

An evaluation of secondary school principals' perception of learning resources in free secondary education era in Kenya

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ABSTRACT

This article reports on the findings from a quantitative research study on learning resources in Kenya's secondary schools. The purpose of this study is to investigate the secondary school principals' perception on the learning resources. The study adopted a quantitative survey design involving 81 secondary principals, selected purposively. Data was collected using a questionnaire (open and closed-ended, rating scale items). Data was analysed using Statistical Package for Social Sciences (SPSS) resulting in descriptive data. From the study, it was found that some schools do not have laboratories, libraries and workshops. Some of the resources were charged unfavourably by the principals therefore raising concerns regarding their quality in the teaching learning process. In terms of their contributions to the teaching and learning process, textbooks and classrooms were charged higher while furniture was charged lowest. The rest of the resources fall in between. As sources of funding, Secondary Free Education (FSE) and Parent Teacher Association (PTA) were considered favourably than Constituency Development Fund (CDF) and Local Authority Transfer funds (LATF). However, FSE was found to be inadequate and unreliable. In conclusion, the implications of the principals' perception on the quality of the teaching and learning resources are that their morale and job satisfaction may be negatively affected thus indirectly affecting the quality of teaching and learning. Poor quality of resources would directly affect the teaching and learning process. In either case, students' attainment may be affected negatively.

Keywords: Secondary schools, principals, learning resources, academic achievement, Kenya, Nyamira County.

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INTRODUCTION

Students' academic performance is an aspect of education that has been and still is of great concern to parents, school managers, educational researchers and policy makers in both developing and developed nations. It is also of great concern across all levels of education in a number of countries (Principe, 2005). It is an area that has been the subject of intensive research over several years (Li et al., 2010; Monk, 1998). On the one hand, educational researchers are under pressure by policy-makers to isolate factors that underpin improvement of academic achievements (An et al., 2008). On the other hand, schools and institutions of higher learning are

under pressure to improve academic performance (Broh, 2002). In the United Kingdom for instance, improving educational attainment is a policy priority (Steele et al., 2007). The introduction of 'performance-based resources allocation' is a characteristic of a pressure regime and therefore schools as well as other organisations have to work hard so as to avoid projects or activities with high likelihood of failure (Liefner, 2003). In the United States, underachievement of the minority students has been a matter of grave concern to educators, parents and policy-makers for several decades (Chang, 2012). However, lack of consistent findings on the most effective

determinants of academic improvement remains a challenge and a source of frustration to policy-makers due to delays in policy implementation process (Marks, 2010). Marks (2010) further observe that 'lack of consensus is disappointing to the policy-makers since schools are the most logical sites to enact policies to improve students' learning outcomes'. Reasons attributed to inconsistency results include (Teodorovic, 2011; Hanushek et al., 1996): varied definitions and operationisation of effective school factors between studies; a restricted range of variations in school organisations and content, failure to examine cultural factors, omission of additional variables that impact student achievement and also use of statistically inappropriate methods.

However, some correlations linked to academic success drivers have been established (Zwick, 2012):

- (a) Socioeconomic background and particularly parental academic achievements;
- (b) Student peers and selection into study subjects have also been identified as important drivers of academic success;
- (c) Individual characteristics such as previous school achievements, assessment of capabilities or study motivation are positively correlated with academic success.

Also, according to Handerson and Mapp (2002) as cited in Teodorovic (2011), some school variables have been found to be associated with students' achievement. They include staff cohesion in academic and disciplinary matters; pleasant working environment, principals' leadership, high expectation for students, school goals, inter-staff relations, emphasis on academic achievement, encouragement and active engagement of parents, strong management teams and quality teaching at the school. Evidence from research continues to demonstrate in a consistent manner that family Socioeconomic Status (SES) is closely related to student performance (Chang, 2012; Engin-Demir, 2009). Further investigation identifies SES as one of the most powerful predictors of student academic achievement across all racial and large groups (Chang, 2012:23). Leadership in schools has also been identified as important in relationship to students' achievement (Locus et al., 2010). Other factors associated with students' performance include students' prior academic achievement, learning skills and habits, and learning strategies and approaches (Li et al., 2010). These factors have been identified as key predictors of the students' further achievements at higher level of study (Li et al., 2010). However, Shimada (2010) warns that no single variable has a strong impact on academic achievement, arguing that the educational process is complex and several factors create combination effect. Rivkin et al. (2005) seems to share similar views when they argue that 'academic achievement at any point is a

cumulative function of current and prior family, community and school experience'. Great deal of research has also focused on class size, student-teacher ratio, learning environment, cultural resource and learning or material resources among others in relation to academic achievement (Atanda and Jayeoba, 2011; Zwick, 2012; Greenwald and Hedges, 1996; Wei et al., 2011; Houtveen and Gift, 2012) and the outcome is a mixed. In Canada, for instance, an evaluation of the physical resources and academic press by the principals revealed no significant effect on student achievement in mathematics and reading (Wei et al., 2011). Also, Shimada (2010) using multi-regression analysis at school level found that school type, school location and school resources were not statistically significant. Marks (2010), argues that 'other things being equal, students at better resourced schools would be expected to perform at higher level than students attending poorly resourced schools'. Jebson and Moses (2012) also observes that learning resources play a paramount role in the teaching and learning of science subjects and thereby contributing to students' academic achievement. Also, Hoy et al. (2002) as cited in Marks (2010) reports that a consensus do exist regarding the academic press' association with higher levels of student achievement. This article reports on the findings of the principals' perception on learning resources.

Secondary school education system in Kenya

In 1985, Kenya overhauled the education system by scrapping one which consisted of seven years of primary education, four years of secondary education, two years of high school education and three years (minimum) in the university (7-4-2-3) and replaced it with one consisting of eight years of primary education, four years secondary education and four years (minimum) in the university (8-4-4) (Amutabi, 2003; Hungi and Thuku, 2010; Sang et al., 2012). The current 8-4-4 system of education was intended to be vocational in nature. What Amutabi (2003:136) describes as 'a more practical oriented curriculum'. But he quickly asserts that the 'outcome is disconcerting' (Amutabi, 2003:136), arguing that the 8-4-4 graduates are not uniquely different from the previous 7-4-2-3. There is nothing vocational in it. He further observes that the damage caused by the 8-4-4 system of education is similar to the one caused by abandoned Ujamaa in Tanzania (Amutabi, 2003). So it is evident that the 8-4-4 system of education is still a controversial issue.

Secondary schools in Kenya cater for students aged 14 to 17 years (Njoroge and Ole Kerei, 2010) and consist of a single secondary stage of post-primary education. Some countries in Sub-Saharan Africa (SSA) and elsewhere have a combination of junior and senior secondary education (Ohba, 2009). It is also important to

highlight the fact that secondary schools in Kenya are differentiated into three categories namely national, provincial (county) and districts schools, the national secondary schools being considered elite and most prestigious public schools in the country (Glennerster et al., 2011). Secondary schools have been recognised for providing youths with opportunities to acquire human capital that enables them to either seek employment or pursue higher education thus improving their higher labour productivity potentials (Ngware et al., 2006). Ngware et al. (2006) further observe that 'individuals with secondary education are less likely to be affected by poverty than those with lower level of education'. World Bank (2007) also underscores the role of secondary education arguing that it 'provides society with educated people who are needed for many areas of work, including the critical area of primary teaching'. The importance of secondary school education is also underscored by President Kibaki (Kabuki's Speech, 2008, Para. 3) as cited (Ohba, 2009):

Primary education alone is not sufficient to provide quality skilled human resources necessary for our country's sustainable development. Moreover, primary school pupils complete 8 years of schooling when they are still young to engage in productive activities and contribute meaningfully to nation building. In addition children from poor families who fail to join secondary schools because of lack of school fees often revert to illiteracy, thus reversing 8 years of investment in their primary education. It is for this reason that my government undertook to implement free secondary education programme beginning this year.

However, it is regrettable that the expansion of secondary education, access and participation are areas that have caused widespread concerns within the Sub-Saharan Africa (SSA) (World Bank, 2007; Ngware et al., 2006). According to the World Bank (2007), 'A cross much of Sub-Saharan Africa, secondary education has been a weak link in students' progression from primary to higher education or from primary education to employment'. World Bank (2007) also note that until recently, secondary education in the region has been given lower priority, and therefore accorded less attention than primary education, resulting in fewer secondary schools than primary schools. Similar views are also expressed by Ohba (2009) who notes that 'secondary education enrolment rates in the SSA region continue to be the lowest in the world'. That situation in itself in part significantly affects the primary to secondary transition rates due to fewer places available to qualified primary school leavers. Higher priority and attention in primary education reflected in the extension of free education much earlier than secondary schools in a number of countries in the SSA such as Rwanda, Uganda, Tanzania

and Kenya (Ohba, 2009). For instance, free primary education in Kenya was introduced in 2003, while free secondary education commenced in 2008, five years later (Itunga, 2011; Ohba, 2009). However, Sang et al. (2012) assert that the rapid increase in the number of primary school leavers has become the drivers of tremendous growth in secondary schools in Kenya. Similar view is also expressed by Dejaeghe et al. (2006, 533) but warn that 'across many countries of Sub-Saharan Africa secondary enrolments are growing faster than teachers can be recruited or trained'. Therefore, suggesting that some countries within SSA region secondary education are experiencing positive growth but resources especially qualified teachers may be constraining.

Kenya introduced free secondary education in 2008 as noted earlier with the assumption that children and especially those from disadvantaged family background, who have completed primary education and qualified for secondary education, would gain access. This was clearly articulated in president Kibaki's speech in 2008 (Kibaki's Speech, 2008, Para. 8) as cited (Ohba, 2009):

... the main objective of providing free secondary education is to ensure that children from poor households acquire quality education that enables them access opportunities for self-advancement and become productive members of society.

As a result of the introduction of free secondary education, enrolment grew remarkably from 779,000 in 2002 to 1.4 million in 2008 (Ohba, 2009). Ohba (2009) has also identified a number of factors that are affecting the sustainable provision of quality free secondary education. They include: limited facilities; large class size in densely populated areas; shortage of schools in marginalised areas; inadequate number of trained teachers; ever increasing financial resource needs and growing government financial deficit.

Other factors identified by Ohba (2009) that affects access to secondary education relates to affordability. Evidence indicates that public schools continue to charge levy fees for a number of items such as lunch, stationeries [Bible, English dictionary (Oxford), Kiswahili dictionary, Hymn book, mathematical tables and geographical atlas, among others], game skit, shoes, uniform, utensils (plates, spoons, mug and cup); learning materials and padlock. This is a serious issue affecting those in their first year preparation for secondary school education (Ohba, 2009). Ohba (2009) therefore warns that 'if secondary schools continue to charge levy, the majority of those who successfully enter and complete free primary education will be unable to continue to secondary education'. Others feel that the Kenya government was not ready for free secondary education (Oyaro, 2013).

Learning resources and students academic attainment

Learning resources/materials and students' academic performance

Review of literature on the association between school resources and student academic attainment reveals widespread inconsistency or lack of consensus. Dincer and Uysal (2010:592) for instance, observe that '...there is a significant disagreement on the existence and the strength of a relationship between school input and student achievement'. Educational research on the link between school resources and students' academic achievement dates back to the work of Coleman and his colleagues in 1966 (Steele et al., 2007). Coleman's work known as Coleman Report is regarded as both pioneering and controversial in nature (Steele et al., 2007). Coleman et al. (1996) as cited in Aksit (2007:129) claimed then that 'only a small portion of variance in student achievement can be accounted for by variation in schools compared with other factors such as family background'. Also Rutter et al. (1979) as cited in Aksit (2007:129) concluded in their study that 'schools make a small but highly significant difference.' One possible explanation for finding a weak relationship between classroom and school resourcing levels and pupils attainment as identified by Steele et al. (2007) is that schools are inefficient and therefore do not use the resources more efficiently. However, Owolabi (2012) attributes poor or low performance in science in school in Nigeria, for instance, to inadequate good instructional materials, equipment, facilities; lack of qualified teachers and laboratories. Lewin (2000) attributes lack of adequate resources in schools in some countries to financial constraints. Lewin (2000) asserts that 'there are well established connections between the availability of learning materials and achievement in developing countries'. Lewin (2000) also reports a positive connection between the qualification and experience of science teachers, and high levels of achievement in science. Balogun (1982) as cited Owoeye and Yara (2011) argue that there can be no existence of effective science education programme without equipment for teaching. Ogunmiyi (1983) as cited in Owoeye and Yara (2011) also observe that 'there is a general consensus among science educators that the laboratory occupies a central position in science instruction'. Some of the benefits of laboratories include, stimulation of the learner's interests as they perform and/or engage in useful scientific activities and experimentations; affords the learners important skills and scientific method of problem solving and laboratory activities results in long term memory (Ango, 1986 as cited in Owoeye and Yara, 2011). According to Phelps et al. (1998) adequate facilities and instructional materials among other factors such as a well-defined goal, a positive learning

environment and high expectations for student performance constitute characteristics of a successful school. Oladejo et al. (2011) argue, for instance, that teaching physics without appropriate instructional materials may certainly result in poor academic achievement. Hines (1996) adds that 'science achievement scores are higher in schools that have better laboratory conditions'. Studies have also established positive association between library and student's academic performance (Jaiyeoba and Atanda, 2011). Ola (1990) as cited in Owoeye and Yara (2011) underscores the importance of a well-equipped library arguing that it constitutes a major facility and enhances good learning achievement of high educational standards. Popola (1989) as cited in Owoeye and Yara (2011) also reports 'that library correlates well with academic achievement and those with well-equipped ones normally maintain high academic performance'. However, Farombi (1998) as cited in Owoeye and Yara (2011) warns that school library may not be effective if the books are not adequate and up-to-date. Farombi (1998) as cited in Owoeye and Yara (2011) also adds that the library's impact is dependent on how often and length of time it is accessible to students. However, Shodmu (1998) as cited in Owoeye and Yara (2011) regrets that majority of the schools in developing countries lack libraries. Studies have also revealed a positive relationship between students' achievement and the presence of text books in the classrooms (Lockheed et al., 1986). 15 (83%) of 18 correlational studies on the effect of textbooks on student achievements in developing countries report statistically significant positive results (Lockheed et al., 1986). Altbach (1983) as cited in Lockheed et al. (1986:380) notes that 'nothing has ever replaced the printed word as the key element in the education process and as a result textbooks are central to schooling at all levels'. Textbooks have benefits both to teachers (staff) and students (learners). Four benefits to the teacher for using textbooks include (Lockheed, 1986:380): Either substituting for gaps in teacher knowledge and skills or complementing existing skills by providing more able teachers with a resource that increases their effectiveness; promoting delivery of more complete and coherently organised curricula, particularly in situations where there is a shortage of teachers and where teachers training is limited in scope; enabling the teacher to make better use of time spent in teaching and enabling the teacher to assign higher quality homework. The benefit to students include (Lockheed et al., 1986:380): providing a basic exposure of written materials that is otherwise unavailable in the learning environment and enabling students to learn independently of the teacher particularly through completion of homework. Several studies have investigated various dimensions of teachers' quality in relations to students' academic achievement have produced mixed results. For instance, Louis et al. (2010)

found that teacher characteristics such as type of degree or certification have little impact on students' achievement. Rivkin et al. (2005) also reports there is no evidence that a master's degree raises teacher effectiveness. Rivkin et al. (2005) also report that teacher's experience is not significantly associated to student achievement after the initial years in the profession. Therefore according to Rivkin et al. (2005), 'the existing empirical evidence does not find strong role for teachers in the determination of academic achievement and future academic and labour market success'. In developing countries, studies have found that teacher education and experience together with basic materials do affect achievement but other study has produced a mixed outcome on teacher and school effects (An et al., 2008). Some of the mixed results produced could be due to methodological issues (Wei et al., 2011). Marks (2010) reports moderate to weak on teacher shortage. Rivkin et al. (2005) argue that:

Poor investigations of school and teacher effects have raised as many questions as they have answered. In large part because of the difficulties introduced by endogeneity and in part because of the failure of observable teacher characteristics to explain much of the variations in student performance.

The outcome of a review of 35 years of production function research Verstegen and King (1999) as cited in Tow (2006) reveals that 'resource can and do make a difference in students' education outcomes'. Positive links between resources and students' academic achievement have been reported by Siddhu (2011). Also Engin-Demir (2009) reports on large scale studies involving low-income countries which focused on such factors as school infrastructure, class size, teacher qualification and experience, and the availability of instructional materials. The studies stressed the importance of human and material resources in achieving better schooling outcomes. Engin-Demir (2009) concludes that 'merely equipping schools with such facilities is not enough to raise student achievement rather what matters most is whether this facilities are utilised properly'. Similar views are also expressed by the World Bank Development Report (Gershberg et al., 2009:187), stressing the need for accountability:

... while improving resources flow and providing plenty of technical/pedagogical capacity, development, and support to the education sector are useful in improving access by the poor to quality education, it is by no means sufficient. Instead schools and bureaucracies must be held accountable for using inputs they are provided in an effective manner (accountability pressure without support and resources may also not work).

Machin and Vignoles (2005) as cited in Steele et al. (2007) cites some countries like United Kingdom, Australia, Korea, Finland and the Republic of Ireland which spent lower than average amount on secondary schooling but student performance in international tests is impressive. However, Lockheed et al. (1986) report that in industrialised countries, education expenditures on material inputs is unrelated to achievement. In developing countries, such an intervention bears positive effect (Lockheed et al., 1986). Based a review of 144 studies related to expenditure parameters to student achievement, in the United States Hanushek (1986) as cited in Lockheed et al. (1986) report that 'there appears to be no strong or systematic relationship between school expenditures and student performance'. Häkkinen et al. (2003) have expressed similar views. However in Nigeria, for instance, the condition and quality of resources available in secondary schools is underpinned by the level of funding (Fabunmi et al., 2007). Lewin (2000) argues that finance is a key factor in determining the level of provision of learning materials, physical infrastructure and equipment. Inadequate school resources have been reported in Uganda and Afghanistan (Sewamala et al., 2011; Guimbert et al., 2008). In Afghanistan, use of outdated text books have been cited (Guimbert et al., 2008).

Sports facility and students' academic achievement

There is growing evidence from longitudinal studies that students' school sports participation raises their grades and test scores (Broh, 2002). In other words, participation in sports improves students' academic performance. Benefits to students as a result of participation in sports include self-esteem, locus of control and time on homework. All these on average explain a third of the effects of sports on grades and test scores (Broh, 2002). Also, participation in sports increases students' social capital which helps them improve their grades more than their test scores (Broh, 2002). Besides participation in sports does help 'build character' which has a direct impact on the students' academic achievement (Broh, 2002). Also, evidence suggests that playing school sports, boosts students' achievement in the classroom and on standardised mathematics tests (Broh, 2002). However, Broh (2002) reports that 'participation in interscholastic sports has different consequences for students' achievement than has participation in intramural sports or cheerleading'. This seems to suggest that different sports have different achievement consequences. But Wooten (1998) as cited in Principe's (2005) observe that students' academic performance is depended on the amount of effort he or she puts forth, among other factors. He further identifies five factors that influence students' effort. They include grade history, motivation, extracurricular activities, work responsibility

and family responsibilities. He however argues that neither extracurricular activities nor work responsibilities influenced the students' effort, therefore in a way contradicts Broh's (2002) findings.

Learning environment and students' academic achievement

According to Schneider (2002) clean, quiet, safe, comfortable and healthy environment constitute an important component of successful teaching and learning process. Evidences show that student achievement lags in shabby school buildings, those without science labs, inadequate ventilation and faulty heating system (Schneider, 2002). There is a plethora of evidences confirming the link between the building and achievement (Schneider, 2002). Victoria Institute of Teaching (n.d) highlights the importance of the quality physical environment which significantly affects student achievement. But some quantitative studies have found little association between school environment and organisational variables and student achievement (Teodorovic, 2011). Earthman (2004:18) as cited in Victoria Institute of Teaching (n.d) reports that 'there is sufficient research to state without equivocation that the building in which students spends a good deal of their time learning does in fact influence how well they learn'. Siegel (1999:4) as cited in Victoria Institute of Teaching (n.d) observes that:

The arrangement of space has immediate and far reaching consequences for teachers' ability to effectively and efficiently accomplish day activities, the formation of social and professional relationship and the sharing of information and knowledge.

Therefore classroom and/or laboratory space is very important in the teaching and learning process. Phelps et al. (1998) observe that safe and good conditions of buildings have been linked to student success. According to Earthman and Lemasters (1996) studies evidence indicate the existence of a relationship between student performance (both achievement and behaviours) and the conditions of the built environment. Important factors influential to learning include control of thermal environment, proper illumination, adequate space and availability of equipment and furnishings more especially in science education (Earthman and Lemasters, 1996). Lyons (2001) and Earthman (1998) report that students who attend better buildings have test scores varying from 5 to 17 percentile points higher than students in substandard facilities. Earthman (1998) concludes that money spent on school building improvement is money well spent. Also, Edwards (1991) reports about improvement of test scores due to the conditions of the

buildings. In their study involving standardised test scores and detailed assessment of school buildings in the State of Wyoming et al. (2005) conclude that 'there is no relationship between quality of school facilities and students' performance when other factors known to impact student performance are accounted for'. But they quickly add that 'policy makers should be aware that investments in facilities by themselves are unlikely to improve student learning' (Picus et al., 2005). The Department of Education (USA) (2000) warns that:

Decaying environmental conditions such as peeling paint, crumbling plaster, non-functional toilets, poor lighting, inadequate ventilation, inoperative heating and cooling system can affect the learning as well as the health and the staff morale of staff and students'.

Crook (2006) as cited in Cash and Twiford (2009) reports of a link between building condition and student performance arguing that building condition is a predictor of student performance. The positive link between building and student achievement has also been highlighted by Cash and Twiford (2009) who argue that:

Research continues to support the positive relationship between building and student achievement. Researchers within the United States have been joined by international researchers in confirming the link between the building and achievement.

Also Cash and Twiford (2009), report that poor building condition has a negative impact on student attendance. Without school attendance no effective learning would take place (Cash and Twiford, 2009).

Study context

Based on the new constitution (2010), the provincial administration that comprised of the province, district, division, location and sub-location have been restructured such that the eight provinces (Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, Rift valley and Western) have been replaced by 47 counties (Onderi and Makori, 2013; Omari, 2011). Therefore Nyamira is one of the 47 counties in Kenya (Onderi and Makori, 2013). The number of counties is based on the number of districts created under the provinces and Districts Act of 1992 (Tisa, n.d). The county constitutes the second level governance after the national one (Soft Kenya, n.d). Therefore counties of Kenya are geographical units for devolved government based on the 2010 constitution of Kenya (Onderi and Makori, 2013). Nyamira County is located in Nyanza province and is made up of three districts, namely, Manga, Nyamira and Borabu (Kenya

Open Data Project, 2011). According to the new constitution (2010), county government are to replace the provincial and local government administration system which has been existence since independence (Omari, 2011). Nyamira district, part of Nyamira County has been noted for its poor performance in mathematics (Yara and Wanjohi, 2011). Yara and Wanjohi (2011) observe that a student's performance in mathematics is underpinned by the type of school he or she attends, because some schools have qualified and experienced mathematics teachers and good learning environment than others, and this could be true for other subjects as well. However, literature on learning resources in the County is limited. But studies conducted in Gucha district in the Kisii County reveals that school had inadequate physical learning and teaching materials (Obegi, Ondigi and Oburu, 2010). The study further reveals that the ratio of text-books : pupils was 1:20 (Mobegi et al., 2010). There are 143 secondary schools in Nyamira County with a total student population of 49,800 (Onderi and Makori, 2013).

METHODOLOGY

The study reported in this article was conducted to increase knowledge and understanding about the complex nature of the challenges that confront school principals as they execute their roles and responsibilities. The focus is secondary school principals' perception on learning resources. The data will contribute to building a knowledge base for understanding the nature of the challenges linked to learning resources as perceived by the principals. The study involved eighty one secondary schools which were purposively sampled from which eighty one principals were obtained as participant for the study. Initially, one hundred schools were sampled and contacted but in the end only eighty one responded representing a response rate of 81%.

Data was collected from eighty one principals. Prior to data collection, the researchers sampled and contacted school heads and invited them through a letter to take part in the study. In the letter, the researchers introduced themselves, described the purpose of the study, explained what the participants were expected to do, indicated that they had a choice to opt out of the study at any time without any negative consequences on their part, assured them confidentiality and therefore undertook to keep their personal details strictly confidential and use them only for the purpose of research. At the end of the letter, participants were requested to sign a declaration of informed consent form in which they confirmed their understanding of the content of the letter, the purpose and nature of study and their voluntary participation in the same, what was expected of them and therefore their willingness to participate in the study. Questionnaires were delivered to one hundred principals but only eighty one completed questionnaires were returned. The study is quantitative in nature and employed a survey technique to collect data. Questionnaires were used as the main tool for collecting data. Questionnaire format consisted of closed, open-ended and rating scale items. This was necessary to diversity responses as well as reduces what Watson and Coombes (2009) in Onderi and Makori (2012) call 'question fatigue'. The first part of the questionnaire collected demographic or background information including gender, years in headship, headship, school size, school setting whether rural or urban, whether mixed or single sex, denominational orientation, relationship with PTA and BOG and secondary school tier whether national, provincial or district. The open-ended section offered the respondents an opportunity to

make a comment, expand or clarify some information on their responses and thus help the researchers gain some insight in their perspectives on challenges affecting their roles and responsibilities in educational institutions. The open-ended comments or responses were analysed and result strengthened the closed-ended results. The resulting quantitative data was analysed using SPSS for obtaining descriptive data.

RESULTS

Participants' characteristics

The participants were mainly secondary school principals and were 81 in number ($n = 81$). 70% of them were males while 30% were females. This perhaps suggests something about females' representation in the educational leadership or decisions making positions in secondary schools. Just fewer than two-fifths had been in principalship position for less than five years, a third between five and ten years and another a third over ten years. Combining those that had between five and ten years of headship experience and those that had over ten years gives 63%, thus suggesting that a significant number of principals had substantial leadership and/or management experience in secondary schools. Just over 40% were in their first headship; just fewer than 40% were in their second headship and just over 10% in their third headship. So, combining those who were in their second headship, those in their third headship and those beyond third headship gives 58%, suggesting that over half of them had significant experience of working in more than one secondary school. 42% worked in small secondary schools, 43% in medium school, 11% in large school and 4%, in mega secondary school. 83% worked in secondary schools which were located in rural settings. 89% worked in public schools, while 68% worked in a faith or church related schools. 64% of the schools were district schools, 27% provincial and 9% national schools. 46% were mixed schools, 21% mixed day, 15% were girls boarding and 7%, $n = 81$) were boys boarding. A majority (90%) of the principals rate their relationship with PTA as good or excellent. Also, a majority of them (85%) rated their relation with BOG as good or excellent. This suggests that the school principals had positive relationship with key individuals with the school governance team.

Resources in secondary schools

The study participants were asked to rate the following items (library, textbooks, classroom, furniture, laboratory, staff, workshop, playground, sports facilities) facilities as none, poor, average, good or excellent in relation to teaching-learning. The result is illustrated in Table 1. Based on Table 1, some schools have no library, laboratory, workshop, and playground and sports facility. Just 1/3 rated the library as good or excellent, just over

Table 1. Percentage distribution of secondary schools resources.

Resources	None (%)	Poor (%)	Average (%)	Good (%)	Excellent (%)
Library	19.8	21	27.2	25.9	4
Textbooks	-	7.4	51.9	35.8	-
Laboratory	11.1	16	37	29.6	4.9
Classroom	-	17.3	33.3	42	6.2
Furniture	-	12.3	45.7	37	3.7
Staff	3.7	13.6	46.7	32.1	2.5
Workshop	46.9	18.5	27.2	6.2	-
Playground	3.7	24.7	45.7	22.2	2.5
Sports facility	1.2	19.8	53.1	17.3	3.7

n = 81

Table 2. Percentage rating of secondary school resources.

Resource	Not Important (%)	Important (%)	Very important (%)	No response (%)
Library	2.5	12.5	81.5	3.7
Textbooks	1.2	9.9	86.4	2.5
Classroom	1.2	21	75.3	3.5
Furniture	-	32	32	1.2
Laboratory	1.2	12.3	76.5	9.9
Staff	1.2	11.1	82.7	4.7
Workshop	3.5	42	34.6	-
Playground	3.7	61.7	33.3	1.2
Sports facility	2.5	55.6	34.6	2.5

n = 81

1/3 rated text books and laboratory as good or excellent; just over 2/5 rated classroom and furniture as good or excellent; 3/50 rated workshop as good and just over 1/5 rated playground and sports facility as good or excellent. This suggests that a significant portion of secondary school principals in the study rated the teaching-learning resources as average and below.

The study participants were asked to rate the resources in Table 2 as not important, important and very important in relation to the teaching and learning process. In order of importance arranged in descending order (based on the sum of important and very important (%): text books (96.3), classroom (96.3), playground (95), library (94), staff (93.8), sports facility (90), Laboratory (88.8), workshops (76.6), furniture (64). Textbooks and classrooms were accorded similar status in the teaching and learning process. Furniture is the least in importance, perhaps suggesting that students can still learn whether they have furniture or not. It is assumed that furniture here refers to desks, lockers and chairs, among others.

The study participants were asked to rate the resources and activities in Table 3 as poor, average, good or excellent. In order of importance arranged in descending order based on the sum of good and excellent percentages: syllabus coverage (66.7%), textbooks (65.5), library (63%), laboratory (56.8), classroom (44.5),

furniture (39.5), availability of funds (38.3%), staffing level (37%) and set books (23.5%). This seems to suggest that in the free secondary education regime furniture, staffing level and set books are rated unfavourably. This may suggest issues of either quantity and/or quality, further suggesting that some schools may not be having the required amount of the item (s) or they have the items but the quality is poor.

The study participants were asked to rate funding sources in Table 4 as poor, average, good or excellent. In order of importance arranged in descending order (based on the sum of good and excellent (%): Free secondary education (FSE) (57.9), Parent Teacher Association (PTA) (54.3); Constituency development fund (CDF) (43) and Local authority transfer fund (LATF) (14.8). As a financial source, LATF was perceived as the least important.

How do you rate Kenya's free secondary education system?

Those who rated the free secondary education system as average and below made some comments. Analysis of their comments yielded information that covers two main aspects, namely government subsidy are inadequate and

Table 3. Percentage rating of resources in the free secondary education era.

Resource	Poor (%)	Average (%)	Good (%)	Excellent (%)	No resp. (%)
Library	8.6	27.2	39.5	23.5	1.2
Textbooks	2.5	30.9	38.3	27.2	1.2
Classroom	21	32.1	23.5	21.0	2.5
Furniture	17.5	42.0	21	18.5	1.2
Laboratory	8.6	33.3	33.3	23.5	1.2
Staff level	17.3	44.1	33.3	3.7	1.2
Availability of funds	13.6	46.9	35.8	2.5	1.2
Set books	42.0	33.	21	2.5	1.2
Syllabus coverage	3.7	28.4	63	3.7	1.2

n = 81

Table 4. Percentage rating of financial sources by school principals.

Financial sources	Poor	Average	Good	Excellent
Local authority transfer funds (LATF)	61.7	23.5	12.3	2.5
Constituency Development Fund (CDF)	19.8	35.8	39.5	3.7
Parent Teacher Association (PTA)	8.6	35.8	42.0	12.3
Free Secondary education (FSE)	6.2	24.7	59.3	8.6

n = 81

unreliable. On the inadequacy of government subsidy, three comments were made and one of them read thus: "The amount given is usually very small that it may not be able to meet the school's need especially during inflation". On the issues of reliability of the government subsidy, eight comments were made and two of the comments read thus: 1) "The disbursement of funds usually delays which leads to straining of the school resources"; 2) "Funds do not come or not remitted on time hence planning of school activities at the beginning of every term is greatly affected." However, two comments were made on the positive note regarding government subsidy, the two comments read thus: 1) "We now receive government fees to cater for the poor compared to the old days"; 2) "It is supportive to the school management, parents and learners. But, it has made some parents not to be serious to fees payment because they believe everything should be free including food".

DISCUSSION

This study set out to investigate the principals' perception of the learning resources as well as funding sources. The investigation consisted of four questions:

How do you rate the following resources/facilities?

The participants were given a table consisting of resources/facilities and were asked to rate them as none,

poor, average, good or excellent (Table 1). It is evident from the table that a number of secondary schools in the study do not have library, laboratory, and workshops, playground and sports facility. Also, a significant number of the principals rated resources/facilities as average and below suggesting that those who have them are not impressed with either their quantity and/or quality. For instance, 11.1% of the principals indicated that their schools do not have laboratories and 53% rated the laboratories as average and below. However, these findings make sense in the context of those studies that have established a positive association between resources and academic achievement. For instance, library (Jeiyeba and Atanda, 2011); text books (Lockheed et al., 1986); teacher shortage (Marks, 2010); resources (Tow, 2006); school expenditure/finance (Fabunmi et al., 2007; Lewin, 2000); sports facility (Broh, 2002) and environment (Schneider, 2002). Other specific examples include, Jebson and Moses (2012) who underscores the importance of resources, arguing that 'learning resources play a paramount role in the teaching and learning of science subjects and inevitably the students' academic achievement in the subjects'. Fabunmi et al. (2007) and Shimada (2010) have cited class factors and class size. Owolabi (2012) also observes that student's poor performance in physics in the world is due to lack of qualified and experienced teachers as well as unavailability and/or insufficiency of material in the laboratories. Ajayi and Ogunyemi (1990) as cited in Owoeye and Yara (2011) have indicated that the overall net effect of students accessing and using resources such as libraries increases overall academic

performance. However, the findings of this study make no sense to studies that have established no link between resources and students' academic achievement (e.g. Coleman, 1966 as cited in Steele et al., 2007).

How do you rate the following resources or facilities in order of importance in relations to the teaching and learning process?

Participants were given a table consisting of resources and were asked to rate them as not important, important and very important (Table 2). The result was arranged in order of importance in descending order. Furniture was ranked bottom followed by workshops and laboratory. This says something about the school in relation to offering science and technical subjects. Owolabi (2012) attributes poor or low academic performance in science to inadequate good instructional materials and equipment, facilities, lack of qualified teachers and laboratories. Oladejo et al. (2011) also argue that teaching physics without instructional materials may certainly result in poor academic achievement.

How do you rate the following in relation to free secondary education?

Participants were given a table (Table 3) consisting of resources and asked to rate them as poor, average, good or excellent in relation to free secondary education. The study result shows that classrooms, furniture, availability of funds, staffing level and set books scored below 50%. Lack of funds has been identified as a serious constraint affecting a number of schools in SSA and subsequently affects the quality and quantity of resources available in schools (Lewin, 2000). Lack of adequate and up to date books in schools has been cited by Farombi (1998) as cited Owoeye and Yara (2011). Lockheed et al. (1986) asserts that libraries which are equipped with adequate and up to date books encourage independent learning among students.

How do you rate the way the following as financial sources?

Participants were given a table (Table 4) consisting of four sources of funding secondary education, Local authority transfer funds (LATF), Constituency development fund (CDF), Parent teacher association (PTA) and Free secondary education (FSE) and were asked to rate them as poor, average, good and excellent. Free secondary education (FSE) and parent teacher association (PTA) were ranked best compared to CDF and LATF. LATF was considered the least as a financial source to secondary schools. However, those who rated

FSE as average and below indicated that it was inadequate and unreliable as a source of financing secondary education. This was also picked from the comments made in the open-ended section of the questionnaires. The comments made indicate that government subsidy in both inadequate and unreliable. Lewin (2000) argues that finance is a key determinant in providing learning materials, infrastructure and equipment. But Hanushek (1986) as cited in Lockheed et al. (1986) and Häkkinen et al. 2003 argue that 'there appears to be no strong or systematic relationship between school expenditure and students' performance. Lack of adequate and reliable source of funding is likely to result in limited facilities/resources which may lead to poor academic performance (Ohba, 2009). Also, free secondary education funding may continue to be inadequate and unreliable due to increasing financial resource needs and government financial deficit (Ohba, 2009). Lack of adequate and reliable source of funding is likely to put pressure on schools to continue to charge levy (Ohba, 2009). Charging levy is likely to discourage children of households from disadvantaged background to successfully access and participate in education.

Conclusion

This study set out to investigate secondary principals' perceptions on learning material/resources as well as sources of funding. The study findings show that some schools did not have important resources such as libraries, laboratories and workshops. Also, those that have rated them unfavourably suggesting that their conditions, quality or quantity were a source of concern. In terms of their contribution to the teaching and learning process, classrooms and textbooks were rated higher while furniture least. The rest of the facilities fall in between. This seems to suggest that furniture was considered least in importance in relation to teaching and learning perhaps suggesting that students can still learn even without furniture e.g. desks and chairs. Just fewer than 60% of the principals attributed poor examination performance to the state of the teaching and learning resources. In terms of the funding sources, free secondary education and parent teacher association were considered favourably than Constituency Development Fund (CDF) and Local Authority Transfer Fund (LATF). However, some comments made regarding free secondary education by those who rated them poor or average raise some concerns such as government subsidy being inadequate and unreliable. The comments seem to suggest that free secondary education though rated favourably is not an effective source of funding for secondary education system. It can also be concluded that such a state of learning resources may affect teachers' morale and job satisfaction negatively. It can also be argued logically that if the teachers' morale is

low, teaching and learning would be negatively affected and obviously students' attainment is likely to suffer.

RECOMMENDATIONS

Poor funding often result in poor teaching and learning resources. The study has indicated that the current sources of funding are inadequate and unreliable and therefore the government needs to take action to improve the efficiency of the funding sources. For instance, Radoli (2011) reports some loopholes identified in some school by the Kenya Anti-corruption Commission (KACC) and include: failure to maintain books of accounts; lack of project files; lack of monitoring and evaluation structures; lack of project management committees (PMCS); failure to involve stakeholders right from identification and prioritisation, through to implementation; failure to involve government technical experts in the project implementation process and conflict of interest among the Constituency Development Fund Committees (CDFCs). It is therefore important for the government to deal with the string of loopholes identified in order to make these funds available to schools adequately and reliably. It is also important for the government to ensure and/or encourage the development the capacities of stakeholders in order for them to be effectively involved in all the projects stages and processes as well as monitoring and evaluating the effective or appropriate use of CDF and LTF among other sources of funding.

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