

Team Collaboration and Decision Making in Public Secondary Schools; Implications to Students' Performance in Kenya Certificate of Secondary Education in Kiambu County, Kenya

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Abstract

This study investigated the implication of team collaboration and decision making to students' performance in Kenya Certificate of Secondary Education (KCSE) in public secondary schools in Kiambu County, Kenya. The study adopted ex post facto research design. Target population consisted of 227 principals and 3736 teachers of public secondary schools from 10 sub-counties in Kiambu County. Sample size of 143 principals and 343 teachers was determined using Cochran's sample size formula. To ensure equal representation, 14 principals of public secondary schools in each sub-county and 3 teachers from each sample school were selected using simple random sampling technique. Data were collected using a questionnaire. Correlations were computed to establish the relationships between the selected management practices(team collaboration and decision making) and students' performance. Linear regressions were generated to test hypotheses and identify predictor variable for students' performance. Findings revealed a significant relationship between these selected management practices and students' performance.

Key words: Public secondary schools, team collaboration, decision making, students' performance, school management practices

1.0 Introduction

According to United States Agency for International Development Education Strategy (USAID, 2011), education has proven essential for developing an informed and active citizenry, required for healthy democratic practice and for enabling individuals to make smarter choices affecting health and household welfare. Education remains the key for unlocking the individual's intellectual and creative potential. It is the engine that drives the economy and the vaccination against the worst effects of globalization (Brodjonegoro, 2009). The Kenya's Basic Education Act, 2013 gives the Cabinet Secretary Ministry of Education Science and Technology the responsibility for the overall governance and management of basic education to all children at national and county levels. Quality management is a source of enhancing organisational performance through continuous improvement in organizations activities (Teht et al., 2009). Kythredis et al.,(2010) found that, mutual respect and cooperation of the principal with all the internal stakeholders of the school is central to successful leadership. Carmeli (2008), emphasize on the importance of group dynamics and processes and note that top management teams (TMs) are the most influential entity governing organisational processes and outcomes. Total quality management involves the organization's long term commitment of quality with the active participation of all the members at all levels to meet and exceed customer expectations (Harold Koontz et al., 2010). Marcello Russo (2012), emphasize on the importance of internal team environment in reducing the negative effects of diversity in goal orientation on team process and outcomes. Nyongesa (2007) notes that, the relationship among teachers, students, support and service personal depend largely on principals.

School management practices may have direct effect on curriculum implementation process and in turn affect students' performance (Browne-Ferrigno, 2007). Sessional Paper No.1 of Government of Kenya (2005) indicates that, secondary education has been characterized by poor performance in national examinations. Students in public secondary schools in Kiambu County, Kenya, perform poorly in KCSE. Table 1 in Appendix A shows an analysis of KCSE performance for 5 years: 2009-2013. The students' average mean grade for the years under review was 'D+' (mean of 4.58 out of expected maximum score of 12 points) and thus, reflecting poor performance. Data also reveal that, 78.35% of the students got below a mean grade of C+ which is the minimum requirement for entry to Kenyan universities and 67.94% obtained below grade C which is the minimum entry requirement to a diploma college.

Kenya Education Master Plan (1997-2010) conceptualizes total quality management (TQM) in Kenyan secondary schools and indicates that many secondary school principals have not been adequately trained in management and administration. Darling-Hammond et al., (2007) recognize the important role of school leaders in developing high performing schools. Table 2, Appendix B shows the number of principals that were transferred and dropped between January 2009 and May 2013 in public secondary schools in Kiambu County. Data reveal that 74 (33%) principals were demoted or transferred within this period. The transfers and demotions are an indication of instability in school leadership and management in public secondary schools in Kiambu County.

Day et al., (2009), found that academic success is achieved as a result of the quality of leadership at the school level, rather than the direct influence of policy. Kiambu County public secondary schools leadership shows inefficiency as manifested in the transfers and demotions, as a result, the poor students' performance in KCSE may partly be attributed to leadership and management practices in these schools. It was for this reason that the researchers chose to investigate whether there were any implications of the two selected TQM practices; the level at which school teams collaborate in curricular activities and involvement of teachers and students in decision making by the school administration to students' performance in KCSE. These management practices among others, were commonly repeated in the literature review as management practices affecting performance.

1.1 Objectives of the Study

The following were the objectives of the study:

1. To determine whether there was a significant relationship between the level at which school teams collaborate in curricular activities and students' performance in KCSE.
2. To determine whether there was a significant relationship between the level of involvement on decision making of teachers and students by the school administration and students' performance in KCSE.

1.2 Hypotheses

The following hypotheses were formulated to guide the study:

Ho₁: There is no significant relationship between the level at which school teams collaborate in curricular activities and students' performance in KCSE.

Ho₂: There is no significant relationship between the level of involvement on decision making of teachers and students by the school administration and students' performance in KCSE.

2.0 Theoretical Perspective

The theoretical basis for this study was derived from the systems theory and transformational leadership theory. The earliest scholars to apply the social system concept to educational administration were Getzels and Guba (1957). The teams (principal, teachers, parents and students) in a school need to cohesively work together to achieve the school goals. School leadership was perceived to be a social control and, one major task of the school administrator was to integrate the demands of the institution and those of staff members in such a way that these demands were organizationally productive and individually fulfilling. Harold et al., (2010) argue that, an organized enterprise does not exist in a vacuum, rather, it is dependent on its external environment; it is part of larger systems such as the industry to which it belongs, the economic system and society. The inputs from the external environment may include people, capital, skills and stakeholders demands. Kezaret al., (2007) reflect an understanding of leadership as social control. Organizations in particular can be seen as a story of people operating jointly to explore and achieve (Kozlowski et al., 2006). Kruger (2008) observes that the way people perceive their leader and the expectations they have of him or her determine what the leaders can and cannot do.

Principals manage and lead students, teachers and parents towards the achievement of school goals resulting to the success of the school. Harold et al., (2010) note that operational management indicate how various inputs are transformed through the managerial functions of planning, organizing, staffing, leading, and controlling. It is the task of the managers to transform the inputs, in an effective and efficient manner, into outputs. Transformational leaders attempt to shape a positive organizational culture and contribute to organizational effectiveness (Fullan, 1991; Leithwood et al., 1996). Leithwood et al., (2003) found that transformational leadership have significant effects on student achievement.

3.0 Research Methodology

Ex post facto research design was adopted for this study. The design has been recommended as the most suitable for education and social research since; problems in social and educational research do not lend themselves to experimental inquiry (Kerlinger, 1973). The design allowed the researchers to select the relevant variables of events or conditions that had already occurred for an analysis of their relationships. *Ex post facto* design was therefore most suitable for this study. The target population consisted of 227 schools from the 10 sub-counties in Kiambu County and 3736 teachers in these schools. Cochran's sample size formula was used to determine the sample size of 143 principals and 343 teachers. To ensure equal representation of principals and teachers from all the 10 sub-counties in Kiambu County, principals from 14 ($143 \div 10$ sub-counties = 14.3) schools in each sub-county and 3 [$(348 \div 10$ sub-counties) $\div 14$ schools = 2.5] teachers from each school were selected using simple random sampling technique. A questionnaire developed by the researchers was administered to 140 principals and 420 teachers from the sample schools.

The questionnaire had likert type scale questions measuring dimensions of the two selected TQM practices; 9 on team collaboration and 8 on decision making. A measure of respondents opinions about the level at which school teams collaborate in curricular activities and the involvement of teachers and students on decision making by the school administration was based on a 5-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The respondents were requested to circle the appropriate option that described their level of agreement with the descriptive items of the selected management practices. There was one open-ended question for each of the two selected management practice where the researchers sought individual opinion or views on the relationship between the selected management practices and students' performance.

The demographic data collected included; gender, age, level of education and years of service. There was also a question requesting the respondents to indicate the average mean grade in KCSE of their school for years 2010, 2011 and 2012. The return rate of secondary school principals and teachers was 89.29% and 87.62% respectively.

3.1 Data Analysis Techniques

In order to find out whether there was a relationship between the dependent and independent variables the researcher used correlations analysis. To find out the nature of the relationship of how each value of the dependent variable (Y) was determined by each value of the independent variable X, linear regression analysis was used. Hence, linear regression analysis was used to estimate the unknown effect of team collaboration in curricular activities and involvement on decision making of teachers and students by the school administration over students' performance. Two tail p-values were used to test the hypothesis. To reject the hypothesis, the p-value had to be lower than 0.05. The t-values were also used to test the hypothesis. To reject the hypothesis, t-value had to be greater than 1.96 (at 0.05 confidence).

4.0 Study Findings

KCSE mean grade scores for the sampled schools for years 2010, 2011 and 2012 were presented in Table 3 Appendix C and also in Figure 1, Appendix H. More than half the number of the sampled public secondary schools in Kiambu County scored a mean grade of D plain and below in KCSE. The average mean grade for the three years was a 'D' (score of 4.59 out of the maximum expected of 12 points). The likert scale questions on team collaboration and decision making were analysed and their relationship with students' performance tested:

4.1 The level at which school teams collaborate in curricular activities and students' performance in KCSE.

To test the hypothesis that there is no significant relationship between students' performance in KCSE with the level at which school teams collaborate in curricular activities, the researchers obtained the correlation and regression analysis for the principals and teachers likert-type scale items.

Correlations are presented in Table 4, Appendix D. The results obtained from the correlation of team collaboration in school curricular activities and students' performance revealed that, parents availing themselves in school to discuss their children's performance and their collaboration in maintaining high levels of student discipline had strong correlation with students' performance in KCSE examinations with $r = 0.22$ in each case.

The researchers generated the linear regression analysis to test the hypothesis and results presented in Table 5, Appendix E. The statement that 'parents avail themselves to school to discuss their children's academic performance' had t-value equal to **2.91**, p-value of **0** and a coefficient of **0.21**. In addition the statement that 'parents collaborate in maintaining high levels of student discipline' had a t-value equal to **2.66**, p-value of **0.01** and a coefficient of **0.26**. These values were significant and the hypothesis that there is no significant relationship between the level of team collaboration in school curricular activities and students' performance in KCSE was rejected. The following linear regression equation for estimating KCSE mean score based on the level at which school teams collaborate in curricular activities was derived:

KCSE Mean Score = 2.69 + 0.21 (parents availability to school to discuss their children's academic performance) + **0.26** (parents collaboration in maintaining high levels of student discipline) points.

The interpretation of the model is that for each one-point increase in parents availability to school to discuss their children's academic performance and for each one-point increase in parents collaboration in maintaining high levels of student discipline, KCSE mean score increase by coefficients of **0.21** and **0.26 points** respectively plus a constant of **2.69 points**. The results demonstrate that parents support in education of their children helps the school maintain high levels of students' discipline and their availability to school leads to improved students' academic performance. There is a positive student academic achievement associated with parental involvement in their children education. Tschannen-Moran (2001) found collaboration to be one practice that can generate synchronistic relationships by bringing agents together for a universal purpose and by fostering collective ownership in the educational mission. The findings are also in agreement with researchers who found evidence of positive relationship between school to family communication and student outcomes (Fan et al., 2010; Rumberger, 2011; Sirvani, 2007).

4.2 The level of involvement on decision making of teachers and students by the school administration and students' performance in KCSE

In order to test the hypothesis that there is no significant relationship between the level of involvement of both the teachers and students by the school administration in decision making and students' performance in KCSE the researchers obtained the correlation and regression analysis for the principals and teachers likert-type scale items. Correlations are presented in Table 6, Appendix F. The results obtained from the correlation of the level of involvement on decision making of teachers and students by the school administration and students' performance revealed that, students participation in making decisions on how the school can meet their needs and also the consideration of teachers' decisions on process improvement by the school administration had correlations with students' performance in KCSE with $r = 0.13$ and $r = 0.11$ respectively.

The researchers then generated the linear regression analysis to test the hypothesis and results presented in Table 7, Appendix G.

The statement that students normally participate in making decisions on how the school can meet their needs had t-value equal to **3.98**, p-value of **0** and a coefficient of **0.4**. The statement that 'teachers' decisions on process improvement are valued' had a t-value equal to **2.85**, p-value of **0.01** and a coefficient of **0.34**. These values were significant and the hypothesis that there is no significant relationship between the level of involvement of both the teachers and students by the school administration in decision making and students' performance in KCSE was rejected. The following linear regression equation for estimating KCSE mean score based on the level of involvement on decision making of teachers and students by the school administration was derived:

KCSE Mean Score/Performance = 4.03 + 0.4 (students participation in making decisions on how the school can meet their needs) + **0.34** (consideration of teachers' decisions on process improvement by the school administration) points.

The interpretation of the model is that for each one-point increase in students participation in making decisions on how the school can meet their needs and for each one-point increase in consideration of teachers' decisions on process improvement by the school administration, KCSE mean score increase by coefficients of **0.4** and **0.34 points** respectively plus a constant of **4.03 points**. The findings imply that, participative decision making encourages team members to interact with one another freely and sharing of their ideas makes them have a sense of belonging which consequently leads to willingness to accomplish decisions made resulting to enhanced performance. These findings indicate that students' involvement in decision making about how their school meet their needs is critical to the improvement of their academic performance.

The findings are in agreement with Mulford and Silins (2007) who found that principals who lead schools, in which the students succeed, work collaboratively with their teachers and involve them in identifying directions, planning strategies and developing systems and structures that promote teaching and learning, and therefore student achievement. Beveridge (2004) found that, students who were in a more democratic school were happier and felt more in control of their learning. Consideration of teachers' decisions on process improvement leads to ownership of decisions made which encourage hard work in accomplishment of tasks and consequently improve students' performance. Mualuko et al., (2009) found that teachers desire greater involvement in decision making and that when teachers are involved in decision making their morale in their performance of duty becomes higher. The findings are in agreement with Mangin (2007) who found that teacher participation in decision making through collaborative decision making has a positive effect on student achievement. In the same dimension Sukirno et al., (2011) found that participative decision making had a significant impact on lecturer performance while Abraham et al.,(2009) found that participatory decision-making processes are an important relational mechanism that enables more realistic decisions and enhances the performance of a firm.

5.0 Conclusion and Recommendations

The findings of this study reveal that, there is a significant relationship between the level at which school teams collaborate in curricular activities and students' performance in KCSE. Involvement of parents in their children education and their collaboration in maintenance of their children discipline is positively related to students' performance. Hence, to improve students' academic performance there is need for increased parents' participation in their children education and in maintenance of high level of students' discipline. Principals should influence parents to be committed in the participation of their children education and align them with the school academic target goals. Teachers too should keep in touch with the parents and talk to them about their children academic progress and similarly do so when a relevant problem arises. The findings of this study demonstrate that team collaboration nurtures higher involvement of team members and this impact positively on achievements of common goals of the school and consequently results to positive students' academic achievement.

The study also revealed that there was a significant relationship between the level of involvement in decision making of the teachers and students by the school administration and students' performance in KCSE. To improve students' performance there is need to have the students participate in making decisions on how their school can meet their needs and similarly have the school administration consider teachers' decisions on process improvement. School principals should bring on board the teachers, students and parents by involving them in making important decisions on curriculum delivery and school policies. Participatory decision making in schools creates ownership of decision taken, enhances engagement and improves the quality of the school programmes which consequently impacts positively on students' performance. Involving different teams (students, teachers and parents) in decision making would be useful in improving students' performance and hence, these teams should be empowered to make and take decisions on process improvement in order to improve students' performance.

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Appendix A

Table 1

Mean Grade	Year					Total	Percent
	2009	2010	2011	2012	2013		
A	27	36	35	27	20	145	0.14
A-	178	217	271	254	245	1165	1.15
B+	433	442	578	620	539	2612	2.57
B	704	718	848	887	868	4025	3.96
B-	1263	1116	1293	1207	1220	6099	6.00
C+	1677	1537	1678	1467	1606	7965	7.84
C	2306	2078	2147	1984	2062	10577	10.41
C-	2643	2587	2776	2345	2681	13032	12.82
D+	3132	2801	3213	2958	3252	15350	15.10
D	3904	3267	3808	3546	4348	18873	18.57
D-	4026	3319	3807	3194	4500	18846	18.54
E	643	582	597	372	765	2959	2.91
Mean	4.46	4.57	4.66	4.75	4.47		

Source: Kiambu County Director of Education Office, (2014).

Kiambu County Public Secondary Schools KCSE Mean Score Analysis From Year 2009 to 2013

Appendix B

Table 2

Year	2009	2010	2011	2012	2013	TOTAL
Demoted	12	01	02	0	02	17
Transferred	14	16	09	07	11	57
TOTAL	26	17	11	07	13	74

Source: Kiambu County Director of Education Office, (2013).

Principals Transferred or Demoted From January 2009 To May 2013 in Public Secondary Schools in Kiambu County

Appendix C

Table 3

Mean Grade	Average KCSE		Total Scores	Percent
	Mean Score	Freq		
A to B+	11	8	88	1.59
B to B-	8.5	5	42.5	0.97
C+ to C	6.5	164	1066	10.32
C- to D+	4.5	76	342	31.74
D to D-	2.5	267	667.5	54.55
E	1	4	4	0.83
Total		481	2210	100.00
Average KCSE Mean Score for the three years	4.59			

Average KCSE Mean Grade Distribution for Years 2010, 2011 and 2012

Appendix D

Table 4

	KCSE Score	Parents in the class I teach avail themselves to school to discuss their children's performance	Teachers normally have their needs addressed by the school administration	The students are generally serious with their studies	The school administration supports the teaching process by providing the required teaching and learning materials	Students are normally disciplined	Parents in the classes that I teach are collaborative in maintaining high levels of student discipline	Students body work well with prefects	Teachers normally do not get late for lessons	The school has a capacity building programme for teachers
KCSE Score	1									
Parents in the class I teach avail themselves to school to discuss their children's performance	0.2215	1								
Teachers normally have their needs addressed by the school administration	-0.0056	0.2984	1							
The students are generally serious with their studies	0.0729	0.0997	0.125	1						
The school administration supports the teaching process by providing the required teaching and learning materials	0.085	0.1868	0.494	0.1107	1					
Students are normally disciplined	0.1756	0.2611	0.3613	0.1857	0.4179	1				
Parents in the classes that I teach are collaborative in maintaining high levels of student discipline	0.2245	0.4746	0.3969	0.2732	0.1871	0.4367	1			
Students body work well with prefects	0.1014	0.281	0.497	0.1415	0.3328	0.5659	0.4851	1		
Teachers normally do not get late for lessons	-0.0271	-0.0345	0.0729	0.0099	0.0336	0.0652	0.0011	0.137	1	
The school has a capacity building programme for teachers	0.1133	0.2886	0.4042	0.1846	0.3324	0.3386	0.3734	0.3454	0.0725	1

Correlation of KCSE Performance with Team collaboration

Appendix E

Table 5

Likert Scale Items on Team Collaboration	Coef.	Std. Err.	t	P	[95% Conf.Interval]
Parents in the classes I teach avail themselves to school to discuss their children's academic performance.	0.21	0.07	2.91	0	[0.07, 3.45]
Teachers normally have their needs addressed by the school administration.	-0.35	0.11	-3.19	0	[-0.57, -0.14]
The students are generally serious with their studies.	0	0.03	0.13	0.90	[-0.06, 0.07]
The school administration supports the teaching process by providing the required teaching and learning materials.	0.16	0.12	1.30	0.19	[-0.08, 0.40]
The students are normally disciplined.	0.18	0.11	1.62	0.11	[-0.04, 0.41]
Parents in the classes that I teach are collaborative in maintaining high levels of student discipline.	0.26	0.10	2.66	0.01	[0.07, 0.45]
Teachers normally do not get late for lessons.	0	0.03	0.07	0.94	[-0.05, 0.05]
The school has a capacity building programme for teachers	0.05	0.08	0.59	0.55	[-0.11, 0.20]
Constant	2.69	0.50	5.43	0	[1.72, 3.66]

Linear Regression of Students' Performance with Team Collaboration

Appendix F

Table 6

	KCSE Score	Students normally participate in making decisions on how the school can meet their needs	School prefects are democratically elected by the students	In my department, teachers decisions on process improvement are valued	Teachers are normally involved by the school administration in the evaluation of programmes as a way of feedback	Teachers inputs concerning quality initiatives are always welcome by school administration	Students are allowed to participate in making decisions on school rules	Teachers ideas and suggestions are normally taken seriously	Teachers are normally involved by the school administration in evaluation of school facilities as a way of feedback
KCSE Score	1								
Students normally participate in making decisions on how the school can meet their needs	0.131	1							
School prefects are democratically elected by the students	-0.1078	0.4513	1						
In my department, teachers decisions on process improvement are valued	0.1112	0.4804	0.3854	1					
Teachers are normally involved by the school administration in the evaluation of programmes as a way of feedback	0.0216	0.4586	0.3855	0.632	1				
Teachers inputs concerning quality initiatives are always welcome by school administration	0.0272	0.4502	0.3251	0.5953	0.6491	1			
Students are allowed to participate in making decisions on school rules	-0.0086	0.6214	0.47	0.4026	0.4289	0.4364	1		
Teachers ideas and suggestions are normally taken seriously	-0.0312	0.4601	0.3689	0.5659	0.633	0.6997	0.4979	1	
Teachers are normally involved by the school administration in evaluation of school facilities as a way of feedback	0.0029	0.5458	0.3245	0.5246	0.627	0.5951	0.5422	0.6796	1

Correlation of Performance with Decision making

Appendix G

Table 7

Likert Scale Items on Decision Making	Coef.	Std. Err.	t	p	[95% Conf.Interval]
Students participate in making decisions on how the school can meet their needs.	0.40	0.10	3.98	0	[0.20 , 0.59]
The school prefects are democratically elected by the students.	-0.30	0.08	-3.82	0	[-0.45, -0.15]
In my department, teachers' decisions on process improvement are valued.	0.34	0.12	2.85	0.01	[0.10 , 0.58]
The teachers are normally involved by the school administration in the evaluation of programs as a way of feedback.	-0,01	0.13	-0.09	0.93	[-0.26, 0.24]
Teachers inputs concerning quality initiatives are always welcome by school administration.	0.03	0.13	0.22	0.83	[-0.23, 0.28]
Students are allowed to participate in making decisions on school rules and regulations.	-0.08	0.09	-0.90	0.37	[-0.26, 0.10]
Teacher's ideas and suggestions are normally taken seriously/considered.	-0.19	0.13	-1.49	0.14	[-0.44, 0.06]
Teachers are normally involved by the school administration in the evaluation of school facilities as a way of feedback.	-0.11	0.11	-0.90	0.37	[-0.33, 0.12]
Constant	4.03	0.42	9.53	0	[3.20, 4.86]

Linear Regression of Students' Performance with Participative Decision Making

Appendix H

Figure 1: KCSE Percent Grade Scores for Years 2010, 2011 and 2012

