on their own assessment, teachers' performance falls short of the expected standard.

The key informants confirmed this picture. All eleven described teacher performance as uneven or in need of attention. As one head teacher put it, "some teachers are punctual and organised, but performance is uneven across schools" (KI-01), while the County Education Officer observed that "lesson preparation is mixed; classroom management and time use need continued attention" (KI-06). Five informants noted that "professional conduct is generally supported by school rules, although follow-up varies" (for example, KI-02).

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In-Service Training and Teacher Job Performance

Descriptive Results on In-Service Training

Table 9: Teachers' Views on In-Service Training (n = 109)

Code	Statement	SD (%)	D (%)	NS (%)	A (%)	SA (%)	Mean	Std. Dev.	Remark
B1	I receive regular in-service training related to my teaching responsibilities	6.4	25.7	37.6	22.0	8.3	3.00	1.04	Moderate
B2	The school provides opportunities for teachers to attend in-service training	6.4	30.3	32.1	22.0	9.2	2.97	1.08	Moderate
B3	In-service training addresses the teaching challenges I encounter	13.8	26.6	33.9	22.0	3.7	2.75	1.06	Moderate
B4	In-service training equips me with new teaching methods	13.8	35.8	27.5	16.5	6.4	2.66	1.11	Moderate
B5	In-service training improves my knowledge of the curriculum	10.1	25.7	26.6	25.7	11.9	3.04	1.19	Moderate
B6	In-service training improves my classroom management skills	11.9	27.5	36.7	16.5	7.3	2.80	1.09	Moderate
B7	In-service training improves my assessment skills	15.6	21.1	35.8	18.3	9.2	2.84	1.17	Moderate
B8	I receive opportunities to practise skills gained during in-service training	9.2	28.4	31.2	23.9	7.3	2.92	1.09	Moderate
B9	Trainers provide useful feedback during in-service training	11.9	25.7	33.0	20.2	9.2	2.89	1.14	Moderate
B10	The school follows up on teachers after in-service training	10.1	25.7	34.9	21.1	8.3	2.92	1.10	Moderate
	In-service training (overall)						**2.88**	**0.73**	**Moderate**

Source: Primary data.

Table 9 shows that in-service training was rated moderate overall (mean = 2.88, SD = 0.73), and that disagreement exceeded agreement on almost every item. The individual items are interpreted as follows.

On whether teachers receive regular in-service training related to their responsibilities (B1), only 30.3% agreed, 37.6% were not sure and 32.1% disagreed (mean = 3.00). On whether the school provides opportunities to attend in-service training (B2), 31.2% agreed and 36.7% disagreed (mean = 2.97). These results confirm that training is not regular, consistent with the finding that 28.4% of teachers had attended no activity in three years.

On the relevance of training, only 25.7% agreed that in-service training addresses the teaching challenges they encounter (B3), while 40.4% disagreed (mean = 2.75). Nearly half of the teachers (49.5%) disagreed that training equips them with new teaching methods (B4), the lowest-rated in-service training item (mean = 2.66). Training was rated somewhat better for improving curriculum knowledge (B5, 37.6% agreed; mean = 3.04), but less well for classroom management skills (B6, 23.9%; mean = 2.80) and assessment skills (B7, 27.5%; mean = 2.84).

On practice and follow-up, 31.2% agreed that they receive opportunities to practise skills gained during training (B8, mean = 2.92), 29.4% that trainers provide useful feedback (B9, mean = 2.89), and 29.4% that the school follows up on teachers after training (B10, mean = 2.92), while more than a third disagreed with each statement.

In summary, in-service training in the selected schools is irregular, not well matched to teachers' classroom challenges and poorly followed up. Its strongest contribution is to curriculum knowledge, and its weakest is to new teaching methods and classroom management skills.

Correlation between In-Service Training and Teacher Job Performance

To test the first hypothesis (H_{01}: there is no significant relationship between in-service training and teacher job performance in selected public primary schools in Maiwut

County), Pearson's correlation coefficient was computed. The results are presented in Table 4.6.

Table 10: Correlation between In-Service Training and Teacher Job Performance (n = 109)

Performance dimension	Pearson r	r^2	Sig. (2-tailed)	Interpretation
Lesson preparation	0.333**	0.111	0.000	Moderate positive
Classroom management	0.367**	0.135	0.000	Moderate positive
Punctuality	0.212*	0.045	0.027	Weak positive
Professional conduct	0.353**	0.125	0.000	Moderate positive
Overall teacher job performance	0.365**	0.133	0.000	Moderate positive

*Source: Primary data. * Correlation is significant at the 0.01 level; at the 0.05 level (2-tailed).*

Table 10 shows a moderate, positive and statistically significant relationship between in-service training and teacher job performance ($r = 0.365$, $p < 0.01$). The coefficient of determination ($r^2 = 0.133$) indicates that in-service training alone accounts for 13.3% of the variation in teacher job performance. The positive sign means that teachers who rate their in-service training more favourably also tend to perform better. Since the p-value (0.000) is less than 0.05, the null hypothesis H_{01} was rejected, and it was concluded that there is a significant positive relationship between in-service training and teacher job performance in the selected schools.

Among the dimensions of performance, in-service training was most strongly related to classroom management ($r = 0.367$), professional conduct ($r = 0.353$) and lesson preparation ($r = 0.333$), all moderate and significant at the 0.01 level. Its relationship with punctuality was weak but significant ($r = 0.212$, $p = 0.027$). This pattern is consistent with the content of training, which addresses curriculum, planning and classroom practice more directly than attendance.

Qualitative Findings on In-Service Training

The interviews confirmed that in-service training is occasional and depends on external support. Ten of the eleven key informants (90.9%) said that training is organised only when funding or partners are available. One head teacher explained that "training is mainly organised when programmes or resources are available; participation is not regular" (KI-02), and five informants stated that "training sessions are arranged when partners or education authorities organise them" (for example, KI-07). Seven informants (63.6%) reported unequal access: "some teachers attend one or two activities in a year, while others may attend none" (KI-08), and "occasional workshops, curriculum briefings and school-based discussions are available, but access differs by school" (KI-04).

All informants agreed that training can be useful. Six said that it "can improve subject knowledge and teaching methods when content matches classroom needs" (for example, KI-06), but six (54.5%) also pointed to weak follow-up: "training introduces new methods, but follow-up and classroom practice opportunities are limited" (KI-01), and "teachers may use new methods, but impact is reduced when there is no follow-up support" (KI-03). Informants cited insufficient funding, transport costs and distance to training venues (KI-01, KI-02, KI-03, KI-06), limited training materials and irregular scheduling (KI-04, KI-05, KI-08, KI-09, KI-10), and teacher shortages that make it difficult for teachers to leave their classes (KI-07, KI-11) as barriers to participation.

The document review was consistent with these accounts. Professional development records showed only occasional training or staff development activities, and in-service training reports were available for selected activities, with incomplete coverage. County education performance reports contained limited detail on follow-up after training.

The qualitative findings explain the quantitative results: training is valued and is related to better performance, but because it is irregular, unequally distributed and rarely followed up, its contribution to teacher job performance is limited.

Discussion

The finding that in-service training has a significant positive relationship with teacher job performance agrees with Popova et al. (2022), Darling-Hammond et al. (2020) and Yoon et al. (2007), who found that well-designed training improves teachers' practice. The particular strength of the relationship with lesson preparation and classroom management is consistent with Garet et al. (2001) and Desimone (2009), who found that professional development focused on content and practice is most likely to change what teachers do in class. It also supports Adult Learning Theory, which holds that adults learn when learning is relevant to their work and can be applied immediately (Knowles et al., 2020): teachers who found their training relevant and practical performed better.

At the same time, the descriptive findings show that in-service training in Maiwut County lacks most of the features that the literature associates with effectiveness. It is irregular rather than sustained, often unrelated to teachers' classroom challenges, and rarely followed by practice, feedback or follow-up. This mirrors the gap between evidence and

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practice identified by Popova et al. (2022), who found that large government and partner programmes seldom include follow-up visits or practice, and the findings of Bantwini and Moorosi (2018) in rural South Africa that inadequate follow-up limits the impact of CPD. It also echoes Joyce and Showers (2002), who showed that training without practice and coaching rarely transfers to the classroom.

The finding that the number of activities attended was unrelated to performance is important. It suggests that, in Maiwut County, attending more workshops does not by itself make teachers perform better; rather, it is the quality and relevance of training, as perceived by teachers, that matters. This supports Kennedy's (2016) argument that the design of professional development, and not its quantity, determines whether it changes teaching, and the finding of Evans and Popova (2016) that repeated training linked to specific classroom tasks is more effective than general workshops.

Conclusion

In-service training is significantly and positively related to teacher job performance and is the strongest of the three practices, particularly for lesson preparation, classroom management and professional conduct. However, training in Maiwut County is irregular, unequally distributed, often not matched to teachers' classroom challenges and rarely followed up, so its contribution to performance is well below its potential. The quality and relevance of training matter more than the number of activities attended.

Limitations

Access and distance Some schools were difficult to reach because of poor roads and long distances. The researcher scheduled visits in advance and used local guides.

Non-response. Four sampled teachers and two key informants (one head teacher and one County Education Administrator) were not available. The resulting response rate of 95.2% was nevertheless high.

Self-reported performance. Teacher job performance was measured mainly through teachers' self-ratings, which may be inflated by social desirability. This was mitigated by assuring confidentiality and by triangulating with interviews and records.

Incomplete records. Some schools had incomplete records on attendance, mentoring and professional development, which limited the documentary evidence available.

Cross-sectional design. The design establishes association rather than causation.

Recommendations

The Maiwut County Education Department, with the Ministry of General Education and Instruction and development partners, should develop an annual in-service training calendar for all primary teachers, so that every teacher receives at least one training activity each term.

Training content should be based on a needs assessment of teachers' classroom challenges, with priority given to practical teaching methods, classroom management and assessment.

Every training activity should include practice sessions and be followed by at least one school-based follow-up visit by an inspector, coordinating tutor or head teacher to support teachers in applying what they learnt.

To reduce the cost and difficulty of travel, more training should be delivered at cluster or school level rather than at distant central venues.

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List of abbreviations and acronyms

ANOVA; Analysis of Variance

CPD; Continuous Professional Development

CVI; Content Validity Index

KI; Key Informant

MCED; Maiwut County Education Department

MCLG; Maiwut County Local Government

MoGEI; Ministry of General Education and Instruction

OECD; Organisation for Economic Co-operation and Development

SD; Standard Deviation

SPSS; Statistical Package for the Social Sciences

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Data availability

Data is available upon request

Author contribution

Tukube Alex Rombe; Conceptualisation, Funding acquisition, Methodology, Formal analysis, Investigation, Writing – original draft, Resources

Dr Muhammad Sendagi; Supervision, Validation, Visualisation, Data curation, Project administration, Supervision, Writing – review & editing

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