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THE EXTENT TO WHICH INSTRUCTIONAL LEADERSHIP PRACTICES BY HEAD TEACHERS CONTRIBUTE TO STUDENTS' ACADEMIC PERFORMANCE IN MACHAKOS COUNTY, KENYA

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Abstract:
The purpose of this study was to assess the extent to which instructional leadership practices by head teachers contribute to students' academic performance. Machakos County was chosen for this study due to its low performance by many students in the Kenya Certificate of Secondary Education Examination in most secondary schools in the recent years (2009-2013). Instructional leadership practices chosen were included defining the school mission, managing the school instructional programme, providing a conducive working climate and providing incentives for teaching and learning. The study applied Survey design. From 176 public secondary schools, stratified sampling technique was used to select 38 head teachers, 190 teachers and 345 students from among high and low performing secondary schools. The study used the Head Teacher Questionnaire (reliability 0.78), Teachers Questionnaire (reliability 0.74) and the students Questionnaire (reliability 0.75). The response was 87.5%. Multiple regression analysis was done to test the extent to which head teachers instructional practices influences on students' performance, while linear regression was used to determine the most influential leadership practice. It was established that the Bowman and Deal's leadership theory is applicable to Kenyan schools, with the provision of incentives for

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learning and teaching being the most important leadership practice towards the teaching and learning process.

Keywords: head teachers, regression analysis, mission, management, school working climate, incentives

1. Introduction

The purpose of this study was to determine whether the instructional leadership practices by head teachers influence students' academic performance in secondary schools of Machakos County, Kenya. The study was prompted by the continuous attainment of low quality Grades (D+ and below) by students in KCSE examination in Machakos County. A glaring disparity in the KCSE examination performance exists between Machakos County and its neighboring Kitui County tilted in favour of the latter. The performance of KCSE examination in Machakos County is therefore not sufficiently competitive, given that one aim of effective schools is to produce excellent grades by many students in KCSE examinations (Sutton Trust, 2013). This poor performance has attracted the community's concern, as voiced in public meetings and official educational gatherings within the county.

This study used the multi-dimensional leadership theory formulated by Bolman and Deal (2003), which assumes that four leadership approaches (frames) are necessary for effective leadership thus:

The structural frame: here the leader espouses clear, well-understood roles and relationships, with coordination among these roles as the key to a successful organization (Trees, 2006).

The human resource frame: Here the leader views people as the heart of the organization and attempts to be responsive to their needs and goals in order to gain commitment and loyalty (Bolman and Deal, 2003).

The political frame: Bolman and Deal (2003) stated that interdependence, divergent interests, and scarcity of resources breed political activity (conflicts). The application of appropriate leadership techniques will therefore eliminate or minimize the negative effects of political behaviour.

The symbolic frame: According to Bolman and Deal (2003), this leader views vision and inspiration as critical. These leaders tend to be very visible and energetic and manage by walking around. Often these leaders rely heavily on organizational traditions and values as a base for building a common vision and culture that provides cohesiveness and meaning.

Thus accelerated student attainment is a function of effective instruction, whose basic tenets are: planning, communication and coordination of school goals, sensitivity

to human needs, advancement of people's interests and forming and maintaining an organizational culture that is conducive to work.

The four frames theory is an effort to blend leadership theories from all patterns of thought since no one frame is appropriate or accurate for effective leadership in every situation (Bolman & Deal, 2003, The Wallace Foundation, 2012). Instead, the leaders should consider viewing issues through multiple frames in order to address all aspects involved and capture the complete picture of reality. According to Bolman and Deal (2003), the use of all four frames as a tool, allows more complete perspective of any situation.

Recent researches by Trees (2006), Day et al, (2009), Roddy (2010), and Tillman (2012) support the four frames leadership theory. These researchers agree that almost all successful leaders draw on the same repertoire of "basic" leadership practices of building the vision and setting direction, understanding and developing people, designing the organization, managing and supporting the teaching and learning programme. Southworth (2002) further states that instructional leaders value a blend of supervision, staff development and curriculum development, with the promotion of teachers' professional development was seen to be the most influential practice.

2. Methodology

2.1 Population and study sample

The target population for this study was the 176 head teachers, 2,112 teachers and 16,000 Form three and Form four students from public secondary schools in Machakos County, South Eastern region of Kenya. Examination statistics at the Machakos County Education Offices (2014) show that performance of KCSE in most secondary schools in this County was not sufficiently competitive in the years under (2009 to 2013). This attracted public concern, hence the need to assess the causes of this poor performance and its implication on overall school effectiveness

The researcher used stratified sampling technique to select 38 (42%) of target schools from high performing and low performing categories, to give a total of 38 head teachers. The study targeted the head teacher and an average of five teachers from each school. Simple random sampling was used to select the 380 form four and three students on the basis that they have stayed in the school for at least two years.

2.2 Data collection tools

The study used questionnaire as the research instrument:
This study used the head teacher questionnaire (HTQ), teacher questionnaire (TQ) on and student questionnaire (SQ).

2.3 Data analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS). For consistency, the IBM SPSS statistics version 20 was used to classify information, investigate relationships, and analyze the data.

2.4 Objective of the study

The objective of this study was to assess the extent to which instructional leadership practices by head teachers account for the academic achievement of pupils. To achieve this objective, data collected was analysed using simple and multiple regression.

Multiple regression analysis was done to test the extent to which head teachers instructional practices influences on students' performance. Multiple regression attempts to determine whether a group of variables together predict a given dependent variable (Orodho, 2009).The independent variables included: defining the school mission, managing the instructional program, promoting a positive school learning climate and advancement of teachers' interest while the dependent variable was the school performance for the years under study (2009-2013). The schools performance was taken as the average of the mean scores attained in the years under study by each respondent school.

Multiple regression model presented below was used

$$Y = a + ß_1X_1 + ß_2X_2 + ß_3X_3 + ß_4X_4 + \varepsilon$$

Where:

- Y = Students' performance;
- X_1 = Defining the school mission;
- X_2 = Managing the instructional program;
- X_3 = Promoting a positive school learning climate;
- X_4 = Advancement of teacher's interest;
- A = Constant;
- E = Error term.

The results of the multiple regression are presented in the summary table below.

Table 1: Summary of the Multiple Regression Model

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.818[a]	.669	.620	1.04424

a. Predictors: Advancement of teacher's interest, Managing the instructional program, Defining the school mission, Promoting positive school learning climate

As seen in Table 1, R Square value was 0.669 at $p<0.01$ level of significance. This coefficient of determination means that 66.9% of the variation on students' performance in KCSE can be explained by defining the school mission, managing the instructional program, promoting positive school learning climate and advancement of teacher's interest. The remaining 33.1% can be explained by other variables not included in the study. R square and adjusted R is above average, an implication that an above average variation can be explained by the model.

These findings confirm the conclusions by many pro 'effective schools' researchers that indeed the school effect, mainly shaped by the head teachers' leadership practices, influences the performance of pupils. Leithwood, Louis, Anderson and Wahlstrom (2004) showed that Leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school through both direct and indirect effects.

Recent Studies (Nettles and Herrington, 2007, Robinson, Lloyd and Rowe, 2008, Swan, 2010 and Nyagosia, Njuguna and Waweru, 2013) also underscore the importance of instructional leadership in enhancing the delivery of curriculum and instruction. Their finding also support the effective schools paradigm in that higher performing schools have evidence of their head teachers exercising the instructional leadership practices more effectively than head teachers in low performing schools (Nyagosia, Njuguna and Waweru, 2013).

Separate linear regressions on the instructional practices were performed in order to determine the percentage effect of each variable on pupils' performance (Orodho, 2009). The linear regression model below was applied:

$$Y = a + ßX + \varepsilon$$

Where:

Y = Students' performance;

X = The instructional leadership practice: Defining the school mission, managing the instructional program, promoting a positive school learning climate or Advancement of teacher's interest;

a = Constant;

ε = Error term.

The results obtained are presented in table 2, 3, 4 and 5 below.

Table 2: Linear Regression for defining the school mission

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.674[a]	.454	.451	.771

a. Predictors: (Constant), Defining the school mission

Table 2 shows that defining the school mission alone can only account for 45.4% of performance of pupils in KCSE examinations.

Table 3: Linear Regression for managing the instructional programme

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.455[a]	.207	.202	.929

a. Predictors: (Constant), Managing the instructional program

Table 3 shows that managing the instructional program alone can only produce 20.7% of students' academic performance in KCSE examination.

Table 4: Linear Regression for promoting a positive learning climate

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.444[a]	.198	.193	.935

a. : (Constant), Promoting positive school learning climate

From Table 4 it can be seen that only 19.8% of academic performance in KCSE examination can be brought about by Promoting positive school learning climate.

Table 5: Linear Regression for advancing teachers interests

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.722[a]	.521	.518	.722

a. Predictors: (Constant), Advancement of teachers' interests

As can be seen from Table 5 above, advancement of teachers' interests can account for (52.1%) of academic performance in KCSE examination.

From tables 1 to 5, it is clear that the four leadership framework (Bowman and Deal, 2003) is applicable in Machakos County. Such observation was made by Nettles and Herrington (2007), who concluded that certain instructional leadership practices

produce a direct relationship with student achievement, though each of them typically accounts for a small proportion of the total student achievement variability.

3. Conclusion and Recommendations

Finally, the study concludes that instructional leadership practices by head teachers have a high influence on students' academic performance. Regression analysis showed that it explained 66.9% of students' academic performance at $p<0.05$ confidence level. The individual instructional leadership practices only account for small percentages on performance, hence the need for balanced instructional leadership practice. It is therefore recommended that head teachers be properly trained and in-serviced in order to practice balanced instructional. This will enhance proper utilization of all resources (human and material), so as to realize good performance in examinations for their schools.

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Appendix i: Proportion of candidates who scored Grade D+ and below in secondary schools in Machakos County between 2009 and 2013

	County	
Year	**Machakos County**	**Kitui County**
2009	57.68%	51.27%
2010	54.07%	41.00%
2011	51.30%	30.10%
2012	52.76%	47.78%
2013	56.96%	42.28%

Appendix ii: Study Sample Schools

	Mean grade							Mean grade					
School serial	'09	'10	'11	'12	'13	Av. '09-'13	**School serial**	'09	'10	'11	'12	'13	Av.'09-'13
HP 1	6.80	7.20	6.94	6.30	6.73	6.79	**LP 12**	2.70	3.22	3.50	3.68	3.73	3.37
HP 2	8.00	8.10	8.80	9.30	8.98	8.64	**LP 13**	3.80	4.1	4.21	4.41	3.43	3.99
HP 3	7.80	7.43	8.20	7.88	8.64	7.99	**LP 14**	3.30	3.11	3.4	4.06	3.17	3.41
HP4	6.00	7.42	7.69	7.92	7.18	7.24	**LP 15**	2.70	3.61	2.88	2.69	2.52	2.88
HP 5	5.40	7.17	5.90	6.60	6.26	6.27	**LP 16**	3.30	3.34	3.7	3.51	3.15	3.40
HP 6	6.30	6.24	7.03	7.37	7.76	6.94	**LP 17**	3.60	3.32	3.7	3.07	3.00	3.33
HP 7	7.00	6.72	6.96	6.55	7.37	6.92	**LP 18**	4.20	3.74	3.00	2.93	2.61	3.30
HP 8	5.60	5.81	5.54	6.11	7.06	6.02	**LP 19**	3.40	3.31	3.55	3.06	3.06	3.28
LP 1	3.60	3.91	4.26	3.90	4.70	4.07	**LP 20**	3.40	3.14	3.26	3.52	3.01	3.27
LP 2	3.80	3.30	4.15	4.51	4.45	4.04	**LP 21**	3.60	3.58	2.53	3.35	3.18	3.25
LP 3	3.50	2.78	2.81	3.13	2.89	3.08	**LP 22**	2.90	3.00	3.19	3.13	2.99	3.04
LP 4	3.70	3.89	4.16	3.92	4.48	4.03	**LP 23**	1.80	3.03	3.41	4.47	3.42	3.23
LP 5	2.80	2.25	2.67	3.33	2.79	2.77	**LP 24**	2.80	3.83	3.23	3.39	2.65	3.18
LP 6	4.40	3.97	4.13	3 .41	3.68	4.02	**LP 25**	3.30	2.48	3.2	3.17	3.69	3.17
LP 7	4.40	3.22	4.35	4.15	3.93	4.01	**LP 26**	3.30	3.57	2.87	3.25	2.77	3.15
LP 8	4.10	4.18	3.71	3.91	4.6	4.01	**LP 27**	3.20	3.09	2.5	3.41	3.29	3.10
LP 9	2.80	2.94	2.66	3.05	3.54	3.00	**LP 28**	2.70	2.94	2.83	3.59	3.3	3.07
LP 10	4.00	3.93	4.22	4.38	3.68	4.00	**LP 29**	3.40	3.07	2.82	3.14	2.82	3.05
LP 11	2.60	3.00	2.30	2.40	2.43	2.61	**LP 30**	2.80	2.77	2.52	2.73	2.39	2.64