Collaboration, Benchmarking and Secondary Schools' University Entry Grades in the Western Region, Kenya.

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Abstract

Education is a tremendously important lever for ensuring competitiveness and prosperity in the age of globalization. Continuous monitoring of schools' performance through the annual publication of league tables coupled with the glamour at education days has put pressure on secondary schools to raise the level of their students' academic performance. As a result, improvement strategies are constantly being adopted, and among these strategies are collaboration and benchmarking. Despite these efforts, the quality of secondary school education in the Western region in particular, as indicated by Kenya Certificate of Secondary Education (KCSE) results over the years has been persistently very low. In 2010, only 11,995 (12.35%) of the candidates who attained the minimum university cut off grade of C+ and above were from the Western region. This indicates that most schools are ineffective when evaluated in terms of students' academic performance. The objective of this study was therefore, to establish the effect of collaboration and benchmarking on secondary schools' university entry grades in the Western Region. The study adopted a descriptive survey design. The target was 137 schools, formally classified as provincial schools. These schools were stratified into four categories (schools that collaborated and benchmarked, schools that only collaborated, schools that only benchmarked, schools that did neither). A total of 41 schools representing 30% were randomly selected. The sample size comprised 41 Directors of Studies and 9 DEOs representing 30% of the 31 DEOs in the Western region. Data were collected using interview schedules, questionnaires and document analysis and analysed using One-way ANOVA. Findings revealed that, schools involved in both practices had high university percentage pass grades (85.75%) during the five year period compared to those engaged in neither practice which had a very low percentage of university entry grades (12.45%). It was therefore recommended that, schools should adopt a three pronged collaboration and benchmarking process that involved schools, departments and subjects in order to maximize the benefits of the two practices.

Key Words: Collaboration, benchmarking, dismal and academic performance.

Introduction

Collaboration is an effective strategy for enhancing student achievement, promoting effective and efficient use of resources around shared institutional goals. Napolitano, Perdue and Barret (2008), reported that, around the globe, governments were eagerly comparing their educational outcomes to the best in the world. Their goal was to identify and learn from the top performers and rapid improvers. This is known as benchmarking while the importance of collaboration is evidenced by the fact that, countries, through their respective governments are involved in collaboration and so are institutions particularly those offering post secondary education. Schools that operate collaboratively, according to Barot and Raybould (1998), tend to be more attractive and effective because these collaborative relationships enabled schools to take advantage of differences and use them as strengths.

In the last thirty years, qualitative and quantitative research supported the idea that, students' achievement increased significantly when teachers worked collaboratively (Abrahams, 1997; Cantwell, 2003; Catalina, 2008). A review of literature on inter-school collaboration by Atkinson, Springate, Johnson and Hasley (2007) showed that, pupil attainment had risen as a consequence of collaborative activity.

Attitudes to learning improved as a result of collaborative ventures leading to greater engagement with learning and culminating in high attainment levels. Bandura (1993) reported that, student achievement was significantly and positively related to collective efficacy and that, collective efficacy had a much greater effect on student achievement than even socio-economic status. An in depth case study conducted on Brandonburg High School showed that, as a result of collaboration, the graduation rate improved from 84.5% to 86.8% while the percentage of students going to colleges and universities increased from 48% in 1986 to 64% in 1997. In addition, standardized test scores met the state and national averages. This led to the conclusion that, collaboration held the promise, not only for making students smarter but for making schools smarter as well (Moran, Uline, Hoy & Mackley, 2000).

Throughout California, there were many school-university partnerships working to close the opportunity and achievement gaps that separated groups of students. According to Friedman & Dorr (2005), such educational partnerships between public schools and institutions of higher education provided a powerful means of enhancing student achievement and cultivating college going cultures. At the school-school level, the California Academic Partnership Programme (CAPP) grant provided time for teachers at Farmersville High School (FHS) and Farmersville Junior High School (FJHS) to meet regularly and establish a collegial relationship. Longitudinal analysis of the 10^{th} grade California High School Exit Examination (CHSEE) pass rates revealed that, the project made considerable progress toward the goal of preparing all students to pass CHSEE at the end of 10^{th} grade. The 10^{th} graders made larger gains in CHSEE pass rates in both English and math. In 2001-2002, the 10^{th} grade pass rate was 30% and it increased by 30 points to 60% in 2007-2008. The math pass rate was 12% in 2001-2002 and it increased to 70% in 2007-2008 registering a 58 point increase (Holmes & Aronson, 2008). In addition, Farmsville High School Academic Performance Index (API) increased from 483 in 2000-2001 when the project began to 624 in 2006-2007 at the end of the project.

Benchmarking is a positive process and provides objective measurements for base-line, goal setting and improvement tracking which can lead to dramatic innovations (Shafer & Coate, 1992). According to Stella and Woodhouse (2007), the American Society for Quality regarded benchmarking as an improvement process in which an organization was able to measure its performance against that of the "best in class" organizations to determine how they achieved their performance levels and use the information to improve its own performance. Schleicher and Stewart (2009) revealed that, educators and governments were paying increasing attention to international comparisons as they sought to develop effective policies to improve the performance of their education systems. It was reported that, when the South African Senior Certificate was benchmarked with the Scottish higher Grade Examination in order to assess the comparability of the South African education standards and quality of international standards, the process helped to increase pass rates from 221, 409 in 1991 to 322,492 in 2003 (Umalusi, 2004).

Method

Participants

To obtain a representative sample, the 137 public secondary schools formally classified as provincial schools in the region, were stratified into four categories using the school mapping data. These were: schools involved in both collaboration and benchmarking, schools that had only collaborated, those that had only benchmarked and those that had done neither. A total of 41 schools representing 30% of the target schools were then used in the study (Gay, 1983; O'Connor, 2011). All Directors of studies from the 41 schools took part in study because they were the custodians of the schools' academic affairs and they provided information on academic performance over the five year period. The sample also included 9 (30%) of the District Education officers who were randomly sampled.

Instrument

An in-depth interview was held with the District Education Officers (DEOs). The researcher sought information on the DEOs' perceptions of the effect of collaboration and benchmarking activities in their districts on secondary schools' academic performance. From schools, information on academic performance was obtained from Directors of Studies who filled in a table indicating the candidature in their respective schools and number of candidates who scored C+ and above between 2007-2011. Documents were also used in this study. They provided data already collected on schools' performance over the years, analysed and archived for future reference and comparison.

The documents used were school records like the Kenya Certificate of Secondary Education analysis files kept by the schools and the Provincial Education office for corroboration. The information was used to check the authenticity of the information that was provided by the Directors of Studies.

Data Analysis

Data on the percentage of students from each category of school attaining the minimum university entry was calculated and tabulated. The difference in the percentage pass grades for the four categories of schools was statistically established using One- way Analysis of Variance (ANOVA) (α=0.05) and the statistical significance was assessed by the F-ratio. A follow up post hoc sheffes's test was used to determine which percentage means were significantly different from each other. All interviews with the DEOs were auto taped and transcribed. A qualitative thematic strategy of data analysis was employed. The information was summarized under common themes and used in the triangulation of study findings.

Results

To establish the effect of collaboration and benchmarking on secondary schools university entry grades, Directors of Studies from sampled schools were asked to fill a table showing their candidature during 2007-2011. In addition they also provided information the number of candidates during each of the five years who scored C+ and above. The C+ was used as a base grade because it would be used to establish the percentage of candidates who qualified to join university during a particular year. Again, this information was corroborated with similar information obtained from the records and the Examinations department at the Provincial Director of Education's Office in order to ascertain its authenticity.

The percentage pass grades posted by the different categories are provided are summarised and presented to two decimal places in table 1.

Table 1: Percentage of students who attained university entry (2007-2011)

School category	Number	2007	2008	2009	2010	2011	Average
Collaborating and benchmarking	12	83.81	82.59	84.03	86.69	91.64	85.75
Collaborating only	11	55.22	50.67	60.19	57.48	69.54	58.62
Benchmarking only	08	25.08	20.64	27.48	29.60	36.11	27.78
Neither	10	7.18	9.50	13.29	15.73	16.57	12.45

Source: Field Data

The findings showed that during the five year period, schools involved in both practices of collaboration and benchmarking posted a very high percentage of students who qualified to join university (85.75%). Schools engaged in collaboration only had average percentage pass grades (58.62%) while those engaged in benchmarking only had below average percentage pass grades (27.78%) but they were still better than those not engaged in any improvement practice which had the lowest percentage pass grades (12.45%). To statistically establish if there were significant differences in the pass grades of the different categories of schools, one-way Analysis of Variance (ANOVA) (tested at α=0.05) was used. The findings are presented in table 2.

Table 2: ANOVA on mean university percentage pass grades (2007-2011) and school categories

	Sum of Squares	df	Mean Squares	F	Sig
Between Groups	34181.397	3	11393.799	123.063	.0001
Within groups	3425.661	37	92.585		
Total	37607.059	40			

Source: SPSS output

The results showed a significant difference in the percentage means of the different categories of schools. The F value of 123.063 (p=0.0001) was greater than F-critical value of 4.51. This again led to the rejection of the null hypothesis. A further analysis to determine which percentage means were significantly different from each other was therefore carried out using the Post-Hoc Scheffe's test. This again involved all the possible combinations of the given means. The findings are presented in table 3

Table 3 Sheffe's test on comparison of percentage passes

(I)School category	(J)School category	Mean difference (I-J)	Std Error	Sig	95% confidence interval	
					Lower bound	Upper bound
Collaborating and benchmarking	Collaborating only	27.13148*	4.01650	.000	15.3690	38.8940
	Benchmarking only	57.97092*	4.39188	.000	45.1091	70.8328
	Neither	73.29807*	4.11995	.000	61.2326	85.3635
Collaborating only	Collaborating and benchmarking	-27.13148*	4.01650	.000	-38.8940	-.15.3690
	Benchmarking only	30.83943*	4.47102	.000	17.7458	439330
	Neither	46.16658*	4.20421	.000	33.8543	58.4788
Benchmarking only	Collaborating and benchmarking	-57.97092*	4.39188	.000	-70.8328	-45.1091
	Collaborating only	-30.83943*	4.47102	.000	-43.9330	-17.7458
	Neither	15.32715*	4.56418	.019	1.9607	28.6936
Neither	Collaborating and benchmarking	-73.29807*	4.11995	.000	-85.3635	-61.2326
	collaborating only	-46.16658*	4.20421	.000	-58.4788	-33.8543
	Benchmarking only	-15.32715*	4.56418	.019	-28.6936	-1.9607

Source: SPSS output *. The mean difference is significant at the 0.05 level.

Table 3 shows a complex comparison using all possible combinations of percentage pass grades. The table shows a total of 12 sets of such differences. These findings showed that, all the percentage pass grades significantly differed from each other because $p<0.05$ on all the sets compared. The greatest difference in percentage of university entry grades was again noted between schools involved in both collaboration and benchmarking and those that were engaged in neither of the techniques (73.29807) while the lowest was between schools that only benchmarked and those involved in neither technique (15.32715). Again, the implication was that, involvement in both collaboration and benchmarking enhanced university entry to a great degree while lack of it created dismal performance and hindered university entry in schools involved in neither of the practices. It also implied that, as much the practice of benchmarking alone did not very significantly boost university entry grades, it still enhanced university entry better than lack of it because the university entry percentage grades were about twice those of schools that were involved in neither practice.

Most of the interviewed DEOs said that, benchmarking had significantly contributed to improvement in academic performance in schools in their respective districts. However, one of the DEOs lamented that:

> *There are schools which have not realized much improvement in their performance even after benchmarking. This is because most of the schools that go on benchmarking trips do so just once a term or even once a year. Most of the trips are also made in term one just after the release of KCSE and early term two and forgotten soon after.*

The inferential statistics ($F=123.063$; $p= 0.0001$) reinforced the finding that, there is a significant difference in secondary schools' university entry grades as a result of collaboration and benchmarking.

This led to the rejection of the null hypothesis, "There is no significant difference in the university entry grades in secondary schools in the Western Region as a result of collaboration and benchmarking." Schools engaged in both practices had very high university percentage passes (85.75%) as compared to those that were engaged in only one practice. Those that were not involved in any of the practices had a very low percentage of university entry grades (12.45%).

Discussion

The findings of this study concurred with those of a study in California which showed a collegial relationship led to an improvement in performance which was shown by the fact that, in 2001-2002, the 10^{th} grade pass rate was 30% and it increased by 30 points to 60% in 2007-2008. The pass rate doubled in six year period while the math pass rate was 12% in 2001-2002 and it increased to 70% in 2007-2008 registering a 58 point increase in a similar period (Holmes & Aronson, 2008). Secondly the study conducted on Brandonburg High School by Moran et al., (2000) showed that, the graduation rate of the studied school improved from 84.5% to 86.8% while the percentage of students going to colleges and universities increased from 48% in 1986 to 64% in 1997. This was an increase of 16% in ten year period. The findings of the current study showed that, university pass grades increased by 7.87% from 83.81% in 2007 to 91.64 in 2011 among the collaborating and benchmarking schools. Schools involved in collaboration only improved by 14.32% from 55.22% in 2007 to 69.54% in 2011. The findings of the current study also suggested that there was a relationship between benchmarking and academic performance since schools that benchmarked still posted better university percentage entry grades averaging at 27.78% compared to schools involved in neither practice which averaged at 12.45%.

Conclusion

The findings also showed that, schools involved in both practices of collaboration and benchmarking posted very a high percentage (85.75) of students who qualified to join university during the five-year period. Schools engaged in collaboration only had average percentage pass grades (58.62), those engaged in benchmarking had below average percentage pass grades (27.78) while those not engaged in any of the two improvement techniques had very low percentage pass grades (12.45) during the five-year period. This again led to the conclusion that, a three pronged collaboration and benchmarking process that involved schools, departments and subjects translated into a high percentage university entry grades. It was also concluded that, schools involved in neither collaboration nor benchmarking sent a negligible percentage of candidates to institutions of higher education.

Recommendations

i. Schools should be encouraged to embrace both collaboration and benchmarking in order to realize improve on their number of quality grades and increase the number of students who attain the minimum university entry grades.
ii. Schools should be encouraged to collaborate and benchmark on multiple levels in order to maximize the benefits of the practices.

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