

School Effectiveness and Improvement: Value-added by Extra-County Schools to Students' Entry Marks Upon Exit

Nicodemus Ojuma Anyang and John Mugun Boit

Abstract

Globally, school examination results are arguably the most important measure of perceived success or failure of a candidate. It was previously pointed out by the Nyanza Provincial Education Board that the province's performance in examinations and the quality of education in general was unsatisfactory and inadequate. This paper sought to determine the added-value to students' entry marks upon exit. Cross-sectional survey design was used. Purposive sampling was used to identify the four schools under study and form three students. The respondents were selected using simple random sampling. The sample size comprised of 197 respondents (49 teachers & 148 students) Data was analyzed using quantitative statistical techniques that included percentages and means, and qualitative methods. The study found out that all the four schools under study had achieved a negative index value addition. The study recommends that the Ministry of Education should shift its focus from the raw school or individual student's mean score to the value added on the students score from entry to exit.

Key words: Effectiveness, improvement, added-value, entry marks

Contact author: Dr. Anyang Nicodemus Ojuma, Ministry of Education, Kenya

INTRODUCTION

School education is regarded as such an important process in modern society that education systems and institutions are constantly being reviewed (Australian Government, 2004). School effectiveness and the related area of school improvement have been topics of increasing body of academic research from as early as 1960s. Research on school effectiveness has suggested that some schools are regarded to be more successful than others. These provoke questions as to what is effectiveness. What factors contribute to effectiveness? How might this information provide the basis for improvement of schools and student outcomes? (Australian Government, 2004)

Hershberg (2004), while commenting on the focus and importance of American Education System advocates that in the new American Education System, teachers and administrators should not only be able to meet the educational needs of the 21st century but also the ability based notion that dominates the thinking of too many educators and

parents with an effort based theory of learning. The theory argues that you are not simply born smart, but you can get smart with appropriate resources and high quality instruction. He suggests that schools must ensure that all students must reach high standards. Hershberg further suggests that in order for the education system to preserve the stable middle-class basis of the American society, schools must henceforth graduate students so that they are able to use technology, think critically. Furthermore, they should be able to handle and solve problems as well as to learn on their own throughout their lives. He sums it up by asking schools to do two things; educate all the children but not just the top fifth, and educate them to unprecedentedly high levels, regardless of the children's earlier achievements. Hershberg argues that all schools must strive to educate all children by adding value to the students' abilities that they came from primary school with, as reflected in the students exit scores. All schools should prove to stakeholders that they are effective by stretching every child's abilities and adding substantial value to their grades regardless of their entry mark.

According to the Catholic Diocese of Kansas City (2004), nearly every day, parents call the Diocese to probe for test scores. Astounded by choices and the significance of making the right choice, many parents wish that a number can establish the best school for their children. However, it is emphasized that as much as test scores reveal one aspect of the school, they cannot reveal the comprehensive picture. Parents have a responsibility to fill in vital gaps: the overall moral and spiritual setting, the quality of the curriculum, training of teachers, special programmes and atmosphere for parental involvement. It is imperative to advocate that the improvement element be treated as a factor – the gaps to be filled. Furthermore, each individual school's stated goals are cascaded down from the national goal of education are rarely taken into consideration.

According to Sanders (2000), education was called to account for failures of large segments of the population of American students to achieve the minimal academic expectations of society as a whole, in the previous years of the twentieth century. The foregoing discussion by all means points to the concept that in most countries there exist good and bad schools, successful and unsuccessful schools, some schools rate high while others rate low. Some schools are popular whereas some are unpopular. Some students excel in some schools while the rest fail in other schools. Unfortunately, the concept of good or effective schools is devoid of the value-added element which is the

hallmark of school effectiveness alongside the objectives' achievement model of school effectiveness. Pennycook (1998) argues that there is still much to be learnt considering the fact that much is known about the factors which influence pupil attainment and there is an increasing body of research evidence on school effectiveness.

The Education Evaluation Report (1994) in *Good New Zealand Schools* asserts that if you talked to anyone with an interest or experience in education, and that was just about everybody, it was likely that they would have a firm idea as to what constituted a good school. The report noted that the notion of a good or an effective school sounds simple but when we examine it more closely, a multitude of questions arise which uncover its complex nature. In Kenya for instance, this research suggests that some of the questions that should be asked are; how much value does 'the' good school add into its students? What are the characteristics of the intake mark of the students? What is their exit score as compared to their entry mark?

Africa Almanac Research (2003) in a study that culminated in publication of *Africa's Top One Hundred* (ranked) High Schools sought to establish and report schools that impart what is regarded as real knowledge and useful abilities in their students. These are skills that translate directly into later years success. The study considered the profile of the school, with regard to academic excellence and or extra curriculum activities as a mark of a successful school. It however does not address the value-added element on students' academic abilities which is one mark of school effectiveness. Dike (2002) while lamenting about the poor state of Nigerian schools appealed to the Nigerian Government to treat the needs of the Nigerian Education Sector as a "public health" issue, since the socio-political and economic development of a country, or (and its health) is determined in numerous ways by the quality and the level of educational attainment of the population.

Olubusyi (2000) speaks of parents from Nigeria living in the United Kingdom who are aware that some very good schools are still available in the state. Majority of them in the United Kingdom have been amazed by the remarkable performances put up by students in British Universities who had done their Secondary Education in Nigeria. Away from the desire for academic excellence, majority of the parents in the United Kingdom are still interested in taking back their children home for them to get the

value-based education in a both moral and cultural society compared to the type of education their children are given in the Western society in which their culture is completely different.

Haddad et al (1990) confirm that there are some consistent general findings from research that show distinction in school inputs like the experience of the teacher, teacher motivation, availability of textbooks, homework and the time spent in school through the year do contribute to varying pupil achievement, even when the differences in family backgrounds are accounted for. It is however critical that the effect of these inputs should be evaluated and considered before a particular school is declared effective or good. This is part of the focus of this study.

The relationship between school resources specifically text books, and their variations is what this study will examine given the background of entry mark to form one in schools that are ranked top in the national exit examination-KCSE, in Nyanza Province. It is significant that the study examines the pupils exit mark from primary school (entry mark to high school) as compared to his/her exit mark from high school, the processes that took place in high school and whether improvements were made between 1st and 4th form hence adding value to the pupil's knowledge and abilities or not. This is the concept commonly known as value addition.

Wilcox (1990) underscores this notion pointing out that the idea of "added value" is necessary in comparing the assessment of test results. In essence, the success of a school relies not just on the improvements made on performance realized by students while at school but also indicators such as social economic contexts of schools.

The fact that majority of school effectiveness studies use examinations or other test results as a definition of quality, Singh (1991) observes that accumulation of research results has brought forth a lot of knowledge on the essentials for quality schooling. Singh while citing Throsby and Cannicott (1990) observes and notes the way of thinking on quality in education: qualified teachers make a difference, class size is not important, provision of the right instructional materials is the greatest cost effective method of improving the quality of education, lavish equipment and buildings may not improve quality, exams are a suitable way of monitoring school quality, quality depends on

good decentralised educational management and amount of learning time affects educational outcomes.

RESEARCH APPROACH

This study adopted a mixed method approach which Creswell (2014) observes that a researcher tends to base knowledge claim on pragmatic grounds. It employs strategies of inquiry that involve collecting data either simultaneously or sequentially in order to best understand the research problem. The data collected was both qualitative and quantitative. The paper focuses on the students' four-year net progression from first to fourth as reflected on the entry and exit grades.

The study employed quantitative data techniques that involved descriptive research analysis techniques that included frequency, percentages, means and graphs. Olatokunho (2004) describes these techniques as the most suitable for analysis of descriptive research data. Descriptive statistics were suitable for use in this study owing to the fact that case study and survey designs generate quantitative data that is analyzed by percentages, means, pie-charts and bar-graphs.

Value Addition Model Framework

The conceptual basis of value-added methodology is that test scores are projected for students and then compared to the scores they actually achieve at the end of the school year(s), the model illustrated in the Figure 1 below was used to measure the value added by each school to their students' entry mark upon exit.

The value addition Framework (or frameworks? See above) captured in Figure 1 above was used to measure the value added by each school to their classroom. Scores that exceed projected values indicate effective instruction. Conversely, scores that are mostly below projections suggest that instruction was ineffective. The approach at the same time considered student factors such as the pattern of prior test scores of the individual student and other students in the same class. If a student's present performance is equal or below projected scores, it implies that the school has not added value to the student's entry mark. If on the other hand, the student's current performance is higher than the projected performance, then the school has added value.

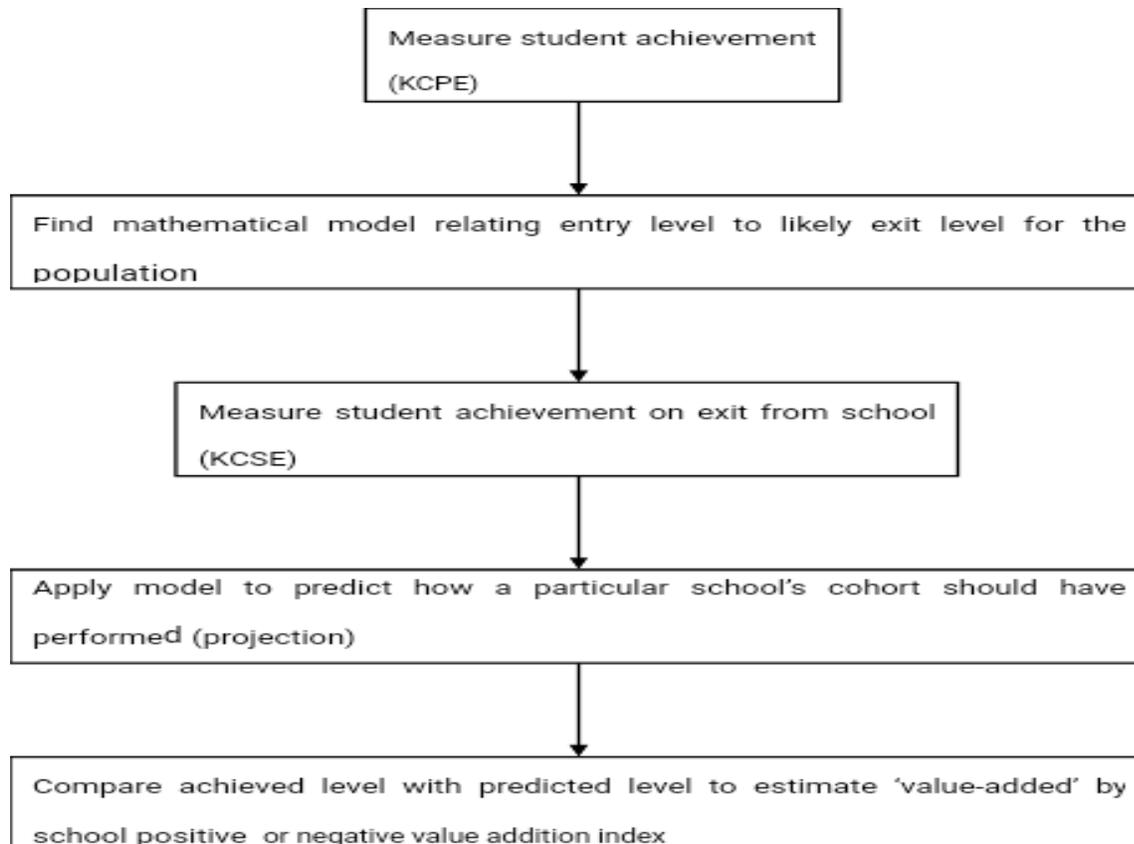


Figure 1. Value addition model Frameworks (Source, year?)

Where x is the candidate's KCPE Marks; 500 is the maximum KCPE Mark; and 12 is the maximum KCSE aggregate

This study purposively selected four Extra-County schools in the larger Nyanza region based on the 2008 KCSE performance. The schools namely St. Mary's Yala, Kisumu Boys, Ng'iya Girls and Kisumu Girls had a mean of 7.5.

Simple random sampling was then used to select 18% of the form three student population and 32 % of the teachers' population. This resulted into a sample size of 148 students and 49 teachers.

The specially designed value-added data capture tool which is an adaptation and simplified form of the Tennessee Value-Added Assessment System developed by William Sanders (not in the references list) (1996), was used to document and compare student's KCPE grade, predicted KCSE exit grade as well as actual KCSE exit mark. The

tool is usually used by the Ministry of Education Quality Assurance and Standards officers as they conduct inspections in educational institutions. The tool is commonly used to calculate students' entry mark and estimated exit grade. This formed the basis for calculation of value that each school may have added to their student's entry achievement in line with the value-added data. Students' entry marks and exit scores were extracted from results released by the Kenya National Examinations Council, analysed and held in official documents as they existed in schools or Government offices at the now defunct province (currently Region) or district (renamed Sub-County) and in schools. Questionnaires were used to discern views pertinent to the factors that either accelerated or inhibited the schools under study from achieving academic growth for their students. In other words, what factors contributed to top ranking schools adding or not adding value into their students' entry scores.

RESULTS AND DISCUSSION

The study was to determine the value added by top provincial schools to students' entry marks upon exit. This was measured by looking at the estimated and calculated value that the school adds into its students' academic attainment as reflected in the KCSE performance.

The following sub-section discusses the findings:

a) Value Added as Perceived by Students and Teachers

An attempt was made to establish the estimated value that the school adds into its students' academic attainment as reflected in KCSE performance. Table 1.1 indicates the students' and teachers' perception

Table 1.1: Perception of the Estimated Value that the School adds into its Students' Academic Attainment as Reflected in KCSE Performance

Estimated Value that the School adds into its Students' Academic Attainment as Reflected in KCSE Performance		Students' Perception				Teachers' perception			
		Very High	High	Moderate	Total	Very High	High	Moderate	Total
Ny'iyas	F	9	21	2	32	1	9	1	11
	%	28.1	65.6	6.3	100	9.1	81.8	9.1	100
Kisumu Boys	F	10	35	2	47	3	7	1	11
	%	21.3	74.5	4.3	100	27.3	63.6	9.1	100
Kisumu Girls	F	13	22	4	39	3	10	1	14
	%	33.3	56.4	10.3	100	21.4	71.4	7.1	100
St Mary's Yala	F	7	21	2	30	3	6	2	11
	%	23.3	70	6.7	100	27.3	54.5	18.2	100

Data as perceived by the students reflected in Table 1.1 shows that in relation to the estimated value that the school added into its students' academic attainment, it was established in Ny'iyas girls that, majority 21 (65.6) of the respondents estimated value that the school added as high, 9 (28.1%) said that it was very high while few 2 (6.3%) said that it was moderated. In general, it is clear that the estimated value that the school added into its students is high.

In Kisumu Boys High School, it was established that 35 (74.5%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 10(21.3%) said that it was very high while only 2 (4.3%) said that the estimated value that the school added was moderate. This therefore implies that the value that the school added to its students was high as proved in the above table.

In Kisumu Girls High School, findings were almost similar to other schools. It was established that 22 (56.4%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 13 (33.3%) said that it was very high while 10.3% (4) said that the estimated value that the school added was moderate.

Finally, from St. Mary's Yala, 21 (70%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 7 (23.3%) said that the value was very high while 2 (6.7%) of the respondents argued that the value that their school added into the students' academic achievement was moderate.

It is clear as far as students' perception is concerned that all the Extra-County schools under study almost revealed similar findings. This is due to the fact that majority of the respondents from these schools said that the estimated value that their respective schools added into the students' academic attainment as reflected in the KCSE was high while a small percentage of the respondents from all the four schools said that the value added was moderate. It should be noted that none of the respondent rated the value that the school added to its students' academic attainment as low or very low.

Findings from Table 1.1 further estimated the value that the school added into its students' academic attainment as perceived by the teachers. It was established that in Ng'iya Girls, 9 (81.8%) of the respondents said the estimated value that the schools added was high, 1 (9.1%) said that it was very high while 1 (9.1%) said that it was moderate. Therefore, it is clear that as it was with the students' findings, the overall estimated value that the school added into its students in Ng'iya Girls is high.

In Kisumu Boys High School, it was established that 7 (63.6%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 3 (27.3%) said that it was very high while only 1 (9.1%) said that the estimated value that the school added was moderate. This therefore implies that the value that the school added to its students as given by teachers was high. This also conforms to the earlier findings where students from Kisumu Boys said that the value that the school added to its students' academic achievement was high.

In Kisumu Girls High School, it was established that 10 (71.4%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 3 (21.4%) said that it was very high while 1 (7.1%) said that the estimated value that the school added was moderate. Similarly, the findings concur with that of students on the same variable.

From St. Mary's Yala, 6 (54.5%) of the respondents said that the estimated value that the school added into its students' academic attainment as reflected in the KCSE performance was high, 3 (27.3%) said that the value was very high while 2 (18.2%) of the respondents argued that the value that their school added into the students' academic achievement was moderate. Furthermore, the findings also concur with that of students on the same variable.

In summary, it was established that majority of the respondents from all four Extra-County schools indicated that the estimated value that schools added to their students' academic attainment as reflected in KCSE achievement was high, responses which concur with those of students on the same variable. This thus, indicates that there have been improvements in academic performance of these schools.

Similarly, responses from the teachers' interview showed that estimated value which their schools added into the students' academic achievement was high.

b) Actual Value-Adding as Calculated from Students’ Performance

The actual value-adding was attained through calculating the projected KCSE equivalent mean (by taking the KCPE mark obtained divide by 500 then multiply by 12) from actual KCSE exit mean to get an either positive or negative value added. This calculation was done for all the four schools under study and the findings presented in Figure 2.

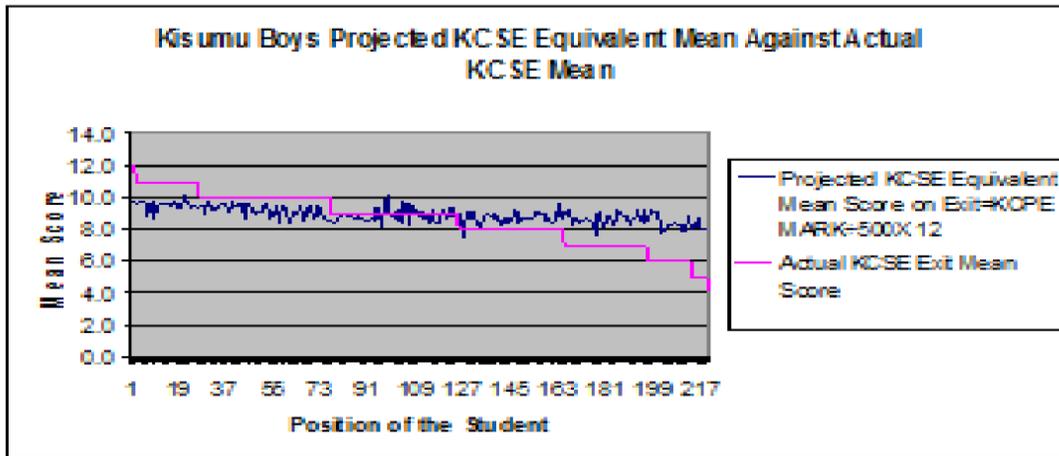


Figure 2: Value-Adding for the Extra County Schools

Data on Kisumu Boys as shown in Figure 2 indicate that, first, the graph for actual KCSE exit mean score was high than that of projected KCSE equivalent means score implying that the value added was positive. However, from around student number 127, the graph fluctuated gradually implying that the value added was negative since projected KCSE equivalent means score was higher than the actual exit mean score.

Data on Kisumu Girls (where is Kisumu Girls in Figure 2?) as shown in Figure 2 further indicated that the graph for actual KCSE exit mean score started at a high note than that of projected KCSE equivalent means score implying that the value added was positive. However, the graph fluctuated gradually implying that the value added was negative since projected KCSE equivalent means score was higher than the actual exit mean score.

Similarly, as it was with Kisumu Boys and Girls respectively, in Ng’iya Girls the trend for the differences between actual KCSE exit mean and projected exit mean was positive at the beginning thereafter, the projected KCSE equivalent mean score was higher than

the actual KCSE exit mean thus recording a negative value added. (it appears some Figures are missing)

Lastly, Figure 2 shows that data on St. Mary's indicated that in the beginning, the graph for actual KCSE exit mean score was high than that of projected KCSE equivalent means score implying that the value added was positive. However, the graph fluctuated gradually implying that the value added was negative since projected KCSE equivalent means score was higher than the actual exit mean score.

c) Value-Adding Line Graph Findings

Findings from the line graph suggested that the x-axis is the deviation point where the upper indices represent positive value added while the lower indices represent the negative value added by the students. It was established that the overall average for value-adding for Kisumu Boys was -0.3. This therefore implies that the school did not add value but it reduced instead which was contrary to the majority (95.8%) of the respondents who said that the value added for their school was high. Positive value added (shown by upper part of the graph from the x-axis) had few students than the lower part. On calculating the overall value adding index, it was established that just like Kisumu boys, Kisumu Girls had a value-added index of -0.3.

Furthermore, it was established that the overall average performance for Ng'iya Girls high school was -0.63. This implies that despite majority (93.7%) of the respondents acknowledging that their school adding value was high, practically, it was not since the value-added index was negative.

Also, it was established that the overall average performance for St. Mary's Yala high school was -0.83. This implies that despite majority (93.3%) of the respondents acknowledging that their school adding value was high, in the real sense it was not since the value-added index was negative.

d) Individual Value-Adding

Table 1.2 indicates the individual value-adding in the 4 Extra-County schools sampled.

Individual Value-Adding	Kisumu Boys		Kisumu Girls		Ng'iya Girls		St. Mary's Yala	
	F	%	F	%	F	%	F	%
Added Value (+)	111	50.5	102	43.6	49	31.2	72	42.6
Constant	1	0.5	2	0.8			2	1.2
Reduced Value (-)	108	49.0	130	55.6	108	68.8	95	56.2
Total	220	100	234	100	157	100	169	100

Data as indicated in Table 1.2 on Kisumu Boys shows that, majority 50.5% (111) of the students from Kisumu Boys added value from 0.1 and above, 0.5% (1) of the students neither added value nor reduced thus recorded a constant value while 49% (108) of the students reduced value from -0.1 and below. A close scrutiny of the above findings indicates that despite the school obtaining an average value adding of -0.3, majority of the students added value.

Data as indicated in Table 1.2 on Kisumu Girls showed that unlike in Kisumu Boys, majority 130 (55.6%) of the students from Kisumu Girls reduced value from -0.1 and below. On the other hand, 102 (43.6%) of the students added value in their performance from 0.1 and above while 2 (0.8%) neither added value nor reduced thus recorded a constant value. A close scrutiny of the above findings indicates therefore that majority of the student reduced value. This implies that they obtained lower grades (KCSE exit grades) than those obtained in KCPE examination.

In relation to individual value-adding for Ng'iya Girls in Table 1.2, it is clear that majority 108 (68.8%) of the students reduced value from -0.1 and below while on the other hand, only 49 (31.2%) of the students added value in their performance from 0.1 and above. This therefore implies that majority of the students reduced value by obtaining lower grades (KCSE exit grades) than the initial KCPE grades.

In relation to individual value-adding for St. Mary's Yala in Table 1.2, it is clear that just like in Kisumu Girls and Ng'iya Girls, majority 95 (56.2%) of the students from St. Mary's Yala reduced value from -0.1 and below. On the other hand, 72 (42.6%) of the students added value in their performance from 0.1 and above while 2 (1.2%) neither added value nor reduced thus recorded a constant value. A close scrutiny of the above findings therefore indicates that majority of the student reduced value.

In summary, among the four selected schools in the study, it was established that only Kisumu Boys had majority of its students who added value (50.5%) while other three schools; Kisumu Girls (55.6%), Ng'iya Girls (68.8%) and St. Mary's Yala (56.2%) had majority of their students who reduced value. In addition, it was established that Ng'iya Girls performed poorly among the four selected schools which participated in the study because it recorded the highest percentage (68.8%) of students who reduced value in their academic performance.

CONCLUSION AND RECOMMENDATION

In conclusion, it was established that after the real calculation of projected equivalent mean from actual KCSE exit mean, it was clear that while some students added value, others dropped. As a matter of fact, among the four selected schools in the study, it was established that only Kisumu Boys had majority of its students who added value (50.5%) while other three schools; Kisumu Girls (55.6%), Ng'iya Girls (68.8%) and St. Mary's Yala (56.2%) had majority of their students who reduced value. In addition, it was established that Ng'iya Girls performed comparatively poorest among the four selected schools which participated in the study because it recorded the highest percentage (68.8%) of students who reduced value in their academic performance.

However, the overall value-adding for all the four schools under study was negative - 0.3 for Kisumu boys and Kisumu girls, -0.63 for Ng'iya girls and -0.83 for St. Mary's Yala. This therefore implies that achieving high marks in KCPE does not guarantee the same in high school unless one works hard. The Study concludes that though top ranked schools admit students with already high entry marks, they add very little value if any to their students' academic ability, during the students four year pursuit of secondary education.

It was recommended that there is need for the Ministry of Education to shift its focus from the raw school or individual students mean score to the value added on the students score from entry to exit. Thus, schools and teachers will be made accountable. Every child will be given a chance to learn, excel and add value to their grades. Hence teachers who add greater value to their students' scores may be identified and considered for either promotion or other rewards in order to maintain their motivation.

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ABOUT AUTHORS

Dr. Anyang Nicodemus Ojuma

Holds PhD in Education Administration from Moi University, Master of Education in Educational Administration from Kenyatta University and a Bachelor of Education from Kenyatta University. A long serving practitioner in education administration, a researcher and educational consultant. Currently Deputy Director of Education at the Ministry of Education, Kenya

Prof. John Mugun Boit

Holds a PhD in Higher Education Policy from the University of Bristol, UK, Master of Education from the same university and Bachelor of Education from the University of Nairobi. Lecturer of Economics of Education and Coordinator of post graduate programmes. He has extensive experience through many years of teaching Quantitative Research.