Investigating School Effectiveness and Improvement: Effect of Teacher Improvement Programmes on Students’ Examination Scores.

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Abstract
The paper sought to determine the effect of teacher improvement programmes on students’ examination. This study adopted a mixed method approach. Purposive sampling was used to identify the four schools under study and form three students. The respondents were selected using simple random sampling. 197 respondents was used (49 teachers and 148 students) as the sample size. The analysed data was both qualitative and quantitative. Descriptive statistics in particular percentages and means were used. The study found out that Improvement programmes such as seminars, workshops and other short courses in form of short post training in service courses enable teachers to come up with new ideas which may be useful to students in terms of different teaching approaches which enhance greater understanding thus creating diversity in the realm of teaching. The study recommended that the school management increases the frequency of in-service courses offered to their teachers. This may enable teachers to increase skills, knowledge and experiences relevant and vital for better academic achievement by students.

Introduction
Sessional Paper Number 1 of 2005 on A Policy Framework for Education, Training and Research reiterates that recent policy initiatives have focussed on the attainment of Education For All (EFA), and in particular, the Universal Primary Education (UPE) whose key concerns are access, retention, equity, quality and relevance, as well as internal and external efficiencies within the education system. The effectiveness of the current 8-4-4 structure and system of education has also come under increasing scrutiny in the light of declining enrolment and retention particularly at the primary and secondary school levels in the last decade (G.o.K. 2005).

Lloyd et al (2000) examined the likelihood of drop-out and academic achievement of adolescent girls and boys in rural areas of three districts in Kenya as the outcome measures of the effects of school quality. Their study concluded that there is more to school effectiveness than the development of academic competency and there is more to quality of school achievement than time to learn, material resources for basic curriculum and pedagogical practices.

Oduol (2006) carried out a study on an analysis of classroom factors that accounted for students’ scores in reading and mathematics under the Southern and Eastern Africa Consortium for monitoring Education Quality. (SACMEQii) project. The study showed that classroom and classroom contexts have considerable influence on students’ achievements in both reading mathematics and reading for standard six students. The study also showed that it was the quality of learning that accounted for the variations in students’ achievement. The study emphasized that it is at the level of classroom that learning takes place this schools need to look at their present process and influence their desired outcomes. These studies however, do not focus on value additions in Kenya schools.

It is ironical in this context that only three years after the launching of the cited sessional paper, and barely a year after the articulation of Vision 2030, K.C.S.E.
ranking comes under scathing criticism. Questions were raised whether it adds any value to the education system. Otieno (2008) cites analysts who blame the system for irrational competition among schools, but proponents believe it encourages hard work. Ogutu (2005), while reporting for the provincial Education Board’s task force on improvement of performance at national Examination by Nyanza schools observed that examination cheating is very rampant in those schools which did not seem to prepare adequately their students for national examinations. Ogutu (2005) for Nyanza province Educational Board problems dogging the education sector under the title. “The state of Education in Nyanza province”. Some of the factors affecting education in the province, according to the taskforce cited included poverty and poor fees payment, political interference, clanism. Population and school land, feeder schools and the quota system of form one admission. Laxity among teachers, cheating in exams. School management process, appointment and promotion of manager and administrators and others. The factors appeared to impact negatively on the quality of education and the effectiveness of schools in the region.

The Sessional Paper No. 5 of 2005 emphasises that one of the goals of education is to improve the quality of all aspects of education and training so that recognised and measurable learning outcomes are achieved, especially in literacy and numeracy and essential life skills relevant to the world of work by 2010. In line with Kenya’s vision for the education sector in 2030 is to have globally competitive quality education training and research for sustainable development GOK (c) (2007).

In reviewing early school effectiveness research in the U.S.A., Firestone (1991) noted that effective schools movement was committed to the belief that all children could learn and succeed in school. Berry and Fuller (2006) observed that many policy makers and reformers are calling for the use of students standardised test scores as a primary and in some cases sole means to identify and/or reward good teachers and root out bad ones. They propose that teacher performance and school effectiveness be rated using a Value-Added Methodology (VAM) that measures how individual teachers influence learning for each child. Adcock (1995) while advocating for the use of Value-Added Methodology to report school or teacher success or failure decries the use of simple raw test averages and notes that the worst possible use of simple test data for public reporting is the use of simple test averages by districts and schools. He argues that it is well known and documented that this simple averages are so confounded with socio-economic factors outside the control of schools, that any sensible interpretation of this reports as to the effectiveness of schools is impossible.

Furthermore, Sanders (2000) observes that the fallacy of using raw test scores for public reporting of teacher and/or school effectiveness lies in the fact that students within a school serving primarily a low socio-economic community could be making a wonderful academic progress, yet their average test scores could be considerably lower than the district’s average leaving the erroneous impression that this is a woefully ineffective school. On the other hand, students from another school serving a population from more advantaged homes could be ‘sliding’ and ‘gliding’ nevertheless leaving a naïve impression that this second school is ‘better’ than the first because its average test scores are higher than the first school.

**Methodology**

This study adopted a mixed method approach which Creswell (2003) 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. This study selected four high ranked or top provincial secondary schools in Nyanza in K.C.S.E., 2008. The schools had been grouped into three: top, medium and bottom. Top schools were schools that were ranked high in K.C.S.E. 2008 i.e. scored 7.500 and above (out of the possible twelve points) in 2008 K.C.S.E. There are thirty four schools in this category. Medium schools were schools ranked average i.e. schools that scored 5.000-7.499 in 2008 K.C.S.E. Bottom schools were schools ranked low i.e. those that scored mean score of 4.999 and below in 2008 K.C.S.E.

From the list of 33 provincial schools ranked top (above 7.500 mean in 2008 K.C.S.E. examination), the following schools were studied.

Anyang (2019)
Samples were drawn from the four schools as follows:

### 3.2 Sample Size

<table>
<thead>
<tr>
<th>School</th>
<th>Mean Score</th>
<th>Position</th>
<th>Sponsor</th>
<th>setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Mary’s Yala</td>
<td>8.763</td>
<td>7</td>
<td>Catholic</td>
<td>Rural Boys Boarding</td>
</tr>
<tr>
<td>Kisumu Boys</td>
<td>8.038</td>
<td>10</td>
<td>DEB</td>
<td>Urban Boys B/D</td>
</tr>
<tr>
<td>Ng’iya Girls</td>
<td>8.140</td>
<td>16</td>
<td>Anglican</td>
<td>Rural Girls boarding</td>
</tr>
<tr>
<td>Kisumu Girls</td>
<td>7.941</td>
<td>22</td>
<td>DEB</td>
<td>Urban Girls B/D</td>
</tr>
</tbody>
</table>

STUDENTS

<table>
<thead>
<tr>
<th>School</th>
<th>2009 Form</th>
<th>Sample (18% of population)</th>
<th>Teachers population</th>
<th>Sample (32% of population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Mary’s Yala</td>
<td>Three</td>
<td>165</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>Kisumu Boys</td>
<td>Three</td>
<td>254</td>
<td>47</td>
<td>40</td>
</tr>
<tr>
<td>Ng’iya Girls</td>
<td>Three</td>
<td>176</td>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>Kisumu Girls</td>
<td>Three</td>
<td>216</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>811</strong></td>
<td><strong>148</strong></td>
<td><strong>151</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

Data analysis

Data analysis was both qualitative and quantitative. In quantitative data, the researcher used descriptive research analysis techniques which included frequency, percentages, means and graphs. This study employed these statistical techniques which Olatukunho (2004) describes 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 analysed by percentages and means.

Results and Discussion

The paper sought to determine the effect of teacher improvement programmes on students' examination scores. This was measured by looking at the frequency of teachers coming up with new ideas and the estimated number of in-service courses that a teacher attends to on average. The findings are summarized in table 2 and table 3 below:

### Table 2: Students' Findings on the Frequency of Teachers' coming up with New Ideas Acquired from Meetings, Seminars or Courses Attended in selected schools

<table>
<thead>
<tr>
<th>School</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ng’iya Girls</td>
<td>Very Often</td>
<td>5</td>
<td>15.6</td>
<td>4</td>
<td>8.5</td>
<td>13</td>
<td>33.3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Often</td>
<td>7</td>
<td>21.9</td>
<td>22</td>
<td>46.8</td>
<td>15</td>
<td>38.5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Occasionally</td>
<td>15</td>
<td>46.9</td>
<td>20</td>
<td>42.6</td>
<td>9</td>
<td>23.1</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Never</td>
<td>4</td>
<td>12.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Do not know</td>
<td>1</td>
<td>3.1</td>
<td>1</td>
<td>2.1</td>
<td>2</td>
<td>5.1</td>
<td>1</td>
</tr>
</tbody>
</table>

Attending seminars, meetings or other refresher courses enable teachers to acquire new ideas that may be useful in the learning process. As a result, the study sought to establish how often a teacher comes up with new ideas which s/he has acquired from meetings or seminars. This variable sought to collect information from students only not teachers because they cannot be to evaluate themselves.

In Ng’iya Girls, it was established that majority, 46.9% (15) of the respondents argued that their teachers come up with new ideas occasionally, 37.5% (12) of the respondents said that their teachers often come up with new ideas, 4 (12.5%) said that their teachers never come up with new ideas while 1 (3.1%)

don’t know. It was concluded that basing on the students findings, majority of teachers in Ng’iya girls high do not often come up with new ideas which can help them in the teaching process. This may be due to lack of frequent in-service programmes in the school. Furthermore, when respondents of Kisumu Boys were asked to state the frequency of their teachers coming up with new ideas, majority said that they often introduce new ideas in class that they acquire from seminars, meetings and other courses. It is clear that 26 (55.3%) of the respondents said that their teachers occasionally come up with new ideas while 2.1% do not know whether teachers come up with new ideas or not. On the other hand, in Kisumu Girls 28 (71.8%) of the respondents agreed that their teachers often come up with new ideas, 9 (23.1%) of the respondents said that their teachers occasionally come up with new ideas while 2 (5.1%) said that they don’t know. In relation to the frequency of teachers’ coming up with new ideas acquired from meetings and seminars in St. Mary’s Yala, it was established that 56.7% (17) of the respondents said that their teachers often come up with new ideas, 40% (12) said that teachers occasionally come up with new ideas while one respondent said that teachers never come up with new ideas obtained from seminars and meetings.

In conclusion, from the above findings, it is clear that apart from Ng’iya Girls where majority of the respondents said that their teachers occasionally come up with new ideas acquired from courses attended, seminars or meetings, majority of the respondents from St. Mary’s Yala, Kisumu Boys and Kisumu Girls admitted that their teachers often come up with new ideas after attending refresher courses, seminars and even meetings. Therefore, teachers need to increase the number of in-services courses which they attend in order to increase their skills in their relevant subjects. This will enable them to be creative and innovative thus, improving students’ performance.

**Average Number of In-service Courses that a Teacher attends in a Year as stated by Teachers.**

Having in-service courses to teachers is very vital because it exposes them to new ideas, experience and methodology relevant to the students’ academic achievement. Refresher courses help teachers to keep abreast with the changing education environment thus, be able to provide what is required by the curriculum. As a result, the study sought to establish the number of in-service courses that a teacher attends in a year. Selected teachers from the four provincial schools were used because students did not have sufficient knowledge on this variable and thus, could not give satisfactory results. Respondents’ information from four schools is summarized in table 3 below.

**Table 3: Average Number of In-service Courses that a Teacher attends in a Year as stated by Teachers**

<table>
<thead>
<tr>
<th>In-service Courses</th>
<th>St. Mary’s Yala</th>
<th>Ng’iya Girls High</th>
<th>Kisumu Boys High</th>
<th>Kisumu Girls High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminars Lasting Less than a Week</td>
<td>3.11</td>
<td>2.09</td>
<td>2.36</td>
<td>1.36</td>
</tr>
<tr>
<td>Takes/Speeches Given by External Speakers</td>
<td>3.05</td>
<td>1.91</td>
<td>3.05</td>
<td>2.00</td>
</tr>
<tr>
<td>Single Day Subject Panel Meetings</td>
<td>2.00</td>
<td>2.27</td>
<td>1.64</td>
<td>1.50</td>
</tr>
<tr>
<td>Exchange (Benchmarking) Programmes</td>
<td>1.55</td>
<td>3.00</td>
<td>2.09</td>
<td>1.21</td>
</tr>
<tr>
<td>Team Building/Bonding Outings Organized by</td>
<td>1.55</td>
<td>1.27</td>
<td>0.00</td>
<td>1.57</td>
</tr>
<tr>
<td>the Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop Lasting over 2 weeks</td>
<td>1.09</td>
<td>1.01</td>
<td>2.18</td>
<td>1.07</td>
</tr>
<tr>
<td>Courses Lasting up to 3 Months</td>
<td>0.00</td>
<td>0.00</td>
<td>1.64</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Findings from table 6 above clearly suggests that respondents from St. Mary’s Yala indicated that on average the maximum number of in-service courses attended was three. These are seminars lasting for less than a week and speeches given by external speakers. On the other hand, single day subject panel meetings, exchange programmes and team building are attended twice per year on average while workshop lasting over two weeks is attended once in a year. However, respondents said that there is no in-service for courses lasting up to three months. On the other hand, when respondents were asked to state the effects of the
above mentioned programs they said that in-service programmes assist teachers to get new changes in curriculum. Furthermore, the programmes have a positive impact on the academic performance as teachers learn new teaching techniques and methodology. Other effects include; they enable teachers to keep abreast with new syllabus, one learns new teaching methods, seminars and workshops refresh, motivates and contributes to better delivery and good performance, team building meeting enhance staff cohesion, individual development, social refreshment, greater motivation and ultimately improve teachers’ performance.

From Ng’iya Girls, it was established that exchange programmes are attended thrice in a year on average while seminars lasting for less than a week, single day subject panel meetings and speeches given by external speakers are attended twice on average per year. It was further established that team building/outings organized by the school and workshops lasting over two weeks are attended only once in a year. However, respondents denied having in-service programme for courses lasting up to three months. In addition, when respondents were asked to state the effects of teachers attending in-service programmes, they argued that attending seminars helps teachers improve on their teaching and evaluation skills hence positively influence students' performance. Other effects include; the programmes help teachers update knowledge, since the Programmes are not regular, this has hampered academic excellence, the Programmes have inhabited teachers' capacity.

From the table above from Kisumu Boys High suggested that the maximum number of in-service courses attended by teachers was three for speeches given by external speakers. On the other hand, seminars lasting less than a week, single day subject panel meetings, exchange (benchmarking) Programmes, workshop lasting over 2 weeks and courses lasting up to 3 months are all attended twice per year on average. However, in Kisumu Boys, all respondents denied of having team building/bonding outings organized by the schools. When asked to state the effects of the above named Programmes to the school academic achievements, they said that benchmarking and seminars help teachers understand the testing systems as compared to other schools, in service courses enhances teachers content delivery, helps in motivation of teachers and improves learners’ zeal to work hard and achieve highly. Furthermore, due to in-service courses, teachers are exposed and acquire skills that are vital in improving curriculum implementation and evaluation. In addition, teachers share challenges and find a way forward in their unique problems, this helps the teachers keep abreast with the constantly changing issues and development in matters related.

Finally, findings from Kisumu Girls High School suggested that the maximum number of in-service courses attended in a year is two. For instance, respondents indicated that speeches given by external speakers, single day subject panel meetings and team building/bonding outings organized by the Schools is attendant twice in a year on average while seminars lasting less than a week, exchange (benchmarking) Programmes and workshop lasting over 2 weeks are normally attended once in a year. However, respondents argued that the school has no in-service program for courses lasting up to 3 months. When respondents from Kisumu Girls were asked to state the effects of in-service Programmes in the school academic achievement, they indicated that the programs help in building the capacity of teachers, they help in the effective delivery of the curriculum as they aid in sharpening of teachers skills. Furthermore, according to the respondents, seminars and speeches help to keep teachers abreast on new techniques of teaching, seminars and talks enables the school to be up to date with new technology and methodology. In summary, the Programmes contribute immensely to the academic achievement of the school.

In general, from the above findings, it is clear that there are no frequent in-service courses for teachers from all the four provincial schools. This is attested by the few numbers of in-service courses attended by teachers in every school. Furthermore, it was established that seldom do schools give teachers an in-service course which runs for three months except for Kisumu Boys High. According to one of the school principal who was the key informant of the study said; ‘…allowing a teacher to undergo an in-service course for three months and above is impossible because teaching and learning process will be disrupted due to shortage of teachers’

This therefore implies that school heads fear in-service courses lasting for three months because they lack enough teachers to replace the vacancy. However,
as stated earlier, in-service courses are very vital for effective education. According to Lockheed & Verspoor (1991), teacher training courses, and in-service courses should be emphasized by the school management. They further said that a key determinant of student achievement is the quality of teaching. An effective teacher they argue should possess at least a thorough knowledge of the subject matter being taught, an appropriate repertoire of pedagogical skills, and motivation.

Summary
The effect of teacher improvement programmes on students’ examination scores, it was established that majority of the respondents from St. Mary’s Yala, Kisumu Boys’ and Kisumu Girls’ admitted that their teachers often come up with new ideas. This was after attending refresher courses, seminars and even meetings. However, it was established that in-service courses for teachers from all the four provincial schools were few. This inhibits teachers from expanding their knowledge of the courses that they impart on their students and also inhibits them from acquiring new or varied skills for doing so. This probably in turn affects their ability to cause effective behavioural change in their students. Lockheed and Verspoor (1991) argue for shortening of teacher training courses and emphasize in service courses. It is argued (Ibid) that the key determinant of student achievement is the quality of teaching. An effective teacher, they argue should possess at least a thorough knowledge of the subject matter being taught as well as an appropriate repertoire of pedagogical skills and motivation. This can mainly be acquired from in-service courses. The inadequacy of teacher in-service courses in the four schools under study concurs with what Lolwana (2007) observes in South African Schools, where problems with pedagogy in schools are deeply rooted in teacher development systems and curriculum.

Conclusion and Recommendation
Improvement programmes such as seminars, workshops and other short courses in form of short post training in service courses enable teachers to come up with new ideas which may be useful to students in terms of different teaching approaches which enhance greater understanding thus creating diversity in the realm of teaching. However, the frequency of teachers attending in-service courses is very low among provincial schools in Nyanza, a scenario which limits teachers from gaining more skills and experience necessary for students to perform much better.

The study recommends that the school management increases the frequency of in-service courses offered to their teachers. This may enable teachers to increase skills, knowledge and experiences relevant and vital for better academic achievement by students.

References