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Teacher's Professional Knowledge and Students' Academic Performance: Evidence of TPAD Implementation in Secondary Schools in Kenya

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Teacher's Professional Knowledge, Teacher Performance Appraisal and Development (Tpad), Descriptive Survey, Transmara East Sub-County, Kenya.

Teacher performance appraisal and development play a crucial part in enhancing staff performance, reward, motivation, and training. A thorough inspection of most public secondary schools in Transmara East Sub-County disclosed a decline in Kenya Certificate of Secondary Education schools' average performance from 2018 to 2022. It is not evident whether Teacher performance appraisal and development (TPAD) implementation has an influence on the performance of learners' academic achievement. The investigation was steered by Goal Setting theory of motivation. The study adopted a descriptive survey research design. A target population of 277 respondents consisted of 1 Teacher Service Commission (TSC) Sub-County director, 34 principals, and 242 TSC teachers from 34 public secondary school teachers in Transmara East Sub-County. The project adopted a stratified random sampling technique on 164 respondents comprising 1 TSC sub-county director, 20 principals, and 143 teachers employed by TSC. Questionnaires were utilised in acquiring data from teachers while the interview schedule was given to the TSC Sub-County director and principals. The checklist was used to collect target and end-term mean scores. Data collected was examined using both quantitative and qualitative approaches. Quantitative facts were evaluated by descriptive statistics, frequency, mean and standard deviation as well as a correlation for inferential statistics. The quantitative facts were illustrated using charts and tables. Qualitative data was analysed thematically, which was triangulated with quantitative data. Findings reveal that teachers in their professional knowledge, showed mastery of subject content, used appropriate teaching styles, developed required documentation and learning assessment, and utilised learning and teaching resources sufficiently. Hence, professional knowledge has a significant positive influence on the academic performance of students ($P < 0.05$). The study concludes that professional knowledge has a significant positive influence on students' academic performance in

public secondary schools in Transmara East Sub-County, Kenya. The study recommended that the government should improve training, assessment, and e-resource for ICT integration in the learning and teaching of students.

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INTRODUCTION

Performance appraisal, as per Kageema and Irungu (2018), is the process of validating employees' performance in a specific task against a set of conditions or goals. It is the approach used to assess an employee's performance on an assigned task and determine their professional advancement (Moyal & Iyengar, 2016). Based on Gurr (2017), performance assessment helps employees become more accountable and productive. On human resourcing in schools, Ibrahim & Benson (2020) concur that appraisal is a vital aspect of the corporate performance management system through which administration guarantees that tasks, responsibilities, and output are in alignment with the organisation's priorities. The outputs of performance evaluation, if correctly handled, can provide an institution with a competitive advantage over rivals. Performance appraisal in schooling has been used by governments throughout the world as a technique for determining educational outcomes in diverse educational systems.

Globally, performance appraisal in learning institutions has spread to Asia and the concept was adopted in Sri Lanka, Pakistan, Korea, India, China, and Bangladesh (Haque, 2013). In Canadian schools, teachers were constantly advanced and inspired to expand their tutoring quality (OECD, 2016). In the USA, Maverick educators, as cited in Kwedho (2015), the administrators and elected officials came up with the idea of starting Teachers' Performance Appraisal and Development (TPAD) in the mid-1990s due to low performance in schools. Thus, Performance Contracting (PC) is well entrenched across various states and the school boards are the managers. The intention of performance appraisal was to improve instructors' proficiency and, as a result, students' performance. Managers may use performance appraisal to ascertain training requirements, decide on promotions, transfer, and award employees.

Performance Appraisal is also evident in Africa. In Rwanda, Teachers' Performance Appraisal is adopted in the education sector, and empirical

studies have established impressive progress in learning outcomes (Mbabazi, 2013). In the field of education, Kyakulumbye (2013) stated that the public-school appraisal system has culminated in the discovery of performance gaps and educator advancement needs. This was made feasible by assessing instructors' knowledge and experience, as well as teamwork, communication, and time management, and so aligning teaching staff with strategic educational goals. Teachers' Performance Appraisal is aimed at the performance of the students through monitoring and evaluation of capabilities offered by the teachers.

In Kenya, performance appraisal was initiated as part of a public-sector reform effort aimed at improving public services (Republic of Kenya, 2013). TPAD is an uneven approach to appraising all public-academic institution educators irrespective of their areas. This was to facilitate and gauge teacher advancement for enhanced educator performance (Kagama & Irungu, 2018). The TSC, in employing Teacher performance appraisal and development, obligates principals of the school to examine and hand out reports of progress on the teachers' performance levels (Midimo, 2017). Teachers enhance their professional knowledge and application through the preparation of lesson plans, lesson notes, and schemes of work, which translates into their instructional performance. TPAD was developed to evaluate professional development, promotion of co-curricular activities, safety, learner protection, creativity and innovation in educating, management of time, professional knowledge and application as well as maintaining teaching progress and lesson attendance (Ngeno et al., 2013). In this case, the students are provided with appropriate teaching material taught efficiently and effectively.

Teachers' professional knowledge is an important part of teaching which is crucial in ensuring effective learning and student outcome (Hill & Chin, 2018). Zhaohui & Anning (2020) asserts that it can be done through building student engagement, classroom management, conflict management,

benchmarking other universities, individual and collaborative research, education conferences and seminars, and reading professional literature as well as courses and workshops. Professional development programmes lead to improvement in academic performance as mediated by professional knowledge, as found by Osei-Owusu (2022). This professional knowledge plays an important role in professional development programmes. Where demonstrating mastery, preparing professional documents, learners assessment and lesson observation were used to measure professional knowledge in TPAD.

In 2018, the Kenya National Union of Teachers (KNUT) and Kenya Union of Post-Primary Education Teachers (KUPPET) challenged the embracing of the new teachers' performance appraisal strategies on the basis of the tool as victimisation for teachers (Joseph et al., 2020). It was also claimed that it does not meet the expectations of improving teachers' commitment to their work and quality education since the tutor's appraisal is more of an error finding than an advisory.

Statement of the Problem

Teacher performance appraisal and development have an effective impact on teacher performance as a tool to determine the educational outcome. Despite the value of teacher appraisal, some believe that it fails to live up to the expectation of improving teaching quality, which is subsequently manifested in higher educational standards due to the way it is administered (Pont et al., 2019). Since the introduction of performance appraisal in public secondary schools in Kenya, teachers, together with the teacher unions have had a lot of complaints about spending too much time preparing the performance appraisal documents at the expense of teaching, which to them, is the most important aspect. They have even doubted whether the performance appraisal itself can translate to having better results in schools, yet one of its objectives is

to provide quality education to learners in all public institutions. It is against this backdrop that the researcher asked questions that begged for answers hence the conceptualisation of this study. The reality is that despite the existence of teacher performance appraisal in Kenyan public schools, questions still arise on its applicability, reliability, and validity in improving the performance in the schools. Roschelle et al. (2016) pointed out that teachers do not get timely evaluation reports which might affect the performance of students. Despite, Teacher performance appraisal and development (TPAD) being applied in Transmara East Sub-County, the county has been registering declining students performance. Hence, it is not clear whether Teacher performance appraisal and development affects students' performance in public secondary schools.

Objective of the Study

The intentions of this investigation are to assess the influence of teachers' professional knowledge on the academic performance of students in public secondary schools in Transmara East Sub-County.

LITERATURE REVIEW

Theoretical Framework

The study used goal setting theory which was developed by Edwin Locke in 1968. The approach emphasises the need to define precise, clear, and challenging goals, as well as provide necessary feedback and include staff in the development of organisational priorities (Locke & Latham, 2019). It asserts that these concepts are vital in inspiring workers to attain greater levels of performance, and it emphasises that objectives established by employees tend to encourage them to achieve higher levels of performance. Goals are vital in offering guidance to staff about what has to be done and the dedication required, according to the notion, which increases productivity (Van-Den-Broeck et al., 2019). In the context of TPAD, it acts as a tool for setting goals as well as appraising teachers through

setting appropriate goals for the academic performance of the student.

This model recommends the termly appraisal system where every staff member is expected to report on the progress of work by filling up the termly work of the task designated earlier as agreed in the term. At the completion of the term, the work plan is applied to evaluate the performance of the staff for the whole term. The idea underscores the benefit of workers' (teachers) involvement in establishing goals as well as the improvement of student performance. Consequently, contribution in initiating goals promotes inspiration of teachers to complete work efficiently and fast and results in better yield by levitation of effort, feedback, and enthusiasm quality (Islami & Mulolli, 2018). A critic of the theory points to the dependency on feedback quality rather than the proactive ability of the teacher. Hence, goals set sometime are not achieved, leading to the failure of an appraisal system to correct poor performance. Therefore, is a need for schools to develop policies that assist in the active utilisation of the feedback. This includes a reward system for performance achievement, training for poor achievers and motivation for achievers. The theory is therefore appropriate to this study since the teacher performance appraisal and development tool has been used by the teachers' employer, Teacher Service Commission (TSC) to set targets for students' academic performance.

Professional Knowledge and Students' Performance

Professional knowledge of the teacher takes part of the fundamental obligation in strengthening the performance of the students. Demonstrating mastery, preparing professional documents, learners assessments, and lesson observation are part of the important practices of professional knowledge of a teacher. According to Mahulae et al. (2020), the professional knowledge of the teacher relates to the competence of the teacher, which assists in improving learners' achievement. It is one

of the TPAD indicators that relate directly to the development of the students as well as the learning process.

Teachers' knowledge and instruction were assessed by Hill and Chin (2018) on achievement outcomes. Students and professional standards which identify the knowledge of students play a crucial role in promoting effective student learning and instruction. This exploration was founded on surveying tutors where evidence from 284 respondents was used. However, there was evidence that concepts are responsive to accurate measurement and such knowledge related to instruction and student outcome. However, knowledge of students' misconceptions remains to be difficult to measure.

Marika et al. (2021) examined the outcome of tutors' professional understanding of delivery service which was done in Kitui County public secondary schools. Teacher Service Commission implemented Teacher performance appraisal and development (TPAD) as means of improving service delivery in secondary schools. However, there is evidence that teachers are not involved in co-curricular activities, are inadequate preparedness in teaching content, and missing lessons. Hence, raising concern on the purpose of improving student performance. Linear regression was selected to analyse the association between variables. The findings disclosed that there existed a noteworthy association between instructors' professional knowledge and service delivery. However, the current study examined the role of teachers' professional knowledge in the performance of the students as a measure of TPAD.

Zhaohui and Anning (2020) examined the effect of educators' professional advancement on students' academic performance in higher learning. A sample of 298 teachers was given survey questionnaires. This was analysed using a structural equation model and confirmatory factor analysis. It was established that instructors at Jiangsu University were interested

in building student engagement, classroom management, conflict management, benchmarking other universities, individual and collaborative research, education conferences and seminars, and reading professional literature, as well as courses and workshops. Teacher instructional methods and abilities have been enhanced through professional development within three years. Low employer supports and conflict of interest between professional development and work schedule were an impediment to the participation of teachers in professional development programs.

Mahulae et al. (2020) investigated the impact of the competence and professionalism of educators on the performance of the teacher in relation to the outcome of student learning achievement. A case study of Harapan Mandiri college in Medan, which is a private university with high student achievement. A descriptive explanatory research design adopted a quantitative method where a census of 95 teachers was used. Results indicated that professionalism and competence had a positive effect on teacher performance. Teacher performance had a significant positive outcome on the students' performance; hence, teachers' performance acted as a partial mediator of both professionalism and competence in the performance of the student.

Lu et al. (2017) investigated the outcome of educator professional advancement programs on the success of students in China rural areas. The study utilised 3066 students and 84 teachers from the western province of China. The results indicated that National Teacher Training Program had no significant outcome on the academic performance of students. However, the program had a positive effect on the mathematics teaching knowledge of the teacher but not on teaching practices in the class. Therefore, the programme assists in proving teaching knowledge but is not translated into improving teaching practice nor student learning.

The impact of professional development programmes was examined by Osei-Owusu (2022) on the relationship between teachers' knowledge and academic performance. Senior high school 4,103 teachers were surveyed across the North, Middle, and Southern belt of Ghana. Findings revealed that professional development had a positive statistical relationship with professional knowledge. Similarly, both professional development and professional knowledge had a positive statistical relationship with academic performance. Hence professional knowledge had a partial mediating effect on the relationship between professional development and academic performance. The study concludes that professional development had an impact on student academic performance through the professional knowledge of the teacher. The study suggested that teachers should engage in professionally developed programmes that would improve their professional competencies.

RESEARCH METHODOLOGY

A descriptive design was adopted in the study. The design incorporates mixed methods that are quantitative and qualitative in approach improving the quality of results obtained from different tools. The research was carried out in public secondary schools in Transmara East Sub County, Narok County because the area experiences a declining trend in KCSE academic performance even with the compliance of tutors in conducting teacher performance appraisals as specified by TSC. The target population comprises the 34 principals and 242 teachers employed by TSC from the 34 public secondary schools in Transmara East Sub-County and the TSC sub-county director. A sample size of 164 respondents was chosen using stratified random selection where there was one TSC representative, 20 Principals and 143 teachers. The data was obtained by use of questionnaires, interview

schedule, and checklist. The questionnaires provided quantitative data that were used to test the influence of TPAD on students' academic performance. However, questionnaires were supported by an interview schedule which provided qualitative information that provided in-depth understanding.

The sampled teachers filled in the questionnaires, whereas interviews were administered to Principals and the TSC Sub-County director. The checklist provided other information that cannot be accessed from TPAD but obtained from the school administration records. This was determined through a pilot study in three public secondary schools selected in the neighbouring Transmara West Sub County. The data collected from the pilot study was analysed using the Cronbach Alpha coefficient, which according to Olson (2003), a Cronbach Alpha coefficient of 0.70 or more is considered reliable. The results indicated an overall Cronbach Alpha Coefficient of 0.812 which implies that the questionnaire was reliable. The quantitative data was examined through the application of both descriptive and inferential statistics with the help of Statistical Package for Social Sciences (SPSS) computer software. The descriptive statistics entailed the use of percentages, means and, standard deviation, frequency, while correlation analysis was used to analyse the influence of teacher performance appraisal and advancement on students' performance in public secondary schools in Transmara East Sub-County.

RESULTS AND DISCUSSIONS

Teachers' Professional Knowledge

The results from teachers' questionnaires which were based on a five-point Likert scale, were analysed to provide mean and standard deviation (STD). The results were summarised and presented in *Table 1*.

Table 1: Descriptive Statistics for Teachers' Professional Knowledge

	SA=5	A=4	U=3	D=2	SD=1	Mean	STD
Mastery of content	33(23.7%)	93(66.9%)	11(7.9%)	0(0.0%)	0(0.0%)	4.22	0.58
Instructional methods	33(23.7%)	93(66.9%)	13(9.4%)	0(0.0%)	0(0.0%)	4.14	0.56
Professional documents	38(27.3%)	95(68.3%)	6(4.3%)	0(0.0%)	0(0.0%)	4.23	0.52
Assessment and feedback	25(18.0%)	93(66.9%)	21(15.1%)	0(0.0%)	0(0.0%)	4.03	0.58
Lesson observation	16(11.5%)	90(64.7%)	33(23.7%)	0(0.0%)	0(0.0%)	3.88	0.58
Teaching/learning resource	30(21.6%)	98(70.5%)	11(7.9%)	0(0.0%)	0(0.0%)	4.14	0.53
Learners' capability	30(21.6%)	92(66.2%)	17(12.2%)	0(0.0%)	0(0.0%)	4.09	0.58
Learners' talents	20(14.4%)	91(65.5%)	28(20.1%)	0(0.0%)	0(0.0%)	3.94	0.59
ICT integration	9(6.5%)	69(49.6%)	54(38.8%)	7(5.0%)	0(0.0%)	3.57	0.69

Table 1 reveals that the teacher satisfactorily demonstrates mastery of the subject content since 33(23.7%) respondents strongly agreed, 93(66.9%) respondents agreed, and 11(7.9%) were neutral. A mean of 4.22 and a standard deviation of 0.58 indicates that the majority of the teacher mastered their subject contents. This implies that teachers were able to master the subject content, which is important in the teaching profession. The interview results concurred with the questionnaire findings that teachers demonstrated mastery of the content. The results from the interview showed that 12 (60%) respondents pointed out that teachers were able to deliver their lessons at ease with sufficient content that assisted the students in improving performance. In the response, Principal 11 said, "I ensure that I get all required content, materials, and teaching aids before I go to the class. This eases my teaching, which has improved my students' performance in exams". 40% of the respondents asserted that mastering the content assisted only in lesson delivery.

In the findings, the teachers greatly used appropriate instructional methods as revealed by 33(23.7%) respondents who strongly agreed and 93(66.9%) respondents who agreed. However, there were a few, 13(9.4%) who were undecided. The study

obtained a mean of 4.14 and a standard deviation of 0.56, which reveals that teachers used appropriate instruction methods. This implies that the instruction methods used were appropriate for teaching.

As per the response, 38(27.3%) strongly agreed, 95(68.3%) agreed, and 6(4.3%) were neutral that the teacher prepares professional documents based on the current syllabus/design. A mean of 4.23 and a standard deviation of 0.52 reveals that professional documents were made by teaching using the current syllabus and design. This indicates that there was high professionalism in the preparation of professional documents in accordance with the current syllabus and design in the majority of secondary school teachers. Similarly, all the response from principals on "how has TPAD improved teachers' ability to prepare for lessons professionally?" indicates that all the teachers prepare schemes, lesson plans, and notes for their classes.

According to the findings, the teacher had sufficient ability to carry out learning assessment, feedback, and reporting on learners' learning as revealed by 25(18.0%) and 93(66.9%) respondents who strongly agreed and agreed, respectively, though there were 21(15.1%) respondents who were

neutral. The mean was 4.03 with a standard deviation of 0.58 shows that the majority of teachers assess and provide reports on the learning process. The teachers' ability to conduct learning assessments, feedback and reporting were sufficient for learning purposes.

The results also reveal that teachers undertook their lesson observation at least once a term where 16(11.5%) strongly agreed, 90(64.7%) agreed, and 33(23.7%) were neutral. Teachers occasionally conducted lesson observation, as revealed by a mean of 3.88 and a standard of 0.58. This implies that lesson observation was somewhat taken once per term by the majority of the teachers.

Findings indicate that there were 30(21.6%) respondents who strongly agreed, 98(70.5%) agreed, and 11(7.9%) were neutral that the teachers were satisfactorily able to utilise teaching/learning resources effectively. Therefore, teaching/learning resources were effectively utilised in these schools (Mean = 4.14, SD = 0.53).

The results indicate teachers have sufficient ability to identify learners' capability and learning styles, as shown by 30(21.6%) respondents who strongly agreed and 92(66.2%) agreed, but 17(12.2%) were neutral. A mean of 4.09 and a standard deviation of 0.58 reveals that the majority of teachers utilised appropriate learning styles. This implies that the teachers were able to appropriate learning styles for different learners' capabilities.

In response to "how has the adoption of TPAD improved lesson observation, utilisation of learning resources and adoption of appropriate learning style among teachers?" Principal 5 responded:

"We have intensified supervision and monitoring of teachers to ensure that teachers did lesson observation, delivered lessons using appropriate teaching strategies as well as teachers have necessary lesson plans. This is because TPAD gives us the role of evaluating and supervising the teachers".

Other responses pointed to similar respondents that the principals, based on their role with the assistance of TPAD ensured that teachers conducted lesson observation, utilised learning resources, and adopted appropriate learning styles.

As per the result, 91(65.5%) agreed, 20(14.4%) strongly agreed, and 28(20.1%) were neutral that the teacher had sufficient ability to identify and nurture learners' talents. Most teachers somewhat identified and nurtured students' talent, as revealed by a mean of 3.94 and a standard deviation of 0.59. This implies that teachers were able to identify and nurture the talent of their students. In response to the interview question, "Do you think the professional knowledgeability of teachers as measured in TPAD helps the students to performance?" reveals that all the principals agreed. On the response "Why do you think so?" there were three themes. A majority of 10 (50%) principals argued the ability of the teacher to identify their students' ability and use appropriate teaching aids, techniques, and skills to ensure that all students participate in learning and gain an understanding of the subject content during the learning process. There were 8 (40%) of the principals argued that professional knowledgeability would assist the teacher in delivering the right content using appropriate teaching methods; however, some teachers are not concerned with assessing the abilities of their students. Two principals were of the opinion that even though teacher professional knowledge assists teachers in improving performance, there is a need for administrative support to assist teachers in getting appropriate teaching tools.

The results further indicate that the teacher had moderate ability to access, retrieve and integrate ICT in teaching and learning, whereby 9(6.5%) respondents strongly agreed, 69(49.6%) respondents agreed, 54(38.8%) were neutral, but 7(5.0%) disagreed. The mean reveals low integration of ICT in teaching, as revealed by a mean of 3.57 and a standard deviation of 0.69. In this case, the use of ICT in the integration,

accessing, and retrieval of learning resources was moderately adopted in most schools.

Professional Knowledge and Student's Academic Performance

Table 2 indicates that there existed a positive significant strong relationship between professional

knowledge and students' academic performance ($R=0.738$, $P<0.05$). This implies that an increased evaluation process of professional knowledge in TPAD leads to an improvement in students' academic performance.

Table 2: Professional Knowledge and Student's Academic Performance

		Professional Knowledge	Students' Academic Performance
Professional Knowledge	Pearson Correlation	1	.738**
	Sig. (2-tailed)		.000
	N	139	139
Students' Academic Performance	Pearson Correlation	.738**	1
	Sig. (2-tailed)	.000	
	N	139	139

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

The academic performance of students was analysed using descriptive statistics. This entailed mean and standard deviation obtained from

frequencies and percentages. This is summarised in Table 3.

Table 3: Descriptive Statistics for Students' Academic Performance

	SA	A	U	D	SD	Mean	STD
Professional knowledge	63 (45.3%)	76 (54.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4.45	0.50
Comprehensive learning environment	36 (25.9%)	87 (62.6%)	16 (11.5%)	0 (0.0%)	0 (0.0%)	4.14	0.60
Teacher professionalism	23 (16.5%)	90 (64.7%)	26 (18.7%)	0 (0.0%)	0 (0.0%)	3.98	0.60
Learning community.	4 (2.9%)	63 (45.3%)	59 (41.7%)	14 (10.1%)	0 (0.0%)	3.41	0.71

Table 3 reveals that the majority of 76(45.7%) respondents agreed and strongly agreed by 76(54.7%) respondents that professional knowledge presented in TPAD has improved students' academic performance. The study finding implies that professional knowledge was crucial in the academic performance of students (Mean = 4.45, SD = 0.50). The response to the TSC sub-county

secretariate interview question "What is the effect of professional knowledge in the TPAD on students' performance?" reveals similar results that professional knowledge positively assisted the academic performance of students.

According to the results, the comprehensive learning environment has greatly improved the

achievement of students as measured by TPAD, indicating 36(25.9%) teachers strongly agreed, 87(62.6%) agreed, and 16(11.5%) were neutral. It was found that a mean of 4.14 and a standard deviation of 0.60 shows that the majority of teachers agreed that the learning environment is crucial for the improvement of students' academic performance. The results reveal that a comprehensive learning environment plays an important role in students' academic performance. In response to "What is the effect of the comprehensive learning environment in the TPAD on students' performance?" by TSC sub-county secretariate agreed that a comprehensive learning environment contributed positively to the academic performance of students in the sub-county.

As per the results, teacher professionalism has somewhat enhanced the performance of student performance as indicated by 23(16.5%) respondents who strongly agreed, 90(64.7%) agreed, and 26(18.7%) were neutral. The majority of teachers agreed that professionalism assists learners (Mean = 3.93 ± 0.60). The results indicate that professionalism

was crucial in enhancing the performance of the learner. As per the interview, "What is the effect of teacher professionalism in the TPAD on students' performance?" the TSC sub-county secretariate agreed that teacher professionalism had a positive influence on students' academic performance.

Finally, the results indicate that the professional learning community somewhat improved students' achievement, as revealed by 4(2.9%) respondents who strongly agreed, 63(45.3%) agreed and 59(41.7%) were neutral, and 14(10.1%) disagreed. There is the poor performance of the teacher in the professional learning community, as indicated by a mean of 3.41 and a standard deviation of 0.71. The professional learning community registered a low impact on students' performances as compared with other TPAD variables. The interview with the TSC sub-county secretariate agreed that the professional learning community positively contributed to students' performance in response to "What is the effect of professional learning community in the TPAD on students' performance?"

Table 4: Target Mean Scores, Term Mean Scores and Percentage Change

	N	Min	Max	Mean	Std. Dev
Target Mean Score	138	3.50	11.00	7.1975	2.37552
End-Term Mean Score	138	2.50	9.90	6.5812	2.32437
Efficiency Percentage	138	71%	97%	90.2%	7.674%

The checklist results in *Table 4* indicated that there was a 90.2% efficiency percentage between achievement rates based on target over achieve results. The achievement ranges from 71% to 97%, which indicate their score obtained are all below the target score but assist in improving the performance of the student. The results indicated that the average target score is 7.20 ± 2.38 and the average mean score of 6.58 ± 2.32 . This indicated that TPAD still has a significant role in enhancing the academic performance of students in Kenya. TPAD assists in managing performance and has been crucial in the

promotion of teachers and rewards since it encourages teachers to perform.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study concludes that professional knowledge had a significant positive effect on the academic performance of students in public secondary schools in Transmara East Sub-County. The positive effect of professional knowledge on academic performance was associated with the teacher's ability to demonstrate mastery of the subject

content, use of appropriate instructional methods, ability to prepare professional documents and conduct learners' assessments, feedback, and reporting on learners' progress. The teachers are also able to somewhat undertake lesson observation at least once a term and identify and nurture learners' talents. In terms of utilisation of learning and teaching resources, it is established that the teachers are able to use them effectively as well as identify learners' capability and learning styles that are appropriate for their students. However, ICT integration, access, and retrieval are among the least utilised resources in the schools.

Recommendations

The study recommends that TPAD was able to identify the weakest teacher professional knowledge capability adoption of ICT in learning. The study indicated that ICT access, retrieval and integration in the learning process was somewhat underutilised. The government have put more initiative so that vision 2030 is achieved through the provision of electricity and ICT resource in secondary schools.

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