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Structural Dynamics of Education Reforms and Quality of Primary Education in Uganda

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ABSTRACT.

This paper examines Uganda's recent undertaking to reform her Primary School education System with a focus on the effect of structural dynamics of education reforms and the quality of primary education. Structural dynamics in the context of this study is in reference to the organizational composition of the education system at the government, ministry, district and school level, where formulation, implementation, management, monitoring and evaluation of Primary education reforms programmes (PERPs) processes and activities take place.

Key words: structural dynamics, education reforms, quality primary education.

1. Introduction

The structural dynamics constitute elements such as school administration and management structures, class size, teaching-learning resources, staff development and motivation as well as community involvement, among others, which influence the likelihood of the education reform processes to promote the quality of primary education in Uganda. Many studies cited in the [23] report show that the head teacher is a key factor to the success of school improvement efforts [2] [20] [21] [22]. In studies about successful implementation and sustainability of reforms, the teachers highlighted head teacher's awareness of the change process, the strengths of the teaching staff, and the necessity of allowing teachers to develop ownership of the reform [15] as key factors for the successful implementation of reforms.

Furthermore, the RAND study that measured principal efficacy through teacher reports about their principals indicates that teachers valued principals who communicated clearly about expectations, supported and encouraged staff, obtained resources for the school, enforced student conduct rules, talked with teachers about teaching practices and showed confidence in teacher expertise [12]. In the same breath, [4] identified a range of principal behaviors that contributed to the successful institutionalization of a particular whole-school reform model. These behaviors included supporting the staff, promoting communication, demonstrating skill in human relations, enhancing parental involvement and interacting with the broader community.

Continuity of leadership has been given in the [23] study as a key constituent of reform longevity (Datnow, in press). However, for the reform to be a taken-for-granted feature of school, it must permeate the very fabric of the school structure and cease to be identified with any one person. Similarly, [7] in their profiles of successful schools taking part in Canada's Manitoba School Improvement Program, note the existence of what they termed as a broad base of leadership structure. In this C*f*BT initiative, schools that were particularly successful in achieving their improvement goals showed change-directed leadership from a collection of individuals within the school as opposed to a single individual.

2. Methodology

A cross-sectional survey research design was used because it allowed for the collection of data from different categories of respondents and gave greater latitude of obtaining large samples, which allowed better generalizations. It was an appropriate method of data collection, not only because surveys are among the most commonly used tools to collect data [19], but also because they permit for a thorough investigation of the phenomenon through the collection of a large amount of data from a variety of respondents in a relatively short period of time [18] [9] [1]. Furthermore, a survey was deemed profitable in this study because it accommodates a variety of methods with a data gathering strategy that can facilitate a qualitative and quantitative understanding of the study problem [8][1].When applying this design, data is collected using mainly interviews and questionnaires and is often analyzed using descriptive analysis [14]. However, in this particular study, a two-pronged approach of quantitative and qualitative approaches was adopted.

3. Sampling

The purposive sampling technique used in the selection of the respondents included; Members of Parliament (MPs), Education officers, Policy analysts, SMC & PTA members. Purposive sampling enabled the study to select respondents on the basis of their knowledge about primary education reforms and their experience in managing primary school affairs. According to [6], purposive sampling enables the study to acquire an in-depth understanding of the study. The four districts were purposively selected from rural and urban areas of the four regions in Uganda.

On the other hand, the simple random sampling technique was used to select Headteachers/School Directors/Deputy Headteachers and Teachers. Random sampling in this respect strengthened the external validity of the study [1] at least at the district and regional levels. Besides, the simple random method facilitates generation of quick responses especially with large samples and allows equal chance and independent chance of being selected for the sample [6] [1]. This facilitates predictions and generalization about the population, on the basis of statistically valid results [7]. Random sample was therefore the best way to obtain representative samples for the study. The sample was based on [11] the table of samples for finite populations.

4. Data Analysis

The data collected in this paper was organized, sorted and interpreted data, and to attach meaning to it [13]. It was collected directly from different schools; the unit of analysis was at the school level, which was the preferred approach when examining school performance [9] [5]. During data collection, careful scrutiny of the captured data was done to ensure consistency, accuracy and completeness of the questionnaire and in-depth interview guides. Later, data was edited, coded and entered into the computer and subsequently analyzed using the Statistical Package for Social Sciences (SPSS). Data was both quantitative and qualitative.

5. Results and Discussion

At first, the study sought to establish the stakeholders' opinion about the extent to which they thought the structural dynamics of education reforms affected the quality of primary education as represented in Table 1.

Table 1: Structural dynamics impact on quality of primary education

Items relating to Structural Dynamics	Agree (n/%)	Not sure (n/%)	Disagree (n/%)	Mean	Std. Deviation
School policy implementation	312 (86.3%)	2 (0.6%)	47 (13.1%)	4.14	.941
Teacher-pupil ratio in the school	189 (52.4%)	7 (1.9%)	165 (45.7%)	2.60	1.068
Availability and provision of teaching aids	228 (63.2%)	9 (2.5%)	124 (34.4%)	3.60	1.112
Teacher remuneration	255 (70.6%)	4 (1.1%)	152 (28.3%)	2.85	1.105
Provision of teachers' accommodation at school	217 (60.1%)	4 (1.1%)	140 (38.7%)	3.49	1.133
Availability of classrooms	125 (34.6%)	7 (1.9%)	129 (35.7%)	3.19	1.131
Availability of teachers	141 (67.0%)	2 (0.6%)	118 (32.7%)	3.06	1.131
Cooperation between management and teachers (motivation)	256 (70.9%)	10 (2.8%)	95 (26.3%)	4.05	1.147
Stakeholder's involvement	259 (71.7%)	24 (6.6%)	78 (21.6%)	3.58	1.342
DEOs participate in educational policy	283 (78.4%)	14 (3.9%)	64 (17.7%)	3.58	1.261
SMC members participate in educational reforms	229 (63.4%)	7 (1.9%)	25 (6.9%)	3.88	1.094

Source: Primary data

Table 1 shows that 86.3 per cent of the respondents agreed that school policy implementation has an effect on the quality of education, 52.4 per cent felt the same about teacher-pupil ratio; 63.2 per cent agreed that availability of teaching aids affected the quality of education; 70.6 per cent were positive about teacher remuneration; 60.1 per cent agreed that teachers' accommodation at school affected education quality; 34.6 per cent agreed that availability of classrooms affected quality of education; 67 per cent were positive about availability of teachers; 70.9 per cent agreed that cooperation between management and teachers affected the quality of education; 71.7 per cent were of the view that stakeholder's involvement affected the quality of education; 78.4 per cent were

positive about DEOs participating in educational policy; and, 63.4 per cent agreed that SMC members' participation in educational policy affected the quality of education. The fact that the majority were in agreement indicates that, indeed, structural dynamics influence the quality of education.

During interviews, the study sought to establish why and how reform implementation, class size, availability of teaching aids, teacher remuneration, teachers' accommodation, availability of classrooms, availability of teachers, cooperation between management and teachers, stakeholder involvement and DEO and SMC participation in the reform process affected the quality of education. Explaining how structural composition of the reform environment affected the quality of education, one DEO from the Eastern region observed:
''Of course the quality of education is largely contingent on the contribution, support, commitment of all key stakeholders…no matter what we do, quality promoting education reforms will have negligible impact if the basic materials such as teaching aids, school facilities and classroom space are inadequate or out rightly non-existent as is the case in most UPE schools….how do you expect one teacher to handle over 100 pupils in a classroom, most of whom have no basic learning materials like pens, pencils and notebooks?''

In a similar vein, one head teacher from the Northern region lamented:
''You cannot imagine what we are going through amidst the demands by parents, politicians and everybody who want quality education, first grades and all of that…but how can you deliver without the necessary support. It is true government sends some little money and buildings have been erected through the School Facilitation Grants but this is a drop in the ocean considering the number of pupils we serve. The working condition is not good for teachers and their motivation is poor…all this impacts negatively on the quality of education…''

In one of the group interview in one rural school in the Eastern region, a parent ruefully observed:
''I send my child to school every day and I want her to learn but instead she plays with friends, fetch's water and collects firewood for the teachers and carries madam's (female teacher) baby…they don't learn much, there are no enough seats and some of them sit on bricks or on the floor… share a pen with friends and write in turns…I want my daughter to study, pass well and become a nurse or work in the Bank but I don't know…''

All teachers, interviewed decried low remuneration, delays in salary payment and some had spent several months without salaries. Very few teachers in public schools were housed at school, and they did not receive housing or transport allowance. Most public schools had no provision for feeding teachers either and most teachers went hungry, just like most of the pupils. A teacher from the Northern region could not suppress his frustration in the following remarks;
''Sometimes I wonder why I wasted my time training as a teacher…we are the forgotten lot and even *Bodaboda* and taxi drivers are a lot better than us. Being a teacher in this country is a curse…I have gone for four months without salary because my name was deleted from the payroll, and yet I am expected to teach normally…how can I teach well when my own children are starving?''

Furthermore, the study established that there was limited cooperation between teachers, SMCs and DEOs. The level of participation of SMCs and DEOs in the reform effort was only limited to implementation. The reasons given were that SMCs had limited understanding of the various reforms that originated from the top. Yet one Education Policy Analyst in the MoESTS underscored the importance of SMCs:
''...School Management Committees are charged with providing overall direction to the operation of the school, ensuring that the school has a development plan for ensuring quality education within and outside the classroom, approving the school's annual budget, monitoring the school's finances to ensure that they are properly used, linking the school to the community, promoting harmony among the head teacher and members of staff, ensuring that teachers and parents do not cause undue psychological stress on pupils or cause them to withdraw from school, and liaising with school foundation bodies on the best way of utilizing foundation resources for promoting school objectives and goals.''

More often than not, DEOs find themselves at the receiving end of these reforms and their input at the formulation stage is almost zero. One DEO from the Western region observed:
''We are not consulted in most cases and we are only instructed to oversee the implementation of reforms such as UPE, thematic curriculum, distributing books to schools and enforcing minimum standards once in a while…our presence on the ground is minimal because of limited facilitation and we only visit schools that have problems here and there…''

Similarly, a school inspector in the Northern region lamented:

‘‘The number of schools in my area has more than tripled but I still receive the same facilitation, it is very little and notoriously irregular…I have a motorbike but I am not given fuel regularly. I can even take two terms (8 months) without visiting many schools. I normally visit and enforce minimum standards in private schools. Government schools have a lot of problems but you can’t touch them because there are political implications…’’

Such state of deprivation perhaps explains why a significant percentage of respondents disagreed about some of the structural indicators. For instance, as shown in table 1, 13.1 per cent disagreed that school policy implementation had an effect on the quality of education; 0.6 per cent were not sure; 45.7 per cent disagreed that teacher-pupil ratio affected education quality while 1.9 per cent were not sure; 34.4 per cent disagreed that availability of teaching aids affected the quality of education; 2.5 per cent were not sure; 28.3 per cent disagreed that teachers’ remuneration at school affected education quality; and, 38.7 per cent disagreed that teachers’ accommodation at school affected education quality; and 1.1 per cent were not sure. In addition, 35.7 per cent disagreed that availability of classrooms affected quality of education, while 1.9 percent were not sure. As regards availability of teachers, 32.7 per cent disagreed that it affected the quality of education; 0.6 per cent were not sure. Twenty-six per cent (26.3%) disagreed that cooperation between management and teachers had an effect on the quality of education, while 2.8 per cent were not sure. Twenty-one per cent (21.6%) disagreed that stakeholder involvement had an effect on the quality of education, while 6.6 per cent were not sure. As regards DEOs’ participation in educational policy, 17.7 per cent disagreed that it had an effect on the quality of education, while 3.9 per cent were not sure. Lastly, 6.9 per cent disagreed that SMC members’ participation in educational policy affected the quality of education, while 1.9 per cent were not sure.

The mean responses in table 1 showed that three issues stood out; for instance majority of the respondents concurred with the opinion that school policies are implemented (Mean =4.14m SD =.941). In addition, there was an indication that teachers and management cooperated well, which could result into better teacher motivation (Mean =4.05; SD =1.147). However, the responses enlisted for teacher –pupils ratio (mean =2.60; SD=1.068) and teacher remuneration (mean =2.85; SD =1.105) showed glaring weaknesses embedded within the structural dynamics and therefore likely to negatively affect the reforms and their likelihood to contribute to quality primary education.

Thus, while majority of respondents strongly believed that the availability of relevant, quality and enough instructional materials was good for the quality of primary education in Uganda, facilities such as core textbooks, teachers’ guides, supplementary textbooks and basic teachers’ professional references, pupils’ basic reference books, supplementary reading books, learning aids, and specifically wall charts, were insufficient or even non-existent in some of the schools. Yet these are critical ingredients in the teaching-learning process. In the event that such materials are lacking, education reforms cannot be effectively implemented and, consequently, the quality of primary education will be compromised.

A simple regression analysis was conducted to establish the degree to which structural dynamics predict (explain) quality of primary education in **table 2** are the results.

Table 2: Regression model results showing the effect of structural dynamics on the quality of primary education

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.398[a]	.159	.156	.396	.159	4.834	1	359	.000
a. Predictors: (Constant), structural dynamics									

Source: Primary data

The results in the table 2 indicate that structural dynamics explain 15.9% variation in quality of primary education and the rest of the variation could be explained by other factors, other than structural dynamics. Which means that structural dynamics account for 15.9 per cent of the variations in the quality of primary education. Thus, if structural dynamics were considered, the quality of primary education would improve by 15.9 per cent, and if they were ignored, quality of education would decline by the same percentage. The rest of the variation could be attributed to other factors, other than structural dynamics. Furthermore, the model shows that structural dynamics has a standardized coefficient beta result of .398. This means that changing structural dynamics by one standardized unit would result into variations in the quality of primary education by a magnitude of .398. The

model is also statistically significant at 0.000, meaning that structural dynamics have a significant effect on primary school education reforms, and subsequently, the quality of primary education.

In addition, the study employed the regression analysis to establish the effect of structural dynamics on the quality of primary education. This was done in a way that shows the views of the different respondents in terms of how they considered the effect of structural dynamics on the quality of primary education, as shown in Table 3.

Table 3: Regression analysis showing the effect of structural dynamics on the quality of primary education.

Structural Dynamics (Elements)	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.666	.146		25.047	.000
Ministry of Education and Sports	-.001	.058	-.001	-.017	.986
District	.039	.066	.048	.585	.559
School management committees	.062	.050	.084	-1.235	.018
Instructional materials	.176	.054	.217	-3.234	.001
Teacher-pupil ratio	-.005	.050	-.007	-.095	.924
Staffing	.005	.057	.007	.096	.924
Teacher remuneration	-.035	.052	-.050	-.680	.497

Dependent Variable: PSER and effectiveness of primary education
Source: Primary data

Table 3 shows that among the structural dynamics, instructional materials (Beta = 0.217, Sig. 0.001) were the major predictor of the quality education in Uganda. This implies that instructional materials have a significant effect on the quality of education. In relation to this finding, a teacher in the Western region had this to say:

‘‘Pupils are eager to learn but the teaching aids are not enough, yet formulation of instructional materials takes a lot of the teachers’ time, which takes a toll on the actual teaching time given to the learners.’’

However, the study established that even when books and other learning materials are available in some schools, the pupils may not actually use them. This was, observed in two primary schools in the Western region where the stock of books had been hoarded in the cupboards in the head teachers’ offices, out of reach of the learners and teachers. A teacher in the same school is quoted to have said:
‘‘It is difficult to access textbooks in this school because we are told that books are in short supply considering the big class sizes and since they are kept in the head teachers’ office, he moves with his keys and thus making it difficult to get the books in time for the pupils to share.’’

Another structural variable that affects Primary School Education reform (PSER) and therefore the quality of primary education, was the SMCs (Beta = 0.084, Sig. = 0.018). This is probably due to the fact that the SMC is a key governance structure in the management of primary schools and can therefore be instrumental in implementation of education reforms. In this respect, one DEO in the Western region revealed;
‘‘…in some instances the recruitment of SMC members is influenced by head teachers who they are supposed to supervise. As a result, some SMCs have been captured by head teachers. In fact, in the majority of instances, it is only the chairpersons of SMCs who are active, which makes it easy for head teachers to dominate them. At times

head teachers withhold crucial information on school finances from chairpersons of SMCs causing them to approve dubious expenditures.''

Further investigation of the effect of structural dynamics of education reforms on the quality of primary education was done by regression analysis results as indicated in Table 4.

Table 4: Analysis of variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.586	1	1.586	4.834	.000[a]
	Residual	117.815	359	.328		
	Total	119.402	360			

a. Predictors: (Constant), structural dynamics
b. Dependent Variable: quality primary education
Source: Primary data

The results in Table 4 show the F statistics, as well as degrees of freedom (df), sum of squares, mean square, and a p value, which indicates the probability that the null **hypothesis is correct**. From the table 4, F = 4.834, the degree of freedom (df) = 1, p =0.000 <.05. Since the P value is less than 0.05, the null hypothesis is rejected, implying that the results are statistically significant. Therefore, the hypothesis that structural dynamics significantly affect the quality of primary education is accepted.
Further analysis was done using the regression model summary, as shown in table 5.

Table 5: Table of Coefficients

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.155	.097		12.312	.000	1.105	1.368
	structural dynamics	.3401	.041	.398	8.23	.000	.003	.194

a. Dependent Variable: quality primary education
Source: Primary data

In table 5, the regression coefficient shows a standardized coefficient Beta of 0.398, which further confirms the earlier correlation results. The significance value 0.000, shows that the results are statistically significant, implying that structural dynamics do significantly affect the quality of primary education. Thus, quantitative and qualitative results are consistent in confirming that structural dynamics on education reforms significantly affect quality of primary education.

CONCLUSION

Key findings on structural dynamics showed that instructional materials had the strongest effect on education reforms and quality of primary education. Such materials like text books, teaching aids, chalk, charts, the curriculum, and all materials that teachers employ to enhance learning. This was in line with the qualitative results showing that most schools had a limited number of textbooks and other teaching aids, as compared to the big class sizes. It should be noted that in the absence of instructional materials, no matter how good a teacher may be, delivery of effective learning may not be realized. Effective learning requires preparation and in order to prepare adequately, teachers require instructional materials. Availability of instructional materials facilitates the effective implementation of education reforms, and therefore, delivery of quality education. It was further observed that SMCs play a key role in facilitating the implementation of the education reforms. A School Management Committee is a statutory body representing government, responsible for overseeing and supporting the implementation of the reforms. SMCs make plans and budgets, monitor schools and evaluate the implementation of the plans, in order to take corrective measures. Therefore, in instances where SMCs play their role effectively through quality management, quality education in primary schools is achieved.

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