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EFFECT OF EXPANSION OF PUBLIC DAY SECONDARY SCHOOLS ON QUALITY OF EDUCATION OFFERED IN MUMIAS SUB-COUNTY, KAKAMEGA COUNTY, KENYA

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Abstract:
Expansion of public day secondary schools was expected to enhance access and provide quality education to students who miss the opportunity to access boarding facilities in County, Extra-County and National schools due to high school fees charged. The specific objective of the study was to determine the effect of expansion of public day secondary schools on the quality of education offered in Mumias Sub-County. The study employed descriptive survey research design. A sample size of 1,323 students, 164 teachers and 36 principals from a population of 4,410 form 3 and 4 students, 546 teachers and 43 principals respectively were involved. Simple random and saturated sampling were used to select students/teachers and principals respectively. Research instruments used were questionnaires, interview schedules and observations. Quantitative data collected from closed questionnaire items was tallied and presented using frequency counts, percentages and means. Qualitative data was transcribed and organized into categories and themes based on study objective. Analysis of data was done using descriptive statistics and data presented in form of frequency tables. The findings revealed that most teachers had the standard workload of 27 lessons per week, there were inadequate reference text books in all subjects, practical lessons are rarely conducted, most public day secondary schools (PDSS) had untrained personnel in the library and laboratory, there was high teacher shortage in languages, sciences, mathematics, humanities and applied subjects. The study concluded that expansion of public day secondary schools had no effect on the quality of education offered; hence more public day secondary schools can be established to attain 100% transition from primary to secondary schools. Quality was relative to resources even public day secondary schools which had limited resources still achieved quality education within the context of available resources. The study recommended that the Teachers Service

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Commission should employ more teachers on contract in PDSS to reduce the high teacher shortage in all subjects hence improved quality education delivery. This would reduce the funds spend by Board of Management on teachers' salaries hence utlilized to employ qualified support staff personnel in library and laboratory to provide of quality services. The Ministry of Education should directly employ trained and qualified support staff and post them to all public day secondary schools. Secondary School principals should enhance internal supervision systems to ensure students access and utilize school libraries/ book stores effectively and efficiently. Science teachers should frequently utilize laboratories for practical lessons to enhance comprehensive understanding of abstract concepts learned in theory lessons. Parents in PDSS should be sensitized and encouraged to support school academic programmes i.e motivation for students and teachers, purchase of Science and Mathematics learning materials, set books, class readers, atlases, dictionaries and stationery materials. School Boards of Management should network with other stakeholders to seek funds to construct and adequately equip laboratories and libraries in PDSS.

Keywords: expansion of public day secondary school, quality of education

1. Introduction

This paper presents a background of study, statement of the problem, purpose of study, the objective, effects of expansion of public day secondary school on Quality of Education, research design, sampling procedure, results, conclusions and recommendations.

2. Background to the study and statement of the problem

Secondary education is now being recognized as the cornerstone of the educational systems in the 21st century. The quality secondary education is indispensable in creating a bright future for individuals and nations alike (world Bank, 2005). World Bank began lending for education; the bank played an important role in assisting developing countries in their efforts to expand secondary education and to improve the quality of institutions and programmes. In countries with high secondary education enrolments, the bank interventions focused on improving employability and productivity of school leavers through support to vocational secondary schools, and increasing competitiveness by improving the quality of general secondary education in especially public day secondary schools, so as to raise the overall productivity and trainability of labour force. In countries with low secondary education enrolment, bank projects focused on meeting specific shortages of educated manpower in public and private sectors by raising secondary school completion rates and improving the social conditions of the poor and reducing inequality by expanding access to secondary education (World Bank, 2005). One of the reasons given by Lewin and Caillods (2001) for expanding secondary education was to expand quality secondary education that

was essential to ensure a better educated teaching force at the first level. Claudia (2001) notes that segmented education systems in Latin America suffered the following challenges: loss of original purpose, inflexible institutional cultures, rigid organization of time and space in schools, awkward management of daily co-existence, teachers with few opportunities for institutional involvement and high absenteeism, curricular unrelated youth cultures. In view of all these, equality, efficiency and quality became the main challenges for secondary school reforms in 1990's. In Asia, Latin America and Europe, improving quality, reducing inequalities and modernizing the functions of secondary schools were priority (Caillods, 2001). Many countries in southern Africa like Botswana and in South Asia like Indonesia were faced with the same constraints; how to attend to greater numbers of students at secondary level with limited additional public funding. There was need to widen access to secondary education in order to have meaningful literacy in a globalized world which can be achieved through more years of education. Provision of quality education could help to reduce income inequality and promote social mobility. Unequal access to education, low quality of education after expansion and systems inefficiencies that are reflected by high levels of wastage rates and high costs often resulting from an underutilization of teachers was a major concern in these countries (Suzanne and Caillods, 2001). In china, expansion of education occurred at least in a first phase to the detriment of quality. Inappropriate curricular, high enrolment per class, a large proportion of untrained teachers, lack of teaching materials often accompany secondary education expansion resulting in serious deterioration in the quality learning. This was reflected by high level of repetition and drop-out rates, low examination results or achievement levels.

In Kenya, expansion of public day secondary schools was expected to enhance access and provide quality education to the citizens. Yearly many primary school leavers missed opportunities in form one during selection, hence the government recommended establishment of more public day secondary schools without considering the quality of education to be offered by those schools. The education sector has continued to receive the higher percentage of budgetary allocation over the last decade especially since the launch of Free Primary Education (FPE) and Subsidized Day Secondary Education (SDSE) but the quality of education offered remained a major challenge (MOE, 2012). Oduori, (2014) noted that registration of new schools nationwide had been suspended. The principal secretary of education noted that there was need to optimize on the existing schools and that every new school required about nine to ten teachers, yet the existing ones had inadequate teachers to supply to upcoming schools. Resources required to establish new learning institution were more than what was needed to expand existing ones hence the need to consider catchment areas for the schools to be established (Oduori, 2014). The number of public day secondary schools increased from 24 schools in the year 2009 to 54 schools by 2015, as shown in the table below.

Table 1: Number of Public Day Secondary Schools in Mumias Sub-County

Year	No. of Public Day Secondary Schools
2015	54
2014	45
2013	37
2012	30
2011	25
2010	25
2009	24

Source: Sub–county Education office, Mumias (2014).

Investment in Education in Kenya occurs against the backdrop of scarce resources hence the need for all education stakeholders to have an insight into internal efficiencies of the school system so as to employ resources to the best benefit of students and nation. Expanding provision for all in the secondary education sub-sector was a major challenge because of limited resources (MOE, 2012).

3. Methodology

The study employed descriptive survey design which enabled the researcher to collect and analyse data on: conducting practical lessons, visits to library, adequacy of text books, frequency of evaluation tests, parents support to education programmes, teacher workload, BOM teacher employment, availability of facilities in the library/laboratory and personnel, teacher shortfall and KCSE performance. This design was appropriate because it was used in preliminary and exploratory studies to allow the researcher gather information, summarize, present and interpret for purpose of clarification (Orodho, 2002). It involved collecting data in order to test hypothesis concerning the current status of subject of the study. Simple random sampling method was used to select a sample of 1,323 form three and four students from a total of 4,410, 164 teachers from a total of 546 teachers representing 30% of the study population. This was in order to get opinion from selected respondents who represented the population of interest. A third of the study population provided an equal opportunity of selection for each element of the population and helped to yield data that was generalized to the larger student population (Orodho and Kombo, 2002).

It involved selecting a sample without bias from the target population (Oso and Onen, 2008). The study employed saturated sampling for principals, because the population involved was too small to be sampled. The sample sizes for students, teachers, principals were conducted as shown in table 2 below.

Table 2: Sampling Matrix

Description	Population (N)	Sample size(s)
Students	4410	1323
Teachers	546	164
Principals	43	36

Research instruments used were: questionnaires, interview schedules and observations. Quantitative data collected from closed questionnaire items was tallied and presented using frequency counts, percentages and means. Analysis of data was done using descriptive statistics and data presented in form of frequency tables. Quantitative data analysis required the use of computer spreadsheets and hence SPSS version 21 was used.

3.1 Research Objective

To determine the effect of expansion of public day secondary schools and the quality of Education offered in Mumias Sub-County.

3.2 Research findings

The objective of study was to determine the effect of expansion of public day secondary schools on the quality of education offered in Mumias Sub-County. The purpose of this objective was to enable the researcher to establish the effect of increase in enrolment of students and public day secondary schools on the quality of education in public day schools. The researcher was to establish how often students conducted science practicals, teachers work load and staffing, availability of text books and performance in KCSE examinations. To achieve this, students were expected to give information on frequency of practical lessons and evaluation tests, adequacy of text books in library, parents' contribution towards school programmes. Through the teachers questionnaire the researcher established the level of education of teachers, work load per week and student textbooks ratio. Principals were expected to give information on teacher shortfall and KCSE performance.

Table 3: How often do you visit the school library

Likert scale rating	Frequency	Percent
Frequently	713	55.2
Rarely	366	28.3
Never	213	16.3
Total	**1292**	**100.0**

Table 3 from student's questionnaire depicted that 55.19% of the students do visit the library frequently. 28.33% of the students rarely visit the library while 16.49% never visited the library.

Table 4: How often do you perform chemistry practicals

Likert scale rating	Frequency	Percent
Frequently	429	32.8
Rarely	721	55.1
Never	159	12.1
Total	**1309**	**100.0**

Table 4 from student's questionnaire revealed that 32.37% of the students frequently performed practicals, 55.08% rarely performed chemistry practicals while 12.15% never performed chemistry practicals. 67.23% of the students are not well exposed to chemistry practicals in Form 3 and 4. This compromised the quality of education offered in most Public day secondary schools. Through interviewing it was noted that some schools had inadequate laboratory facilities and some do not have laboratories.

Table: 5: How often do you perform physics practicals

Likert scale rating	Frequency	Percent
Frequently	257	20.4
Rarely	425	33.7
Never	580	46.0
Total	**1262**	**100.0**

Table 5 from the student's questionnaire showed that 20.36% of the students agreed that they frequently performed physics practicals, 33.58% of the students agreed that they rarely perform physics practicals and 45.96% never performed physics practicals. 79.54 of the students are not well exposed to Physics practicals in form 3 and from 4. Most of them do not offer physics. This compromised quality of education offered in most PDSS. Through interviewing it was noted that the few students who offer physics, rarely performed practicals because of inadequate facilities in the laboratory and a few schools lack laboratories.

Table 6: How often do you perform biology practicals

Likert scale rating	Frequency	Percent
Frequently	432	33.1
Rarely	670	51.3
Never	203	15.6
Total	**1305**	**100.0**

Table 6 from the student's questionnaire revealed that 33.10% of the students frequently performed biology practicals, 51.34% rarely performed biology practicals while 15.56% never perform biology practicals. 66.9% of the students were not well exposed to Biology practicals in form 3 and 4. This compromised the quality of education offered in PDSS. Some schools have inadequate laboratory facilities-others lack laboratories.

These findings are similar to those of Keitany (2012) which revealed that most laboratories lacked equipment, chemicals and storage facilities, an indicator that practical lessons are rarely conducted. The researcher further revealed that learners sit for science practicals examinations only at KCSE level. This implied that students who were not exposed to frequent science experiments are not in a position to score good marks in science subjects. The findings are similar with those of Makari (2014) that revealed that 26% of students in county schools had time to handle science equipment. 41% of students in extra-county schools handled practicals and 33% of students in national school.

This revealed that resources available in county, extra county and national schools were insufficient to effectively carry out practicals lessons prompting most teachers to carry out demonstrations to students without giving them a chance to carry out practicals lessons on their own.

Table 7: How often do you sit for evaluation tests

Likert scale rating	Frequency	Percent
Frequently	915	70.8
Rarely	344	26.6
Never	33	2.6
Total	**1292**	**100.0**

Table 7 from the student's questionnaire depicted that 70.82% of the students frequently sat for evaluation tests, 26.63% rarely sat for evaluation test while 2.53% never sat for evaluation test. This was an indicator that internal examinations are done frequently on monthly basis to evaluate the students' outcome on what they covered in class.

Table 8: Parents contribute towards school programes

Likert scale rating	Frequency	Percent
Strongly Agree	309	24.0
Agree	394	30.6
Disagree	279	21.7
Strongly Disagree	306	23.8
Total	**1288**	**100.0**

Table 8 from the student's questionnaire showed that; 23.99% of the students strongly agreed that parents contributed towards school programmes while 30.59% of the students agreed with the same. 21.66% of the students disagreed that parents contributed towards school academic programmes and 23.76% strongly disagreed with the same. This implied that not all parents contributed towards academic programmes of their children in PDSS. This compromised the quality of education offered in most PDSS. These findings are similar to those of Makari (2014) whose study on Impact of subsidized school funding on selection and use of learning resources in secondary schools in Bungoma County revealed that 83% of parents provided text books, 78% paid motivation fees towards teachers welfare and 20% paid extra levy to top up tuition fees. The payment was made gradually hence heavy defaulting. This reflected parents' contributions towards academic programmes of their children in school, which is limited in PDSS.

Table 9: What is your teaching work load per week?

Teaching work load	Frequency	Percent
6 – 10 lessons	2	1.1
11 – 15 lessons	29	16.0
16 – 20 lessons	39	21.5
21 – 27 lessons	89	49.2

28 lessons and above	22	12.2
Total	**181**	**100.0**

Table 9 from teacher's questionnaire showed that 1.10% of the teachers had a teaching work load of 0-10 lessons per week. 16.02% had a workload of 11-15 lessons per week. 21.55% of the teachers had a teaching workload of 16-20 lessons per week. 49.17% of the teachers had a teaching workload of 21-27 lessons per week. 12.15% of the teachers had a teaching workload of 28 lessons and more. This showed that most teachers had the average workload recommended by TSC. However workload was still high, due to high teacher student ratio 21-27 lesson per week was unmanageable in a school with high student enrolment especially in compulsory subjects.

The findings are similar to those of Makari (2014) which revealed that, teachers overwhelmed by work load may not interact effectively with learners. With increased enrolment most teachers had work load of between 21 and 30 lessons per week, which implied that they were strained and could not effectively, manage their lesson. This affect internal efficiency since effective teaching and learning process is not attained due to limited teacher-student interaction. This affects the quality of education delivered to students; an indicator of internal inefficiency.

These findings are also similar to those of Tindall (1988) as cited in Miyawa (2013) whose study on effects of learning resource management in technical training institutions in Western Kenya revealed that teachers' workload had significant effect on academic achievement. Schools where teachers had 25 lessons or less registered higher mean scores compared to schools where teachers had 26 lesson or more. The findings agreed with Nwwinina and Mwanakezi cited in Osagic and Okafar (2012) who concluded that teachers' workload was one of factors that inhibited students' academic achievements.

Table 10: There are adequate text books per subject in the library

Likert scale rating	Frequency	Percent
Strongly Agree	2	1.1
Agree	56	30.3
Disagree	89	48.1
Strongly Disagree	38	20.5
Total	**185**	**100.0**

Table 10 from teacher's questionnaires revealed that 1.08% of the teachers strongly agreed that there were adequate text books per subject in the school library. 30.27% of the teachers agreed with the same. 48.11% and 20.54% of the teachers disagreed and strongly disagreed respectively that there were adequate text books per subject in the library. This depicted that there were inadequate text books in school libraries in PDSS. This was due to most schools lacking library facilities hence few textbooks issued at class level. Most schools do not use FDSE funds to purchase text books as per the tuition vote heads. The 1:1 student- text books ratio has not been attained in most PDSS. This compromised the quality of education offered in PDSS.

Makari (2014) also revealed that low textbooks ratio poses serious questions on quality of learning in schools. Some teachers hardly used textbooks. UNESCO (2005) showed that teachers having taught for so long without textbooks found it challenging to teach with them. These findings are also similar to those of Fuller (1986), whose findings revealed that schools that operated without libraries had affected the academic performance of their students.

A library as an instructional resource would significantly influence students' academic achievement. Popoola (1989) also noted that schools with well-equipped library normally maintained high academic performance.

Table 11: The school library is adequately equipped with facilities

Likert scale rating	Frequency	Percent
Strongly Agree	7	3.9
Agree	27	14.9
Disagree	81	44.8
Strongly Disagree	66	36.5
Total	**181**	**100.0**

Table 11 from the teacher's questionnaire showed that 3.87% and 14.92% of the teachers strongly agreed and agreed respectively that the school libraries are adequately equipped with facilities. 44.75% and 36.46% of the teachers disagreed and strongly disagreed respectively that the school libraries were adequately equipped with facilities. It was observed that in most rooms used as libraries do not have facilities like chairs, reading tables, book shelves and cupboards. Most students visited the rooms only to pick or return the textbooks. Adequate time was not created for library utilization of text books. This compromised the quality of education offered.

These findings are in line with those of Miyawa (2013) which revealed that a library occupied a central place in any school system hence must be up to date and at same time should allow access to older materials. Ola (1990) noted that a well-equipped library enhances good learning and achievement of high educational standard. Farombi (1998) similarly noted that school libraries would be ineffective if the books there are inadequate and upto date as its impact may be meaningful if it could be opened to students always for considerable length of time in a school day.

The findings were also in agreement to those of Miyawa (2013) that noted that an education system without a library limited students' academic achievement and level of exposure to current development. School enrolment was bound to influence effective utilization of library and its resources among secondary school students. This reflected academic performance and achievement of students. Davies (1994) agreed that availability of adequate libraries, positively contributed to students' academic performance.

Table 12: The school has qualified laboratory technician

Likert scale rating	Frequency	Percent
Strongly Agree	28	15.6
Agree	73	40.8
Disagree	35	19.6
Strongly Disagree	43	24.0
Total	**179**	**100.0**

Table 12 from the teacher's questionnaire revealed 15.64% of the teachers strongly agreed that their schools had qualified laboratory technicians. 40.79% of teachers agreed with the same. 19.55% of the teachers disagreed that their schools had qualified laboratory technicians while 24.02% of the teachers strongly disagreed with the same. This implied that 43.57% of PDSS do not have laboratory technicians to prepare equipment for practical lessons.

This was done by the science teachers who are also supposed to prepare for lesson teaching and with high workloads. Some of the teachers therefore skipped the practical lessons hence compromised the quality of education offered in these institutions.

Table 13: There is high shortfall in compulsory subjects

Likert scale rating	Frequency	Percent
Strongly Agree	19	67.9
Agree	7	25.0
Disagree	2	7.1
Total	**28**	**100.0**

Table 13 from the principal's questionnaire reveals that, 67.86% of the principals strongly agreed that there was a high teacher shortfall in their schools. 25% agreed with the same while 7.14% disagreed. This implied that 92.88% of the PDSS had high teachers' shortfall in compulsory subjects: English, Kiswahili, Mathematics, Biology and Chemistry. This impacted negatively on the quality of education offered in these institutions.

Table 14: Science teachers adequately utilize laboratories for practical lessons

Likert scale rating	Frequency	Percent
Strongly Agree	15	8.5
Agree	85	48.3
Disagree	52	29.5
Strongly disagree	24	13.6
Total	**176**	**100.0**

Table 14 from the teacher's questionnaire showed that 8.52% of the teachers agreed that science teachers adequately utilized laboratories for practical lessons. 48.30% agreed with the same. 29.55% of the teachers disagreed that science teachers adequately utilized laboratories for practical lessons while 13.64% strongly disagree with the same.

This implied that in some of the PDSS teachers don't perform practicals in science subjects hence compromised the quality education offered in 43.19% of the institutions.

Table 15: The school has a qualified librarian

Likert scale rating	Frequency	Percent
Strongly Agree	16	9.0
Agree	38	21.5
Disagree	50	28.2
Strongly disagree	73	41.2
Total	**177**	**100.0**

Table 15 from the teacher's questionnaire showed 9.04% of the teachers strongly agreed that their schools had employed a qualified librarian. 21.47% of the teachers agreed with the same. 28.25% of the teachers disagreed and 41.24% strongly disagreed with the same. This implied that 69.49% of the PDSS do not have qualified personnel to offer services in the school library.

Quality service was therefore not offered in the library. This contributed to poor reading culture since most libraries operated during games time, when language teachers are free to offer the services.

Table 16: There is high teacher shortfall in optional subjects

Likert scale rating	Frequency	Percent
Strongly Agree	15	53.6
Agree	12	42.9
Disagree	1	3.6
Total	**28**	**100.0**

Table 16 from the principal's questionnaire revealed that 53.57% of the principals strongly agreed that there was high teacher shortfall in optional subjects in their schools. 42.86% of the principals agreed with the same while 3.5% disagreed. This implied that 96.43% of the PDSS had high teacher shortfall in optional subjects; Physics, History & Government, Geography, CRE/IRE, Agriculture and Business studies. This affected the quality of education offered by these schools.

High teacher shortage in all disciplines implied that most of teachers had high workload per week, that affects service delivery to learners i.e. inadequate lesson preparation and evaluation of learners.

Table 17: The school employs teachers on board yearly

Likert scale rating	Frequency	Percent
Strongly Agree	23	85.2
Agree	2	7.4
Disagree	2	7.4
Total	**27**	**100.0**

Table 17 from the principal's questionnaire revealed that 85.19% of the principals strongly agreed that their schools employed teachers on board of management yearly while 7.14% agreed with same. 7.14% of the principals disagreed that their school employed teachers on board yearly. This implied that there was high turnout of teachers in PDSS hence lack of consistence in lesson actively. This affects the quality of education offered in PDSS.

Table 18: Your school offers quality education to students

Likert scale rating	Frequency	Percent
Strongly Agree	12	44.4
Agree	12	44.4
Disagree	3	11.1
Total	**27**	**100.0**

Table 18 from the principal's questionnaire reveals that 44.44% of the principals both strongly agreed and agreed that their schools offer quality education to students. 11.15 disagreed with the same. This implied that 88.88% of PDSS Principal believed that their schools offered quality education to students.

Table 19: Increased enrollment compromise quality of education

Likert scale rating	Frequency	Percent
Strongly Agree	8	29.0
Agree	11	40.7
Disagree	5	18.5
Strongly disagree	3	11.1
Total	**27**	**100.0**

Table 19 from the principal's questionnaire revealed that; 29.63% of the principals strongly agreed that increase enrolment day secondary schools compromised quality of education offered in schools. 40.74% agreed with the same while 18.52% and 11.11% of the principals disagreed and strongly disagreed respectively that increased enrolment compromised quality education offered in schools.

Table 20: KCSE performance has been on upward trend for the last 5 years

Likert scale rating	Frequency	Percent
Strongly Agree	9	36.0
Agree	10	40.0
Disagree	6	24.0
Total	**25**	**100.0**

Table 20 from the principal's questionnaire revealed that 36% of the principals strongly agreed that the KCSE performance of their schools had been on upward trend for the last 5 years. 40% of the principals agreed with the same. 24% of the principals disagreed that their KCSE performance had been on an upward trend for the last 5 years.

Table 21: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Enrollment for form 4 in 2010	Between Groups	11926.833	2	5963.417	3.249	.075
	Within Groups	22026.500	12	1835.542		
	Total	33953.333	14			
Enrollment for form 4 in 2011	Between Groups	8542.067	2	4271.033	2.603	.115
	Within Groups	19687.667	12	1640.639		
	Total	28229.733	14			
Enrollment for form 4 in 2012	Between Groups	7537.192	2	3768.596	1.661	.231
	Within Groups	27234.542	12	2269.545		
	Total	34771.733	14			
Enrollment for form 4 in 2013	Between Groups	9015.483	2	4507.742	1.635	.236
	Within Groups	33088.917	12	2757.410		
	Total	42104.400	14			
Enrollment for form 4 in 2014	Between Groups	12378.125	3	4126.042	1.884	.186
	Within Groups	26279.875	12	2189.990		
	Total	38658.000	15			
Enrollment for form 4 in 2015	Between Groups	15147.596	3	5049.199	2.470	.108
	Within Groups	26578.875	13	2044.529		
	Total	41726.471	16			

Table 21 from the principal's questionnaire, it was noted that from the year 2010 to 2014 the P-Values were more than the standard P-Values of 0.05. The null hypothesis that there was no significant relationship between effects of expansion of PDSS and the quality of education offered in Mumias Sub-county was accepted. The school enrolment and performance in KCSE Exams using the mean score was used to determine the relationship. This implied that increase in student enrolment in PDSS and establishment of new PDSS had no effect on the quality of Education offered in Mumias Sub-County.

4. Conclusion

The objective was attained because it was established that 44.82% of the students in PDSS rarely or never visited school libraries/book stores, not exposed to practical lessons and that internal examinations are conducted frequently to evaluate teaching outcome. 54.58% of student agreed that parents had contributed towards running school academic programmes. It was established that most teachers had the standard weekly workload of 27 lessons i.e. 49.17% had 21 – 27 lessons per week, 68.65% of teachers revealed that there were inadequate reference books in all subjects –a student textbook ratio of 1:1 had not been realized. 81.21% of teachers revealed that libraries/book stores are inadequately equipped. 43.19% of science teachers don't conduct practical lessons in the laboratory for students. 69.41% of public day secondary schools had unqualified personnel in library while 43.57% in the laboratory. 92.88% of PDSS had high teacher shortage in languages, sciences and mathematics. 96.88% of shortage in optional subjects 92.33% of PDSS employed teachers yearly on BOM terms 70.37% of the principals agreed that increased enrolment in PDSS compromised quality of education. 76% of principals agreed that KCSE performance in their schools had been

on upward trend for the last five years. A test research Anova established that expansion of PDSS had no effect on quality of education offered. More PDSS can be established to attain 100% transition to secondary school. Quality was relative to resources even PDSS which had limited resources still achieved quality education within the context of available resources.

4.1 Recommendations

Teachers Service Commission should employ more teachers on contract in public day secondary schools to reduce the high teacher shortage in all subjects hence improved quality education delivery. This would also reduce the fund's spend by Boards of Management on teachers' salaries hence utilized to employ qualified support staff personnel in the Library and Laboratory to provide quality services. The Ministry of Education should directly employ support staff and post them to all public day secondary schools. Secondary School principals should enhance internal supervision systems to ensure that students access and utilize school libraries/ book stores effectively and efficiently. This would improve the reading culture and performance in examinations. Science teachers should frequently utilize laboratories for practical lessons to enhance comprehensive understanding of abstract concepts learned in theory lessons. Some practical lessons can be carried out during weekends. Parents in public day secondary schools should be sensitized and encouraged to support school academic programmes, like motivation of students and teachers, purchase of basic learning: Mathematics instruments, set books, class readers, dictionaries, atlases and stationery materials. This would assist in improving the quality of teaching and learning. School Boards of Management should network with other stakeholders to seek funds to construct and adequately equip laboratories and libraries in public day secondary Schools.

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