A Correlation Analysis of School Plant Management and Curriculum Implementation in Bungokho County Secondary Schools, Mbale District, Uganda

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Abstract

The study examined the correlation between school plant management and curriculum implementation in government aided secondary schools in Bungokho County, Mbale District. It was guided by three hypotheses; Ho₁ there is no statistically significant correlation between management of study materials and curriculum implementation; Ho_2 there is no statistically significant correlation between management of physical infrastructure and curriculum implementation and Ho_3 there is no statistically significant correlation between school location and curriculum implementation. Correlational research design was used as empirical road map with a sample size of 110 respondents who participated in the study. A piloted self-constructed questionnaire tool was used to collect data. It was then analyzed using inferential statistical tool of Pearson product-moment correlation coefficient and also by descriptive statistics of frequencies and percentages. The findings revealed that there was a strong positive correlation between school location management and curriculum implementation (r = .50, n = 110, p < .05). The study found that there was a positive moderate correlation between study materials and curriculum implementation (r = .34, n = 110, p < .05). It was also discovered that there was a positive moderate correlation between physical infrastructure and curriculum implementation (r = .40, n = 110, p < .05). The study recommended that; the school administrators should ensure that available school equipment is effectively used to facilitate content delivery for effective learning. There should be candid use of available physical infrastructure to enhance innovations and creativity among the teaching staff and students. The Boards of Governors managing secondary schools in Bungokho County and government stakeholders should ensure that any constructed secondary schools in the area should strategically and geographically be well located with ease of access.

Key words: school plant, curriculum implementation, study materials, physical infrastructure, school location

Education is one of the tools that aim to reform society through young people having the opportunity to acquire skills, knowledge, values and attitudes for their productive life. This aim may not be achieved unless there are effective curricular reforms and implementation in institutions of higher learning. The Uganda Government white paper on education (1992) observes that, education, through effective curriculum implementation, is the backbone and basic foundation which inspires people to accept change. Consequently, Onyeachu (2008) believes that no matter how good a curriculum is designed for any teaching subject, its implementation remains imperative. Effective curriculum implementation may work well with systematic school plant management (SPM).

This could be because SPM forms a significant part in the enhancement of the school administrative functions that generally influence curriculum implementation in an educational system. Olujide (2001) explains that for a school plant to be efficient and effective in as far as the general implementation of curriculum enhancement is concerned, management functions need to be well articulated. Such functions include; planning, organizing, coordinating, directing, supervising and budgeting for efficient and effective pursuit of organizational goals (De Nissi, 2008; Stoner, 2008).

What is SPM in the context of this study? It has been referred to in literature as effective maintenance and utilization of school structures, its facilities, equipment, audio and visual aids and ICT, all of which facilitate the effective content delivery and coverage, mode of assessment and staff quality and the entire school environment to ensure effective teaching and learning. Therefore, when such conducive environment is created by school management, there is a likelihood of effective curriculum implementation. On the other hand, study materials such as text books, laboratory equipment and chemicals form essential elements of school plant management and curriculum implementation (Adeogun, 2001; Bowers and Burkett, 2007; Garba, 2015; Nwokike, 2012; Obi, 2003; Ololube, 2013; Onyeachu, 2008; Padmanabhan, 2001).

Although SPM may also refer to the availability of; physical infrastructure (such as administrative block, classrooms, laboratories, dormitories, libraries, furniture) and school site (such as land, paths, parking lots, play grounds and open grounds) used for supporting the implementation of educational programmes, it can only be realized when there are qualified and competent teachers to effectively handle subject content and also manage such facilities professionally (Raychauduri, Amivata & Majundar, 2010; Ogbonnaya, 2004). In addition, SPM represents a learning environment that has a tremendous impact on the comfort, safety and students' output (Adesina & Ogunsaju, 2003; Lyons, 2012).

Other scholars add school location as a significant element that influences availability and maintenance of school facilities and thus impacting the extent to which teachers perform in a school environment about delivery of curricular and co-curricular activities (Bowers & Burkett, 2007; Mukasa, 2010; Ndu, Ocho & Okeke, 2014; Ngoka, 2003; Padmanabhan, 2001; Oni, 2002).

Effective SPM stimulates implementation of curriculum that leads to desirable educational goals. It affects the type and number of curricular and cocurricular activities that can take place in it and outside it. When it is substandard, curriculum implementation also lacks vigor to ensure educational goals and this may cause a fundamental effect on motivation of learners and study progress (Ajayi, 2007; Ariani, Muthamia & Adiegu, 2016; Mkwandawire, 2010; Oni, 2002). This argument therefore implies that curriculum implementation and learning outcomes in schools are closely dependent on utilization and adequacy of physical and material resources, nature of content coverage and quality teacher preparations (Furror, 2012; Kelo, 2007; Mkwandawire, 2010; Saidu, 2007; Sallis, 2011; Simnick & Russ, 2015; Sule, 2012; Onyeachu, 2008).

The Authors of this article therefore believe that the nature of the classroom environment highly determines the associated intended learning outcomes. This affects learners' experiences, purposeful content and skills, overt and covert behaviors, attitude and values that the learner encounters under the direction of the school (Tanner & Tanner, 2005; Watenga, 2013). In empirical studies, SPM has been directly correlated with different curriculum implementation aspects. For example, Adeogun (2001) correlates study resources with students' academic performance.

The available physical infrastructural resources correlate highly with teachers' extent of ingenuity and commitment towards effective lesson planning and content delivery (Ameir, 2013; Ayodele, 2000; Enyi, 2004; Garba, 2015; Obi, 2003; Ugwu, 2008).

On the other hand, different educationists correlate geographical physical location of the school with students' academic achievement, effective school plant management practices and enhanced curriculum implementation. They postulate that when schools manage their resources effectively depending on the physical location of the school, there is easy, flexible and access ways of implementing the designed curriculum (Castaldi; 2007; Ezewu, 2003; McCabe, 2005; Mgbodile, 2006; Mukasa, 2010; Onyeachu, 2008; Shaib, 2013). Such schools reach out to qualified staff, quality students, shared equipment, accessible roads, perceived literate parents, access to government grants among other benefits accruing to school location.

However, curriculum implementation on the basis of SPM has been a challenge in schools especially in Uganda. Obanya (2012) observes that curriculum implementation in Africa is the major setback for attaining goals of education. In Uganda, this situation is not different. For example, Baale's (2014) study indicates that Ugandan students have been facing a problem of education that is "abstract", artificial and bookish. Despite the government effort to provide school facilities and equipment, curriculum implementation and its outcomes are still a challenge to many secondary schools in Uganda. The

training acquired on curriculum implementation in Universal Secondary Education schools seems inadequate for the school leavers to be fully competent and self-reliant or to be able to join subsequent higher levels of education.

The curriculum may not be effectively implemented when there is; lack of materials that promote experiential learning, failure in mastery of functional skills due to poor instructional methods as well as unclear division of duties and roles of the stakeholders involved in the implementation process. The implementation is effective when there is deliberate set expectations that are required for efficient and effective curriculum. This could take the form of content coverage, mode of delivery of the content to the learners and mode of assessment of the learners in the school environment (Coleman & Middle wood, 2003; Earley & Bubb, 2004; Fleisch, 2002; Kolb, 2008; Leonard, 2008; Ornstein & Hunkins, 2004; Tooke & Van der Vegt & Knip, 2008).

Diagnosing the Problem Statement

Effective curriculum implementation is crucial for the realization of educational goals. It is a process through which learners acquire duly planned skills, knowledge, values and attitudes for their productive life. The effective curriculum implementation can be measured by observable outcomes of learners' academic achievements and physical well-being such as change in behavior, attitude and development of skills for improved productivity.

However, curriculum implementation is still a challenge in Africa, Uganda inclusive (Baale, 2014; Obanya, 2012). The Directorate of Uganda Education Standards Agency (2014) explains that despite government effort to provide school facilities and equipment, curriculum implementation and its outcomes are still not yet fully achieved. For example, adequate classroom space and library facilities in Bungokho secondary schools have been provided through grants, but the mode of content delivery remains a challenge (Board of Governors' meetings in one of the selected secondary schools, 2015). In addition, despite government provisions of the required facilities to secondary schools in Bungokho County, it is not yet established whether they actively support curriculum implementation. There is, therefore, noticeable lack of correlation between school plant management and curriculum implementation, which makes this study relevant to examine the correlation between the two phenomena.

Conceptual Framework

The researchers contextualized the correlation between management of the school plant as independent variable and curriculum implementation as dependent variable. They perceive that effective management of study materials, physical infrastructure and school location, determines effective implementation of school curriculum in relation to; subject content coverage, mode of delivery and mode of assessment. The study conceptual framework is premised on the systems theory developed by Chikere, Cornell and Nwoka (2015). They posit that a system acts like a single unit with several intercorcorrelated parts that are interdependent and that the interplay of each part affects the entire system. The systems theory focuses on the relations between parts. School plant management in this case influences the way the curriculum is likely to be implemented. This is because the entire school plant management and curriculum implementation are correlated components of the education system.

Rationale and Study Scope of Study

The study was conducted in Bungokho county, Mbale district, in the eastern part of Uganda and was limited to government aided secondary schools (USE and UPOLET). The county has a total number of 13 government aided secondary schools, out of which, 12 are under Uganda Universal Secondary Education (USE) and Universal Post O' Level Education and Training (UPOLET) programmes. Given that:-

Bungokho County has many USE schools with challenges related to school plant management and curriculum implementation, and this study sought to bring out how these two functions are intercorcorrelated. On the other hand, the study examined the period between 2012 and 2016. This is the time when the government of Uganda invested more resources to develop and strengthen the school plant with necessary facilities like libraries, classrooms and laboratory equipment, instructional materials and school location to support curriculum implementation in USE schools. In regard to content scope, the study was limited to the correlation between school plant management and curriculum implementation. The school plant involved; study materials, physical infrastructure and school location whereas curriculum implementation considered subject content coverage, mode of delivery and mode of assessment.

The researchers tested three hypotheses: Ho_1 ; there is no statistically significant correlation between management of study materials and curriculum implementation in government aided secondary schools in Bungokho. Ho_2 ; there is no statistically significant correlation between management of physical infrastructure and curriculum implementation. Ho_3 ; there is no statistically significant correlation and curriculum implementation.

Significance of the Study

This research article aims at contributing towards improvement in school plant management systems and curriculum implementation. The researchers hoped that the findings of the study were important; firstly, to implore government to appreciate the need for proper funding of school plant development for effective curriculum implementation by providing more school equipment commensurate to number of students. Secondly, they believed that the findings could enable secondary school administrators to ensure proper management of their school plants in terms of utilization and maintenance. Thirdly, the study is hoped to contribute to the existing body of knowledge corcorrelated to school plant and curriculum implementation and also form a basis for further research in the same area.

Methodology

The researchers used a correlational research design to measure the relationship between school plant management and curriculum implementation. Since the aim was to examine the correlation between two or more variables, this research design was perceived suitable (Creswell, 2012; Pallant, 2007).

The study targeted a population of 154 participants comprising of school administrators; head teachers, deputy head teachers, directors of studies and teaching staff, all selected in five out of eleven USE and UPOLET schools in Bungokho County, Mbale District. The schools had been coded with pseudo names S_1 , S_2 , S_3 , S_4 , and S_5 accordingly and were purposefully sampled based on the researchers' knowledge about such schools in the area that were facing challenges of curriculum implementation despite the perceived government support of school plant.

The study sample size was 110 respondents premised on Krejcie and Morgan (1970) Table. The proportional allocation of samples of teachers in each school was determined by using the formula $n_i/n.p_i$ recommended by Kothari (2004). Where n_i Total number of teachers in the school, n= Total population size, and p_i Sample size (total number of teachers in the school divided by the total population size multiplied by sample size). The researchers used census sampling technique to select all administrators; head teachers, deputy head teachers and directors of studies because of their small and specific numbers and all were perceived to be directly involved in supervision of curriculum implementation in secondary schools in Bungokho County, Mbale district. They used simple random sampling technique to select teachers for the study.

The data for this empirical study was collected using a self-constructed closed-ended questionnaire. It was administered to all the respondents in the five selected schools in the district. The responses were measured on a continuum of 5 Likert scale of; strongly agree, agree, not sure, strongly disagree and disagree. The instrument was divided into five sections; first section consisted of 7 items on the respondents' biodata, second section with 9 items on the management of study materials, third section consisted of 10 items on management of school location and fifth section consisted of 11 items on curriculum implementation

In order to ensure validity of the items for each construct in the questionnaire, it was submitted to three experts in the Faculty of education, Islamic University in Uganda who evaluated and rated the items therein. Thereafter, the CVI was computed and whole instrument scored 0.6 which was regarded as valid and suitable for this study (Pallant, 2007).

In order to ensure reliability of the whole questionnaire with all its constructs, the researchers carried out a pilot study at a selected secondary school using 100 respondents. Data was analyzed using SPSS version 20. Cronbach's alpha was found to be .759 against 36 items, therefore showing that the study instrument was reliable as its reliability value exceeded the prescribed threshold of 0.6 (Pallant, 2007).

In order to ensure credibility, fidelity and rigor, the researchers sought official permission to collect data from concerned authorities. They submitted their proposal to the heads of district administrative units including District Education Officer (DEO). District Inspector of Schools (DIS) and individual school Head teachers who all endorsed the proposal by all purpose and intent. With the help of SPSS, data was analyzed using Pearson product-moment correlation coefficient (r) to test the hypotheses. It was also analyzed using descriptive statistics of frequency and percentages.

Ethical Considerations

The researchers considered empirical ethical research features. In the first place, respondents who participated in the study were informed of voluntary participation without coercion. There was no respondent who was compelled or influenced to give information while collecting data. All pieces of information were treated with utmost confidentiality for purposes and intent of the study. The instrument was designed in such a way that the respondents remained anonymous. Besides, the administrative heads of the district provided exceptional permission to the researchers to collect data from the selected schools. Most importantly though, the researchers maintained the ethical values of non-plagiarisms where all sources of information were duly and appropriately cited.

Findings

The findings were based on the correlation between school plant management and curriculum implementation in government aided secondary schools in Bungokho, Mbale District on three constructs; management of study materials, management of physical infrastructure and management of school location.

The results from the data collection response rate revealed that 110 questionnaires were collected from the respondents depicting (100%) response rate of the set sample size. The data analysis was conducted in three categories; firstly on the characteristics of the demographic data, secondly, on descriptive statistics of frequencies and percentages and thirdly, on testing the research hypotheses.

Characteristics of the Demographic Data

The study found that males 58 (52.7%) participated in the study more than females 52 (47.3%). This implied that there were more male teachers in USE and UPOLET secondary schools than female teachers (DEDSR, 2017) in the selected schools of Bungokho county, Mbale district. It was also found that

more than half of the teachers 56 (51%) in the selected schools in Bungokho county had teaching experience of eleven years and above. In addition to their long serving experience, the study discovered that most of them 70 (63.6%) possessed undergraduate degree in education (BA. Education or BSc. Education). This finding implied that these schools recruit qualified and professional staff who had the ability, knowledge and skills to implement the school curriculum.

With regard to school location as part of school plant, it was discovered that 65 (59.1%) of the teachers stated that their schools were easily accessible. This implied that all stakeholders including administrative and teaching staff, district heads, and Ministry of Education officials among others can easily reach out to these schools. Therefore curriculum implementation in terms of practice accordingly was not a challenge. The study revealed that overwhelmingly 96 (87.3%) of the teachers stated that the National Curriculum Development Centre (NCDC) in Uganda was the major determinant of the teaching curriculum in the schools and that only 14 (12.7%) of the curriculum is determined by the school administrators and teachers combined. This implied that schools implement centralized curriculum from the state with less or no input from the teachers themselves.

Management of Study Materials

After analyzing major aspects of the demographic data, the researchers analyzed salient findings from the descriptive statistics. The study revealed findings on the correlation between study materials management and curriculum implementation in government aided secondary schools in Bungokho, Mbale District. For example, it was reported that 88 (80%) of the teachers agreed that science apparatus and chemicals in the laboratories in their schools were available and appropriately used for science lessons. The teaching staff reported that 3 (60%) of the schools did not have capacity to use computers in their classrooms. This implied a management gap in the administration to effectively implement computer-aided teaching and learning process in the selected schools.

Hypothetical Analysis of Study Materials

The researchers tested the first hypothesis; using Pearson productmoment correlation coefficient; Ho₁: there is no statistically significant correlation between management of study materials and curriculum implementation in government aided secondary schools in Bungokho, Mbale District. The findings showed a positive moderate correlation between study materials and curriculum implementation (r = .34, n=110, p < .05). The hypothesis was therefore rejected which implied that the more study materials (school plant) were provided in the selected secondary schools, the more likely effective implementation of the curriculum. The researchers therefore concluded that management of study materials had significant moderate correlation between school plant and curriculum implementation in the selected secondary schools in Bungokho County, Mbale District.

Management of Physical Infrastructure

The study analyzed findings on the correlation between physical infrastructure management and curriculum implementation in government aided secondary schools in Bungokho County, Mbale District. The study revealed 56 (50.9%) of teachers in the selected schools agreed having adequate classroom furniture to facilitate teaching and learning and 53 (48.1%) agreed their schools having functional sickbays (sanitariums) as students' and staff's healthcare facility. However, majority members of staff who participated in the study 89 (80.9%) reported that in the selected secondary schools, there were no suitable playgrounds to facilitate school co-curricular activities. In addition, academic staff reported that their schools did not have capacity to provide adequate main hall facilities for multiple use like accommodating school functions, holding students' clubs, seminars, conferences, meetings among others.

It was reported that 90 (81.8%) of the selected schools did not have facilities for skills-based subjects such woodwork, break laying, knitting, home economics, carpentry among other vocational based subjects. However, 55 (50.0%) of the staff reported that their schools had adequate library facilities for students' and staff references because of government's continued practice of providing textbooks to secondary schools throughout the country. The overwhelming 106 (96.4%) of the staff reported the selected secondary schools did not have adequate staff quarters for staff accommodation.

Hypothetical Analysis of Physical Infrastructure

The study tested the second hypothesis; Ho₂: there is no statistically significant correlation between management of physical infrastructure and curriculum implementation in government aided secondary schools in Bungokho, Mbale District. The findings revealed a positive moderate correlation between physical infrastructure and curriculum implementation (r=.40, n=110, p<.05). The hypothesis was rejected which implied that the more adequate and suitable physical infrastructure (school plant) is provided in these selected secondary schools the more likely effective implementation of the curriculum. The researchers concluded that physical infrastructure is moderately corcorrelated to curriculum implementation.

Management of School Location

The researcher analyzed descriptive statistics data on the correlation between management of school location and curriculum implementation in government aided secondary schools in Bungokho County, Mbale District. It was reported that majority 82 (74.5%) of the schools were located near the main road and therefore easily accessible. This was why 102 (92.7%) of the staff reported that in all the selected secondary schools in Bungokho county, there was conducive learning environment. The selected schools in Bungokho County accept both full time and part time teachers. The majority 67 (60.9%) of the staff reported that the location of these schools was quite convenient for them as full- time and part-time teachers. However, majority of them 49 (44.5%) disagreed that the location of these schools is suitable for further physical infrastructural development. Therefore these schools do not have enough space for expansion.

Hypothetical Analysis of School Location

The researchers tested the third hypothesis; Ho₃ there is no statistically significant correlation between school location and curriculum implementation in the selected secondary schools in Bungokho County, Mbale District Uganda. Using Pearson product-moment correlation coefficient, the findings showed that there was a strong positive correlation between school location management and curriculum implementation (r=.50, n=110, p<.05). Therefore, the hypothesis was rejected which implied that the more accessible the school the more the curriculum was implemented effectively. This concluded scientifically that school location management was highly corcorrelated with curriculum implementation in the selected secondary schools in Bungokho County, Mbale District.

Discussion

The study found that most secondary schools in Bungokho County in Mbale District do not conduct computer-aided-learning in the classroom. This misses out the advantages of using computers in the teaching and learning process. The finding is contrary to the opinions of Sule (2012) and Kelo (2007) who believe that students are motivated and highly engaged to learn well using class instructional materials especially computer devices. The computer-aided-learning is part of the bigger picture that implores the need for modern instructional materials. Gogo (2002) explains that to provide quality education, it is crucial for schools to procure relevant teaching and learning materials. The curriculum implementation becomes a great challenge with inadequate study materials in the classroom (Bowers & Burkett, 2007; Ololube, 2013; Onyeachu, 2008).

The study discovered that majority of secondary schools in Bungokho county could not provide main halls for multiple use. The curriculum implementation would become a struggle where schools were not able to organize students' clubs, school seminars, workshops, meetings, social hours, demonstrations among others. Ariani, et al. (2016) observed that the physical learning space and design of the school have a fundamental effect on motivation of learners and study progress.

It was found that the government of Uganda through the Ministry of Education provides secondary schools with textbooks to equip their libraries. This is great support for both science and arts based schools. Enyi (2004) explains that physical library facilities contribute a lot to the achievement of educational objectives. The school library promotes the development of reading skills and long-term learning habits among teenage students. It is through reading that these students view a variety of learning materials that enrich their career discipline. This is school plant that enhances curriculum implementation.

The study found that school location is highly and significantly correlated with curriculum implementation. This was a rather intriguing finding. There are several advantages when a school is easily accessible. These include; attracting professional teachers who "moonlight" in many schools looking for extra pay, easy interaction with other sister schools, school billboard takes daily advert because of nearness to the road. School location easily partakes in the cocurricular activities within the schools at any time of the day or evening. This helps in exposing learners to more critical skills, values and attitudes viable for their social and emotional development. Mukasa (2010) believes that school location determines the extent of teacher performance in a school environment regarding delivery of academic and extra-curricular activities. Therefore as part of school plant, school location promotes curriculum implementation. The geographical location of the school influences the way teaching and learning programmes are conducted. Sallis (2011) observed that educational programmes cannot be effectively implemented using only policy guidelines even if the teachers are trained and committed without adequate and appropriate physical school location.

Ololube (2013) reasons that, a strong correlation exists between the quality of a school location plant and the academic achievement of students; most parents, who are aware of this, spend time searching for well-located and equipped schools with high quality infrastructural facilities for their children and wards. It is noted that schools situated in urban settings have an edge over those located in rural areas about endowment of necessary facilities and are thus likely to perform better in the learning and teaching process. The Uganda Ministry of Education and Sports (2010) reiterates the importance of ensuring the need for a suitable school location with adequate and appropriate facilities for teaching-learning so that educational programmes could be implemented effectively. Therefore, a successful implementation of the curriculum is equally determined by the nature of the school location.

Conclusions

The study findings revealed a positive moderate correlation between study materials and curriculum implementation (r = .34, n=110, p<.05). This implied that the more study materials are provided the more likelihood chances of implementing the curriculum in government aided secondary schools in Bungokho county Mbale district. The researchers thus concluded that study materials if well managed can promote effective curriculum implementation.

The findings also indicated a positive moderate correlation between physical infrastructure management and curriculum implementation (r=.40, n=110, p<.05). This implied that the more physical infrastructure is constructed in support of school plant, the more it is perceived that the curriculum shall be implemented in these respective schools. The study therefore, concluded that

physical infrastructure is corcorcorrelated with curriculum implementation in government aided secondary schools in Bungokho county Mbale district.

The researchers discovered that there was a strong positive correlation between school location management and curriculum implementation. (r=.50, n=110, p<.05). This implied that the more the accessibility of the school, the more effective curriculum implementation. This concludes that school location determines curriculum implementation. This was the most salient finding in this study.

Recommendations

Basing on the objectives of the study, findings and conclusions, the researchers made the following recommendations;

- 1) School administrators should strengthen supervision and monitoring of teachers to ensure that available school equipment is effectively used to facilitate content delivery for effective learning.
- 2) There should be candid use of available physical infrastructure to enhance innovations and creativity among the teaching staff and students.
- 3) The Boards of Governors managing secondary schools in Bungokho County and government stakeholders should ensure that any constructed secondary schools in Uganda should strategically and geographically be well located with ease of access.
- 4) The Boards of Governors managing secondary schools in Bungokho County and the government of Uganda through the Ministry of Education and Sports should provide these secondary schools with adequate computers to promote computer-aided learning.
- 5) The school administration in Bungokho County, Mbale District should procure more land to develop modern play grounds to promote co-curricular activities for physical development of learners and promote their talents.

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