

IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN PRIMARY SCHOOLS AS A PANACEA FOR LOW ACADEMIC ACHIEVEMENT

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ABSTRACT

Worldwide, 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 teamwork. 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 extent of implementation of teamwork 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 teamwork predicted the academic achievement. The findings revealed that the extent of implementation of TQM was low. Spearman's correlations showed positive and significant relationship between academic achievement and teamwork ($r = .912$; $p < .01$). 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 teamwork is an essential principle of TQM for predicting academic achievements of pupils. Based on these findings, the study proposed that policy makers at the Ministry of Education and the head teachers should formulate strategies for maximizing the influence of implementation of TQM for enhancing academic achievement of pupils in primary schools.

Keywords: 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 students' 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).

Samanhya, 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, Samanhya, 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 teamwork 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 extent of implementation TQM and the influence of its implementation on academic achievement of pupils in KCPE in primary schools in Teso North sub-county. The questionnaire was measured on a five point Likert scale where 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree and 5=strongly agree. Responses from the teachers and deputy head teachers were analyzed separately to identify the extent of implementation of teamwork 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 teamwork. In order to assess the extent of implementation of TQM principle of teamwork, an interval class was developed as follows: (1) Very Low; 1.00 to 1.80 (2) Low; 1.81 to 2.60 (3) Moderate; 2.61 to 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 2.56 and 2.59 by the teachers and deputy head teachers respectively indicated that the extent of implementation of TQM principle of teamwork was low. The standard deviation values of 1.09 and 1.22 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 teamwork was varied widely from school to school.

Table 1. Teamwork

Code	Item
TW1	Teachers work well in teams in this school to enhance the academic achievement of pupils
TW2	This school has effective teams of teachers which ensure their commitment towards their duties
TW3	In this school the head teacher uses team approach that entails ideas generation, alternative evaluation and consensus building to solve problems
TW4	In the school, there is spirit of cooperation to meet academic objectives
TW5	In this school, teamwork is encouraged to increase teachers' involvement in promoting academic achievement of pupils
TW6	The leadership in this school recognizes teamwork by open communication in an environment where fear is driven out
TW7	In this school, teachers work closely together as a team in order to coordinate work and improve academic achievement of pupils

Key: TW = TEAMWORK

Nevertheless, an independent t-test statistic was performed to establish if there was any significant difference between the perceptions of teachers and deputy head teachers regarding the extent of implementation of TQM principle of teamwork. The table 3 presents a summary of the results of a t-test statistic under the assumption of equal variance. The table 3 depicts that the perceptions regarding the extent of implementation of teamwork as a principle of TQM between teachers (Mean = 2.55; Std = 1.09) and deputy head teachers (Mean = 2.65; Std = 1.27) did not differ significantly; $t(270) = -.458$, $p = .648$. Therefore, these results suggest that both teachers and deputy were in agreement that the extent of implementation of teamwork as a principle of TQM in primary schools in Teso North sub-county was low.

In order to measure the strength of relationship between teamwork and academic achievement of pupils, the Spearman's rho was performed using SPSS version 17 and the output is reported in the table 4. The results in the table 4 reveal that there was a very high correlation between teamwork and academic achievement of pupils ($r = .912$; $p < .01$). This means that increase in implementation of teamwork was associated with increase in academic achievement of pupils. This correlation finding was similar to the findings of Alkanam, and Ackon (2015) that also found a positive correlation ($r = .871$; $p < .01$) between implementation of TQM principle of teamwork and construction quality performance in Ghana. Moreover, this finding echoed the current research study done by Agarwal, and Adjirackor (2016) who investigated the impact of teamwork on organizational productivity in some selected basic schools in the Accra Metropolitan Assembly in Ghana. The spearman rho showed a strong positive correlation ($r = .819$; $p < .05$) between the implementation of teamwork and organizational performance. Hence the primary schools that strongly focus on teamwork would significantly improve the academic achievement of pupils in KCPE in Teso North sub-county as this finding is consistent with previous research findings.

Table 2. Responses of Teachers and Deputy Head Teachers Pertaining to Extent of Implementation of Teamwork as a Principle of TQM

Item	Respondent	n	Mean	Std Dev	Min	Max
TW1	Teacher	223	2.71	1.06	1	5
	Deputy Head Teacher	49	2.78	1.25	1	5
TW2	Teacher	223	2.56	1.01	1	5
	Deputy Head Teacher	49	2.63	1.11	1	5
TW3	Teacher	223	2.51	1.20	1	5
	Deputy Head Teacher	49	2.51	1.43	1	5
TW4	Teacher	223	2.52	1.00	1	5
	Deputy Head Teacher	49	2.47	0.96	1	5
TW5	Teacher	223	2.61	1.16	1	5
	Deputy Head Teacher	49	2.63	1.21	1	5
TW6	Teacher	223	2.49	1.00	1	5
	Deputy Head Teacher	49	2.55	1.57	1	5
TW7	Teacher	223	2.52	1.18	1	5
	Deputy Head Teacher	49	2.57	1.04	1	5
Cluster Mean	Teacher	223	2.56	1.09	1	5
	Deputy Head Teacher	49	2.59	1.22	1	5

Key: n = Number of respondents, M= Mean, R= Respondents, TE= Teachers, DH= Deputy Head Teachers, Std Dev = Standard Deviation, Min= Minimum, Max = Maximum, TW = Teamwork

Since a relationship was found in the correlation analysis of Spearman's rho to assess the degree of association between the extent of implementation of TQM principle of teamwork and academic achievement of pupils, it was deemed necessary to employ regression analysis in order to establish whether there was any predictive relationship between the independent variable (teamwork) and dependent variable (academic achievement). The regression was run with respect to the responses of teachers and deputy head teachers using SPSS version 17.

Table 3. Independent T-test for Teamwork

Teamwork		Levene's test for equality of variance				T- Test for Equality of Means				
Resp	n	Mean	Std	F	Sig.	t	df	Sig. (2-tailed)	Mean Differ	Std Error Differ
TEA	223	2.55	1.09	3.875	.07	-.458	270	.648	-.08108	.17719
DHT	49	2.63	1.27							

Key: Resp = Respondent, n = Number of respondent, Std = Standard deviation, Differ = Difference.

Therefore, table 5 provides a model summary of the regression result of extent of implementation of TQM principle as independent variable (teamwork) and academic achievement of pupils as the dependent variable.

Table 4. Spearman's rho for Teamwork and Academic Achievement Based on Teachers Deputy Head Teachers Responses

		Teamwork	Academic Achievement
Spearman's rho	Correlation Coefficient	1.000	.912**
	Teamwork	Sig. (2-tailed)	.000
	N	14	14
	Correlation Coefficient	.912**	1.000
	Academic Achievement	Sig. (2-tailed)	.000
	N	14	14

** Correlation significant at the 0.01 level (2-tailed).

From the table 5, the TQM principle of teamwork correlates positively and significantly with academic achievement of pupils ($R = .831$; $P < .05$).

Table 5. Summary of Regression of TQM Principle and Academic Achievement

Model	R	R ²	Adjusted R ²	SEE	Change Statistics				
					R SC	F Change	df1	df2	Sig. F. Change
1	.831	.691	.689	.69665	.691	602.656	1	270	.000

Further examination of table 5 reveals the R² value of .689 indicating that 68.9% of the total variance of pupils' academic achievement was accounted for by the TQM principle of teamwork while the remaining 31.1% was due to other factors not considered in this study and residuals.

Table 6. ANOVA Table for Regression on TQM Principle and Academic Achievement

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	292.479	1	292.479	602.656	.000
Residual	131.036	269	.485		
Total	423.515	270			

a. Predictors: (Constant) and Teamwork

b. Dependent Variable: Academic Achievement

However, to test for the significance of R value table 6 was presented. The table 6 shows that the R value of .831 is significant ($F = 602.656$; $P < .05$). Hence the observed effect of the TQM principle of teamwork on academic achievement of pupils did not occur by mere chance. However, to determine the relative contribution of teamwork to academic achievement, the table 7 was presented.

Table 7. Relative Influence of Teamwork on Academic Achievement

TQM Principle	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std Error	Beta (β)			Tolerance	VIF
Constant	.527	.106		4.990	.000		
Teamwork	.926	.038	.831	24.549	.000	1.000	1.000

a. Significance is at $p < .05$

b. Dependent Variable: Academic Achievement

The table 7 reveals that teamwork made positive and significant contribution to academic achievement of pupils ($\beta = .831$; $P < .05$). 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 AND RECOMMENDATIONS

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 teamwork was low.
- 2 The extent of implementation of TQM principle of teamwork predicted the academic achievement of pupils in KCPE in primary schools in Teso North sub-county.

Based on these conclusions, the following recommendations are made for the improvement of the current practice:

- 1 Teamwork of teachers was found to impact significantly on academic achievement of pupils in primary schools in Teso North sub-county. This implies that if teachers demonstrated cooperative behaviour and positive attitudes towards working in teams then this is likely to enhance the academic achievement of pupils in primary schools in the sub-county. Therefore, it is recommended that the head teachers should strive to foster the working systems of teachers such that it fosters teamwork. Promoting teamwork among teachers will create a culture where all members of the team share a strong sense of collective responsibility for pupils' academic success or failure.
- 2 The implementation of TQM of teamwork 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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