

Effect of teachers' professional knowledge and practice on pupils' learning outcomes in public primary schools in Kakamega County, Kenya

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<https://doi.org/10.51867/ajernet.6.4.29>

ABSTRACT

In the year 2012, the Teachers Service Commission (TSC) in Kenya launched the Performance Contract (PC) policy in the teaching service. Teacher PC was launched to correct the failure by the Ministry of Education to achieve targets outlined in the Kenya Education Sector Support Project (KESSP) of 2005-2010. Appraisals of the PCs are guided by predetermined set targets using the Teacher Professional and Development (TPAD) tool. Despite PC having been in place over the last thirteen years, there has been little change in learning outcomes in Kakamega County public primary schools. The purpose of the study was to establish the effect of teachers' achievement in professional knowledge and practice PC target on pupils' learning outcomes. The learning outcomes examined were academic achievement (Kenya Certificate of Primary Education-KCPE), pupil retention rates and pupil completion rates. This study was guided by the New Public Management (NPM) theory. A correlational research design with a mixed-methods approach was adopted for the study. Eighty-two (82) schools were selected from the 13 sub-counties of Kakamega County using multistage random sampling. Four key informants involved in Teacher PC supervision (2 Curriculum Support Officers, one Sub-County TSC Director and the County TSC Director) were also purposefully selected and interviewed. Structured questionnaires were used to collect data from the head teachers and teachers in the selected schools. The professional knowledge and practice PC target achievement scores and learning outcome scores over the past six years (2018-2023) were obtained from the selected schools and the records at the County Ministry of Education office. Quantitative data collected was analysed using descriptive statistics, Pearson's correlation and multilinear regression analysis. Qualitative data was analysed thematically using the NVivo 14 software. The results showed that only 39% of the teachers achieved good professional knowledge and practice PC target scores (>74.5%). The associations between achievement in professional knowledge and practice with learning outcomes were poor (KCPE performance: $r=.159$; $P=0.7640$; retention rates: $r=0.285$; $p=0.585$; completion rates: $r=-0.079$; $p=0.061$). The linear regression models revealed weak, statistically insignificant relationships for all the learning outcomes ($P>0.05$). Further analysis showed that the majority (78.1%) of the teachers had a poor attitude towards the PC initiative and disagreed with regular PC assessment. The study concluded that teacher achievement in professional knowledge and practice PC target did not meaningfully predict KCPE performance among the sample schools. The study recommends TSC should review the appraisal questions on professional knowledge and practice to ensure they are comprehensive and effective in enhancing pupil learning outcomes. There is a need for further research to establish the effect of teachers' professional knowledge such as subject-specific pedagogy on other pupil learning outcomes such as creativity, problem-solving and communication skills.

Keywords: Learning Outcomes, Professional Knowledge, Performance Contracts, Target Achievement

I. INTRODUCTION

Globally, Performance Contracting (PC) is used as a component of a broader set of public-sector management tools aimed at increasing efficiency and effectiveness in service delivery. Performance Contracting (PC) is a negotiated management tool used to measure performance against predetermined goals and targets (Hallinger, *et al.*, 2014). Once the targets are set, employees then direct their efforts toward achieving the targets. The aim of introducing PC in the teaching service, as in other sectors of service delivery, was to improve teacher performance to provide quality education. However, there are conflicting reports regarding the effectiveness of PCs in enhancing the quality of education (Jensen, 2011; Hallinger *et al.*, 2014; Darling Hammond *et al.*, 2020; Camilleri, 2021).

Teacher efficiency in the teaching service has been and is still largely measured through teacher appraisals. In Kenya, PC in the teaching service is a new concept having started a decade ago. Long before PCs were formally introduced in public service, teacher appraisals were already in place. Teacher appraisals were carried out through

inspection, with regular evaluations of schools and teachers by school inspectors. A confidential report would then be sent to TSC by the school's head teacher along with a teacher evaluation. Teachers were not given any specific PCs targets back then (Omondi, 2015).

The framework for PC in the teaching service is anchored in Section 11 (c) and (f) of the Teachers Service Commission (TSC) Act (2012), which makes provisions for monitoring teacher conduct and performance in public learning institutions (Government of Kenya [GOK], 2012). Unlike previous school inspections, performance targets and evaluation standards are established in a participatory and democratic manner between the supervisor and the teacher. In the year 2016, TSC introduced the 'Teacher Performance Appraisal and Development (TPAD) tool to appraise teacher performance in primary and secondary schools. On the TPAD tool, teachers are evaluated on five set performance targets of professional knowledge and practice, comprehensive learning environment, professional development, teacher conduct and professionalism and participation in professional learning community (TSC, 2017). Achievement in the targets was presumed to translate into effective teacher performance and subsequently into good learning outcomes. However, despite PCs have been in place in the teaching service for the last thirteen years, the effect the PCs on learning outcomes are still not clear. The learning outcomes have remained relatively unchanged in Kakamega County in Western Kenya. There are also still reports of teacher indiscipline and absenteeism, poor academic achievement, learners dropping out of school and learner indiscipline (Table 1 and Table 2).

Table 1

Learning Outcomes of Kakamega County Public Primary Schools over the Period 2018-2023

Year	2018	2019	2020	2021	2022	2023
Mean score (out of 500 Marks)	248	249.6	264	255.7	261.2	257.8
Pupil Retention rates (%)	75.2	81.4	83.6	81.4	83.3	82.7
Pupil Completion rates (%)	82.6	84.5	81.4	84.6	83.2	84.1

Source: Kakamega County Education Office (2023)

Table 2

Number of Primary School Teacher Discipline Cases Reported Over the Period 2018-2023 in Kakamega County

Discipline Case	Year					
	2018	2019	2020	2021	2022	2023
Desertion of duty	32	30	10	6	26	29
Absenteeism	15	13	6	-		21
Alcohol abuse	15	18	-	18	18	16
Insubordination	23	18	-	11	12	24
Sexual Molestation of learners	59	64	7	23	46	49
Others	13	9	-	10	-	13
Totals	157	152	23	68	129	152

Source: Kakamega County TSC Unit (2023)

The purpose of the study was to establish the effect of teachers' achievement in the professional knowledge and practice PC target on pupils' learning outcomes in public primary schools in Kakamega County. The professional knowledge and practice target is evaluated using the criteria of mastery of the subject content and use appropriate instructional methods, effective utilization of teaching/ learning resources, ability to carry out learner assessment, feedback and reporting on learners' learning and ability to access, ability to retrieve and integrate Information, Communication and Technology (ICT) in teaching and learning. Other criteria include preparation of schemes of work and lesson plans, lesson attendance, observation in class and effective use of time in class, preparation and maintenance of learner's progress records and whether teachers follow the laid down syllabus. These criteria are evaluated as guided by the 'Teacher Performance Appraisal and Development (TPAD) tool and scored out of 100. The Head of school determines the annual average score for all the teachers and posts the score on the TSC website using a password given by TSC. The learning outcomes examined included pupil academic achievement, pupil retention rates and pupil completion rates. The study used Kenya Certificate of Primary Education (KCPE) examination mean scores as a measure of academic achievement.

1.1 Statement of the Problem

A key government strategy to enhance education quality and teacher performance is the TSC's Performance Contract (PC) policy, launched in 2012 following reports by the Kenya Education Sector Support Project (KESSP). This policy, supported by the TSC Act (2012) and the Teacher Performance Appraisal and

Development (TPAD) tool introduced in 2016, aims to review teaching standards, evaluate performance, and promote professional development. This is further envisioned in the National Education Sector Strategic Plan (NESSP) (2018-2022), which seeks to improve learning outcomes, access, affordability, and service delivery, focusing on enhancing teaching quality and teacher management. Despite these efforts, challenges still persist, particularly concerning the learning outcomes.

In Kakamega County, pupil learning outcomes have shown stagnation with slight fluctuations over recent years. For instance, the mean Kenya Certificate of Primary Education (KCPE) scores in Kakamega County public primary schools have hovered around 250, with 251.27 in 2018 and 250.04 in 2023. Similarly, pupil retention rates remained around 88% (e.g., 87.6% in 2018 and 88.2% in 2023), and completion rates around 91% (e.g., 91.2% in 2018 and 91.3% in 2023). This indicates that the effect of PC on learning outcomes in Kakamega County is not yet clear, and performance in the education sector has notably declined.

Teacher Performance Contracts involve evaluating teachers across five areas: professional knowledge, learning environment, professional development, conduct and professionalism, and participation in professional learning communities. This study therefore provides valuable insights to the TSC by examining the actual effectiveness of PC on pupils' learning outcomes. The study aimed to identify existing gaps in professional knowledge and practice target achievement and learning outcomes, proposing strategies to improve PC as a strategy for ensuring quality education.

1.2 Research Hypothesis

Teachers' achievement in professional knowledge and practice PC target has no effect pupils learning outcomes in public primary schools in Kakamega County in Kenya'

II LITERATURE REVIEW

2.1 Theoretical Review

Performance contracting is an application of various theoretical bodies of knowledge to improve organizational performance. As a result, many theories from different disciplines have been advanced to support and explain the performance contracting paradigm. This study was guided by the New Public Management (NPM) theory. According to Hood (2012), NPM is a series of themes relating to reforming the public sector's organization and procedures to make it more competitive and efficient in resource use and service delivery. The NPM is associated with the various reforms initiated in the public sector to improve accountability and maximize the use of scarce resources in the provision of public goods and services. There is agreement among scholars who have studied performance contracting that PC is one of the reforms that have been initiated under NPM, whose main focus is making the government more efficient by using less to produce more (Mutahaba, 2011).

In the context of the current study, TSC has created a New Public Management movement of PC to make the teaching service more efficient. Though many theories have been used to explain performance management, the researcher is convinced that the NPM mentioned above adequately covers the concepts in teacher performance contracting. Performance contracting practices and innovations are routine activities used by institutions to achieve set Visions, Missions, objectives, and targets. In the case of this study, teacher achievement of set targets and students' learning outcomes are all

2.2 Empirical Literature review

Several studies have reported a positive relationship between teacher professionalism and learning outcomes (Skaalvik & Skaalvik, 2020; Perry et al. 2021; Beach et al. 2021). The argument in these studies is that teacher professionalism and practice influences teachers' performance in the classroom by providing teachers with new information, techniques, tools, and instructional strategies that they can use to connect with and engage their students. However, in these studies, the linkage between professionalism and teaching practice to performance contracting in the teaching service and learning outcomes has not been investigated. The aim of performance contracting was mainly to improve on teacher professional competence. Teacher professional competence significantly improves teacher performance and pupil learning outcomes by enhancing teachers' knowledge, pedagogical skills, and professional attitudes (Popova et al., 2022). Ideally, teacher professional competence should enable teachers to plan and deliver lessons effectively, manage classrooms better, and adapt teaching methods to diverse student needs, thereby fostering improved student engagement and learning outcomes. However, in many schools including those in the current study, the effect of the teacher professionalism on learning outcomes remains unclear.

Empirical studies on teacher professional competence are still in their early stages (Nguyen et al., 2023). Teacher professional competence is also influenced by psychological factors such as beliefs, motivation, and self-regulation. Preparing professional documents based on the current syllabus/designs as required by the TPAD tool in the TSC PC

requirements is only a small part of professional competency. The TPAD tool lacks sections to measure such factors. The key question about teacher professionalism is: to what extent does teacher professionalism as envisioned on the TSC TPAD tool translate into teacher competence (better teaching, better learning outcomes for students, and, ultimately, quality education?). Research studies reveal that pedagogical knowledge is an important component of teacher professional competence, but knowledge alone is insufficient to make teachers competent (Kraft & Christian, 2022). According to Nguyen et al. (2023), the major gaps in evaluating teacher professional competence are the lack of standardization in defining and measuring teacher competence and underemphasis on contextual and environmental factors affecting teaching and learning.

While the link between teacher professionalism and pupil learning outcomes is well-supported in the literature, several challenges, particularly in Kenyan primary schools, including the study area, are notable. There is a lack of adequate resources, and teachers face significant constraints that limit their ability to maintain high levels of professionalism. The demanding nature of the teaching profession, without adequate support or recognition, can lead to burnout, which negatively impacts pupil learning outcomes. In several cases, teachers have very large classes, with an enrolment of more than 60 learners per class. The effectiveness of teacher professionalism may also vary based on cultural norms, educational policies, and contextual factors such as socioeconomic status. The level of teacher professional knowledge and practice among teachers could vary individually and widely, and therefore teachers may require targeted support and training to improve specific aspects of their teaching. Additionally, although teacher knowledge and practice are crucial, student factors such as socio-economic status, motivation, and home support may also significantly impact learning outcomes.

III. METHODOLOGY

The study was carried out in Kakamega County in Western Kenya. Kakamega County has one TSC County Director, 13 Sub County Directors of Education, 27 Curriculum Support Officers, 899 public primary schools and 10,145 public primary school teachers employed by TSC according to Kakamega County TSC Unit in 2019. The study adopted a correlation research design with a mixed methods approach. This design and approach were preferred because the nature of the study required both quantitative and qualitative data sources to appropriately establish the associations between teacher target achievement and pupil learning outcomes. The sample size (82) was determined using the Cochran formula. The 899 public primary schools are distributed over a vast area of 3092Km². Table 3 shows the distribution of primary schools in the Sub counties of Kakamega County.

Table 3

Distribution of Public Primary Schools in Sub-counties of Kakamega County

S/NO	Sub County	Number of Public Primary Schools
1	Kakamega Central	64
2	Navakholo	61
3	Kakamega North	116
4	Matete	45
5	Butere	80
6	Khwisero	61
7	Kakamega East	100
8	Kakamega South	80
9	Lugari	56
10	Likuyani	66
11	Matungu	68
12	Mumias West	53
13	Mumias East	49
	Total	899

Source: *Kakamega County TSC Unit of 2023.*

Using multistage sampling, 82 schools were randomly selected from the thirteen Sub-counties of Kakamega County. Four Sub Counties (Kakamega North, Navakholo, Kakamega South and Mumias East) were first randomly selected; within the four sub counties, 82 public primary schools were selected by systematic random sampling (20 schools from each of the selected Sub-counties). The headteachers of the selected schools were then approached and interviewed on teacher achievement in the professional knowledge and practice PC target and the KCPE mean scores over the last six years (2018-2023). Pupil retention and completion rates were obtained from the county education office records. One teacher was also randomly selected from each of the selected schools and interviewed on the PC process. Additionally, four (4) key informants who included 2 Curriculum Support Officers (CSOs), 2 TSC Sub County Directors and the Kakamega County TSC Director were also selected purposefully for the

study. The four selected Key informants are officers involved in the supervision and implementation of the teacher PC and carry out regular appraisals of teacher performance in schools.

Data was collected using questionnaires and Key informant interview guides. The data Collection tools were pretested in the neighbouring Lugari Sub County and the instruments attained a reliability coefficient of 0.782. Quantitative data collected was analysed using descriptive statistics, Pearson correlation and multiple linear regression analysis with the aid of the Statistical Package for Social Sciences (SPSS) computer software program Version 27. The qualitative data collected was analysed thematically using the N-Vivo version 14 computer software. The results of the study are presented in narratives, tables and figures. This research study was approved by the Department of Education, administration and Planning of Masinde Muliro University. The Kakamega County Director of Education also gave authority to conduct the study. The study also obtained a research permit from the National Commission of Science, Technology and Innovation (NACOSTI- License No: NACOSTI/P/23/28363).

IV. FINDINGS & DISCUSSION

4.1 Sociodemographic Characteristics of the Head Teachers

The sociodemographic characteristics of the head teachers are summarised in Table 4

Table 4
Sociodemographic Characteristics of Headteachers

	Variable	Frequency	Percentage
Type of school	Day	81	98.8%
	Boarding	1	1.2%
	Total	82	100%
Sex of Head teacher	Male	61	74.4%
	Female	21	25.6%
	Total	82	100%
Age category	30-40 years	8	9.8%
	41-50 years	41	50.0%
	Above 50 years	33	40.2%
	Total	82	100%
Experience as Head teacher	1-5 years	21	25.6%
	6-10 years	34	41.5%
	11-15 years	21	25.6%
	Above 16 years	6	7.3%
	Total	82	100%
Category of school	Mixed	81	98.8
	Girls	1	1.2
	Total	82	100%
Period which school has done KCPE examination	5-9years	1	1.2%
	10-14 years	17	20.7%
	15-20 years	63	57.7%
	Above 20 years	1	1.2%
	Total	82	100%
Understaffing level	3-5 Teachers	54	65.9%
	More than 5 teachers	28	34.1%
	Total	82	100%

It was observed from Table 4 that almost all (81) 98.8% of the public primary schools in the study were day schools. Most (61)74.4% of the head teachers were male. The age of the head teachers ranged from 36 years to 59 years with a mean of 47.84 years and a standard deviation of ± 5.821 . A majority (61) 74.3% of the head teachers had more than five years' experience as head teachers. A majority (81) 98.8% of the public schools sampled were mixed primary schools (the learners were both boys and girls) with a majority (81) 98.8% of the schools having done KCPE examinations for a period of over 10 years.

The total number of TSC teaching staff per school ranged from 14 to 27 with a mean of 18 teachers per school. The number of male teaching staff in the schools ranged from 6 to 16 with a mean of 10 teachers. The number of female teaching staff in the schools ranged from 5 to 13 with a mean of 8 female teachers. Most (54) 65.9% of the schools were understaffed, lacking up to 5 teachers as per the Curriculum Based Establishment (CBE).

4.2 Sociodemographic Factors of Teachers

The sociodemographic characteristics of the teachers are summarised in Table 5

Table 5
Sociodemographic Characteristics of Teachers

Variable	Variable	Frequency	Percentage
Type of school	Day	81	98.8%
	Boarding	1	1.2%
	Total	82	100%
Sex of the teacher	Male	50	61%
	Female	32	39%
	Total	82	100%
Age category	30-40 Years	8	9.8%
	41-50years	41	50.0%
	Above 50 years	33	40.2%
	Total	82	100%
Experience as a teacher	1-5 years	6	7.3%
	6-10 years	19	23.2%
	11-15 years	9	10.9%
	Above 16 years	48	58.5%
	Total	82	100%

It was observed from Table 5 that most (50) 61% of the teachers were male. The age of the teachers ranged from 28 years to 56 years with a mean of 42.65 years and a standard deviation of ± 8.298 . The teachers experience ranged from 4 years to 32 years with a mean of 16 years. More than half (48) 58.5% of the teachers had more than 16 years of experience in the teaching service.

4.3 Sociodemographic Characteristics of the Key Informants

Four Key informants participated in the study. They included the Kakamega County TSC director, One Sub-County TSC Director and two Curriculum Support Officers (CSOs). The age range of the Key informants ranged from 41years to 54 years. All the Key informants had over 6 years' experience in their duties of teacher management. They were selected for the study because of their knowledge and experience on the requirements of teachers PC and also because they are involved in regular teacher PC appraisals. Data from the Key informants has been triangulated with quantitative data from the headteachers and teachers to arrive at the findings of this study.

4.3.1 Mean Scores of Professional Knowledge and Practice Target and Learning Outcomes (2018-2023)

The mean scores of annual achievements in teacher professional knowledge and practice target, the learning outcomes of pupil academic achievement, pupil completion rates and pupil retention rates over the six-year period (2018-2023) were first computed. The results are summarised in the Table 6.

Table 6
Teacher Professional Knowledge and Practice Target Achievement and the Learning Outcomes (2018-2023)

Variables	Teachers Achievement Professional Knowledge and Practice Targets Annual Mean Scores	Pupil Learning Outcome Mean scores		
		KCPE Scores	Retention Rates	Completion Rates
2018	74.49	263.87	75.20	82.60
2019	73.24	272.62	81.40	84.50
2020	75.90	275.58	83.60	81.40
2021	72.78	281.09	81.40	84.60
2022	75.38	283.83	83.30	83.20
2023	75.00	288.70	82.70	84.10

4.3.2 Analysis and Categorisation of the Achieved Professional Knowledge and Practice PC Target Scores.

The scores attained by teachers in the Professional Knowledge and Practice PC target were first analysed using descriptive statistics. The results are presented in Table 7.

Table 7*Analysis of Professional Knowledge and Practice PC Target Scores*

N	82
Mean	74.476
Std. Error of Mean	.1618
Std. Deviation	1.4650
Range	8.5
Minimum	69.8
Maximum	78.3

Using the mean (74.476) and the Standard deviation (± 1.4650), attained in table 6, a cut-off was set at 75%. Scores above 75% were categorised as good. The results are summarised in Table 8

Table 8*Categories of Achieved Professional Knowledge and Practice Target Scores*

Categories	Frequency	Percentage
Poor	50	61.0
Good	32	39.0
Total	82	100.0

It was observed from Table 8 that only 39% of the scores were in the category of good scores

4.3.3 Teacher Professional Knowledge and Practice PC Target Achievement Effect on Academic Achievement

The study sought to establish the association between teachers' Professional knowledge and practice target achievement and the learning outcome of academic achievement using Pearson Correlation. The result is summarised in Table 9.

Table 9*Association between Teachers' Professional Knowledge and Practice Target Achievement and KCPE Performance (2018-2023)*

Variable	Professional Knowledge and practice Target	KCPE Performance
Pearson Correlation	1	.159
Sig. (2-tailed)	-	.764
N	6	6

From table 9, it is observed that the Pearson correlation coefficient is $r = 0.159$. This indicates a very weak positive correlation between teacher professional knowledge/practice target achievement and pupil KCPE performance. the p-value is 0.764, which is much higher than 0.05. This suggests that there is no statistically significant association between professional knowledge/practice target achievement and KCPE performance.

Regression analysis was conducted to determine whether achievement in the Professional Knowledge and Practice PC target significantly influenced KCPE performance (Table 10). The analysis revealed a very weak, statistically insignificant relationship ($\beta = 0.159$, $p = 0.764$). These results suggest that teachers' achievement in the professional knowledge and practice target did not significantly predict learners' KCPE performance. This aligns with qualitative feedback indicating that the current appraisal approach might not adequately capture practices that directly impact learner achievement. Only 2.5% of the variance in KCPE performance can be explained by variations in Professional Knowledge and Practice scores ($R^2 = 0.025$). This is extremely low and suggests a poor fit of the model. Adjusted R^2 (-0.208) implies that the model does not improve prediction beyond the mean. Therefore, the regression model is not statistically significant, and professional knowledge and practice scores do not meaningfully predict KCPE performance among the sample schools.

Table 10*Summary of the Regression Model*

Statistic	Value
R	.159
R-squared	.025
Adjusted R-squared	-0.208
Standard Error Estimate	—
Sig. (p-value)	.764

4.3.4 Professional Knowledge and Practice Target Achievement Effect on Retention Rates

The study sought to establish the association between teachers' professional knowledge and practice target achievement and the learning outcome of retention rates using bivariate Correlation. The result is summarised in Table 11.

Table 11

Association between Teachers' Professional Knowledge and Practice Target Achievement and Pupil Retention Rates (2018-2023)

	Professional Knowledge and practice Target	Pupil retention rates
Pearson Correlation	1	.285
Sig. (2-tailed)	-	.585
N	6	6

From table 11, Pearson correlation coefficient was 0.285 suggesting a weak positive correlation; however, the high p-value of 0.585 indicates non-significance. This implies that no meaningful association exists between the two variables. Regression was conducted to examine whether teachers' achievement in the Professional Knowledge and Practice (PKP) target significantly predicts pupil retention rates (Table 12). The regression model was not statistically significant, $F(1,4) = 0.597$, $p = .585$, and explained only 8.1% of the variance in retention rates ($R^2 = .081$; Adjusted $R^2 = -0.138$). The coefficient for PKP score was not significant ($\beta = .285$, $p = .585$), indicating that variations in PKP scores do not meaningfully predict changes in pupil retention. These results suggest that other factors may have stronger influence on pupil retention outcomes than PKP target achievement alone.

Table 12*Regression Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.285	0.081	-0.138	3.69

4.3.5 Professional Knowledge and Practice Target Achievement Effect on Completion Rates

The study sought to establish the association between teachers' Professional knowledge and practice target achievement and the learning outcome of pupil completion rates using bivariate analysis. The result is summarised in Table 13.

Table 13

Association between Teachers' Professional Knowledge and Practice Target Achievement and Pupil Completion Rates (2018-2023)

	Professional Knowledge and practice Target	Pupil completion rates
Pearson Correlation	1	-.079
Sig. (2-tailed)	-	.061
N	6	6

From table 13, it was observed a Pearson correlation coefficient of -0.079 suggesting a weak negative correlation; however, the high p-value of 0.061 indicates non-significance. This implies that no meaningful association exists between the two variables. Regression analysis was conducted to evaluate whether teachers' achievement in the Professional Knowledge and Practice (PKP) performance contract target significantly predicts pupil school completion rates. The results (Table 14) indicated a very weak, negative, and statistically non-significant relationship between the variables ($R = -0.079$, $R^2 = 0.006$, $p = .719$). The model explained only 0.6% of the variance in completion rates and did not significantly improve predictive capability over the mean. These results suggest that teacher achievement in PKP

targets has no meaningful influence on pupil completion rates, pointing to the likelihood that other factors may play a more substantial role in determining completion outcomes.

Table 14

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-0.079	.006	-0.243	2.41

4.3.6 Enhancement of Performance Contracting Target Achievement

The study sought to establish PC implementation shortcomings from the head teachers and teachers and how PC target achievement could be enhanced to improve on learning outcomes. The results are presented in Tables 15 and 16

Table 15

Headteachers Opinions on Enhancement of Performance Contracting Target Achievement (N=82)

Teacher Performance Contracting target achievement can be enhanced by:	Level of agreement				
	Strongly Disagree	Disagree.	Not sure	Agree	Strongly Agree
1.Timely feedback	-	1 (1.2%)	2 (2.4%)	30 (36.6%)	49 (59.8%)
2.Training Workshops	-	10 (12.2%)	-	31 (37.8%)	41 (50%)
3.Involving the support staff	26 (31.7%)	31 (37.8%)	5 (6.1%)	11 (13.4%)	9 (11%)
Regular teacher professional growth	3 (3.7%)	40 (48.8%)	2 (2.4%)	19 (23.2%)	18 (22%)
Regular Teacher PC assessment	6 (7.3%)	1 (1.2%)	-	29 (35.4%)	46 (56.1%)

From table 15, it was observed that the head teachers agreed with most of the opinions to enhance teacher Performance Contracting target achievement with greater than 80% agreeing on strategies of timely feedback, training workshops and regular teacher PC assessment. However, more than two thirds of the Headteachers 63 (69.5%) disagreed with the suggestion of involving support staff

Table 16

Teachers Opinions on Enhancement of Performance Contracting Target Achievement (N=82)

Teacher Performance Contracting target achievement can be enhanced by:	Level of Agreement				
	Strongly Disagree	Disagree.	Not Sure	Agree	Strongly Agree
1.Timely feedback	3 (3.7%)	9 (11%)	3 (3.7%)	18 (22%)	49 (59.8%)
2.Training Workshops	5 (6.1%)	12 (14.6%)	3 (3.7%)	20 (24.4%)	42 (51.2%)
3.Involving the support staff	44 (53.7%)	20 (24.4%)	6 (7.3%)	7 (8.5%)	5 (6.1%)
Regular teacher professional growth	-	11 (13.4%)	4 (4.9%)	34 (41.5%)	33 (40.2%)
Regular Teacher PC assessment	44 (53.7%)	18 (19.5%)	3 (3.7%)	10 (12.3%)	9 (11%)

From table 16, it was observed that the teachers agreed with most of the proposed strategies to enhance teacher Performance Contracting target achievement with greater than 80% agreeing on strategies for timely feedback, training workshops and regular teacher PC assessment just like the head teachers. The teachers also disagreed involving support staff 64 (78.1%). Unlike the head teachers, most teachers 62 (73.2%) disagreed on the strategy of regular teacher PC assessment. The PC process appeared unpopular. As one of the teachers put it:

'PC assessment takes a lot of time. It involves a lot of paperwork and filling. If we have regular PC assessment, where will we get the time to complete the syllabus, and revise for national examinations?' (Female teacher in one of the Selected schools, 2023)

The CSOs, the Sub-County Director of TSC and the County Director of TSC also confirmed that most teachers did not like PC appraisals. The teachers had developed a negative attitude towards the PC programme. The County Director of TSC had this to say:

Teachers have looked at the whole PC process as a mere routine procedure. It is only recently that teachers started taking PC as serious when the Teachers Service Commission started using the PC scores in promotion interviews. But even then, most teachers appearing for interviews could not recall what was being assessed on the TPAD tool (Kakamega County TSC Director, 2023)

4.3.7 Variation in Teachers' Performance Contracting Target Achievement and Pupils' Learning Outcomes

Other than the Teachers attitude towards the PC process, the study went further to establish from the head teachers the cause of variation in teachers' performance contracting target achievement and pupils' learning outcomes. The results are presented in Tables 17.

Table 17

Headteachers Opinions on Cause of Variation in Teachers' Performance Contracting Target Achievement and pupils' Learning Outcomes (N=82)

Variation in teacher target achievement in PC and pupil learning Outcomes is due to:	Level of Agreement				
	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Poor supervision of the PC process	27 (32.9%)	51 (62.2%)	1 (1.2%)	2 (2.4%)	1 (1.2%)
Poor understanding of the PC process by teachers	32 (39%)	49 (59%)	-	1 (1.2%)	-
Limited ICT knowledge by teachers	22 (26.8%)	51 (62.2%)	1 (1.2%)	8 (9.8%)	-
Negative attitude towards the PC process	2 (2.4%)	3 (3.7%)	-	47 (57.3%)	30 (36.6%)
Failure by teachers to attach value to the PC benefits	-	3 (3.7%)	-	44 (53.7%)	35 (42.7%)

4.4 Discussion

The results of this study show that there exist very weak associations between teacher's professional knowledge and practice target achievement and the learning outcomes of KCPE performance ($r=0.159$; $P=0.7640$), retention rates ($r=0.285$; $p=0.585$) and completion rates ($r=-0.079$; $p=0.061$). The high p-values indicate that the associations are not significant. The Regression models also revealed a very weak, statistically insignificant relationships between teacher's professional knowledge and practice target achievement with the learning outcomes. This therefore means that there isn't enough evidence to support the associations as meaningful. We therefore fail to reject the null hypothesis that there is no significant association between target achievement and learning outcomes among pupils in public primary schools in Kakamega County in Kenya. The findings also mean that teacher achievement in Professional knowledge and practice PC target did not meaningfully predict KCPE performance among the sample schools.

The qualitative insights of the study also supported these findings. All the Key informants were of the opinion pupil learning outcomes witnessed in the study were mainly due to poor teachers' attitudes towards the PC process. Teachers felt that the whole PC process takes a lot of time and was meaningless. Such sentiments point at poor teacher attitudes and could perhaps be the reason why only a few teachers (39%) scored well in the Professional knowledge and practice PC target. This is corroborated with the Headteachers view (>90%) that many teachers did not attach value to the PC process (Table 10). The common problem where teachers feel that the same questions are being asked during the appraisal process could be easily handled through stimulus variation. This finding could imply that the teachers still have some form of resistance towards the whole PC process. Teachers countrywide had initially resisted the PC process.

These study findings corroborate with study findings by Chirchir and Letangule (2021) of implementation of PC in secondary schools in Nyeri and in Kisii Counties in Kenya.) Chirchir and Letangule reported in that most schools in Nyeri County in Kenya, teachers' scores in the appraisals did not correlate with the learners' secondary school Kenya Certificate of Secondary Education (KCSE) examination performance. This study had also examined dependability of student learning outcomes on performance appraisal for teachers in public secondary schools in Kisii County. Chirchir and Letangule's study of schools in Kisii County looked at appraisal variants of teacher qualifications, professional development, appraisal ratings, and student survey ratings with student learning achievement. The study established that appraisal using TPAD minimally contributed to student academic achievement in public secondary schools in Kisii County, Kenya. Chirchir and Letangule (2021) studies seem to cast doubt on the appraisal scores relation to the learning outcome of academic achievement. However, an earlier study by Aloo *et al.* (2017), using a correlation study design in Public Secondary schools in Kisii County (Kenya) found that PC had a significant positive effect on timeliness in curriculum implementation ($r=0.604$; $p<0.05$). However, Aloo's study did not examine how PC targets influenced learning outcomes. The results of these studies are conflicting and failed to look at whether the set PC targets were achieved, and the effects of target achievement on other learning outcomes.

Unlike the findings of the current study, several studies have reported a positive relationship between teacher professionalism and learning outcomes (Perry *et al.* 2021; Beach *et al.* 2021). The argument in these studies is that teacher professionalism and practice influences teachers' performance in the classroom by providing teachers with new information, techniques, tools, and instructional strategies that they can use to connect with and engage their students. However, these studies also assert that the Knowledge and instructions need to be relevant to the expected learning

outcomes. A study Kutaka *et al* (2017) concluded that while professional knowledge can lead to improved learning outcomes, the effectiveness often depends on the relevance and application of the training received by teachers.

The findings of the current study have implications on the appraisal in the PC policy for teachers. The findings of could imply that either, the teachers, and more so the headteachers are scoring target achievement poorly, or the scoresheets used are faulty, or the aspects being evaluated on the TPAD tool have little bearing with the learning outcomes being studied. This argument corroborates with the Teachers Service Commission observation report of 2016, in the newsletter, where it had been observed that the average score of 80% achieved in most targets by teachers should arguably translate to good National examination performance (TSC, 2017). However, in many schools with high PC target scores, the performance in Kenya Certificate of Secondary Education (KCSE) national examinations was still poor (TSC,2017). Looking at results of the current study, and by admission of the Curriculum Support Officers, the Sub-County TSC Directors and the County TSC Director, most teachers still teachers have negative attitude towards the PC process. The appraisal process is supervised by these officers who most likely carry out the appraisal process professionally. Therefore, it is most likely that the aspects captured on the PC scoresheets may have little bearing on the learning outcomes being studied. One of the main shortcomings mentioned by the Key informants was that the TPAD tool could not evaluate all aspects of learning outcomes such as learner creativity, communication scales and problem-solving skills.

Some scholars have argued that PC in the teaching service is a meaningless exercise (Camilleri, 2021; Singh & Loh, 2024; Darling Hammond *et al.*, 2020; Jensen, 2011; Hallinger *et al.*, 2014). In one earlier study carried out on the effects of PC on effectiveness of curriculum implementation in Australia, Jensen (2011) had reported that teachers were delayed in fundamental areas of curriculum implementation by the large amount of record filling. Jensen's study also found that student performance in reading had dropped significantly and performance in mathematics had also stagnated. A Kenyan study by Mbua and Sarisar (2013), had concluded that teacher PC still has some gaps in its implementation. The gaps identified by Mbua and Sarisar (2013) included a lack of feedback for teachers, a lack of participation by support staff in the PC implementation process, and ineffective appraisal criteria. According to Hollweck and Lofthouse (2021)., from a broad perspective, performance appraisals are designed to help organizations draw the best out of their employees, by enabling individual employees to perform at optimal levels. However, the execution of such systems is not always easy and the appraisals frequently do not achieve their goals, with the result that both the employees and their supervisors are often dissatisfied with the system.

Although positive associations between teacher professionalism and learning outcomes are well-documented elsewhere in research (Desimone *et al.*, 2009; García *et al.*, 2023; Harris & Jones, 2021), the quality of learning outcomes vary due to challenges experienced by teachers, especially in the educational systems in developing countries including Kenya. Many educational systems suffer from insufficient resources, and teachers encounter significant limitations that hinder their capacity to uphold high professional standards. The pressures on the teaching profession to produce good mean scores in national examinations including KCPE, compounded by a lack of support or acknowledgment, can result in burnout, which adversely affects learning outcomes. In many instances in the study area, teachers are tasked with managing very large class populations, often with enrolments exceeding 60 pupils per class. Thus, while the professionalism of teachers can influence student learning outcomes, it is important to consider issues like insufficient resources, teacher burnout and pedagogy to guarantee that every student receives the advantages of teacher professionalism to have good learning outcomes.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

In the context of the current study, teacher achievement in the professional knowledge and practice PC target has no effect on pupil learning outcomes.

5.2 Recommendations

The study recommends that as TSC implements ongoing professional development programs, focus should be on pedagogical strategies with stimulus variation rather than just content knowledge. This would equip teachers with effective teaching methods that could positively impact student learning outcomes. There is need for further research to establish the relationship between specific aspects of teachers' professional knowledge (e.g., subject-specific pedagogy) and student outcomes rather than relying solely on overall scores. There is need for further research to establish the influence of teachers' professional knowledge (e.g., subject-specific pedagogy) with other pupil learning outcomes such as creativity, problem solving skills and communication skills.

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