
Full Length Research Paper

SUPERVISORY PRACTICES USED BY HEADTEACHERS FOR STUDENTS' ACADEMIC PERFORMANCE IN KCSE IN PUBLIC SECONDARY SCHOOLS IN MACHAKOS COUNTY, KENYA

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ABSTRACT

Supervisory practices play an important role in promoting academic performance. It is therefore important that the performance of a school is appraised against the supervisory practices that are used. The purpose of this study was to investigate the relationship between supervisory practices and students' academic performance in KCSE in public secondary schools in Machakos County, Kenya. The research adopted a correlational study research design of the ex-post factor method. The target population was 270 schools and the sample for the study was 41 schools equivalent to 41 headteachers. Data was analyzed using quantitative and qualitative techniques. The statistical significance of the difference between sample means was tested using two sample t-test of equal variance while the relationship between dependent and independent variable was tested using Pearson Product Moment Correlation. A coefficient value of 0.7289 was obtained and this was good enough to judge reliability. Findings on the relationship between supervisory practices and students' academic performance revealed that there was a significant relationship between supervisory activities used by headteachers and students' academic performance in KCSE in Machakos County. This was shown by a p-value of 0 which was less than 0.1. This implied that supervisory practices used by headteachers are key determinants of students' good academic performance in KCSE in Machakos County. The study recommended that research should be done in other strategies used by headteachers in pursuit to improve performance in KCSE.

KEYWORDS:

Academic performance, Correlational study, Determinants, Reliability, Statistical significance, Supervisory practice.

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INTRODUCTION

Supervisory practices are directed towards maintaining and improving teaching-learning process of a school. A well planned programme of education can be successful only if efficient supervisory practices is provided at all levels, without this, the process of planning can be seriously handicapped [12].

In a school set up, supervision draws its foundation and data from the events that take place inside and outside classroom. The Analysis of events in the school and the relationship between the teacher and the headteacher form the basis of the programmes, procedures and strategies designed to improve the teaching-learning process [17].

[6] Holds that the organization and control of staff both teaching and non-teaching is all part of the headteachers' duties. In particular he/she must check standards by reference to schemes of work, lesson notes, lesson plans, records of work done and pupils exercise books among others.

[23] suggests that headteachers need to supervise teachers by ensuring that lessons are planned easily, lesson are structured with an interesting begging, revision of previous knowledge and teachers have a good relationship with their students and follow up the curriculum strictly. [15] considers supervision as an administrative strategy aimed at stimulating teachers towards greater pedagogic effectiveness and productivity. The stimulation function of supervision enhances teaching to play important roles aimed at excellence in examination.

In a study by [24] impact of selected modes of instructional supervision activities on students' academic performance in senior secondary schools in Ondo State, Nigeria showed that there was a significant impact of checking of students' notes on students' academic performance in English in senior secondary schools certificate examination. This concur with the findings of [12] that there was a significant impact of checking of students' notes on students' academic performance in English language in US elementary school. Similar results are reported by [38] which reported a significant impact of checking students' notes on students' academic performance in English language in secondary schools in New York City.

This study was carried out to investigate if supervisory practices have any relationship with students' academic performance in KCSE in publish secondary schools in Machakos County Kenya. Despite realization of high performance in some counties in Kenya, many students continue to perform poorly in national examination. There has been a persistent outcry from all educational stakeholders about this poor performance. No matter how well staffed a school is, without proper application of supervisory practices, the basic goal of a school that is teaching and learning to realize good performance in a school can be seriously handicapped [24]. It is on this background that this study investigated the relationship between supervisory practices used by headteachers and students' academic performance in KCSE in public secondary schools in Machakos county; Kenya.

Related studies had been conducted elsewhere by [15] and [12]. These studies used different methodologies and the findings concentrated more on English language not relationship between supervisory practices used by headteachers and students' academic performance in KCSE in Machakos County. This led to justification of the study.

The purpose of this study was to investigate the relationship between supervisory practices used by headteachers and students' academic performance in KCSE in public secondary schools in Machakos County.

The study was guided by one hypothesis; there is no significant relationship between supervisory practices used by headteachers and students' academic performance in KCSE in Machakos County.

The findings of the study may serve as a reference points for teachers of public secondary schools in Machakos County on supervisory practices that would lead to improvement of students' performance in national examination.

RESEARCH METHODOLOGY

The research adopted a correlational study research design. This research design describes quantitative terms; the degree to which variables are related. It involves collecting data in order to determine whether and to what degree a relationship exists between two or more quantifiable variables [19]. Correlational study research design was appropriate for the study since it established if a relationship exists between instructional supervision and student performance in KCSE in Machakos County. The method used for the study was ex-post facto. In ex-post facto method, the researcher starts with observation of the dependent variables in retrospect for their possible relationships and the effect of the independent variables. The design was recommended for this study because it involved studying conditions or events that had already occurred. The dependent variable (KCSE performance) had already occurred while the factors influencing the level of performance in KCSE could not be manipulated (Independent variables).

The study targeted all public secondary school headteachers in Machakos County. According to Machakos County Education Director, there are 270 public secondary schools. Therefore the target population was 270 headteachers.

According to [19] a sample is a small group obtained from the accessible population. This sub-group is carefully selected so as to be representative to the whole population.

To obtain a representative sample of schools, systematic sampling procedure was used. The schools in the eight sub-counties were arranged randomly. By list every n^{th} item ($n^{\text{th}} = 7$) was selected from the list. A total of 41 schools were selected which translated to 15% (Best and Khan, 2004). The entire sampling procedure yielded a total of 41 subjects for the study (41 headteachers).

The necessary data was collected using questionnaires. The questionnaires were preferred because it allowed the researcher to reach a larger sample within a limited time. It also ensured confidentiality and objective replies. The questionnaires were prepared for headteachers. [4] observed that questionnaires are often used to collect the basic descriptive information from a large sample.

Questionnaires were designed with questions and statements related to the objective of the study. The questionnaires consisted of 3 sections. Section A solicited for personal data, section B, captured educational and professional training and preparation and section C dealt with supervisory activities carryout.

The validity and reliability of the instruments were done as they were used in the actual study. [13] defines validity as a criterion which indicates the degree to which an instrument measures what is supposed to measure. It was necessary to ascertain the validity of the instruments used to collect data so that the research findings could be reliable. In order to ascertain content and face validity, the questionnaires were presented to two lecturers in the department of educational management and curriculum instruction at Maasai Mara University for scrutiny and advice. The contents and impressions of the instruments were improved based on the expert's advice and comments. The questionnaires items were then constructed in a way that they related to the questions.

[11] observed that reliability measures the degree of accuracy in the measurements as instrument provides. It ensures that instrument generate similar data when used by independent researchers to ensure reliability of the questionnaires. The instrument was tested in one randomly selected public secondary school in Machakos County before the actual study. The school was not included in the main study. The answered instruments were scored manually. The same instruments were administered to the same subject after a period of two weeks and responses between the answers obtained in the first and second tests was made.

The procedure to be used in pre-testing the instruments was identical to those that were used in the actual study. To establish the co-efficient of the internal consistency of the research instruments, split half method was used. The results were analyzed and reliability co-efficient was calculated using Spearman Brown formula.

$$a = \frac{2r}{1+r} \tag{1}$$

Where a = reliability coefficient

r = actual correlation between halves of the items.

“r” was calculated using the Pearson product moment formula, given by equation (2) below

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \left(\sum(y_i - \bar{y})^2 \right)}} \tag{2}$$

Where x stood for scores from first half and y stood for scores from the second half of the pilot sample. \bar{x} and \bar{y} were their respective means. Pearson Product Moment formula for test-retest was employed to compute the correlation co-efficiency in order to establish the extent to which the content of the questionnaires were consistent in eliciting the same responses every time the instruments were administered. The reliability yielded a coefficient of 0.7289 and this was deemed to be reliable [25].

The questionnaires were administered personally during piloting and the actual study to allow the respondents to have ample time to study and respond appropriately. The researcher and the research assistants visited the respondents on the agreed dates and then issued the questionnaires personally to the headteachers. The researcher and the research assistants collected the instruments after they were completely filled.

Data was analysed using SPSS (Statistical Package for Social Science) computer package. The research questions elicited both qualitative and quantitative data. Quantitative data analysis was analyzed using descriptive statistics and presented in tables, charts and percentages.

The level of significance for the study was set out at 0.05 level of confidence. The statistical significance of the difference between sample means with respect to specific variables were tested using two sample t-test. The relationship between the dependent and independent variables (student performance and instructional supervisory skills) was tested using Pearson Product Moment and chi-square test and a coefficient of 0.7289 was realized.

RESULTS AND DISCUSSIONS

Table 1 present results on the supervisory activities used by the head teacher. The supervisory practices used by the headteacher was weighted based on probability values whereby 'often' was given a probability of 1.0, 'rarely' was given 0.5 and 'never' 0.0.

Table 1: Supervisory Activities used by the headteacher

Supervisory Activities Used		Often (1.0)	Rarely (0.5)	Never (0.0)	Index
Supervising Teachers in the Classroom	Frequency	13	15	13	
	Per cent	32.67	36.63	30.69	50.99
Checking the Schemes of Work	Frequency	24	14	3	
	Per cent	57.76	34.65	7.59	75.09
Checking of Lessons Plans	Frequency	12	15	14	
	Per cent	27.72	36.96	35.31	46.20
Checking Records of Work	Frequency	23	14	4	
	Per cent	57.76	33.33	8.91	74.43
Checking Students Exercise Books	Frequency	12	21	8	
	Per cent	30.36	49.17	20.46	54.95
Provision of Teaching and Learning Materials	Frequency	29	11	1	
	Per cent	71.62	25.41	2.97	84.33
Average percentage score		46.32	36.03	17.66	64.33

After carrying out the computation, the weighted index was on average 64.33 per cent for the six supervisory practices. Specifically, supervising teachers in the classroom had a score of 50.99 per cent, checking the schemes of work 75.09 per cent; checking of lessons plans 46.20 per cent. Among the six supervisory activities, the provision of teaching and learning materials by the headteacher had the highest score index of 84.33 per cent; checking of students exercise books had 54.95 per cent while checking records of work scored a weighted index of 74.43 per cent.

Table 2: Pearson chi-square test for the association between students' academic performance and head teacher's supervision of teachers in the classroom

Supervising Teachers in the Classroom	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	3	6	2	1	1	0	13
Rarely	1	6	4	3	1	1	15
Often	2	5	4	1	0	0	13
Total	6	17	10	5	2	1	41

Pearson χ^2 (10) = 15.5461 Pr = 0.113

In regards to supervising teachers in the classroom as a supervisory activity of the headteacher, a p-value of 0.113 was computed. The chi square test for the association indicated that the null hypothesis of independence could not be rejected at the five per cent level of significance. Hence, it was deduced that the frequency in head teacher's supervision of teachers in the classroom was not associated with the students' academic performance. The performance did not depend on how often the teachers were supervised by the head teachers. This implied that teachers being professionals know what is expected of them and did not require the head teacher's supervision for them to achieve their objectives and deliver their outputs.

Table 3: Pearson chi-square test for the association between students' academic performance and the frequency of time the head teacher checks on the schemes of work

Checking the Schemes of Work	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	0	2	0	1	0	0	3
Rarely	2	5	4	3	1	0	14
Often	4	11	6	2	1	1	24
Total	6	17	10	5	2	1	41

Pearson χ^2 (10) = 20.5461 Pr = 0.024

A chi-square test for the association between the frequency of time the headteacher checked on the schemes of work and students' academic performance gave a p-value of 0.024. This indicated that at the five per cent level of significance, the null hypothesis of independence between the two variables was rejected. This implied that students' academic performance depended on the frequency of teachers schemes of work inspection by the headteacher. Thus, the more often the head teacher inspected schemes of work prepared by teachers the better the academic performance of the school by students.

Table 4: Pearson chi-square test for the association between students' academic performance and the frequency of checking teachers lessons plans by the headteacher

Checking of Lessons Plans	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	3	6	2	3	0	0	14
Rarely	2	6	5	1	1	0	15
Often	1	5	3	1	1	1	12
Total	6	17	10	5	2	1	41

Pearson χ^2 (10) = 15.1502 Pr = 0.127

A p-value of 0.127 from the chi square test indicated that there was no association between the frequency of checking teachers' lessons plans by the headteacher and students' academic performance. This was deduced at the five per cent level of significance and thus academic performance of students did not depend on the frequency of head teacher's inspection in the lessons plans prepared by teachers.

Table 5: Pearson chi-square test for the association between students' academic performance and the frequency in which the head teacher checks teachers records of work

Checking Records of Work	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	1	1	1	1	0	0	4
Rarely	2	5	3	3	1	0	14
Often	3	11	6	2	0	1	23
Total	6	17	10	5	2	1	41

Pearson χ^2 (10) = 21.8023 Pr = 0.016

A tabulation of the students' academic performance with the frequency in which the head teacher checked teachers records of work, gave a p-value of 0.016 per cent for the computed chi square statistic. This showed that at the five per cent level of significance the null hypothesis of no association between the two variables was rejected and thus students' academic performance depended on how often the head teacher checked records of work prepared by the teachers. This implied that students' academic performance improved with an increment in the number of times the head teacher checked records of work prepared by the teachers.

Table 6: Pearson chi-square test for the association between students' academic performance and the frequency of checking students' exercise books

Checking Students Exercise Books	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	2	3	2	1	0	0	8
Rarely	3	10	5	2	1	0	21
Often	1	4	3	2	1	1	12
Total	6	17	10	5	2	1	41

Pearson χ^2 (10) = 15.9648 Pr = 0.101

A test for the association between the frequency of checking students' exercise books and their academic performance using a chi square test produced a p-value of 0.101 which showed that the null hypothesis of no association between the two variables could not be rejected at the five per cent level of significance. Hence, academic performance of students did not depend on the frequency of checking students' exercise books.

Table 7: Pearson chi-square test for the association between students' academic performance and the frequency of providing teaching and learning materials by the headteacher

Provision of Teaching and Learning Materials	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Never	0	0	0	1	0	0	1
Rarely	1	4	3	2	1	0	11
Often	5	13	7	3	1	1	29
Total	6	17	10	5	2	1	41

Pearson $\chi^2(10) = 23.8054$ Pr = 0.008

Regarding the provision of teaching and learning materials by the head teacher as a supervisory activity and its association with students' academic performance, chi square test gave a p-value 0.008, thus rejecting the null hypothesis of independence between the two variables. This showed that students' academic performance depended on the frequency of providing teaching and learning materials by the headteacher. Specifically, the academic performance improved with an increment in the frequency of times, teaching and learning materials were provided. This was the case since, teaching and learning materials were necessary key inputs required in the production of quality education.

Table 8: Pearson chi-square test for the association between students' academic performance and a weighted score index for all the instructional supervisory activities used

Instructional supervisory activities Used (weighted score index)	2 (D-)	3 (D)	4 (D+)	5 (C-)	6 (C)	7 (C+)	Total
Supervising Teachers in the Classroom	0	0	0	0	0	0	0
Checking the Schemes of Work	0	0	0	1	0	0	1
Checking of Lessons Plans	0	0	0	0	0	0	1
Checking Records of Work	0	0	0	0	0	0	0
Checking Students Exercise Book	1	1	0	1	0	0	3
Provision of Teaching and Learning Materials	0	1	1	0	0	0	3
Allocation of Administrative Work	1	1	2	0	0	0	4
Conducting follow up activities	0	4	1	0	0	0	6
Supporting teachers through supervisory activities.	1	2	1	1	0	0	4
Helping teachers in record keeping	1	3	1	1	0	0	7
Assisting teachers to improve their pedagogical skills.	0	2	1	0	1	0	4
Helping teachers to improve their communication skills in class.	1	1	1	1	0	0	3
Help teachers in diagnosing learning problems encountered by students.	0	2	1	0	0	0	4
Total	6	17	10	5	2	1	41

Pearson χ^2 (60) = 122.3554 Pr = 0.000

A further analysis of the data set through a computation of a weighted index for the six respective administrative activities, and a test of the index in association with students' academic performance, using a chi square test gave a p-value of 0.000. The null hypothesis of independence between the variables was rejected. This implied that as the value for the weighted score index increased students' academic performance also improved. Hence all the six supervisory activities considered were necessary for improved academic performance if taken together, though in isolation only three; provision of teaching and learning

materials, checking records of work, and checking the schemes of work stood out as key determinants of students' academic performance.

CONCLUSION AND RECOMMENDATION

Data revealed that there was a significant relationship between supervisory practices used by the headteacher and students' academic performance in KCSE in public secondary schools in Machakos County. This implied that supervisory practices used by the headteachers are key determinants of students' good academic performance in KCSE. It is recommended that more; research should be carried on other strategies used by headteachers in pursuit to improve students' performance in KCSE.

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