

School Management-Output Model

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Abstract

Gori's School Management-Output Model explains how the community which is the epicentre and kingpin as a source of resources and production of inputs are manipulated through management (processing of inputs) at schools to form outputs and outcomes for the outer environment (see Fig. 1). There were 8 independent research variables and one dependent variable that were tested for relationships in different management aspects and schools' academic performance using Pearson r at an alpha level of .05, a df of 143 and a critical r of .166. All the 8 independent variables were found to have positive relationships with the dependent variable. Under multiple linear regression test, the 8 independent variables were treated as predictors to a dependent variable (outcome) to test to what extent each one of the 8 contributed to the outcome variable (perceptions of secondary schools' academic performance). Results indicated that Adjusted $R^2 = .969$; $F_{7, 137} = 638.1$, $p < .05$. These results show that seven of the variables significantly predicted the perceptions of secondary schools' academic performance (outcome) in Gucha. Overall, this result shows that the 7 predictors accounted for 97% of the variability in the dependent variable which was very high thus the conclusion that the model under test was a success.

Key Words-Board of Management (BOM), Parents Teachers Association (PTA), Principal, Community, Environment, output, Outcome

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1. Introduction

Gori's school management-output model was developed between 2008 and 2013 at the University of Botswana as conceptual framework for use in a PhD thesis preparation with the title "Decentralized educational management: Its implications on academic performance of secondary schools in Gucha district, Kenya". In the designing and development of this model, reference was made to "model of an open system" (Hanna, 1997); "an input-output open systems model of educational organizations" (Levacic, 1997); and "the open systems model of organizations" (Mullins, 2002). Information on models of educational leadership and management was helpful on what models are and how they can be applied (Bush, 2003). On the input-output of organizations upon which this model is designed, this model stresses that it is the management of resources that determines the nature of output from schools to other levels. The works of Levacic (2000) and Ross & Levacic (1999) proved useful in this aspect. Figure 1 shows that this model has two types of environments which work complementarily. These are the community or the inner environment which is referred to as environment A and the outer environment which is referred to as environment B. However, it should be noted that there are no clear or permanent boundaries drawn between the inner and outer environments (see broken lines used to show the boundaries). While the inner environment is a wide area surrounding the school location that extends to cover the whole country and beyond, the outer environment that is referred to in this model covers the whole country including the area around the school and it extends to areas outside the country boundaries (see Fig.1 for details). In this model, it is a school in the inner environment that imparts knowledge and skills (processing) to learners who go to the same environment (environment A) as outputs and outcomes as others are transferred to the outer environment as outputs and outcomes and as inputs to other organizations. In this model, it is the management bodies which are also supplied by the community from environment A that manage the resources during processing stage. The resources to be managed are supplied by the community from environment A as inputs to the school. The management of the resources (inputs) determines the quality of output/outcomes to the outer environment.

2. Methodology

Research for the production of school management-output model was carried out in Gucha District (Gucha Sub-County) in Kenya. The target population comprised of 138 secondary schools. Stratified random sampling was used to arrive at 41 schools and 164 teachers as an accessible population. The researcher used cross sectional research design. According to Gay, Mills and Airasian (2006) and Gall,

Gall and Borg (2003), this design allows one to collect data within a short period of time in a given point (area). As Bryman (2004) notes, testing of tools' reliability is paramount. Questionnaire reliability was tested using Chronbach's alpha index and was found to be .863 while the testing of relationships between the different independent variables and dependent variable was done using Pearson r at an alpha level of .05 and a df of 145. To determine the rejection or acceptance of the null, a critical r of .166 and the observed r were used (see Table 1)

In testing whether there was a relationship between management by BOMs, PTAs and principals on resources in secondary schools in Gucha District (Gucha Sub County) in Kenya and academic performance (output) from schools, the following independent variables were involved as shown in Table 1. Table 1 also shows a summary of the analysis output for the 8 independent and a dependent variable. For all the 8 independent variables, results indicated that there existed relationships with the dependent variable. This indicated that management of the said resources and the related aspects considered in this study had a relationship to academic performance of secondary schools in Gucha district (Sub-County).

However, when subjected to multiple linear regression, to test to what extent each one of the predictors contributed to the outcome variable, one of the predictors was dropped thus Adjusted $R^2 = 969$; $F_{7, 137} = 638.1$, $p < .05$.

Table 1
Variables' Means, Standard Deviations and Observed r

Variable	M	SD	r
Principals efficiency in managing decentralized resources	1.61	.375	.473
BOM & PTAs efficiency in managing decentralized resources in schools	1.81	.330	.947
Level of funds availed for use in schools	1.63	.415	.729
Managerial experience of principals	1.57	.537	.536
Where the principal hails from within the community	2.03	.727	.670
Academic Status of BOM/PTA members	1.71	.576	.481
Principals' attitude towards decentralization of resources for use in schools.	5.01	1.41	.741
Principals' perception toward decentralization of resources for use in schools.	1.56	.464	.746
Secondary schools academic performance	1.65	.297	

$p < .05$, $df = 143 (145-2)$; Critical $r = .166$; $\alpha = 0.05$.

These results show that seven variables significantly predicted the perceptions of secondary schools' academic performance in Gucha. Overall, this result showed that the seven predictors accounted for 97% of the variability in the dependent variable which was very high. Out of the results, it was concluded that management of resources by BOM, PTA and Principals had a relationship to academic performance of secondary schools in Gucha District (Sub-County) in Kenya. This is in line with Dambe, et al (2008) who found out that it is not the abundance of resources that matter for the production of quality output from secondary schools but the management of the available resources.

3. The Ingredients of the School Management-Output Model

3.1 Inner Environment (Environment A)

The community which forms the inner environment (also referred to as the internal environment) is a group of people who belong to one geographical area (see figure 1). However, according to this model, community that is referred to as inner environment may extend to other areas so long as the inputs to the school are drawn from there. In this case the international community and other parts of the nation qualify as a community for environment A so long as they qualify as input suppliers to the school. First and foremost, the community is charged with the responsibility of erecting (establishing) a school, secondly it supplies students (inputs) to the school, thirdly, it supplies the Board of Management(BOM) and Parents Teachers Association (PTA) as management bodies to the school and lastly, it gives the human resources required by the school (see Fig. 1). The nature of the output to the outer environment (external environment) will therefore depend on the quantity and quality of the resources from the community and above all the quality of the management teams that manage the supplied resources in schools. The inner environment supplies two categories of inputs to the schools. These are resources and management. Resources include human (teachers, students and support staff), finances and materials. On the other hand the management category comprises of BOM, PTA, the Principal and the community members (public).

3.1.1 The School

The school is the most important component of the inner environment. The community is charged with the responsibility of erecting the school through community, government and donor funds. Once established, the resources from the said bodies to the school are managed for the school's output. The government funding comes to the school in several ways.

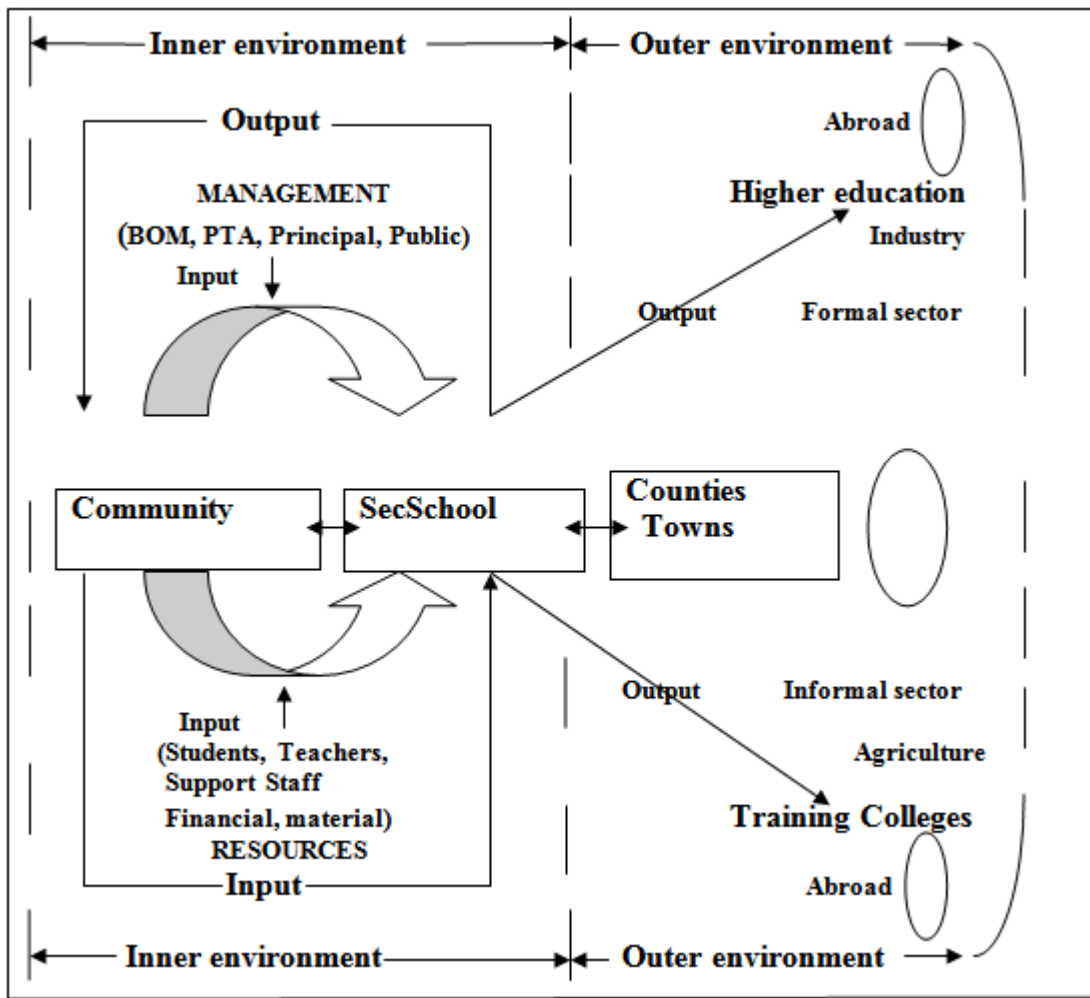


Figure 1. Gori's School Management-output Model

However, the most important methods are first formula funding and payment of teachers by a government parastatal body called Teachers Service Commission (TSC) after recruitment is done by the school's BOM. Other than first formula funding, school funding criteria has no uniformity and this has an impact on the performance of students since resources from communities are not uniform just like the management bodies. As Bray (1996) noted, community funding to schools is erratic. The school is a confluence for the resources and management inputs. This is a place where formal and informal learning takes place through the instruction of agreed curricula for the production of outputs to the community and the outer environment (Pearsall, 1998). As indicated in figure 1, the school is the focal point in this model. Referred as a processing plant, the school processes the inputs with supervision by the management input. According to this model, it is management of the resources in a school that determines the nature of the output to the outer environment.

3.1.2 Board of Management (BOM) and Parents Teachers Association (PTA)

These include the BOM, PTA and the Principal. The BOM, PTA and the principal all come from the immediate environment (Bray, 1996; Gori, 2014). The quality of the management teams is important and this is reflected in the output which at glance will be through the

students' pass rate at the external examinations. While the principal is appointed by the BOM, the PTA and BOM members are elected at the schools' annual general meetings from among the community members who also double as parents. According to this model, BOM and PTA members' level of education, management skills, management experience and qualification are essential in their deliberations and this has impacts on the output (World Bank, 2008 & Koech, 1999). Their ability to mobilize and organize the resources for management for performance in a school is essential. Earlier research by Dambe, Moorad and Afemikhe (2008) in Botswana's Community Junior Secondary Schools (CJSS) found out that availability of resources is not a sufficient condition for utilization of resources but managing of the available resources takes a central role in school performance. In their management of schools, BOM and PTA members in conjunction with the principal, organize for the availing of resources to schools and supervise the utilization of the said resources for the schools' benefit. Specifically the management teams allocate the resources, supervise the teaching and manage the finances for the benefit of the learners as an input under process in the school. It is out of this that the schools are categorized in terms of the quality of output. In this case output is measured based on the quality of grades attained by learners after doing external exams.

3.1.3 The School Principal

The principal, who is charged with the responsibility of running a school on a daily basis, is appointed by the BOM in collaboration with the Ministry of Education whose representative is at the county headmasters. However, the BOM and PTA members have all the powers to appoint a principal of their choice with the government (Ministry of Education) "rubber stamping" the appointment. It is also noted that the ability of the principal as a manager is an important aspect in the determination of the quality of output from a school (Marks & Printy, 2003). The principal manages the resources in the school which are supplied by the community in conjunction with the BOM and PTA members. Such resources include the teachers, the support staff, materials and finances. The principal is the accounting officer of the school and all the monies coming to school are under the principals control for the management team. Proper financial management therefore will count greatly for the nature of output since the finances are used to purchase other resources both consumables and permanent ones for management (Turner & Hoy, 2004). In this regard, this model therefore recognizes the principal as the custodian of management of resources for school performance. The model emphasizes that his failure to manage well will be reflected at the school's output level.

3.1.4 Members of the Public (Community Members)

These are ordinary members of the community where the school is located. While these people do not have the formal powers of inspecting the school, removing any of the management teams in a given school, their views about the performance of the members of the management teams and the school in general are taken into consideration. As Bray (1996) notes, the community plays an important role not only as financiers but also as "inspectors" to the schools that they erect within the community. This is because among others, they are

part and parcel of the school because they are involved in donating land for school erection, funding it and in the election of the management team members. They are therefore indirectly involved in the management of the school. They form stakeholders of education portfolio in the community. Their complaints on how the schools are run do not go unnoticed but are strongly taken into consideration. If they do not want a school principal or teacher, they can remove him/her at any time since they have direct access to the County education and TSC officials at County level. For example if the BOM member cannot address their needs, they have the freedom of going direct to the County Director of Education (CDO) or County Director of TSC to seek attention about their issue. The members of the public form a very important informal management teams within the community where the school is located.

3.1.5 Resources for use in Schools

This is the supply of money, materials and staff to a school (Anderson, Briggs & Burton, 2001). The change to self-management of schools has changed the context of resource supply and allocation to schools. Availing of resources is important to schools' performance (Gori, 2014). One major function of resource management is to attract resources into the organization. In most cases in many schools, resources enter in form of money which is then transformed into real resources like staff, learning materials and consumable goods for learning. This therefore could have an impact in performance because it is the real resources that are mostly depended on for good performance in schools.

The supply of resources to schools in decentralization era in many developing countries where decentralization of governance is adopted, is delegated to the community (Gori, 2014). These include the supply of teachers, support staff, money, learning materials and equipment and above all students who form an important element as input. The community's ability to supply this important component is extremely crucial to the schools' performance. Unlike formula funding that is common in developed countries where there is uniformity in funding of schools, the community funds, equips and supplies staff to schools unequally depending on their ability. Once the community and the government supplies resources to schools, it is up to the managers who are also supplied by the community who utilize them through management for performance. This has consequences not only in the quality of school buildings but also on the learning equipment and materials. Management of the availed resources by the decentralized personnel therefore can determine the quality and quantity of output to the outer environment (Levacic, 2000).

Supply of students to schools from the community is a very important aspect of management – output model. Students as inputs to secondary schools come from primary schools that are found in environment A. Though the entry behavior is important, Dambe, et al (2008) argues that it is the management aspect that matters during the processing stage (teaching) for the kind of output from each school. As output, the students go to the two different environments depending on the quality of output. Some go to environment B to join different institutions while some go back to environment A.

3.2 The Outer Environment (Environment B)

In this model, the outer environment which is referred to as Environment B is characterized by institutions that receive the output from the inner environment (Hanna, 1997). Some of the components of this environment where the output from the inner environment are absorbed include: higher institutions of learning e.g. Universities and training colleges; employment e.g in the formal and informal sector in both agriculture and industry; farming and business and other countries which in the model are referred to as abroad (see Fig. 1).

3.2.1 Institutions of Higher Learning

These institutions which include universities and training colleges admit students using minimum set qualifications irrespective of the schools where they come from in the inner environment. They accept students for qualifications ranging from non certificate courses to degree courses but entry (acceptance to join) is based on qualification attained from secondary schools that are found in the inner environment. In figure 1, it is shown that the output will not only go to the outer environment but will also be retained in the inner environment where they came from as inputs. In this case the difference between those who go to the outer environment and those who remain in the inner environment can give an assessment of the management and community supplied resources to schools. It therefore means that if management of resources in schools is well done, there will be more and quality output to higher institutions of learning which are found in the outer environment. In this model the outer environment institutions may as well be found within the inner environment and some output may not necessarily move very far to join such institutions.

3.2.2 Employment of Output from Schools

Employment opportunities exist in both the outer and the inner environment where the outputs go after several years in secondary schools. They include employment in government and private institutions and in both agriculture and industry. The ability to secure employment by the output depends on the qualification of that output and this qualification is the outcome of the management at schools. According to this model, more and quality output depends on the management of resources which in turn will help the students to do better in external examinations. The output will be absorbed not only in the formal sector but also in the informal sector. Those who are less qualified will join the informal sector and once again conditions held constant, the difference between those employed in the informal sector and formal sector has a reflection of the management of resources in schools.

3.2.3 Farming and Business and Abroad

Some of the output will go to the two environments to practice farming and do business. However, low achievers from secondary schools find themselves landing in farming and business at early ages because this could be the option among others since their qualifications could not allow them to join higher institutions of learning. However, it should be noted that not all those that join farming and business could be low achievers. Some may join these sectors willingly. On the other hand depending on the quality of the output, some from secondary schools go abroad for studies. Once again it should be noted that in most cases

other than those who go abroad because of other reasons like to join parents, quality of those considered by foreign institutions must have performed well to meet the standards of institutions in those foreign countries. According to this model, it is management at school level that brings about this aspect.

4. Summary

The management-output model which emphasizes that management of resources is the determinant of the quality of the output from schools, assumes that the quantity of such resources does not matter. It stresses that what matters is the quality of the management that will lead to quality output. This model therefore advocates for highly educated, qualified and experienced managers for both quantity and quality output to both environments A and B. It stresses that the principal who is the day- to- day manager must be a person who should be depended on most and that his/her guidance to the BOM and the PTA is essential in the school for quality output. What does this model tell us about schools' performance? The model shows that under decentralized educational management era in many countries, it is the community that matter most and that the community's contribution in terms of the supply of managers and resources to schools do determine the output and outcomes from schools. It shows that if there is efficient school management (principal, BOM and PTA) at the processing level (teaching in schools), then the output from secondary schools can be qualitative with good grades attained after doing external examinations. This model shows that it is the managers at schools who determine the quality of the processing (teaching) after the community has supplied the resources and this means that the output will be a reflection of the work done by managers.

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