



**INFLUENCE OF APPRAISAL OF TEACHERS'
ADHERENCE TO NATIONAL PROFESSIONAL STANDARDS
ON TEACHER PRODUCTIVITY IN PUBLIC SECONDARY
SCHOOLS IN MAKEUNI COUNTY, KENYA**

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Abstract:

Appraisal of teachers' ability to adhere to the national professional standards plays a significant role in ensuring their productivity in schools. However, in Makueni County, teacher productivity in public secondary schools is low. This study assessed the influence of appraisal of teachers' adherence to national professional standards on teacher productivity in public secondary schools in Makueni County, Kenya. A mixed methodology and concurrent triangulation research design were adopted. The target population comprised 393 principals and 3420 teachers from the 393 public secondary schools in Makueni County totaling 3813 respondents from which a sample of 362 respondents was calculated using Yamane's Formula. Stratified sampling was used to select all public secondary schools in all the nine sub-counties in Makueni County. From each sub-county, at least four schools were selected using simple random sampling. Simple random sampling was applied to select 39 principals considering schools that have registered high and low academic grades for the last five years. A total of 323

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teachers were selected using a simple random method. A questionnaire was used to collect data from teachers whereas interview guides were used to gather qualitative data from principals. Data analysis began by identifying common themes. Qualitative data were analyzed thematically based on study objectives and presented in narrative forms. Quantitative data were analyzed inferentially using Pearson's Product Moment Correlation Analysis using Statistical Package for Social Sciences (Version 27) and presented using tables. The study of the levels of appraisal of teachers' adherence to national professional standards is not satisfactory to occasion improved productivity among teachers. The study recommends that principals should encourage teachers to understand different legal requirements in education, pursue further training, and have an inkling of all requirements of classroom pedagogy. This will go a long way in enhancing their professional acumen necessary for higher productivity.

Keywords: appraisal of teachers' adherence to national professional standards, teacher productivity, public secondary schools

1. Introduction

Teachers are at the heart of the learning process and strongly influence both the quality of education that children receive at school and eventually their learning outcomes. However, to achieve their educational objectives, performance appraisal of their participation in co-curricular activities ought to be conducted regularly. The academic curriculum is the only program offered to learners. However, to achieve their educational objectives, performance appraisal ought to be conducted regularly among teachers. Historically, an appraisal is a very ancient art and might well lay claim to being the world's second oldest profession. The early evidence of an appraisal system can be traced back to Robert Owen's New Lanark Textile Mills in Scotland in the 1800s where a colour display was used as a means to distinguish an employee's performance (Grint, 2015). The aim of the appraisal system then was to improve and motivate performance, encourage competition, and possible reward for good work performance. However, over time, the appraisal system for employees has changed considerably.

According to Tyler (2014), with the advent of technology and market changes, the appraisal system is now being used for far more reaching areas. In summary, performance appraisal is a continuous process of assessment of how well employees are performing on their jobs in relation to established standards and the communication of that assessment to employees (Fournies, 2016). To a large extent, performance appraisal impacts on the employees' needs for security, belonging, self-esteem, self-actualization, motivation, and performance. For the organisations, it helps them achieve their mission and objectives by getting the best out of people, rewarding and retaining the best people on the job. Theoretically, the employee is engaged to work for the manager who in turn is responsible for meeting the company objectives (Quality Digest, 2017).

In education context, performance appraisal is an essential strategy of personnel management designed to identify an individual teacher's current level of job performance. Nykodym, Simonett and Welling (2016) note that performance appraisal practices entail activities undertaken by education managers to determine the capability of a teacher to perform and deliver on his or her mandate. These practices include assessing teachers' time management, participation in co-curricular activities, management of students' discipline, creating learner safety in the classroom and above all, adherence to national professional standards.

2. Statement of the Problem

Appraisal of teachers' ability to adhere to national professional standards plays a significant role in ensuring improved classroom pedagogy, syllabus coverage and teacher productivity in public secondary schools. However, in Makueni County, the situation is different with teacher productivity in many public secondary schools being low. Many teachers are unable to meet set deadlines and do not complete syllabi in time which has occasioned low performance of their students in national examinations. Kimayu (2018) also reports that in public secondary schools, 59.3% of their students register low grades in national examinations. The government through the Teachers' Service Commission has implemented several initiatives to address the problem of teacher productivity by introducing specific procedures for appraising teachers' adherence to national professional. However, much still needs to be done on how such practices enhance teacher productivity, hence the study.

3. Objectives of the Study

The study was guided by the following objectives:

- 1) To assess the status of teacher productivity in public secondary schools in Makueni County.
- 2) To determine the extent to which appraisal of teachers' adherence to national professional standards influences their productivity in public secondary schools in Makueni County.

4. Literature Review

The teaching profession encompasses a multiplicity of legal requirements and standards to which teachers must adhere. According to the Centre of Study for Policies and Practices in Education (2017), teaching standards support the improvement of teacher performance; help to certify teachers who are new to the teaching profession or who have attained a certain status as teachers; help to assess teacher performance and in evaluating and accrediting teacher training institutions. This indicates that the need for standards is to demonstrate the required level of competence for entry into the profession, maintain

this required level of competence to ensure the continuation of credentials to teach and foster increased skill and expertise is also a source of tension in their design and application and raises the question of the application of professional standards across the professional continuum from early career to a veteran teacher. A study carried out in Australia by the Australian Professional Standards for Teachers (AITSL, 2022) has four levels: graduate, proficient, highly accomplished, and lead. This is consistent with the assertions of Murad (2017) that effective teachers collaborate with their colleagues as they learn and improve their pedagogical skills and thus enhance their productivity. This implies that teaching has to be student-focused if it has to yield an improvement in teachers' performance. Teachers' professional training plays an important role in equipping teachers with contemporary skills and knowledge to improve their productivity. Thus, appraisal of such upgrade training cannot be ignored. Professionalism in teaching is displayed through upholding high moral standards, and free interaction with colleagues on teaching pedagogies. Teachers' approaches to problem-solving and decision-making in their profession should be tailored to suit students' needs.

As observed by Wang and Walberg (2017), the aspects of social and emotional components as well as academic components are a consequence of teaching and learning in schools. In a study carried out in Malaysia, McAdamis (2019) established that the purposes for which standards are intended impact upon their subsequent design and use and so dichotomies emerge, not just in terms of the balance between regulation and development, but in whether they are seen as both normative and generative and whether they should be generic or specific. Standards, therefore, reflect, implicitly and explicitly, historic, current, and projected understandings of the teacher and the teaching profession and what is seen to be valued and important. Taylor and Tyler (2021) note that this reflects the shift in the wider adoption of standards so that national-level professional standards for teachers exist where they did not exist before but which has been a recipe for decontextualized 'reified' standards that are removed from the authentic experiences of teachers. According to Taylor and Tyler (2021), generic professional standards are preferred by authorities because they are more technically and politically expedient. The author further detects a further shift in that the focus has moved from the quality of the subject of interest (teachers) to the quality of the tool used to audit them (professional standards).

A study carried out in the United States of America by Wilson, Hallam, Pecheone, and Moss (2020) established that standards incorporate classroom evidence of secondary school students learning, and large-scale studies have shown that they can predict Secondary school teachers' value-added effectiveness. A study carried out in Austria by Krantz and Fritzen (2017) found that the adoption and implementation of professional standards for teaching are gaining more attention in the literature and there is a growing interest in how standards come to work and how they gain authority. In another study undertaken in Colombia, Murphy, Seashore Louis and Symile (2018) revealed that, during the assessment of professional standards, teachers' engagement with professional

standards is central to the extent to which they can become embedded in practice. Murphy *et al.* (2018) revealed that, while the standards might look very promising on paper, they mean little unless and until people bring them to life in their professional practice. In most countries in Sub-Saharan Africa, an appraisal may be a tool to help teachers improve, but school leaders often lack training in how to use appraisal results to guide teachers toward professional growth (Costa & Garmston, 2021). However, both outcomes of appraisal, that is, for accountability and improvement, rely on the same foundation for making decisions: reliable and valid evidence about teacher performance and children's learning. Appraisal for accountability and for improving performance can be part of the same system.

In a study carried out in Nigeria, Goldrick (2018) asserted that to ensure equity, fairness, and common understanding in teacher performance appraisal practices, states need to establish teaching standards, which may also be called standards for instruction, defining criteria for quality teaching. Goldrick (2018) advised that professional standards should build upon what is known about effective teaching practices, describe what exemplary performance looks like, and serve as a guide for developing the related components. These findings attest to the fact that teaching standards should be compatible with standards for secondary school students' learning. Secondary schools in Kenya are not different and there is a consensus that effective training is essential to ensure that evaluators are familiar with the standards being measured, the evidence to be examined, and how to appropriately score the evidence (Koops & Winsor, 2019). Koops and Winsor (2019) view the term training as a continual refinement of understanding how standards, measures, and tools can contribute to an alignment between teacher performance appraisal practices and professional development. This means that through training, stakeholders gain a better understanding of the purpose and expectations embedded in the system.

Assessment of communication between teachers and parents is observed to motivate teachers and thus enhance their productivity. Student engagement in schools is continuously shaped by their relationships with adults and their schooling environment (Aloo & Odongo, 2017). Schools apart from fostering the cognitive development of learners, ensure that they grow emotionally and socially. Teachers are tasked with executing evidence-based approaches that foster the cognitive, social, and emotional development of learners which enhances students' academic success. Teachers also have the responsibility of identifying such capacities among students to enable them to identify and possibly cater to learners' individual needs. According to Kadenyi (2020), assessment not only improves performance but also examines it. Participation encompasses raising their hands, answering queries when asked as well as being keen in class. The outcome of assessment and evaluation enables teachers to decide on what and when to focus on the curriculum. Focusing on Makueni County, Kinyua (2021) posits that without standards and standards-based measures, there is no evidence, only opinion. In the same breath, Kinyua (2021) indicated that without training, scores on observations and other measures are based on personal judgment rather than evidence. However,

Kinyua (2021) failed to indicate that there is no national consensus on what standards should be given that various organizations have proposed standards, and many secondary schools have developed their own or adopted national standards or adapted standards from another source.

4.1 Theoretical Framework

This study was guided by Teacher Evaluation Theory which was postulated by Shadish, Cook and Leviton (2001). Teacher performance appraisal theories are largely prescriptive and offer a set of rules, prescriptions, prohibitions, and guiding frameworks that specify what a good or proper teacher performance appraisal practice is and how such appraisal should be done. Teacher performance appraisal practices theory has become a central thread in the social fabric of appraisal of the teaching profession. The study was also guided by the Educational Production Function (EPF) Theory (Hanushek, 2000). One of the premises of this theory is that teacher productivity is impacted by a set of activities adopted by schools. The theory associates diverse inputs affecting teacher productivity such as teacher performance appraisal practices and learning environments with measured outputs. In this study, teacher productivity (syllabus coverage and students' performance in KCSE) as a function was expressed in relation to the appraisal of teachers' adherence to national professional standards. This theory was represented as $E = f(X_1)$ whereby: E-is the teacher productivity and X_1 is the appraisal of teachers' adherence to national professional standards.

These theories were suitable in this study in that they underscore the fact that, once the performance appraisal practices focus on what is to be appraised by teachers the appraiser, as well as the appraisee, agree on the targets that can be achieved within a certain timeframe, it is expected that the appraiser demands the appraisee (the teacher) to commit themselves to activities (inputs) that may lead to the implementation of performance appraisal system in schools.

The appraiser can then engage the teacher at the end of the appraisal process and determine, through measurable indicators, the extent to which the set targets (productivity) were achieved. In this way, the teacher evaluation theory (performance appraisal) may relate well with the education production function theory (productivity).

5. Materials and Methods

A mixed methodology and concurrent triangulation research design were adopted. The target population comprised 393 principals and 3420 teachers from the 393 public secondary schools in Makueni County totaling 3813 respondents from which a sample of 362 respondents was calculated using Yamane's formula. Stratified sampling was used to select all public secondary schools in all the nine sub-counties in Makueni County. From each sub-county, at least four schools were selected using simple random sampling. Simple random sampling was applied to select 39 principals considering schools that have registered high and low academic grades for the last five years. A total of 323

teachers were selected using a simple random method. A questionnaire was used to collect data from teachers whereas interview guides were used to gather qualitative data from principals. Data analysis began by identifying common themes. Qualitative data were analyzed thematically based on study objectives and presented in narrative forms. Quantitative data were analyzed inferentially using Pearson's Product Moment Correlation and Multiple Linear Regression Analysis using Statistical Package for Social Sciences (version 27) and presented using tables.

5.1 Abbreviations and Acronyms

AITSL - Australia by the Australian Professional Standards for Teachers,
 EPF - Educational Production Function,
 KCSE - Kenya Certificate of Secondary Education.

6. Results

In this study, 323 questionnaires were administered to teachers out of which 296 questionnaires were filled and returned. At the same time, the researcher also interviewed 31 principals. This yielded response rates as shown in Table 1.

Table 1: Response Rates

Respondents	Sampled Respondents	Those Who Participated	Achieved Return Rate (%)
Principals	39	31	79.5
Teachers	323	296	91.6
Total	362	327	90.3

Table 1 shows that principals registered a response rate of 79.5% whereas teachers registered 91.6% as the response rate. On average, this yielded a response rate of 90.3%, which affirmed the assertions of Creswell (2014) that a response rate above 75.0% is adequate and of suitable levels to allow for the generalization of the outcomes to the target population.

6.1 Status of Teacher Productivity in Public Secondary Schools

The study sought to assess teacher productivity in public secondary schools in Makueni County. This was measured by assessing how often teachers covered the syllabus in time and students' KCSE performance (mean points) between 2018 and 2022. Descriptive data were collected from the sampled teachers and results are shown in Table 2.

Table 2: Frequency of Syllabus Coverage by Teachers in Public Secondary Schools

Frequency of Timely Syllabus Coverage by Teachers	Number of Teachers	
	f	%
Often	25	29.4
Rarely	47	55.3
Never	13	15.3

Table 2 shows that most of the teachers do not often cover the syllabus in time, 45.9% rarely whereas 11.3% never do. During the interviews, principals also stated that most teachers do not cover the syllabus in time. Principal, P1, noted:

"In my school, I have had cases where teachers do not cover the syllabus in time to accord students adequate time for revision."

These findings corroborate the assertions of Hofman and ve Hofman (2015) that, in the Netherlands, a performing or a competent teacher is regarded as one who can cover syllabus in time and teach a particular subject very well that is, one who perceives his or her teaching competence and believe that they can exert a positive effect on students' achievement. Having collected and analyzed data on syllabus coverage, the researcher further sought to assess the status of performance in KCSE for the last five years (2018-2022) as an indicator of teacher productivity. Results are shown in Table 3;

Table 3: KCSE Performance in Public Secondary Schools in Makueni County (Mean scores) between 2018 and 2022

KCSE Results in Mean Score (Points)	Years of Examination				
	2018	2019	2020	2021	2022
	%	%	%	%	%
1-2.9 points (Poor)	40.2	43.5	44.2	47.3	48.9
3-4.9 points (Below Average)	36.9	35.1	34.9	33.5	32.5
5-6.9 points (Fair)	15.4	15.1	14.8	13.7	13.4
7-8.9 points (Good)	5.3	4.4	4.3	3.8	3.6
9-11.9 points (Excellent)	2.2	1.9	1.8	1.7	1.6

Table 3 shows that, in 2018, 40.2% of the secondary schools had mean points ranging between 1-2.9 in KCSE, 36.9% scored between 3-4.9 points, 15.4% scored between 5-6.9 points, 5.3% scored between 7-9 points whereas only a paltry 2.2% of the secondary schools scored between 9-11.9 points in KCSE. In the subsequent years, the performance has been on a declining trend. For example, from Table 4.5, 43.5% of secondary schools scored between 1-2.9 points in 2019, 35.1% scored between 3-5 points, 15.1% scored between 5-7 points, 4.4% scored between 7-8.9 points whereas 1.9% scored between 9-11.9 points in KCSE. In 2020, 44.2% of secondary schools registered between 1-3 points in KCSE, 34.9% scored between 3-5 points, 14.8% scored between 5-7 points, 4.3% scored between 7-8.9 points whereas 1.8% scored between 9-11.9 points.

Table 3 further shows that, in 2021, 47.3% of secondary schools scored between 1-2.9 mean points in KCSE, 33.5% scored between 3-4.9 mean points, 13.7% scored between 5-6.9 mean points, 3.8% scored between 7-8.9 mean points while 1.7% scored between 9-11.9 mean points in KCSE. In a similar trend, 48.9% of the secondary schools scored between 1-3 mean points, 32.5% scored between 3-4.9 mean points, 13.4% scored between 5-6.9 mean points, 3.6% registered between 7-8.9 mean points whereas 1.6% registered between 9-11.9 mean points in KCSE in 2022. These findings corroborate the findings of

a study carried out in Makueni County by Kimayu (2018) who also established that, in public secondary schools, 59.3% of their students register low grades in national examinations. This is also consistent with the findings of a report by MoE (2023) that the performance of students in Makueni County in KCSE has been on a downward trend. In summary, these findings point to the fact that instances of low productivity among teachers in public secondary schools have become a problem. From the study findings, many teachers do not cover the syllabus in time which has occasioned low academic performance in national examinations.

6.2 Appraisal of Teachers' Adherence to National Professional Standards and Teacher Productivity in Public Secondary Schools

The study sought to examine the influence of appraisal of teachers' adherence to national professional standards on their productivity in public secondary schools. Descriptive data were collected and the results are shown in Table 4:

Table 4: Teachers' Views on the Influence of Appraisal of Teachers' Knowledge of Legal Requirements in Education on their Productivity in Public Secondary Schools

Test Items	Ratings				
	SA	A	U	D	SD
	%	%	%	%	%
Appraisal of teachers' understanding of the Basic Education Act has improved their productivity	46.3	31.1	8.1	1.7	12.8
Teachers' understanding of the TSC Code of Ethics is often appraised as a way of improving their productivity	48.3	35.8	2.7	7.1	6.1
Teachers' mastery of the Bill of Rights and Children's Act is often appraised to improve their productivity	32.4	56.8	1.0	6.1	3.7
Teachers' understanding of the Employment Act is rarely appraised to improve their productivity	0.0	12.8	8.4	28.0	50.7
Teachers' capacity to promote school-community partnership is often appraised which has improved their productivity	38.9	46.3	4.7	7.4	2.7

Table 4 reveals that 137(46.3%) of the teachers strongly agreed with the view that appraisal of teachers' understanding of the Basic Education Act has improved their productivity as did 92(31.1%) who agreed, 24(8.1%) were undecided, 5(1.7%) disagreed whereas 38(12.8%) strongly disagreed. The study found that 143(48.3%) of the teachers strongly agreed with the view that teachers' understanding of the TSC Code of Ethics is often appraised as a way of improving their productivity with 106(35.8%) being in agreement, 8(2.7%) were undecided, 21(7.1%) disagreed whereas 18(6.1%) strongly disagreed. Table 4 shows that 96(32.4%) of the teachers strongly agreed that teachers' mastery of the Bill of Rights and Children's Act is often appraised to improve their productivity while more than half, 168(56.8%), were in agreement, 3(1.0%) were undecided, 18(6.1%) disagreed whereas 11(3.7%) strongly disagreed. None (0.0%) of the teachers strongly agreed with the view that teachers' understanding of the Employment Act is rarely appraised to improve their productivity while 38(12.8%) agreed. However,

25(8.4%) were undecided, 83(28.0%) disagreed whereas 150(50.7%) strongly disagreed. These findings point to the fact that teachers' knowledge of legal requirements in education is rarely appraised and they are not aware of its implications on their productivity. This implies that, though it is not always undertaken by school heads, appraisal of the ability of teachers to understand the legal requirements in education forms a key pillar in improving their productivity. The study revealed that 115(38.9%) of the teachers strongly agreed with the view that teachers' capacity to promote school-community partnership is often appraised which has improved their productivity, 137(46.3%) agreed, 14(4.7%) were undecided, 22(7.4%) disagreed whereas 8(2.7%) strongly disagreed. These findings point to the fact that the ability of teachers to promote school-community partnership is considered as a major undertaking, though not always appraised as crucial aspect for assessing teacher productivity. Data were collected on how appraisal of teachers' professional development training influences their productivity. Results are shown in Table 5:

Table 5: Teachers' Views on the Influence of Appraisal of Teachers' Professional Development Training on their Productivity in Public Secondary Schools

Test Items	Ratings				
	SA	A	U	D	SD
	%	%	%	%	%
Teachers identify professional gaps which is often appraised which to improve their productivity	42.9	45.3	5.4	2.4	4.1
To enhance their productivity, teachers prepare for self-professional development that is rarely appraised	51.4	32.1	1.0	13.9	1.7
Teachers' continuous engagement in career growth and development activities are often appraised and has improved their productivity	35.1	41.6	2.4	14.5	6.4
In public secondary schools, the number of trainings teachers have undergone is often appraised and has enhanced their productivity	40.2	14.2	8.4	3.7	33.4
Teachers participate in a professional learning community that is often appraised as a way of improving their productivity	29.4	34.5	14.5	12.8	8.8

Table 5 reveals that 127(42.9%) of the teachers strongly agreed with the view that teachers identify professional gaps which is often appraised which to improve their productivity, 134(45.3%) who agreed, 16(5.4%) were undecided, 7(2.4%) disagreed whereas 12(4.1%) strongly disagreed. These findings lend credence to the assertions of Sachs (2016) that a 'one size fits all' version of standards may not be in the best interests of teachers teaching in varied contexts (remote areas, in difficult schools, or in multi-age settings) and where their competence will be judged based on some idealized notion of what competent or excellent teaching might be. This implies that, with appraisal, professional gaps which exist in teaching approaches may be identified and mitigations suggested. The study found that 152(51.4%) of the teachers strongly agreed with the view that, to enhance their productivity, teachers prepare for self-professional development that is rarely appraised with 95(32.1%) being in agreement, 3(1.0%) were undecided, 41(13.9%) disagreed

whereas 5(1.7%) strongly disagreed. Table 5 shows that 104(35.1%) of the teachers strongly agreed that their continuous engagement in career growth and development activities is often appraised and has improved their productivity with 123(41.6%) in agreement, 7(2.4%) were undecided, 43(14.5%) disagreed whereas 19(6.4%) strongly disagreed.

A fair proportion, 119(40.2%), of the teachers strongly agreed with the view that, in public secondary schools, the number of training teachers have undergone is often appraised and has enhanced their productivity while 42(14.2%) agreed, 25(8.4%) were undecided, 11(3.7%) disagreed whereas 99(33.4%) strongly disagreed. The study found that 87(29.4%) of the teachers strongly agreed with the view that teachers participate in a professional learning community that is often appraised as a way of improving their productivity while 102(34.5%) agreed. However, 43(14.5%) were undecided, 38(12.8%) disagreed whereas 26(8.8%) strongly disagreed. These findings support the findings of a study carried out by CEPPE (2017) which revealed that standards set out what someone should know and be able to do to be considered competent in a particular (professional or educational) domain; are used to describe and communicate what is most worthy or desirable to achieve, what counts as quality learning or as good practice and can also be used as measures or benchmarks, and, thus, as a tool for decision-making, indicating the distance between actual performance and the minimum level of performance required to be considered competent.

These findings affirm the fact that appraising teachers' professional training plays an important role since it determines the extent to which they are equipped with contemporary skills and knowledge to improve their productivity. Data were also collected on the appraisal of teachers' requirements in teaching and learning and its influence on their productivity. Results are shown in Table 6:

Table 6: Teachers' Views on the Influence of Appraisal of Requirements in Teaching and Learning on their Productivity in Public Secondary Schools

Test Items	Ratings				
	SA	A	U	D	SD
	%	%	%	%	%
Appraisal of teachers' class attendance has improved their productivity	73.3	21.3	5.4	0.0	0.0
Teachers' lesson delivery is often appraised as a way of improving their productivity	32.8	40.2	3.0	8.4	12.2
How often teachers mark and check students' assignments and lesson notes is not always appraised as a way of improving their productivity	20.9	57	1.4	18.2	40.2
Teachers utilize instructional materials and is often appraised to improve their productivity	29.4	44.9	1.0	13.2	11.5
Teachers undertake class control and management and is frequently appraised which has improved their productivity	35.8	40.9	2.4	12.5	8.4
Appraising teachers' ability to carry out learner assessments, provide feedback and report on learners' learning has improved their productivity	39.9	44.6	0.7	9.5	5.4

Teachers access, retrieve and integrate ICT in teaching though is rarely appraised as a way of improving their productivity	39.9	31.4	8.1	9.8	10.8
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Table 6 reveals that the majority, 217(73.3%), of the teachers strongly agreed with the view that appraisal of teachers' class attendance has improved their productivity as did 63(21.3%) who agreed, 16(5.4%) were undecided, 0(0.0%) disagreed whereas 0(0.0%) strongly disagreed. The study found that 97(32.8%) of the teachers strongly agreed with the view that teachers' lesson delivery is often appraised as a way of improving their productivity with 119(40.2%) being in agreement, 19(3.0%) were undecided, 25(8.4%) disagreed whereas 36(12.2%) strongly disagreed. Table 6 shows that 62(20.9%) of the teachers strongly agreed that how often teachers mark and check students' assignments and lesson notes is not always appraised to improve their productivity while 57(19.3%) agreed, 4(1.4%) were undecided, 54(18.2%) disagreed whereas 119(40.2%) strongly disagreed. These findings support the findings of a study carried out in Nigeria in which Goldrick (2018) found that to improve teacher performance in their classroom activities, there is a need to assess how frequently they attend their classes, deliver their lessons and ensure that students undertake their daily assignments. This implies that, though refuted by many teachers, principals' appraisal of their lesson delivery and whether students carry out academic tasks and assignments is important it helps promote standards and quality of teaching. The study found that 87(29.4%) of the teachers strongly agreed that teachers utilize instructional materials and are often appraised to improve their productivity while 133(44.9%) agreed, 3(1.0%) were undecided, 39(13.2%) disagreed whereas 34(11.5%) strongly disagreed. This supports the findings of Wilson et al (2020) that assessing how teachers utilize instructional materials improves the delivery of concepts to learners. This implies that the use of instructional materials is paramount in improving students' mastery of concepts and thus, appraisal of teachers' use of the same is key to improving their productivity.

The study found that 106(35.8%) of the teachers strongly agreed with the view that teachers undertake class control and management and are frequently appraised which has improved their productivity, 121(40.9%) agreed, 7(2.4%) were undecided, 37(12.5%) disagreed whereas 25(8.4%) strongly disagreed. This indicates that the ability of teachers to control and manage their classes and discipline is an activity that is rarely appraised by school heads though crucial for their performance. 118(39.9%) of the teachers strongly agreed that appraising teachers' ability to carry out learner assessments, provide feedback, and report on learners' learning has improved their productivity, 132(44.6%) agreed, 2(0.7%) were undecided, 28(9.5%) disagreed whereas 16(5.4%) strongly disagreed. This corroborates the assertions of Taylor and Tyler (2021) that appraising teachers' assessment activities designed for learners determines their performance. This implies that principals, despite their busy schedules, must ensure that how teachers assess and grade learners is constantly appraised. This enhances timely syllabus coverage and improves students' academic performance.

The study found that 118(39.9%) of the teachers strongly agreed with the view that teachers access, retrieve, and integrate ICT in teaching though is rarely appraised as a way of improving their productivity, 93(31.4%) agreed, 24(8.1%) were not decided, 29(9.8%) disagreed whereas 32(10.8%) strongly disagreed. These findings are consistent with the findings of a study carried out in Austria by Krantz and Fritzén (2017) found that consultation with the teaching profession is a critical element in the development and implementation of professional standards such as integration of ICT. This implies that integration of ICT in teaching activities is highly regarded by many teachers as crucial for effective instruction and thus, appraisal of their ability to undertake the same is key to their performance in terms of timely syllabus coverage and academic performance.

6.3 Inferential Analysis

To ascertain the relationship between appraisal of teachers' adherence to national professional standards and teacher productivity, data were collected from the sampled 31 public secondary schools on how often (Very Often = 5, Often = 4, Sometimes = 3, Rarely = 2 and Never = 1) principals appraise teachers' knowledge of legal requirements of education, whether teachers have professional development training and understand the requirements of teaching and learning and KCSE performance for the last five years (2018-2022). Results are shown in Table 7:

Table 7: Frequency of Principals' Appraisal of Teachers' Adherence to National Professional Standards and KCSE Performance in Public Secondary Schools (2018-2022)

Frequency of Appraisal of Teachers' Adherence to National Professional Standards	KCSE Performance (mean scores)				
	2018	2019	2020	2021	2022
3	4.723	4.724	4.643	4.17	4.52
2	2.5	2.68	2.805	2.24	2.34
2	2.003	2.245	2.179	2.27	2.30
1	3.1	3.15	3.118	2.77	2.29
2	3.140	4.320	3.710	4.010	4.020
2	4.660	4.750	6.090	5.286	6.030
5	8.320	7.700	7.670	8.409	7.913
3	4.706	5.700	5.316	5.534	5.500
4	5.162	5.928	6.757	5.150	5.566
5	3.720	3.485	3.420	3.615	3.424
5	3.877	4.64	4.464	4.10	5.200
4	3.95	4.066	4.0984	3.09	3.09
5	7.789	8.031	8.7588	8.26	8.36
4	7.497	7.519	7.4704	6.74	7.10
2	5.481	4.814	4.819	4.84	4.18
3	6.413	7.231	7.0604	6.19	6.16
5	7.753	7.601	6.928	6.113	6.5
2	7.376	8.109	8.738	8.2777	8.9206
2	2.135	2	2.0984	2.35	2.333
5	6.02	7.46	7.59	7.6	7.8

Jacob Kyengo Muthoka, Richard Kimiti, Patrick Wambua
 INFLUENCE OF APPRAISAL OF TEACHERS' ADHERENCE TO NATIONAL PROFESSIONAL STANDARDS
 ON TEACHER PRODUCTIVITY IN PUBLIC SECONDARY SCHOOLS IN MAKEUNI COUNTY, KENYA

2	2.22	1.97	2.37	2.42	2.235
1	3.767	4.235	4.925	4.2	4.824
2	3.767	3.539	4.743	3.772	3.872
1	4.100	4.058	4.342	3.45	3.589
2	3.34	3.64	3.93	3.3	3.180
5	5.658	5.733	6.159	4.822	5.532
3	4.280	5.698	5.843	4.1	4.369
3	2.851	2.855	3.963	2.906	2.816
2	4.216	4.681	5.584	4.82	5.560
3	4.706	5.242	5.228	5.141	4.984
5	6.448	6.889	6.705	6.285	6.630

Table 7 shows that, in public secondary schools where principals regularly appraise teachers' adherence to national professional standards, performance in KCSE tends to be higher than in those where there is irregular appraisal. This indicates that frequent appraisal of teachers' knowledge of legal requirements of education, whether they have undertaken professional development training as well as their ability to understand the requirements of teaching and learning leads to improved academic performance in public secondary schools. The above data were run through Pearson's Product Moment Correlation Test Analysis and outcomes are recorded in Table 8:

Table 8: Relationship between Frequency of Principals' Appraisal of Teachers' Adherence to National Professional Standards and KCSE Performance in Public Secondary Schools (2018-2022)

		X1	B	C	D	E	F
X1	Pearson Correlation	1	.584**	.577**	.508**	.521**	.527**
	Sig. (2-tailed)		.001	.001	.004	.003	.002
	N	31	31	31	31	31	31
B	Pearson Correlation	.584**	1	.959**	.932**	.937**	.912**
	Sig. (2-tailed)	.001		.000	.000	.000	.000
	N	31	31	31	31	31	31
C	Pearson Correlation	.577**	.959**	1	.964**	.953**	.948**
	Sig. (2-tailed)	.001	.000		.000	.000	.000
	N	31	31	31	31	31	31
D	Pearson Correlation	.508**	.932**	.964**	1	.951**	.962**
	Sig. (2-tailed)	.004	.000	.000		.000	.000
	N	31	31	31	31	31	31
E	Pearson Correlation	.521**	.937**	.953**	.951**	1	.979**
	Sig. (2-tailed)	.003	.000	.000	.000		.000
	N	31	31	31	31	31	31
F	Pearson Correlation	.527**	.912**	.948**	.962**	.979**	1
	Sig. (2-tailed)	.002	.000	.000	.000	.000	
	N	31	31	31	31	31	31

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

Key: X1- Frequency of Principals' Appraisal of Teachers' Adherence to National Professional Standards; B, C, D, E and F - Students' Performance in KCSE (mean scores) for the Years 2018 to 2022 respectively.

Table 8 shows the results of the Pearson Product Moment Correlation Test Analysis, which generated correlation coefficients, $r_1 = 0.584$, $r_2 = 0.577$, $r_3 = 0.508$, $r_4 = 0.521$, and $r_5 = 0.527$ with corresponding p-values of 0.001, 0.001, 0.004, 0.003 and 0.002 respectively. This indicates that there is a statistically significant influence of appraisal of teachers' adherence to national professional standards on teacher performance in public secondary schools.

6.4 Thematic Analysis

During the interviews, the principals, however, differed from the majority of the teachers who stated that they rarely appraise teachers' understanding of the legal requirements in education as a way of improving their productivity. Principal, P2, noted:

"In my secondary school, I always appraise teachers' understanding of the Basic Education Act, TSC Code of Ethics, Bill of Rights, and Children's Act as well as the Employment Act. This has made them understand their roles and basic requirements as teachers and thus improved their productivity."

From these verbatims, it is evident that teachers' knowledge of legal requirements in education is a key determinant of their productivity, and thus their appraisal is important.

On the question of professional development training, the principals stated that they appraise teachers' professional development skills. Principal, P3, stated:

"In my secondary school, I often assess the capacity of teachers to identify professional gaps in the curriculum and how it can be improved, their preparation for self-professional development, their continuous engagement in career growth and development activities, the number of trainings teachers have undergone as well as their participation in a professional learning community. This has improved their productivity in terms of timely syllabus coverage and academic performance of their students."

Just like quantitative findings, these views affirm the fact that appraising teachers' professional training plays an important role since it determines the extent to which they are equipped with contemporary skills and knowledge to improve their productivity. On the question of requirements in teaching and learning, the principals also responded in favour of the view that they always appraise teachers' class attendance as a way of improving their productivity. Principal P4, stated:

"In my secondary school, I ensure that teachers attend classes regularly and I have developed a register marked by class prefects showing when teachers clock in and out. This has ensured that teachers attend their lessons regularly, cover syllabus in time, and has led to improved academic performance."

The principals, however, disagreed with the majority of the teachers who stated that they rarely appraise how often teachers mark and check students' assignments and lesson notes, their utilization of instructional materials as well as class control and management as a way of improving their productivity. Principal, P5, further noted:

"I always assess the ability of teachers in my secondary school to carry out learner assessments, provide feedback, and report on learners' learning which has improved their productivity. I also appraise their ability to access, retrieve, and integrate ICT in teaching."

From these verbatims, appraisal of teachers' ability to assess and grade learners and use ICT in teaching and learning activities is key to their performance in terms of timely syllabus coverage and students' academic performance.

7. Conclusions

From the study findings, it is evident that teacher productivity has been low. This is characterized by untimely syllabus coverage which has occasioned low academic performance in public secondary schools. The study also found that the levels of appraisal of teachers' adherence to national professional standards are not satisfactory to occasion improved productivity among teachers.

7.1 Recommendations

The study recommends that principals should encourage teachers to understand different legal requirements in education, pursue further training, and have an inkling of all requirements of classroom pedagogy. This will go a long way in enhancing their professional acumen necessary for higher productivity.

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References

- Aloo, J. O., & Odongo, A. J. (2017). Influence of teacher performance appraisal on effectiveness in curriculum evaluation in Kenyan public secondary schools. *Academic Journal of Interdisciplinary Studies*, 6(3), 1-84.
- Centre of Study for Policies and Practices in Education (CEPPE) (2017). *Learning Standards, Teaching Standards and Standards for School Principals in Chile: A Comparative Study*, OECD Education Working Papers, No. 199, OECD Publishing, Paris.
- Costa, A. L. & Garmston, R. J. (2021). *Cognitive coaching: A foundation for renaissance schools*. Norwood, MA: Christopher-Gordon Publishers, Inc.
- Creswell, J. (2014). *Research design: qualitative, quantitative and mixed methods*. Thousand Oaks, California: Sage Publications.
- Goldrick, L., (2018). *Improving teaching evaluation to improve teaching quality*. Retrieved on 2018.
- Kadenyi, J. K. (2020). *Influence of teacher appraisal on improvement of students' academic performance in public secondary schools in Vihiga sub-county, Kenya*. Nairobi: University of Nairobi.
- Kinyua, T. N. (2021). *Influence of monitoring and evaluation process on teaching and learning among public secondary schools in Makueni County, Kenya*. Unpublished Med Thesis, University of Nairobi.
- Koops, J. B., & Winsor, K. (2019). Creating a professional learning community through faculty evaluation, *The Journal of Education*, 186(3), 61-70.
- Krantz, J., & Fritzén, L. (2017). From Expert to Novice? The Influence of Management by Documents on Teachers' Knowledge Base and Norms.' Professions and Professionalism, Available on line at <https://doi.org/10.7577/pp.2113> (accessed 20/03/22).
- McAdamis, S. (2019). Teachers tailor their instruction to meet a variety of student needs. *Journal of Staff Development*, 22(2), 1-5.
- Ministry of Education (2023). *A report on academic performance*. Nairobi: Ministry of Education, Kenya
- Murad, H. N. (2017). Innovative Teaching Has a Positive Impact on the Performance of Diverse Students. *Special Collection - Student Diversity*, 4(2), 1-8
- Murphy, J., Seashore Louis, K., and Smylie, M. (2017). 'Positive school leadership: How the Professional Standards for Educational Leaders can be brought to life.' *Phi Delta Kappan*, 99(1), 21-24.
- Taylor, E. & Tyler, J. (2021). The effect of evaluation on performance: Evidence of longitudinal student achievement data of mid-career teachers. *Working Paper No. 16877*. MA: National Bureau of Economic Research.
- Wang, M. C. & Walberg, H. J. (2017). *Learning influences*. Berkeley, CA: McCatchan
- Wilson, M, Hallam, P., Pecheone, R., & Moss, P. (2020). *Investigating the validity of portfolio assessments of beginning teachers: Relationships with student achievement and tests of*

teacher knowledge. Berkeley, CA: Berkeley Evaluation, Assessment, and Research Center.

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