ASSESSMENT OF IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN PRIMARY SCHOOLS: IMPLICATIONS FOR ACADEMIC ACHIEVEMENT

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ABSTRACT

Globally, studies have affirmed that implementation of Total Quality Management (TQM) generated improved organizational performance. Moreover, TQM is a management approach that was established to seek sources of continuous motion of improvement to provide quality products and hence has become an accepted technique to ensure organizational performance. Therefore, the purpose of this study was to assess the extent of implementation of TQM and examine its impact on pupils' academic achievement in primary schools in Kenya. The implementation of TQM was assessed through a TQM principle namely top management support. This study was conducted in Teso North sub-county which was purposively sampled due to low learning outcomes as compared to other sub-counties in Kenya. The study was guided by the following objectives: to determine the extent to which TQM was implemented and to establish how the top management support affects the academic achievement of pupils. Descriptive survey was used. Stratified sampling technique was employed to select 44 deputy head teachers and 196 teachers in public primary schools while saturated sampling was used to select 11 deputy head teachers and 83 teachers in private primary schools. Data was collected by structured questionnaire. Descriptive statistics in terms of means and standard deviations were used to determine the respondents' perception on extent of implementation of TQM. Spearman's rho was used to measure the strength of relationship and regression analysis was used to measure the extent to which top management support predicted the academic achievement. The findings revealed that the extent of implementation of TQM was moderate. Spearman's correlations showed positive and significant relationship between academic achievement and top management support (r =.648; p <.05). Regression analysis revealed that the effect of implementation of TQM principle on academic achievement was significant (F=1215.060; p< .05). The implications of this result are that top management support is an essential principle of TQM for predicting academic achievements of pupils. Based on these findings, the study proposed that policy makers at the MOE and the head teachers should formulate strategies for maximizing the influence of implementation of TQM for enhancing academic achievement of pupils in primary schools.

Key words: Total Quality Management, Top Management Support, Academic Achievement

INTRODUCTION

Total quality Management (TQM) refers to a management philosophy that builds customer-driven learning organization dedicated to total customer satisfaction through continuous improvement in the effectiveness of the organization and its process (Charantimath, 2003; Corrigan, 1995). Taking this further, Zairi and Youssef (1995) define TQM as a positive attempt by an organization concerned to plan and implement a continuous improvement process focused on satisfying customers' expectations. Moreover, Mural and Rajesh (2010) define TQM as a general management philosophy and a set of tools which allow educational institutions pursue a definition of quality and a means of attaining it. Taking each of these definitions into account and finding the overlaps in each of the definitions, it can be concluded that TQM is a well-structured and systematic approach for meeting customer needs and expectations by creating an organization wide participation and commitment in planning and implementation of continuous improvement.

Total Quality Management is generally acknowledged as an approach to organizational management which brings about enhanced performance. It is a management approach that was established to seek sources of continuous motion of improvement to provide quality products and services to customers (Wani, 2014).The advantages of implementing TQM have been valued by many organizations around the world. Many organizations have achieved excellence and competitive lead by putting into practice TQM principle of top management support. Most of the principles of TQM can be implemented in the area of education and training (Sudha, 2013). Bhala (2012) noted that if educational institutions really want to improve their academic performance, then it is necessary for them to embrace the principles of TQM.

While hitherto education has largely been viewed as a social service, it is now assuming a business outlook and resources put to it are viewed as investment whose payoffs must be continuously assured (Wani, 2014). As such Kalpana (2014) observed that for education as for the industry, implementation of TQM is no longer an option but it is a necessity. However, when some educators look at TQM principles, they assume that the model applies only to profit making organizations (Tahidu, Bawa, & Abubakari, 2014; Zabadi, 2013). Education enterprise being part of the service industry where the students are the primary customers raises the need for a solid base to be developed to reach high quality service in education industry to promote academic achievement of students (Syed, 2013). Adaptation of TQM has proved to provide the needed organizational performance that will enhance the success of customers (students) measured through academic performance (Mensa, Copuneglue, & Fenning, 2012; Shahid, Faisal, & Aftabs, 2014).

TQM is a management process that has made its ways into Higher Educational Institutions (HEIs) in many developed countries. For example, developed countries like United States of America (USA), United Kingdom (UK) and Japan have already recognized the importance of TQM and have adopted it successfully (Pandi, 2009; Talib, Ali, & Idris, 2013). In United States of America (USA), many institutions have adapted TQM in HEIs and this adaptation has resulted in success stories about improved sudents' academic achievement, employees work satisfaction and improved process efficiency (Syed, 2013). Moreover, Olgun and Hakar (2014) also reported success stories of implementation of TQM principles of top management support, training and teamwork in secondary schools in Virginia Beach. The implementation of TQM in Virginia Beach resulted in improved test scores in mathematics by the students. Although the three principles; top management support, training and teamwork, were positively associated with student academic achievement, it was observed that teamwork was

the most significant predictor of student' academic achievement. Teamwork was identified as the extent to which the educational institutions allowed educators to work together.

Adoption of TQM in HEIs is a common practice in United Kingdom (UK) .The results of incorporating TQM in HEIs have been striking such that UK remains a high quality provider of education in all its modern forms (Kalpana, 2014). Similarly, Japan has benefited from a TQM process similar to their counter parts in USA and UK resulting in improved student performance, better services, reduced cost and customer satisfaction. This has made Japan to be such a strong force in the world economy (Gopal, Abdul,& Bin, 2010; Shahid, Faisal,& Aftab, 2014).

In developing countries, the national examination results are used as a good indicator for the quality of education. International test of students' academic achievement at basic education level consistently show that most of developing countries score at the bottom of performance scale (Bhalla, 2013; Zabadi, 2013). Olaleye and Bebatope (2013) noted that it was highly saddening that for the last three decades Nigerian education system had continued to witness a quantitative growth at the expense of qualitative development. The deteriorating academic performance in public primary schools which had continued unabated impinged heavy traumatic effects on Nigerian citizens and the nation as a whole. There had been a complaint about the low performance of children in national exams, poor reading and writing skills (Yusuf & Alabi, 2012).In search of quality, many basic educational institutions had embarked on the implementation of TQM to enhance academic achievement of learners in national exams (Nwogu &Nath, 2013).

Samanhyia, Arhin-larbi, Adusei and Donbesur (2014) tell a parallel story in Ghana where Basic Education is at cross-roads. There has been a significant progress in terms of enrolment but the improvement of test scores had stagnated. While a number of policy reforms and interventions have improved access to Ghana's school aged population, improving quality education in terms of student achievement in national exams remained a challenge (Kajui, Thomas, Emma,& Hari, 2009, Samanhyia, Arhin-larbi, Adusei,& Donbesuur, 2014). For instance, according to Ghana's Education Service (GES) annual report on Basic Education Certificate Examination(BECE) results for 2010, out of 400 candidates registered for BECE in Chereponi district only 9.5% of the students passed the examination (GES,2011). Similarly, only 6.6% of 286 candidates who sat for the BECE in the district recorded a pass during the 2011 academic year. This therefore presents a worrying trend that calls for intervention (GES, 2012). Such a situation calls for adoption of TQM. Research shows that by adapting aspects of the TQM to fit their own needs, both secondary (Petrus, 2011) and primary (Ngwenya &Pretorius, 2014) educational organizations experienced a better quality education in terms of academic achievement by learners (Ngwenya &Pretorius, 2014; Petrus, 2011).

As far as Kenya is concerned, the issue of low achievement of pupils in KCPE is widely debated and remains to be addressed (Njuguna, 2013; Uwezo, 2014).This scenario of low academic achievement by pupils in KCPE has provoked discontent of parents in particular and the public in general. It has also ignited passionate discussions in both print and electronic media as to what the future holds for the numerous young Kenyans who leave the primary schools semi-literate (Ruinge & Kimani,2015; Uwezo,2011, 2014). Teso North sub-county has been particularly challenged in recent years with low achievement scores in KCPE since the year 2011.

RESEARCH METHODOLOGY

The study adopted a descriptive survey design. The researcher adopted this design because a large population could be studied with only a portion of that population being used to provide the required data (Kothari, 2004). The study was conducted in Teso North Sub-county and at the time of this study, the sub-county had two educational zones namely Angurai zone with a total of 30 public schools and 6 private schools and Amagoro zone with a total of 17 public primary schools and 5 private schools. Teso North sub-county was purposively sampled for this study because the report of Uwezo (2011) shows that the educational achievement outcomes in the sub-county was a challenge due to low levels of learning outcomes of the pupils compared to other sub-counties countrywide. The study population was composed of 58 deputy head teachers (47 from public and 11 from private) and 436 (353 from public and 83 from private) teachers drawn from 47 public primary schools and 11 private primary schools giving a total of 494 respondents.

Multi-stage sampling technique was used for the study. The first stage involved the listing of all approved private primary and public primary schools and the stratification of these schools into private and public schools in Teso North sub-county. The next stage of the sampling procedure involved selection of respondents from each stratum of private and public schools for data collection. In this regard, saturated sampling technique was applied to select all the deputy head teachers and the teachers in private primary schools. Stratified sampling technique was used to select deputy head teachers and teachers from public primary schools. Questionnaire and document analysis were used as instruments of data collection. To enhance content validity and face validity, the research instruments were validated by researcher's supervisors and a panel of experts in the University who reviewed, critiqued and provided feedback on the research instruments concerning any need for improvements in wording or addition of items. Descriptive statistics in terms of means and standard deviations were used to determine the respondents' perception on extent of implementation of TQM. Spearman's rho was used to measure the strength of relationship and linear regression analysis was used to measure the extent to which TQM principle of top management support predicted the academic achievement.

RESULTS

The main objective of this study was to assess the extent of implementation of Total Quality Management and examine its effect on academic achievement of pupils. Therefore, seven items in the scale were used to assess the implementation of top management support, extent of its implementation and the influence of its implementation on academic achievement of pupils in KCPE in primary schools in Teso North sub-county. The scale was measured on a five point Likert scale where 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree and 5=strongly agree. However, for easy interpretation and discussion of data, the percentages for strongly disagree and disagree were combined and strongly agree and agree were also combined. Responses from the teachers and deputy head teachers were analyzed separately to identify the extent of implementation of top management support as a principle of TQM. The items were coded as per table 1 to reduce the bulk in analysis and presentation of the data.

The table 2 summarizes the mean and standard deviation values of the responses of teachers and deputy head teachers on the extent of implementation of TQM principle of top management support. In order to assess the extent of implementation of TQM, an interval class was developed as follows: (1) Very Low; 1.00 to 1.80 (2) Low; 1.81 to 2.60 (3) Moderate; 2.61to 3.40 (4) High; 3.41 to 4.20 (5) Very High; 4.21 to 5.00. Based on the results

in table 2, the cluster mean scores of 2.62 and 2.64 by the teachers and deputy head teachers respectively indicated that the extent of implementation of TQM principle of top management support was moderate. The standard deviation values of 1.05 and 1.37 indicated less homogeneous data and more dispersed/spread out which implied that respondents did not share similar opinions towards each variable in this study and hence variations in respondents' opinions were high. This suggests that the implementation of top management support was varied widely from school to school.

Table 1.Top Management Support

Code	Item
TMS1	In this school, the head teacher gives all the teachers directions to improve pupils' academic performance.
TMS2	In this school, the head teacher promotes academic policy for purpose of improving academic achievement of pupils.
TMS3	The head teacher in this school always strives to ensure that teachers work effectively to attain academic goals to enhance academic achievement of pupils.
TMS4	The head teacher in this school promotes shared vision about academic achievement of pupils among teaching staff.
TMS5	The head teacher in this school allocates adequate teaching and learning resources towards the efforts to improve academic achievements of pupils.
TMS6	The head teacher in this school establishes academic improvement plans for teachers with the aim of enhancing academic achievement of pupils.
TMS7	In this school, the head teacher designs strategies to improve the academic achievement of pupils.

Key: TMS: TOP MANAGEMT SUPPORT

However, in order to test if there was any significance difference of perceptions on extent of implementation of TQM principle of top management support between teachers and deputy head teachers, an independent t-test statistics under the assumption of equal variance was employed. The table 3 gives a summary of an independent t-test for top management support. The table shows that there was statistically no significant difference in responses between teachers (Mean = 2.61; Std = 1.28) and deputy head teachers (Mean = 2.63; Std = 1.35); t (270) = - 0.200, p = 0.399. These results suggest that both the teachers and deputy head teachers agreed that the extent of implementation of TQM principle of top management support was moderate in primary schools in Teso North sub-county.

In order to examine the association between the extent of implementation of TQM principle of top management support and academic achievement of pupils in KCPE, Spearman's rho was performed using SPPSS version 17 and results presented in table 4. The results from the table 4 show that there was a significant positive relationship between extent of implementation of top management support and academic achievement (r = .648; p < .05). This result from table 4 supports the findings of the previous researchers (Das, Kumar, & Kumar, 2011; Masood, Nawaz, Shauket, & Hassan, 2014; Mwaniki & Okibo, 2014; Valmohammadi, 2011). In a study of examination of association of implementation of TQM with organizational performance in Pakistan textile sector, Masood, Nawaz, Shaukat, and Hassan (2014) revealed that that there was a positive correlation (r =.565; p < .01) between implementation of top management support and organizational performance measured in

terms of financial performance. According to Valmohammadi's (2011) study, implementation of TQM principle such as top management support significantly (r = .341; p < .01) related with organizational performance.

Table 2. Responses of Teachers and Deputy Head Teachers Pertaining to Extent of Implementation of Top Management Support

Item	Respondent	n	Mean	Std Dev	Min	Max
TMS1	Teacher	223	2.81	1.32	1	5
	Deputy Head Teacher	49	2.78	1.21	1	5
TMS2	Teacher	223	2.59	1.29	1	5
	Deputy Head Teacher	49	2.52	1.24	1	5
TMS3	Teacher	223	2.52	1.20	1	5
	Deputy Head Teacher	49	2.59	1.50	1	5
TMS4	Teacher	223	2.44	1.23	1	5
	Deputy Head Teacher	49	2.52	1.21	1	5
TMS5	Teacher	223	2.71	1.21	1	5
	Deputy Head Teacher	49	2.67	1.61	1	5
TMS6	Teacher	223	2.63	1.37	1	5
	Deputy Head Teacher	49	2.71	1.14	1	5
TMS7	Teacher	223	2.52	1.27	1	5
	Deputy Head Teacher	49	2.46	1.42	1	5
Cluster Mean	Teacher	223	2.62	1.27	1	5
	Deputy Head Teacher	49	2.64	1.33	1	5

Key: n = Number of respondents, Std Dev = Standard Deviation, TMS= Top Management Support, Min = Minimum, Max = Maximum

Since relationship was found in the correlation analysis of Spearman's rho to assess the degree of association between the extent of implementation of TQM and academic achievement of pupils, linear regression analysis was conducted to establish whether there was any predictive relationship between the independent variable (Top management support) and dependent variable (academic achievement of pupils). Multicollinearity statistics were first assessed to ascertain that the independent variables were not highly connected. The Variable Inflation Factor (VIF) value was 1 which falls within the 1.0 to 4.0 range prescribed by Pan and Jackson's (2008) rule of thumb. Tolerance value was 1 which was higher than the recommended minimum value of 0.5 (O'Brien2007). Therefore, the multicollinearity problems associated with regression analysis were negligible as shown in the table 8.

Table 3. Independent T-test for Top Management Support

Top Management Support				Levene's test for equality of variance		T- Test for Equality of Means				
Resp	n	Mean	Std	F	Sig.	t	df	Sig. (2tailed)	Mean Dif	Std Error Differ
TEA	223	2.61	1.28	.714	.399	-.200	270	.842	-.04072	.20352
DHT	49	2.63	1.35							

Key: Resp = Respondent, n = Number of respondent, Std = Standard deviation, Differ = Difference, TEA = Teachers, DHT = Deputy head teachers.

Table 4. Spearman's rho for Top Management Support and Academic Achievement

			Top Management Support	*Academic Achievement*
Spearman's rho	Top Management Support	Correlation Coefficient	1.000	.648*
		Sig. (2-failed)	.	.012
		N	14	14
	Academic Achievement	Correlation Coefficient	.648*	1.000
		Sig. (2-failed)	.012	.
		N	14	14

*Correlation significant at the 0.05 level (2-tailed).

Therefore; table 6 provides a model summary of the regression result of extent of implementation of TQM principle as independent variables and academic achievement of pupils as the dependent variable. From the table 6, top management support correlates positively and significantly with academic achievement (R = .905; P < .05). This means that this TQM principle could explain academic achievement. Further, the results reveal the R^2 value of .819 indicating that 81.9% of the total variance of pupils' academic achievement was accounted for by the TQM principle while 18.1% was due to other factors and residuals.

Table 6. Summary of Regression of Top Management Support and Academic Achievement

Model	*R*	*R^2*	*Adjusted R^2*	*SEE*	*Change Statistics*				
					R SC	*F Change*	*df1*	*df2*	*Sig. F. Change*
1	.905	.819	.818	.53190	.819	1215.060	1	269	.000

Predictors: (Constant), Top Management Support. SC-Square Change, df-degree of freedom, SEE- Standard Error of Estimate

However, to test for the significance of R value table 7 was presented.

Table 7. ANOVA Table for Regression on TQM Principle and Academic Achievement

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	343.768	1	343.768	1215.060	.000
Residual	76.107	269	.283		
Total	419.875	270			

a. Predictors: (Constant) and Top Management Support
b. Dependent Variable: Academic Achievement

The table 7 shows that the R value of .905 is significant (F = 1215.060: P < .05). Hence the observed effect of the TQM principle of top management support on academic achievement of pupils did not occur by mere chance. However, to determine the relative contribution of top management support to academic achievement, the table 8 was presented. The table 8 reveals that top management support made positive and significant contribution to academic achievement of pupils (β =.878; P < .05).

Table 8. Relative Influence of Top Management Support on Academic Achievement

TQM Principle	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std Error	Beta (β)			Tolerance	VIF
Constant	.619	.073		8.441	.000		
TMS	.878	.025	.905	34.858	.000	1.000	1.000

   a.   Significance is at p < .05
   b.   Dependent Variable: Academic Achievement

The results of this study have confirmed the view of prior researchers. For instance Masood, Sadia and Saad (2014) in their study on an empirical assessment of implementation of TQM principles and their relationship with firm performance in textile sector of Pakistan revealed that TQM constructs (principles) have positive and significant impact on firm performance. In the same vein, Khan's (2011) study found that implementation of some principles of TQM predicted organizational performance to achieve the quality performance. Khan study also concluded that implementation of TQM led towards improvement in financial and non-financial performance of organizations in Pakistan in particular and globally in general. All these previous study findings corroborate the findings of the current study and point to the importance of implementation of TQM in order to enhance academic achievement of pupils in primary schools in Teso North in particular and Kenya in general.

CONCLUSIONS

Based on the stated objectives, the following conclusion was reached:

1. Total Quality Management (TQM) was being implemented in primary schools in Teso North sub-county. However, the extent of implementation of TQM principle of top management support was moderate.

2. The extent of implementation of TQM principle of top management support predicted the academic achievement of pupils in KCPE in primary schools in Teso North sub-county.

RECOMMENDATIONS

Based on these conclusions, the following recommendations are made:

1. The head teachers should formulate collective purpose, instill academic achievement values, influence a culture of good academic achievement of pupils and determine the strategic plan on how to have significant influence on academic achievement of their pupils.

2. The implementation of TQM of top management support should be enhanced in primary educational institutions by head teachers, deputy head teachers and teachers in Teso North sub-county in particular and Kenya in general.

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