

Investigation of the Influence of Class Size on Internal Efficiency of Public Secondary Schools in Teso North Sub County.

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Abstract: Inefficiency indicators like high repeater and dropout rates in Kenyan schools is worrying. This study sort to investigate the Influence of Class Size on Internal Efficiency of Public Secondary Schools in Teso North Sub County. The researcher employed a descriptive survey research design. The study population comprised of 29 Head teachers, 29 Directors of studies, 131 class teachers and one Quality Assurance and Standards Officer (QASO). Stratified random sampling technique was used to select 64 class teachers while purposive sampling technique was used to select 16 Head teachers, 16 directors of studies and one QASO. A pilot study was done in two schools to establish the reliability of the questionnaires and the experts opinion was sought on validity of the instruments. Data was collected using questionnaires, interview schedule and document analysis. The questionnaires were administered to the class teachers and directors of studies while the interviews were conducted with the Head teachers and QASO. The researcher analyzed school records to obtain information on enrolment, wastage and graduation rates. Data collected was analyzed thematically and reported accordingly. The findings of the study provide information to the ministry of education on influence of selected factors on internal efficiency of public secondary schools in Teso North Sub-county. The study's findings give insights for appropriate administrative actions to school managers to enhance internal efficiency of their schools. The class size was large with a student population of 40 – 49 per class. Despite the challenge of high teacher - student ratio, teachers strived to adequately supervise class activities and enforce class discipline. The schools lack necessary physical infrastructure such as; classrooms and the offices, and library, furniture, laboratory and equipments, toilets, teachers housing and text books. Most schools (85%) had school based policies which influenced their internal efficiency. The teachers' characteristics such as training, experience and population had influence on internal efficiency. The number of government teachers was inadequate and schools had employed teachers under BOM to curb the shortage. All government teachers were qualified and experienced in their subject areas but this wasn't the case for all BOM teachers. From the findings, the researcher recommends the school management should; ensure that the resources available are commensurate with the enrolment, liaise with the Government and other partners to provide the necessary infrastructure, harmonize school policies and train teachers through seminars and workshops in order to enhance internal efficiency. The researcher recommends further similar study to cover large area.

Keywords: Class size, Internal efficiency, Public secondary schools, Student Ration, Teso North Sub-county

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I. Introduction

Abagi and Odipo (1997) define internal efficiency in education as the amount of learning achieved during the school age attendance, compared to the resources provided. Thus, internal efficiency refers to the measurement of performance of the education system by showing the proportion of students successfully completing a given level of the Education system without wastage. When achievements by students is low, as seen from the school's low test score in national examination, such a school would be considered to be of low quality and therefore inefficient (Abagi and Odipo, 1997). Internal efficiency addresses the question of how funds within the Educational sector should be best allocated. It is concerned with obtaining the greatest Educational outputs for any given level of spending. Economists have a simple Conceptual rule to determine how resources should be allocated among alternative Educational activities: The improvement in educational performance that results from the last amount of funds spent on an educational activity should be equal across each possible activity. For example, consider a school that is deciding between buying new Workbooks for students and hiring a part-time teacher to teach individual students. Clearly, the school should spend the funds on the one that increases performance the most, which are workbooks in this example. In fact it should continue spending money on Work books until the educational value of the two choices are the same (After the Initial

purchase of workbooks, the value of added workbooks is probably lessened so that at some level of spending the appropriate decision is to purchase a tutor instead of more workbooks). The same logic holds for all of the inputs that a school purchases, leading to the previously stated rule. Internal efficiency is also sometimes referred to as "allocate efficiency" or "price efficiency" (Lockheed and Hanushek, 1987).

In a nutshell, internal efficiency of any educational system is believed to have high co-relation with educational inputs, processes and outputs of the system. On the other hand according to Sanothimi and Bhaktapur (2001), the question of educational quality is also a question of internal efficiency in education system. Therefore, internal efficiency and quality of the education system can be indicated by calculating the promotion, repetition & dropout rates, at various grade levels. Furthermore efficiency also includes cycle completion and survival rates at certain grade level and cycle to cycle transfer rates. To put it differently, improving internal efficiency of the school system is by default improving quality of education because both of them focus on relationship of educational inputs, processes and outputs of the system.

II. Statement Of The Problem

The high number of students repeating classes and or dropping out of schools in Kenya is a possible indication that internal efficiency in these schools may not have been achieved. Like other Sub Counties in Kenya, Teso North Sub County has witnessed high dropout rate, high rate of repetition and fairly low and fluctuating academic performance (Teso North Education Statistics, 2014). For instance, Teso North education office (2012) reported a 13% decrease in KCSE performance of public secondary schools. When students repeat a class for one or more than one year, this constitutes wastage in the school system. This is in view of the fact that the space which could have been occupied by anew enrolled or promoted students would have to be retained for a repeater, and the dropout or students who leave the school before completing the given cycle or academic year are also wasting the education resource, some time they may not bring back the school material to the school, there by siphoning more funds from government in-terms of continued teaching of the repeaters in the same class for more than one year. Such inefficiency indicators have been associated with large class size, inadequate physical facilities, unfavorable school policies and inappropriate teacher characteristics in public secondary schools. There is need to investigate the Influence of Class Size on Internal Efficiency of Public Secondary Schools in Teso North Sub County. This study therefore attempted to investigate influence of selected factors on internal efficiency of public secondary schools in Teso North Sub County.

III. Class Size And Internal Efficiency

Adeyemi (2008) expressed class size as an educational tool that can be used to describe the average number of students per class in a school. It is often simply considered as the respective population of each class. Different researchers (Adeyela, 2000; and Adeyemi, 2012) have reported that large class sizes have negative effect on academic task. Class size ranks amongst the most important factors that have strong and direct influence on academic performance of schools. Similarly, Alebiosu (2000) and Oderinde (2003) have reported that students in small classes have greater achievement level than those in large classes.

The provision of secondary education has changed markedly since independence with the number of schools and students increasing from 151 and 30,000 in 1963 to 4,111 and 1,487,989 in 2010 (MOE, 2012). The introduction of Free Secondary Education (FSE) resulted in higher increase in enrolment in public secondary schools by 17.1 percent in 2008 (Republic of Kenya, 2009) as compared to 13.7 percent in 2007, and the increase was noted in the subsequent years.

Asian Network of Training and Research Institutions in Educational Planning (ANTRIEP, 2008) did a study on improving school efficiency. The Asian experience done in Colombo, Sri Lanka purposed to improve school efficiency. The objectives were to: give an overview of the situation of different countries in Asia; examine how both external and in-school supervision and support services should be strengthened and adapted to have a positive impact on the quality of schools; explore the role that evaluation mechanisms (examinations, achievement tests and others) can play in improving the quality and effectiveness of schools; and discuss the system of teacher deployment and management, and ask at what levels different decisions about deploying and managing teachers can best be taken and how this decision process can be improved. The study found out among others that: evaluations of elementary and secondary schools are undertaken without sufficient information regarding developments in the field which gives immense scope for prolonged bureaucratic formalities; evaluation leads to overwork among school staff and that the standards for evaluation are so abstract that it is almost impossible for the evaluators to communicate with the schools. The reviewed study looked at the aspect of efficiency improvement in general, where it focused on what negatively affected efficiency, while the current study specifically looked at how internal efficiency is affected by increased enrolment in public secondary schools.

Over the past several decades, researchers, politicians, and corporate leaders have focused reform efforts on the size of educational contexts. Hundreds of billions of public and private dollars have been invested

to reduce the size and scope of both classrooms and schools (Lee and Ready, 2007). Unlike many education reforms, these downsizing plans have attracted support virtually from every quarter, and a united front of stakeholders has coalesced behind the notion that “smaller is better.” Efforts to reduce elementary-school class sizes have garnered particularly strong popular and political support. Indeed, the American public feels that creating smaller class sizes is the most effective way to recruit and retain highly qualified teachers (Rose and Gallup, 2007). Thirty-two states now fund either voluntary or mandated class-size reduction programs, with California and Florida together investing almost \$20 billion to reduce class sizes.

Despite its popularity, some academicians and policy makers remain skeptical of class-size reduction, concluding that the results may not justify the enormous sums currently being invested (Hanushek, 2002; Harris, 2002). In particular, critics question the axiom that class size is related to student learning. One such criticism of class-size initiatives is that they neglect teaching and learning, focusing on structure at the expense of instruction (Cohen, Raudenbush and Ball, 2003; Hanushek, 2002; Milesi and Gamoran, 2006). Among the more cynical conclusions is that support for smaller classes among teachers stems from a desire to reduce workloads, and to increase the number of teachers and union members (Hoxby, 2000). According to a survey in Kenya by UNESCO (Daily Nation, May 15th 2005 p19) shows the average ratio in 162 schools sampled is 58:1, against the required 40:1. Such class sizes in public secondary schools make it difficult for the teachers to teach lessons effectively as compared to their counterparts in private schools who handle a smaller number of students.

IV. Methodology

The study adopted descriptive survey research design. The choice of the design is premised on the fact that survey research deal with incidence, distribution and interrelationships between variables and accurately describes the nature of existing conditions (Orodho, 2009, 2012a). The study utilized the survey design because the researcher wanted to get the precise information to make conclusive results regarding internal efficiency of secondary schools. Mugenda and Mugenda (1999) notes that the survey design is the best method available to social scientists who are interested in collecting original data for the purpose of describing a population which is too large to observe directly.

Population in research is total number of subjects or all members under the study (Orodho, 2009). This study considered the population in public secondary schools in the Sub-county. The secondary schools under study are those which have consistently presented candidates for National examination in the period 2011 – 2014. Enrolment in these public secondary schools is 6651 students out of which 3492 are boys and 3159 girls. Government employed teachers are 158 out of which 113 are male and 49 female. There are 29 Head teachers, 129 teachers and one Quality Assurance and Standards Officer (Teso North Education Office, 2014).

Table 3.1: Study Population

Category	population	sample
QASO	1	1
Head teachers	29	16
Directors of studies	29	16
Class teachers	100	64
Total	159	97

The researcher used purposive and stratified random sampling techniques. Purposive sampling technique was used to select one QASO, 16 Head teachers and 16 directors of studies. Purposive sampling technique was appropriate because the study targeted schools that have consistently presented students for national examination. It has the advantage of total representation (Kothari, 2004). The current study had a total of one QASO, 16 Head teachers and 16 directors of studies, of which all of them were sampled for the study. Stratified random sampling technique was used to select 64 class teachers. Stratified random sampling technique is a method used to divide a population into homogeneous sub groups (strata), each stratum is then sampled individually (Dooley, 2004). In the current study, each class formed a stratum. Table 3.2 shows how the sample was distributed.

Table 3.2: Sample Distribution

Category	Population	Sample	Sample Percentage (%)
QASO	1	1	100
Head teachers	29	16	55
Directors of studies	29	16	55
Class teachers	100	64	64
Total	159	97	61

The instruments for data collection in this study were questionnaires, interview schedules and documents analysis to obtain information on enrolment, wastage rate and graduation rate. The questionnaires were administered to the directors of studies and the class teachers. The questionnaires sought information on class size, physical facilities, school policies and teachers' characteristics in relation to internal efficiency of the school.

V. Results And Discussions

Influence of class size on internal efficiency of public secondary schools in Teso North Sub County

The researcher sought to establish the influence of class size on internal efficiency of public secondary schools in Teso North Sub County. The class teachers response on adequacy of class rooms was 26(43.3%) agreed while 34(56.7%) disagreed that class rooms were enough. This indicates that most schools lack sufficient class rooms and therefore teachers have challenge in managing crowded class rooms, hence compromising learning. Finn *et al.* (2003) remarked that students in small classes display less disruptive behavior than those in large classes. The study established that most schools do not meet the required teacher student ratio, as evidenced by the majority of the class teachers 38(63%) who agreed with the statement, as a results teachers cannot adequately supervise class activities as indicated by 32(53%) of the respondents. 26(43.3%) of the respondents agreed that the class room atmosphere is conducive for learning while 34(56.7%) disagreed, as presented in table 4.1

Table 4.1: Class Teachers response

Statements	Response	Frequency	Percent
The school has enough class rooms	Yes	26	43.3
	No	34	56.7
There is good teacher student ration	Yes	22	37
	No	38	63
Teachers can adequately supervise class activities	Yes	28	47
	No	32	53
The class room atmosphere is conducive for learning	Yes	26	43.3
	No	34	56.7
Total		60	100.0

The response from the directors of studies established that 8(50.0%) of the schools did not have enough class rooms. Few schools 2(12.5%) had good teacher-student ratio (1:40), while 14(87.5%) did not have. 7(43.8%) of the respondents agreed that the teacher can adequately supervise class activities, while 9(56.3%) disagreed. Majority of the respondents 11(68.8%) agreed that the teacher can enforce class discipline with ease, while 5(31.3%) disagreed. 9(56.3%) of director of studies agreed that the classroom atmosphere is conducive for learning while 7(43.8%) disagreed. The information is summarized in table 4.2

Table 4.2: Directors of studies Response on school enrolment

Statement	YES		NO	
	F	%	F	%
The school has enough classrooms	8	50.0	8	50.0
There is good teacher-student ratio (1:40)	2	12.5	14	87.5
The teacher can adequately supervise class activities	7	43.8	9	56.3
The teacher can enforce class discipline with ease	11	68.8	5	31.2
The classroom atmosphere is conducive for learning	9	56.2	7	43.8

The head teachers were asked to rate the total enrolment in the school, 4(25.0%) rated high, 4(25.0%) rated low while 8(50.0%) rated average as indicated in table 4.3.

Table 4.3: Rating of enrolment in the school

	Frequency	Percent (%)
High	4	25.0
Low	4	25.0
Average	8	50.0
Total	16	100.0

On the actual enrolments, the study established that 4(25.0%) of the schools had total enrolment of below 150 students, 6(37.5%) had enrolment of between 151-200, 4(25.0%) had enrolment of between 401-500, while 2(12.5%) had total enrolment of between 800-900 students, as indicated in table 4.4. the schools with enrolment of below 250 students were new schools and are single streamed, while those with more than 250 students had more than one stream.

Table 4.4: Total Enrolment

	Frequency	Percent
150 and below	4	25
151-250	6	37.5
401-500	4	25
800-900	2	12.5
Total	16	100.0

The researcher also sought to know the average number of students per class, it was found that, 2(12.5%) of the schools had 30-39 students per class, 8(50.0%) had 40-49 students per class, 2(12.5%) had 50-59 students per class, while 4(25.0%) had more than 60 students per class, as indicated in table 4.5

Table 4.5: Number of students per class

	Frequency	Percent
30-39	2	12.5
40-49	8	37.5
50-59	2	12.5
> 60	4	25.0
Total	16	100.0

The response from both class teachers, directors of studies and head teachers indicates that the class size in most schools in study area are large, in which it is further complicated by teacher student ratio of above 1:40. The class size determines teachers' ability to supervise class activities and enforce class discipline. The smaller the class size, the better and conducive is the learning process. Therefore the research findings indicate that the internal efficiency in most schools in the study area might be compromised.

VI. Conclusion

The total enrolment of the school was average with an average of 40 - 49 students per class. Few schools had good teacher-student ratio (1:40). Despite the challenge of high teacher student ration, it was found that teachers strived to adequately supervise class activities and to enforce class discipline so as to create conducive classroom environment. The schools lacked necessary physical infrastructure such as; class rooms and the offices, and library, furniture, laboratory and equipments, toilets, teachers housing and text books. But in spite of inadequate physical infrastructure, teachers have managed to utilize the facilities available to enhance learning. Most schools had promotion policy, language policy, disciplinary policy and boarding policy. The study established that school policies had effect on internal efficiency based on how they were being implemented. The study established that teacher characteristics influence internal efficiency. The number of government teachers in all schools was not adequate hence schools had employed teachers under BOM to curb the shortage. Not all BOM teachers were qualified and experienced to teach the subjects assigned. Further, most teachers were found to have good attitude towards students, able to adequately supervise class activities and are motivated and committed to their work.

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