SCHOOL ENVIRONMENT AND STUDENTS ACADEMIC ACHIEVEMENT IN SELECTED PUBLIC SECONDARY SCHOOLS IN MBALE UGANDA

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DECLARATION

I **BUKOSELA JESCA.KAKAYI TESILAH** declare that this research dissertation is my original work. It has never been presented anywhere in any institution of higher learning by any individual for any academic award.

Signed.  Date: 21/08/2024

APPROVAL

I, the undersigned certify that this research dissertation has been written under my guidance and supervision. It is now ready for submission for approval.

Signed  Date. 21/ 08/2024

Dr. Okurut David

DEDICATION

This research is dedicated to my beloved family and I pray that they get the urge of furthering their studies to the highest level.

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ABSTRACT

The purpose of the study was to examine the influence of school environment and students' academic achievement in selected public secondary schools in Mbale, Uganda. It was guided by three objectives which were; to examine the contribution of library on students' academic achievement, to assess the contribution of sanitation on students' academic achievement and to examine the contribution of classroom facility on students' academic achievement in selected public secondary schools in Mbale, Uganda. The study adopted a descriptive research design and the explanatory sequential mixed methods, with a sample of 247 selected from a study population of 660 using Krejcie and Morgan simple table of 1970. The data obtained was analyzed using SPSS software into percentages, mean and inferential statistics. The study showed that the presence of a library in a school has a positive correlation with students' achievement although the relationship is small, while sanitation had a positive and high correlation on students' achievement. The study concluded that the magnitude of contributions to students' achievements are; sanitation, library and classrooms respectively. The study recommended that that schools should have well equipped libraries and good classroom facilities so as to enhance students' academic achievement.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter contains the background of the study, statement of the problem, purpose of the study, specific objectives of the study, research questions, significance of the study, the scope of the study, the conceptual framework and definition of key concepts.

1.1. Background to the Study

Education is an all-round process that is essential for the development of society. (Dimbisso,2009) The more educated the people of a society are, the more civilized and well-disciplined the society might be. It has been assumed that academic achievement of students may not only depend on the quality of schools and the teachers, rather the extent of parental involvement has vital role to play in academic achievement of their kids. According to Dewey (1926) 'education is a continuous process of expressing and of revising or no revising experiences. It is the development of all those capacities in the individual, which enables him to control his environment and fulfil his possibilities'(Y.K.Singh, p.22). the forces of the environment begin to influence the growth and development of the individual right from the womb of the mother. Educational process of development occurs in physical, social, cultural and psychological environment. A proper and adequate environment is very much necessary for a fruitful learning of the child. Especially the home and the school should provide the necessary stimulus for learning experience. The child spends most of his time in school and here his environment is exerting a different influence on performance through curricula, teaching techniques, relationships.

Jawaharlal Nehru declare that if all were well with our education institutions, all would be well with the nation. Educational institutions are intimately lined with society at large. They are the temples of knowledge. They are the agents of change and transformation. therefore, the general conditions of our schools, colleges is a matter of great concern to the nation. Environment plays a vital role in the

development of the personality of the students. As a student spends most of his time at school, the school environment is highly responsible for the inculcating of great values in him. The Kothari commission of (1964 to 1966) has beautifully said, “The destiny of India is now being shaped in her classrooms (p.2). As students are the backbones of the nation it is important to maintain a healthy school environment.”

In Canada, education is for the most part provided publicly, and is funded and overseen by provincial, territorial and local governments. Education is within provincial jurisdiction and the curriculum is overseen by the province. Education in Canada is generally divided into primary education, followed by secondary education and post-secondary. Within the provinces under the ministry of education, there are district school boards administering the educational programs. Education is compulsory in every province and territory in Canada, up to the age of 18 for Manitoba, New Brunswick, Nunavut, and Ontario, and up to the age of 16 for other jurisdictions, or as soon as a high school diploma has been achieved. In some provinces early leaving exemptions can be granted under certain circumstances at 14. Canada generally has 190 (180 in Quebec school days in the year, officially starting from September (after Labor Day) to the end of June (usually the last Friday of the month, except in Quebec when it is just before June 24 – Saint-Jean-Baptiste Day/Fête nationale du Québec).

In British Columbia schools, the Ministry of Education sets the minimum number of instructional hours in a school year, while local school boards have the authority to determine the start and end of the school year, length of the school day, number of non-instructional days, etc. in order to meet the minimum number of instructional hours for that year. While the school year typically runs from the start of September to mid/end of June, there exists local variation throughout the country. The Canadian Education Statistics Council (CESC) works in collaboration with provincial and territorial departments that are responsible for education and training, on the Pan-Canadian Education Indicators Program (PCEIP). The CESC includes both the CMEC and Statistics Canada. The CESC submits an annual report, Education Indicators in Canada: An International Perspective, "supports the comparison of educational systems in Canada's provinces and territories with member [OECD] countries".

The Organisation for Economic Co-operation and Development (OECD) coordinates the Programme for International Student Assessment (PISA) that is intended to evaluate educational systems—OECD members and non-OECD members—by measuring 15-year-old school pupils' scholastic performance on mathematics, science, and reading.

About 6% of Canadian tenth-graders are in private schools, most of which are in Quebec. A Statistics Canada study from 2015 found that these students tend to have higher test scores and future educational attainment than their public school counterparts. Rather than enjoying superior resources and educational practices, the most likely explanation for this discrepancy is the higher expectation of success that students experience from their parents, teachers, and fellow students.
Lorraine (2016) explains that in the US, academic achievement is linked to building condition mediated by the social climate and student attendance. The model accounted for 70 percent of the variance in the outcome measures. Student attendance and perception of social climate mediate building condition and academic outcomes in NYC middle schools. Controls include percent minority students in the school and percent eligible for free and reduced price meals. The model expands previous research on social climate and student attendance relationship with school building condition.

Student's education achievement remains a big challenge in many public secondary schools especially in low income countries. School environment refers to factors within the school setting that influence the teaching-learning process and these factors include; classrooms, library, workshops, laboratories, teachers, textbooks, peers. School environment also refers to a set of relationships that occur among members of a school community that are determined by structural, personal, and functional factors of the educational institution which provide distinctiveness to schools (Ayayi, pg. 142, 2001). However, in low income countries, the school environment is limited in provision of the required teaching and learning facilities which affect students' academic achievements. Achievement measures are test of developed skill or knowledge. The most common type of achievement test is a standardized test developed to measure skills and knowledge learned in a given

grade level, usually through planned instruction, such as training or classroom instruction. Agharuwhe & Nkechi (2017) contend that effective teachers produced better performing students. However, the observed differences in students' performance were statistically not significant. This could be due to the influence of student and school environment related factors which were not included in this study. It was concluded that teachers' effect is not the only determinant on students' academic achievement.

In Ekiti state in Nigeria, academic achievements over four decades, series of studies have suggested the importance of school as social environment of learning. Some of these studies examined locational planning and their attendant consequences on achievement of students in various states of the Federation. The studies were intended to assist education authorities of various states to decide where a particular type of school should be located; the size of a school in each location; whether a new school should be built or otherwise among others (Mbakwe, 1986). The World Bank recommended that the following data were needed for rationalizing and drawing up of both the urban and rural school map. Schools which includes physical aspects, site, type of building, usage, capacity, teachers (numbers, qualification, and age); students which include enrollment in school by age, individual data in age, sex, previous schools, home, location of mode transport, time taken in home/school journey, parental background; Rural and Urban Area Data which include land use administrative map on as large a scale as possible, planning reports, settlement patterns and the likes are required. These school locational planning techniques have been reportedly used by a number of countries to solve their educational problems (World Bank Guidelines 1978).

In applying the school locational planning to study and establishment of secondary level education in a plot study in Ondo State of Nigeria, Omoyemi (1978) discovered that locations of schools was not based on sound principles of distribution of population because of initial community participation. In his observation, Ogunsaju (1984) noted that School sites in the past were arbitrary chosen with little or no consideration for the necessary parameters such as creativity and corporate planning. In another development, Orebiyi (1981) using locational implication of

secondary education reform in Oyi Local Government area of Kwara State between 1980 and 1985 purpots that unplanned location of secondary schools has limited the spread of secondary education to a few centers. Madumere (1982) investigated the distribution of secondary schools in Imo State (Ohaozara Local Government area), employing locational planning technique to carry out diagnostic and projection analysis on distribution of facilities in relation to education reforms, discovered among other things, that were imbalances in the relationship between population density and distribution of secondary schools by Local Government Area.

It is evident that students' academic success does not depend solely on their mental and physical abilities; rather, other external factors also contribute to academic excellence. To put the aforementioned strategies in perspective, Hijazi and Naqui (2006) identify three types of factors regarded as influencing student academic achievement: environmental, socioeconomic, and psychological factors. One important aspect of socioeconomic factors is parental education (e.g., Ferguson & Ladd 1996; Mestry et al., 2007; Kurian, 2008). The consensus among researchers is that student academic achievement depends largely on parents' involvement in matters related to the education of their children. Kurian (2008) affirms that parents' active participation is not only essential to improving discipline in schools, but also promotes student academic achievement, as demonstrated by good grades. The findings reveal that children of educated parents have a higher level of life satisfaction and fewer problems (Sudhir & Lalhirimi, 1989) and are relatively more confident, self-reliant, and free from anxieties and other psychological problems (Jehangir, Tahir, & Saeed, 2000). However, these behavior traits may vary by school and the level of teachers' involvement in molding and polishing a child's personality.

Nevertheless, for parents to effectively become involved in their children's learning and thereby exert a positive influence on the children's academic performance, they must have had previous experience with the formal education system. The situation may vary by parent; for example, mothers with higher education can provide more support to their children in problem-solving situations at the preschool level. Englund, Luckner, Whaley, and Egeland (2004) reveal that "children can be

encouraged to develop higher expectations of educational attainment during the early years of their education. The educated mothers are also more involved in their children's studies and helped them as compared to mothers with no or less education." The study suggests high academic achievement at later stages of schooling among children with early involvement by educated mothers. Parents maintain their interest and concern in their children's studies in higher-level classes as well (Perveen & Alam, 2008). While the situation may not be any different with regard to fathers' education level (Houtenville & Conway, 2007; Desforges & Abouchaar, 2003), Marks (2007) suggests that the impact of the mother's level of education is greater than the father's on overall academic performance of their children. This is probably because the men in most cases fulfill all of the economic needs of the family, while the women act as housewives and perform home duties such as cooking, washing, and looking after their children. However, this may not be entirely the case in Uganda.

In Uganda, the majority (66%) of the working population is engaged in the agricultural sector (UBOS, 2012), which employs both men and women. Though the population of Uganda includes more females than males, the proportion of women in formal employment is lower than that of males. Thus, children spend most of their time with mothers. The mother in most cases ensures that the children learn the social and moral etiquettes as well as receive religious education. In light of the fact that a majority (70.5%) of households in Uganda are male-headed (UBOS, 2012), most important decisions in a home are certainly made by the man—women are not actively involved in the decision-making process regarding household assets, cash, or income flows, or when and how often to have children. As a result, their role in choosing a school for their child is limited. The country is marked by a gender gap in control over resources and decision-making power, to the detriment of women.

Though literacy rates and levels vary internationally, in developing countries, these rates are typically estimated as lower for women compared to men. In Uganda, the estimated literacy rate is 79% and 66% for males and females, respectively (UBOS, 2012). Further, the 2006 UDHS reports higher enrollment of males than females at all levels of education (UBOS, 2006). However, much lower enrollments are recorded at secondary levels compared to primary levels of education, implying that primary

education is an exit point for many individuals in Uganda. The situation with regard to male-female and primary-secondary differentials in enrollment is not different from the results obtained from analysis in the preceding demographic health surveys. Overall, males have a clear advantage over women in access to and control over resources while cultural practices bestow men with more power than women. On the other hand, the literacy levels in the country are reported to vary by rural-urban residence and geographical location; lower rates are reported in rural areas. The Northern (64%) and Eastern (68%) regions record the lowest estimates in the country (UBOS, 2012). On the other hand, given that literacy in Uganda is defined as the "ability to read with understanding and write meaningfully in any language," not necessarily English, which is the official language used in schools, the suggested association between parents' education and the academic achievement of their child may not hold. Nonetheless, the minimum levels of father and mother's education required to predict better academic achievement of their child may not be the same across countries and academic disciplines.

This may be due to variations in student background characteristics and the quality of education services in different countries. Thus, the link between father and mother's education levels and the academic achievement of their child remains to be investigated in the context of Uganda. Though a recent study in Uganda yielded similar results with regard to parents' education and student academic achievement (MoES, 2009), no statistical assessment is provided to support the conclusions made. The focus of studies in Uganda is on student academic achievement in primary and secondary education (UNEB, 2011), with hardly any linkages made to the education levels of the father and mother. Nevertheless, these studies do not control for the influence of other variables in the analysis of academic achievement. On the other hand, it is debatable whether the impact of parents' education on the academic achievement of their children holds across various discipline areas, for example, reading, numeracy, and health sciences, to mention but a few. This study therefore investigates the effect of the father and mother's levels of education on the academic achievement of their child in Uganda. The investigations are made across various disciplines to ascertain whether differentials exist in student academic

achievement by their father and mothers' education. The analysis accounts for variations in the selected background characteristics of the learners.

School environment has been defined by various authors in various ways. Mege (2014.p.xiii), defines school environment as "factors within the school that influence the teaching and learning process. The school environment includes classrooms, library, technical workshops, teacher's quality, teaching methods, peers among others that can affect the teaching and learning process." This therefore implies that there are various environmental variables and this may differ from one school to another. Erisa .M.kigenyi (2015), postulates that school environment is broadly characterized by its facilities, classrooms, school based health supports and disciplinary policies and practices. It concerns the external factors that affect the students. According to Mick Zais (2011), school environment means the extent to which school settings promote student safety and student health, which may include topics such as the physical plant, the academic environment, available physical and mental health supports and services, and the fairness and adequacy of disciplinary procedures, as supported by relevant research and an assessment of validity. According to Korir and Kipkemboi (2014) school environmental factors include school structure, school composition and school climate. In addition, school environmental factors also include safety and order, teacher relations and collaboration, academic expectations, leadership and teachers' professional development factors. In this context therefore school environment refers to physical, tangible/visible things used in the school setting or atmosphere which may include library, playground, laboratory, sanitary facilities, and dust bins, among others.

On the other hand, academic achievement is a measure of knowledge gained in formal education usually indicated test scores, grades, grade points, average and degrees. Here, the achievement level of student is judged by marks that the students have scored in the quarterly examinations. (According to journal of education and instruction studies in the world, august 2012 volume2 issn3 articles). According to Reynolds & Walberg, (1992), academic achievement refers to the psychological characteristics of individual students and their immediate psychological environments that influence educational outcomes (cognitive, behavioral and

attitudinal. According to Narad and Abdullah (2016), academic achievement refers to acquired knowledge that is examined through marks by a teacher and / or a set of educational goals established by the teacher and the students that are to be attained over specific timelines.

Academic achievement refers to the performance of students in the field of education towards educational contributes to the child's success in schools (Essien, 2002). Dimbisso, (2009) defines academic achievement as how students deal with their studies and how they cope with or accomplish different tasks given to them by their teachers in fixed time or academic year. In this study therefore academic achievement means deriving success in the teaching and learning outcomes in an educational institution for instance scoring high grades in exams, tests and acquiring skills that qualify you to the next academic level.

1.2. Statement of the Problem

The problem is realization of the declining student's academic achievement at UCE in public secondary schools in Mbale District. This is characterized by: low or poor student's grades in Uganda Certificate of Education (Mbale District Education Report, 2021). Though several education policy reforms have been adopted by government of Uganda to improve students' academic achievement, for example free education, instructional materials, refresher courses, compassion international, NAPE, DES and administrative admission but the effort has been in vain. Therefore, this study sets out to establish the influence of school environment on student's academic achievement in selected public secondary schools in Mbale-Uganda.

1.3. Purpose of the Study

The purpose of the study was to examine the influence of school environment and students' academic achievement in selected public secondary schools in Mbale, Uganda.

1.4. Specific Objectives of the Study

i. To examine the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda.

ii. To assess the contribution of sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda.

iii. To examine the contribution of classroom facility on students' academic achievement in selected public secondary schools in Mbale, Uganda.

1.5. Research Questions

i. What is the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda?

ii. What is the contribution sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda?

iii. What is the contribution classrooms on students' academic achievement in selected public secondary schools in Mbale, Uganda?

1.6. Scope of the Study;

This refers to the coverage and it stipulates clearly the boundaries of the study. For this case the study will be carried out in public secondary schools to establish the secondary schools in Mbale district that have been performing poorly.

1.6.1. Content Scope

The study will be limited to the influence of school environment and students' academic achievement in selected public secondary schools in Mbale district, Uganda.

1.6.2. Geographical Scope

Mbale District is bordered by Sironko District to the north, Bududa District to the northeast, Manafwa District to the southeast, Tororo District to the south, Butaleja District to the southwest and Budaka District to the west. Pallisa District and Kumi District lie to the northwest of Mbale District. Mbale city is the largest town in the district and the location of the district headquarters, is located approximately 245 kilometers (152 mi), by road, northeast of Kampala, the capital of Uganda, and the largest city in that country. The coordinates of the district are: 00 57N, 34 20E. It has an area of 518.8 square kilometers (200.3 sq. mi).

1.6.3. Time Scope

The study will cover a period of five academic years (2016, 2017, 2018, 2019, 2020, & 2021). This period has been preferred because there has been a lot of decline in this period about poor grades at UCE in Mbale District. This is because there has been a lot of outcry in this period by teachers, parents and the government at large about poor grades at UCE in Mbale district. The five years will be critical to generate data especially on Uganda Certificate of Education in terms of grades.

1.7. Justification of the study.

Several studies have been conducted to establish the poor students' academic achievements in public secondary schools in Uganda. Many of these studies have attributed this phenomenon to funding, Universal Secondary Education policy, parents' support, student's family background (Tumusiime, 2019). However, thin

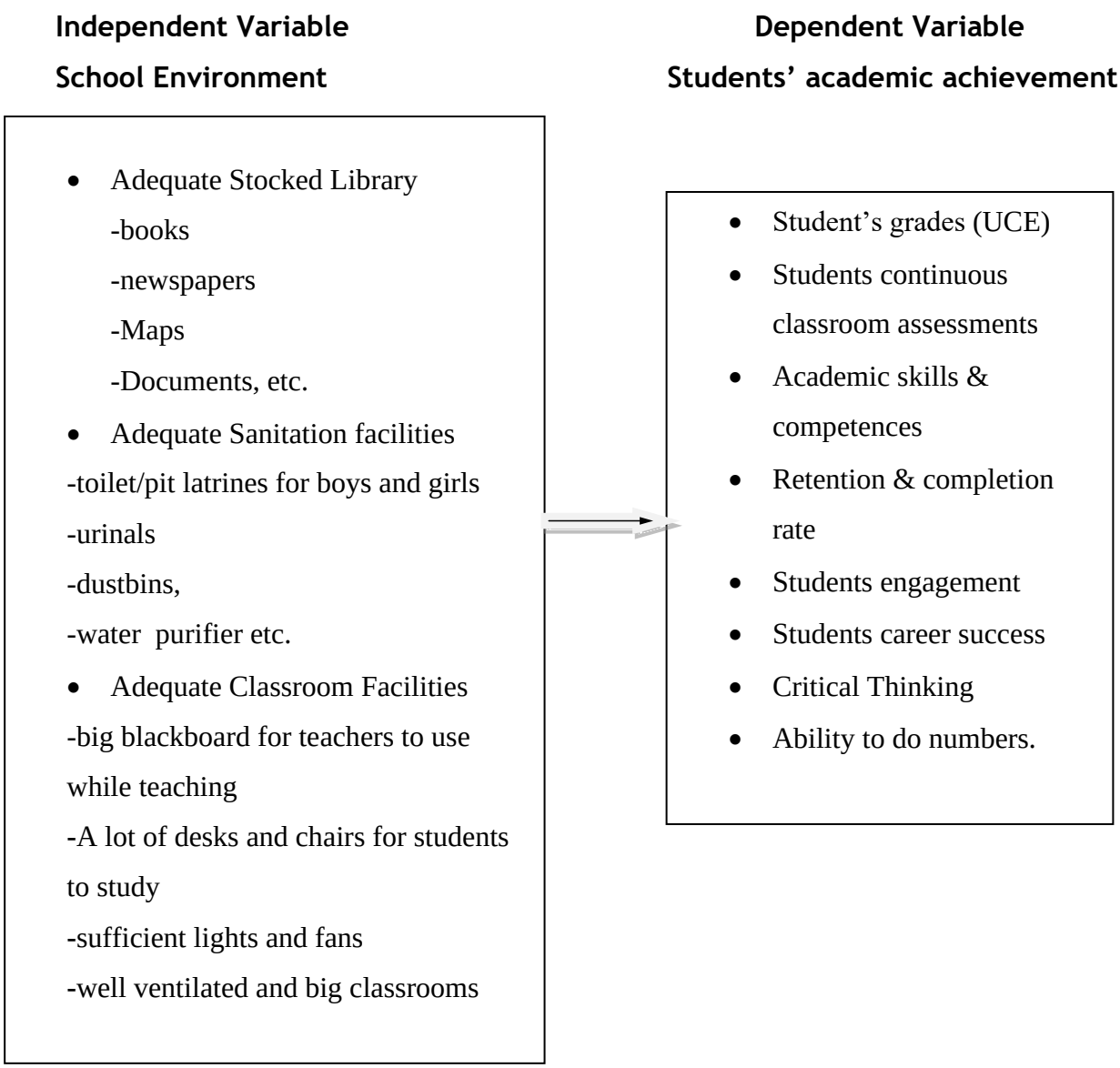
literature exists on the influence of school environment and students' academic achievement in public secondary schools in Mbale, Uganda. Thus the alarming realization of the decline of academic achievement in the recent past has motivated the researcher to carry on the study because if left unattended to, the future of education in Uganda and Mbale in particular will be at stake as there will be unemployment, lack of skills among the young people resulting into street roaming hence high crime rates in the country.

1.8. Significance of the Study

The study will be important to the following category of stakeholders;

The study findings will inform policy makers at both national and local government level to prioritize the building of libraries and classrooms to promote effective teaching-learning process in public secondary schools in Uganda. The study findings will add to the body of knowledge in the field of academia to further research and development. The findings will inform parents, and other stakeholders to improve the learning environment that will facilitate effective learning process. The study is an academic requirement for the award of the Master of Education Management and Planning of Uganda Christian University.

1.9. Conceptual Frame Work



Source: *Adopted* from: Hafiz et al., (2013); York, Gibson, Rankin (2015), Zulfiqar & Mushtaq-ur-Rehman (2022) *as modified* by researcher, 2022.

Figure 1.9; conceptual framework showing the relationship between the independent variable (school environment) and dependent variable (students' academic achievement). The independent variable will be measured by: library, sanitation facility and classroom. While the dependent variable will be measured by: student's grades, students' academic skills & competences, students' retention &

completion rate, students' engagement, critical thinking students career success and ability to do numbers.

1.10. Definition of Key terms

Academic achievement: Deriving success in the teaching and learning outcomes in an education institution for example skills high grades.

School environment: refers to the physical tangible/visible things used in the setting of school atmosphere for example library, playground among others.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents information about something which may be written or oral that people have and can help to connect. It involves reviewing literature in the systematic way, by identifying, location, retrieval, analysis and evaluation of documents containing information which provides a wide perspective from global to local about the study problem. It also contains theoretical framework and analysis of three research objectives as sub-themes and identification of gaps in existing literature.

2.1 Theoretical Framework

2.1.1 Theory of Academic Performance

The theory of academic performance (ToP) was developed by Elger (2007). The theory emphasizes six foundational concepts to form a framework that can be used to explain performance as well as performance improvements. To perform is to produce valued results. A performer can be an individual or a group of people engaging in a collaborative effort. Developing performance is a journey, and level of performance describes location in the journey. Current level of performance depends holistically on six components: context, level of knowledge, levels of skills, level of identity, personal factors, and fixed factors. Three axioms are proposed for effective performance improvements. These involve a performer's mindset, immersion in an enriching environment, and engagement in reflective practice.

The theory of performance is a challenge to educators: by improving our own performance, we empower ourselves to help others learn and grow. As advocated by Harvard's Project Zero, performance is closely related to learning-for-understanding (Wiske, 1998). When people learn and grow, they are empowered to create results that make a difference. Working and learning together in ways that make the world better has been a primary goal of higher education throughout the ages.

2.1.2 Rationale for a Theory of Performance (ToP)

Humans are capable of extraordinary accomplishments. Wonderful accomplishments also occur in day-to-day practice in higher education. An advisor inspires students to follow their dreams. A teacher magically connects with students. A researcher continually asks the quintessential questions that lead to revolutions in thinking. A dean inspires an entire college to collaborate and attain wonderful outcomes. Since worthy accomplishments are produced from high-level performances, a theory of performance (ToP) is useful in many learning contexts.

Traditional Contexts: A ToP informs learning in classrooms, workshops, and other venues that are traditionally associated with learning.

Non-Traditional Contexts: A ToP informs learning in contexts that are not traditionally conceptualized as learning environments. Examples of these contexts include academic advising, self-development, departments, academic committees, professional research groups, and colleges.

Organizational Learning: A ToP informs learning by organizations through the idea of examining the "level of performance" of the organization.

To perform is to take a complex series of actions that integrate skills and knowledge to produce a valuable result. In some instances, the performer is an individual; in other instances, the performer is a collection of people who are collaborating, such as an academic department, research team, committee, student team, or a university. Performance, as the adage goes, is a "journey not a destination." The location in the journey is labeled as the level of performance. Each level characterizes the effectiveness or quality of a performance.

As an academic department improves its level of performance, the members of the department are able to produce more effective student learning, more effective research, and a more effective culture. As a teacher advances his levels of performance, he is able to produce deeper levels of learning, improved levels of skill development, and more connection with the discipline for larger classes while

spending less time doing this. Performing at a higher level produces results that can be classified into categories:

Quality increases—results or products are more effective in meeting or exceeding the expectations of stakeholders

Cost decreases—amount of effort or financial resources to produce a result goes down; amount of waste goes down

Capability increases—ability to tackle more challenging performances or projects increases

Capacity increases—ability to generate more throughout increases

Knowledge increases—depth and breadth of knowledge increases

Skills increase—abilities to set goals, persist, maintain a positive outlook, etc. increase in breadth of application and in effectiveness

Identity and motivation increases—individuals develop more sense of who they are as professionals; organizations develop their essence

Improving Performance: While some factors that influence improving performance are immutable, other factors can be influenced by the performer or by others. The factors that can be varied fall into three categories. Performer's Mindset. Performer's mindset includes actions that engage positive emotions. Examples include setting challenging goals, allowing failure as a natural part of attaining high performance, and providing conditions in which the performer feels an appropriate degree of safety.

Immersion - Immersion in a physical, social, and intellectual environment can elevate performance and stimulate personal as well as professional development. Elements include social interactions, disciplinary knowledge, active learning, emotions (both positive and negative), and spiritual alignment.

Reflective Practice - Reflective practice involves actions that help people pay attention to and learn from experiences. Examples include observing the present level of performance, noting accomplishments, analyzing strengths and areas for

improvements, analyzing and developing identity, and improving levels of knowledge.

The ToP presented here is similar to other constructs in the literature. The Parallel Curriculum, advocated by Tomlinson et al. (2002), advocates four parallel curriculums that reinforce the four adjustable components. The core curriculum and the curriculum of connections focus on knowledge construction. The curriculum of practices emphasizes context and promotes skill development. The curriculum of identity focuses on development of the individual as a member of a professional community.

Additional support for the axioms can be found in the work of Bransford et al. (2000). Their model for effective teaching and learning includes knowledge-centred, learner-centred, assessment-centred, and community-centred components. The learner-centred component involves the performer's mindset. The knowledge-centred and community-centred components connote immersion in an enriching environment, while the assessment-centred component embraces elements of reflective practice. The importance of having a well-founded conceptual model, appropriate methods for data collection, and reliable and robust system for making inferences about observations is well-established in the work of Pellegrino and Glaser (2001), and this undergirds reflective practice in organizational contexts.

Walberg's theory of educational productivity

Walberg's (1981) theory of educational productivity, is one of the few empirically tested theories of school learning based on an extensive review and integration of over 3,000 studies (DiPerna, Volpe & Stephen, 2002). Wang, Haertel, and Walberg (1997) analyzed the content of 179 handbook chapters and reviews and 91 research syntheses and surveyed educational researchers in an effort to achieve some consensus regarding the most significant influences on learning (Greenberg et al., 2003). Using a variety of methods, Wang, et al. (1977) identified 28 categories of learning influence. Of the 11 most influential domains of variables, eight involved social-emotional influences: classroom management, parental support, student-

teacher interactions, social- behavioral attributes, motivational- effective attributes, the peer group, school culture, and classroom climate (Greenberg et al., 2003). Distant background influences (e.g., state, district, or school policies, organizational characteristics, curriculum, and instruction) were less influential. Wang et al. (1997) concluded that "the direct intervention in the psychological determinants of learning promise the most effective avenues for reform" (p. 210).

Wang et al.'s research review targeted student learning characteristics (i.e., social, behavioral, motivational, affective, cognitive, and metacognitive) as the set of variables with the most potential for modification that could, in turn, significantly and positively affect student outcomes (DiPerna et al., 2002). More recently, Zins, Weissberg, Wang and Walberg, (2004) demonstrated the importance of the domains of motivational orientations, self-regulated learning strategies, and social/interpersonal abilities in facilitating academic performance. Zins et al. reported, based on the large-scale implementation of a social-emotional learning (SEL) program, that students who became more self-aware and confident regarding their learning abilities, who were more motivated, who set learning goals, and who were organized in their approach to work (self- regulated learning) performed better in school. According to Greenberg, Weissberg, O'Brien, Zins, Fredericks, Resnick, & Elias, (2003), Zins et al. (2004) research linking social, emotional, and academic factors are sufficiently strong to advance the new term social, emotional, and academic learning (SEAL). A central challenge for researchers, educators, and policymakers is to strengthen this connection through coordinated multiyear programming.

Walberg and associates' conclusions resonate with findings from other fields. For example, the "resilience" literature (Garmezy, 1993) grew from the observation that despite living in disadvantaged and risky environments, certain children overcame and attain high levels of achievement, motivation, and performance (Gutman, Sameroff & Eccles, 2002). Wach's (2000) review of biological, social, and psychological factors suggested that no single factor could explain "how" and "why" these resilient children had been inoculated from the deleterious effects of their day- to-day environments. A variety of promotive (direct) and protective (interactive) variables were suggested, which included, aside from cognitive abilities, such conative characteristics as study habits, social abilities, and the absence of behaviour problems (Guttman et al., 2003).

Haertel, Walberg, and Weinstein (1983) identified eight major models of school learning that are either based on psychological learning theory (Glaser, 1976) or time-based models of learning (Bennett, 1978). Despite variations in names of constructs, Haertel et al. (1983) found that most of the eight theories included variables representing ability, motivation, quality of instruction, and quantity of instruction. Constructs less represented in the models were social environment of the classroom, home environment, peer influence, and mass media (Watson & Keith, 2002). Haertel et al.'s (1983) review of theories, multiple quantitative syntheses of classroom research, and secondary data analyses of large- scale national surveys (Reynolds & Walberg, 1992), generally support Walberg's global model of educational productivity. Walberg's model specifies that: Classroom learning is a multiplicative, diminishing-returns function of four essential factors—student ability and motivation, and quality and quantity of instruction—and possibly four supplementary or

supportive factors—the social psychological environment of the classroom, education-stimulating conditions in the home and peer group, and exposure to mass media. Each of the essential factors appears to be necessary but insufficient by itself for classroom learning; that is, all four of these factors appear required at least at minimum level (Haertel et al., 1983).

An important finding of the Walberg et al. (1986) large scale causal modelling research was that nine different educational productivity factors were hypothesized to operate vis- à-vis a complex set of interactions to account for school learning. Additionally, some student characteristic variables (motivation, prior achievement, attitudes) had indirect effects (e.g., the influence of the variable "went through" or was mediated via another variable). The importance of the Walberg et al. group's findings cannot be overstated. Walberg's (1981) theory of educational productivity is one of the few empirically tested theories of school learning and is based on the review and integration of over 3,000 studies (DiPerna et al., 2002). Walberg et al. (1986) have identified key variables that effect student outcomes: student ability/prior achievement, motivation, age/developmental level, quantity of instruction, quality of instruction, classroom climate, home environment, peer group, and exposure to mass media outside of school (Walberg, Fraser & Welch, 1986). In the current context, the first three variables (ability, motivation, and age) reflect characteristics of the student. The fourth and fifth variables reflect instruction (quantity and quality), and the final four variables (classroom climate, home environment, peer group, and exposure to media) represent aspects of the psychological environment (DiPerna et al., 2002). More recently, Wang, Haertel, and Walberg (1993) organized the relevant school learning knowledge base into major

construct domains (State & District Governance &Organization, Home & Community Contexts, School Demographics, Culture, Climate, Policies &Practices, Design & Delivery of Curriculum & Instruction, Classroom Practices, Learner Characteristics) and attempted to establish the relative importance of 228 variables in predicting academic domains. Using a variety of methods, the authors concluded that psychological, instructional, and home environment characteristics ("proximal" variables) have a more significant impact on achievement than variables such as state-, district-, or school-level policy and demographics ("distal" variables). More importantly, in the context of the current document, student characteristics (i.e., social, behavioural, motivational, affective, cognitive, metacognitive) were the set of proximal variables with the most significant impact on learner outcomes (DiPerna et al., 2002).

Motivational Systems Theory and Academic Performance

A direct offspring or subset of Sigmund Freud's theory is Martin Ford's motivational systems theory (MST). This framework focuses on the individual as the unit of analysis, but embeds the individual in the biological, social, and environmental contexts that are crucial to development. MST attempts to describe the development of the whole person-in-context, in much the same way a biologist might describe an individual plant and its relation to its immediate ecological niche, as well as the larger ecosystems in which it resides (Pintrich & Schunk, 1996). Ford proposed a simple mathematical formula that attempts to represent all these factors in one model. The formula for effective person-in-context functioning is:

Achievement = (Motivation x Skill) x Responsive Environment

Biological Structure

The formula proposes that actual "achievement and competence are the results of a motivated, skillful, and biologically capable person interacting with a responsive environment" (Ford, 1992, p.70). The motivational systems theory does not attempt to replace or supersede any of the existing theories. Instead, it attempts to organize the various motivational constructs from different theories into one model. The main constructs are self-efficacy beliefs, the role of expectancy, and goal orientation. The formula suggests that in any behavior episode, there are four major prerequisites for effective functioning:

1. The person must have the motivation needed to initiate and maintain the activity until the goal directing the episode is attained.
2. The person must have the skill necessary to construct and execute a pattern of activity that will produce the desired result.
3. The person's biological structure and functioning must be able to support the operation of the motivation and skill components.
4. The person must have the cooperation of a *responsive environment* that will facilitate progress towards the goal (Ford, 1992).

This model attempts to provide a comprehensive theory of motivation and proposes that actual achievement and competence are the results of a motivated, skillful, and biologically capable person interacting within a responsive environment.

From available research on motivation and academic performance, it became quite evident that motivational constructs do in fact impact the academic performance of students. There are studies documenting the correlation of the Scholastic Aptitude Test, American College Testing (Ward, 1993), Mathematics (Carpenter, 1993; Ward, 1993; Gist, 1996), High School Grade Point Average (Price and Kim, 1976; Carpenter,

1993) and College Entrance Examination (Price and Kim, 1976) scores and the performance of college students. Also well documented are studies in the areas of arts and sciences, psychology, philosophy, and natural sciences. Studies documenting the correlation of motivational behaviour and the performance of students in a college business environment appear to be non-existent

2.2 The contribution of library on students' academic achievement in public secondary schools

The academic and social climate is critical contributory factors in determining students' academic achievements in secondary schools. In a study that investigated how the location of schools contribute to academic performance of students in Ekiti state of Nigeria between 1990 and 1997, the findings revealed that there was a significant difference between students' academic achievement of rural and urban secondary schools in senior school certificate examinations (Owoeye & Yara, 2011).

In a study that examined the Teachers Impact on Student Academic Performance in Rwengoma Sub county Kabarole District, the findings recommended that the government and the MoES should supervise the already recruited teachers in these schools to ensure that there are qualified teacher to impart knowledge to students, given that the teacher is the biggest determinant of student performance. The teachers should as much as they can try to improve on the capacities, experience and qualifications as they are important to improve their position to help students achieve their educational goals. There should be training of teachers by the governments in seminars and workshops in order to equip teacher with updated knowledge in their teaching subjects. The government and school administrators to support the teachers in such trainings by paying for them and giving them leaves as well as paying them better salaries as a way of motivating them (Akankwasa, 2018).

In a study conducted by Ndidi & Effiong (2020), the findings revealed that class size and availability of instructional facilities significantly influenced students' academic performance in mathematics among SS 2 students in Calabar Nigeria. Based on this finding, increased government funding for provision of conducive classroom environment, with optimum class sizes is recommended. Instructional materials for teaching mathematics should be made available in public schools.

Korir & Kipkemboi (2014) contend that school environment factors and peer influences in terms of the level of psychological impact they have on learners. The school environment and peer influence made significant contribution to the students' academic performance. A school, as a learning institution and as a second home for learners, has a strong relationship with students' academic performance. The head teacher and the teachers through their specific roles either have negative or positive influence on students' academic performance. Therefore, the head teacher and the teachers should enhance a good learning environment in which the learners are free to consult them when in need, provide adequate learning facilities and arouse interest in the learners to work hard. Peer level factors also have a relationship with students' academic performance. It is hoped that the findings of this study will be useful to teachers, principals and parents to gain more insight into the psychosocial factors that affect students' academic performance and therefore help improve their academic performance.

Zulfiqar &Mushtaq-ur-Rehman (2016) explain that the learning environment impacts on students` academic achievement at secondary school level. Positive correlation (r =.725) was found between the Learning Environment and Students academic

achievement. The factors of Learning Environment i.e. group procedures; teacher behavior and curriculum have a positive correlation with the academic achievement of the students. The study further showed that Learning Environment has positive effect on students' academic achievement which measured through regression analysis i.e. Academic Achievements = -13.726+76.786(Learning Environment). The findings of this study suggest that students achieve high scores in schools with healthy learning environment.

The schools that embraced more democratic and participatory leadership styles that encouraged group work and team spirit performed significantly better than those that used more autocratic leadership styles that were largely dictatorial. Several recommendations were made key among them being that the Ministry of Education through the Kenya Education Staff Institute (KEMI) should intensify in-service training for school principals on use of learner centered leadership styles geared towards enhancing students' academic performance not only in the study locale of Homa-Bay County but other counties with similar management challenges (Ouma, Akinyi & Aluko, 2015).

In a study which was carried out by Odutuyi (2015) that examined the influence of laboratory learning environment on students' academic performance in secondary school chemistry in all the public secondary schools in Ondo State, Nigeria, the findings revealed that there was a significant relationship between the five dimensions of laboratory learning environment and students' performance in chemistry. Material environment had the highest contribution to students' performance in chemistry followed by student cohesiveness and rule clarity while open-endedness had the lowest contribution. It is recommended that to enhance

chemistry teaching and learning, the government should provide secondary schools with resources, teaching materials, models, equipment, and adequate laboratories for the teaching and learning of chemistry.

2.3. The contribution of sanitation on students' academic achievement in public secondary schools.

Agharuwhe & Nkechi (2017) contend that effective teachers produced better performing students. However, the observed differences in students' performance were statistically not significant. This could be due to influence of student and school environment related factors which were not included in this study. It was concluded that teachers' effect is not only determinant on students' academic achievement. Akinsolu (2010) argues that in secondary schools, student's academic achievement public secondary schools are affected by teacher's academic qualification. This was after a study which was conducted and revealed that teachers' qualifications, experience and teacher-student ratio were significantly related to students' academic performance. This call on government to recruit qualified teachers to facilitate effective teaching and learning in secondary schools in Nigeria.

In a study which was carried out by Kimani, Kara & Njagi (2013), it was found out that teachers' age, gender, professional qualifications and teaching experience were not significantly related to academic achievement. Teachers' job group had significant and positive relationship with students' academic achievement in secondary schools. Teachers' weekly teaching load, administration of students 'classroom assignments, evaluation of students' continuous assessment test(CATs)results, provision of individualized attention to weak students, time of completion of form four syllabus and setting performance targets for KCSE significantly affected student's academic achievement.

According to Duruji, Azuh & Oviasogie (2014), poor academic performance of students of secondary schools in external examinations in Nigeria was attributed to the quality of teachers and non-commitment of students to their studies due to distractions that hamper learning but very little attention has been given to the learning environment. But the environment in which the students learn such as

classrooms, libraries, technical workshops, laboratories, play grounds, conveniences, sanitation, maintenance culture, aesthetics among others are variables that affect students learning and academic performance. Hence, the learning environment remains an important area that should be studied and well managed to enhance students' academic performance.

The main objective of this study was to determine the effect of learning environment on students' academic achievement at secondary school level. The study was causal comparative using correlation. The study which, was conducted on a sample of 1473 secondary school's students in the selected from the public schools of five selected districts of Punjab province. Data was collected through Student School Climate Questionnaire (SCSQ) that contained 18 items at 5-point Likert scale. The validity and reliability of the questionnaires were ensured through the experts' opinions and pilot testing. The overall reliability of the questionnaire was 0.77. positive correlation(r=.725) was found between the learning environment and students' academic achievement. The factors of learning environment i.e. group procedures; teacher behavior and curriculum have a positive correlation with the academic achievement of the students. The study further showed that learning environment has positive effect on students' academic achievement which measured through regression analysis i.e. Academic Achievements=-13.726+76.786(Learning Environment). The findings of this study suggest that students achieve high scores in schools with healthy learning environment.

In a study to determine the effect of learning environment on student's academic achievement at secondary school level in the selected public schools in Punjab province, the findings revealed a positive correlation between the learning environment and students' academic achievement. The factors of learning environment i.e. group procedures; teacher behavior and curriculum have a positive correlation with the academic achievement of the students. The study further showed that learning environment has positive effect on students' academic achievement. The findings of this study suggest that students achieve high scores in schools with healthy learning environment (Zulfiqar & Mushtaq-ur-Rehman, 2022).

According to Ssebuyungo (2016) students' achievement is affected by limited supply of study materials that aid the learning process. The government has been

instrumental in supplying scholastic materials and personnel to schools but there is also need to increase her efforts but the ratios have been high and therefore, most students not having access. The school environment has fundamental linkage with students' family background and students' concentration in class is also dependent on home based factors like; family size and leadership. It is important to observe that a school is an open system in which all the stake holders need to participate and bring inputs if desired goals are to be achieved. It is noting therefore, that the government should increase scholastic materials to schools as well as personnel to work effectively for excellent results. To the parents and teachers, concerted effort should be made to make schools open systems and places where knowledge and wisdom can be harvested.

2.4 The contribution of classroom on students' academic achievement in public secondary schools

The word education is exclusively used for the development of human beings in the cognitive, affective, psychomotor and psycho-productive domains. There is a general agreement among educationists and educators that education involves a desirable change in human behavior through the process of teaching and learning. This means that a human being who exhibits undesirable behaviors from the point of view of the acceptable societal norms cannot be adjudged an educated person, despite the fact that he had passed through the four walls of an educational institution. The society, generally, expects a kind of change from an educated person. Education, as a process of initiating the child into cherished norms and skills, is designed and implemented by the more matured or the adult members of the society to effect the desirable changes in the younger ones, from one generation to the other. Fafunwa (1974) defined education as what each generation gives to its younger ones, which makes them to develop attitudes, abilities , skills and other behaviors which of positive value to the society in which they live . This position reflects the sociological perspective (Hoque, 2017).

Education can generally classify into three forms, namely: formal, informal and non-informal. By these various forms some people might be receiving education without knowing. But there are limits to what each form of education can do to the receiver. The type of society one finds oneself and the type of person one is, determines what

form of e education is most appropriate for one. it is also important to observe that so many people have passed through all the three forms of education without knowing (Ecole, 2020).

Students' education achievement remains a big challenge in many public secondary schools especially in low income countries. School environment refers to factors within the school setting that influence the teaching- learning process and these factors include; classrooms, library, workshops, laboratories, teachers , textbooks, peers. School environment also refers to a set of relationships that occur among members of a school community that are determined by structural, personal, and functional factors of the education institution which provide distinctiveness to schools (Ayayi,pg.142,2001). However, in low income countries, the school environment is limited in provision of the required teaching and learning facilities which affect students' academic achievement s. Achievement measures are test of developed skill or knowledge. The most common type of achievement test is a standardized test developed to measure skills and knowledge learned in in a given grade level, usually through planned instruction, such as training or classroom instruction.

According to Farooq et al., (2011), socioeconomic status (SES) and parents' education have a significant effect on students' overall academic achievement as well as achievement in the subjects of mathematics and English. The high and average socioeconomic level affects the performance more than the lower level. It is very interesting that parents' education means more than their occupation in relation to their children's academic performance at school. It was found that girls perform better than the male students.

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2.5. Gaps identified in current literature

This study intended to examine school environment and students' academic achievement in selected public secondary schools in Mbale, Uganda. Much of the existing and reviewed literature focus on teachers and students' academic performance, parents and students' academic performance, feeding and students' academic performance. There is limited literature on influence of school environment on students' academic achievement in selected public secondary schools especially in Uganda.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology of the study that focuses on: research design, area of study, population, sample population size, sampling techniques, data collection methods, data collection tools, validity and reliability of study instruments, data collection methods and analysis, ethical consideration and limitation of the study.

3.1. Research Design;

According to Kothari (2012), research design is a general plan to answer a research question. As a systematic approach to conducting a scientific inquiry, it brings together several components, strategies and methods to collect data and analyze it. This is the framework that describes how the research will be carried out.

The study adopted a descriptive research design and the explanatory sequential mixed methods applied to guide the study. Bryman and Bell (2011) assert that a descriptive research design seeks to get information that describes existing phenomena by asking questions relating to individual perceptions and attitudes.

According to Mugenda and Mugenda, (1999), quantitative approach allows a researcher to solicit quantifiable information, while qualitative approach allows a researcher to solicit information that cannot be described. The qualitative method describes variables that cannot be measured in quantitative terms. Thus, this design is appropriate for this study because it can be conducted in a setting that requires direct responses from respondents while investigating the phenomenon without manipulating the variables. The design can also be considered for its suitability in economic terms, rapid data collection among others.

3.2. Study Population;

According to Ogula, (2005), a population refers to any group of institutions, people or objects that have common characteristics. This means number of people in a given area that needs the inclusion criterion. The population for this study will constitute the following categories of people; District Education Officer, Inspectors of Schools, Head teachers, teachers, Board of Governors, members of PTA and students in S4 class.

3.3. Sample Size Determination;

Sample size.

This is a set of respondents selected from the study population for purposes of a survey (Kombo & Tromp, 2006). It is a small representation portion of the population which involves picking a few out of the many available. The population will involve District Education Officer, Inspectors of Schools, Head teachers, teachers, Board of Governors, members of PTA and students in S4 class. A sample of 247 was selected from a study population of 660 using Krejcie and Morgan simple table of 1970.

Table 3.1: Showing Sample Size Determination

S/N	Category of Population	No. of target Population	Sample Size	Sampling Technique
1.	District Education Officer	01	01	Purposive Sampling
2.	Inspector of Schools	03	03	Purposive Sampling
3.	Head teachers	08	03	Purposive Sampling
4.	Members of BOG (12X8=96)	96	35	Simple Random Sampling
5.	Members of PTA(9x8=	72	27	Simple Random Sampling
6.	Teachers (8x10=80)	80	29	Simple Random Sampling

7.	Students in S4 class (average 50x 8=400)	400	149	Simple Random Sampling
	Total	**660**	**247**	

Source: Mbale District Education Report (2022).

From the study population of 660 respondents as shown in the table above, the researcher adopted the table of Krecie and Morgan to determine the sample size. This is because it can be easy to interpret and is unbiased.

3.4. Sampling Techniques;

A sample is a smaller group or sub-group obtained from the accessible population (Mugenda and Mugenda, 1999). This subgroup is carefully selected so as to be representative of the whole population with the relevant characteristics. Each member or case in the sample is referred to as subject, respondent or interviewees. Sampling is a procedure, process or technique of choosing a subgroup from a population to participate in the study (Ogula, 2005). it is the process of selecting a number of individuals for study in such a way that the individuals selected represent the large group from which they were selected. The study will apply simple random sampling and purposive sampling techniques to obtain the respondents for questionnaires. The sample frame of the study includes a representative sample of the individuals living in the informal settlement. At least 30% of the total population is representative (Borg and Gall, 2003). Thus 30% of the accessible population is enough for the sample size.

3.4.1 Simple random sampling;

Simple random sampling according to Koul, (2009) is a technique that selects a sample without bias from accessible population. It can be suitable in selecting representative sample that can be used in selection of members of board of

governors, members of PTA, teachers, and students in S.4 class. This is because it can be time saving for the big population and can allow equal opportunity for each member to be included in the sample.

3.4.2. Purposive sampling

This is a method used to select those respondents by virtue of their responsibility and nature of work because they have required information for the study. Purposive sampling also known as judgment sampling is a non-random sampling technique which is a deliberate choice of a respondent because of the qualities that he/she possesses (Amin 2005). This research will purposively select the District Education Officer, Inspectors of schools and head teachers for in-depth information about the phenomenon under study. This technique can be preferred because it can be used to collect focused information from respondents and these individual categories have few respondents and can easily share information. Purposive sampling technique is advantageous as it involves selecting typical and useful cases only thus can save on time and money for the study.

3.5. Data Collection Methods;

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities, business, etc. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same. The goal for all data collection is to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed. Regardless of the field of study or preference for defining data (quantitative, qualitative), accurate data collection is essential to maintaining the integrity of research. Both the selection of appropriate data collection instruments (existing,

modified, or newly developed) and clearly delineated instructions for their correct use reduce the likelihood of errors occurring.

Data collection is one of the most important stages in conducting a research. You can have the best research design in the world but if you cannot collect the required data you will be not be able to complete your project. Data collection is a very demanding job which needs thorough planning, hard work, patience, perseverance and more to be able to complete the task successfully. Data collection starts with determining what kind of data required followed by the selection of a sample from a certain population. After that, you need to use a certain instrument to collect the data from the selected sample. (Syed Muhammad Sajjad Kabir 2016)

3.5.1. Questionnaire

Is a written document that involves asking the selected people similar questions and to fill in the required information and return the form to the researcher for analysis of data collected.

This study will use this method because it will ensure that all respondents are asked the same questions and are exposed to the same response options for each question. Since questions will be pre-tested and organized in a particular arrangement, the researcher will ensure that every respondent confronted with questions that address the complete range of information objectives driving the research study. This method will be used to collect quantitative data for analysis from Head teachers, teachers, Board of Governors, members of PTA and students in S4 class.

3.5.2. Interview Method

This method involves face to face discussion between the researcher and the respondent. The study used used an interview method to collect qualitative data from respondents. The interview method will involve presentation of oral-verbal stimuli and reply in terms of oral- verbal responses (Kothari, 2004). It involved face - to- face verbal exchanges between the researcher and the respondents. The

researcher will ask specific questions concerning the research objectives and ensure that the respondents restrict their answers to those questions. This method will be used to collect data from the District Education Officer and Inspectors of schools. The answers to the questions posed during the interview were written down during the interview. This method will be used by the researcher because it offers the opportunity to restructure questions which can generate data on aspects that can have been left out in the interview guide through probing.

3.6. Data Collection Instruments

The main data collection instruments was used in this study was the questionnaire. This will be used for the purpose of collecting primary quantitative data. additionally, the questionnaires were used for the following reasons: its potentials in reaching out to a large number of respondents within a short time, able to give the respondents adequate time to respond to the items, offers a sense of security (confidentiality) to the respondent and it is objective method since no bias resulting from the personal characteristics (as in an interview) (Owens 2002)

3.6.1. Questionnaire

The questionnaire is divided into the main areas of investigation except the first part which captures the demographic characteristics of the respondents. Other sections are organized according to the major resource objectives. The close ended questionnaires were preferred as an instrument of research because they were self-administered, have identical set of items for all respondents, produce fewer errors, ensure confidentiality as respondents were free from the influence of the researcher and they have the chance to answer in their convenient time. The items were short direct answers based on the Likert scales of 1 – 5 from strongly disagree – strongly agree. This research instrument will be used to collect quantitative data for analysis from Head teachers, teachers, Board of Governors, members of PTA and students in

S4 class. This instrument used in the study because it is easier to collect data within the shortest period of time and it will be convenient to respondents as they will fell free in giving sensitive answers.

3.6.2. Interview Guide

The study will use an interview guide to collect qualitative data from key respondents and these include; the District Education Officer and Inspectors of schools. A set of structured questions were developed which will be responded to in interview sessions and answers will be recorded by the researcher. This tool is preferred because helped to collect in-depth data from key respondents on a phenomenon under study.

3.7. Data Quality Control

Reliability and validity are important qualities of research and must always be taken into account for effective data quality control.

3.7.1 Validity of Instruments

Validity is the extent to which the instruments used during the study measure the issues they are intended to measure (Amin, 2005). To ensure validity of instruments, the instruments were developed under close guidance of the supervisor. After designing the questions, they were pre-tested. This helped to identify ambiguous questions in the instruments and be able to re-align them to the objectives.

3.7.2 Reliability

Reliability is the extent to which the measuring instruments to produce consistent scores when the same groups of individuals are repeatedly measured under the same conditions (Amin, 2005). The study administered one type of questionnaire to selected respondents for Cronbach reliability test, Alpha values of 0.753 if attained will imply that the tool is suitable for to be used in the study. Besides, most

authorities accept the minimum alpha value of 0.5. However, a Cronbach's alpha reliability of $\propto$=.888 was obtained from the instrument after piloting the instrument. This is showed in the Table below;

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.888	.868	38

3.7. Data Processing and Analysis

Data analysis involved organization and interpretation of information generated into useful data and the researcher used both qualitative and quantitative data analysis techniques.

3.7.1. Quantitative Data Analysis

The study used descriptive statistics to analyze quantitative data that was obtained from questionnaires. After getting all data, it was be sorted, coded and entered into SPSS computer software for social sciences for analysis. Data was analyzed in form of frequencies, percentages, Mean and Standard Deviation and presented in form of tables for easy interpretation. This is presented in chapter four of this report.

3.7.2. Qualitative Data Analysis

The study analyzed qualitative data using narrative analysis. The qualitative data in this study was analyzed through data reduction, editing and categorizing into themes that are in line with the objectives of the study. The main focus was on the research questions posed earlier in the study in line with the research objectives. Analysis was done objective by objective and question by question.

3.8. Ethical Consideration.

During the planning, collection and processing of data, the researcher followed a number of research guides in order to maintain ethical standards. These included seeking informed consent of the respondents and making it known that their participation is voluntary and are free to withdraw from the study at any time. The researcher also accorded due respect to respondents' privacy and confidentiality. The names of the respondents remained anonymous. Approval and permission to conduct the study was sought from Uganda Christian University Mbale University College Head of Department Education and the Research Coordinator who introduced the student to selected Public secondary schools to collect data.

3.9. Limitations of the study

This refers to anticipated problems or constraints which a researcher is likely to face in the process of carrying out research work. Limitations are also those conditions beyond the control of the researcher that may place restrictions on the conclusions of the study and their application to other situations (Best and Kahn, 1989;38).

Like any other study the researcher is bound to encounter some limitations such as geographical since some areas where to collect data from were hard to reach, hostility or unwillingness of some people to give out the necessary information, high financial cost especially transport, data, airtime cost, stationary cost, healthy issues, suspicions, tight time schedule from some respondents, for example the senior four students and teachers of senior four since the data collection time is most likely to collide with UCE exams as well as marking.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.0. Introduction

This chapter presents the findings of the study in accordance with the study objectives beginning with the demographic data of the respondents. The following were the specific objectives of the study;

i. To examine the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda.
ii. To assess the contribution of sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda.
iii. To examine the contribution of classroom facility on students' academic achievement in selected public secondary schools in Mbale, Uganda.

4.1 BIOGRAPHIC DATA

Table 4.1.1 Gender of respondents

Gender is a very important variable in research because it creates balance in responses. This study involved both gender and the results are presented in the Table below;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	152	61.3	61.3	61.3
	Female	96	38.7	38.7	100.0
	Total	248	100.0	100.0	

Source; field data 2022

From Table 4.1.1 out of 248 respondents, 152(61.3%) were male and 96(38.7%) were female which means that both gender were involved in the research although not in equal proportions.

Table 4.1.2.Age of respondents

This study sought to find out the ages of respondents and the results are presented in the Table below;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-30 yrs	32	12.9	12.9	12.9
	31-40yrs	72	29.0	29.0	41.9
	41-50yrs	88	35.5	35.5	77.4
	51yrs and above	56	22.6	22.6	100.0
	Total	248	100.0	100.0	

Source; field data 2022

Also the study required the respondents to give their age brackets. According to the responses, 32(12.9%) were between 21 and 30 years, 72(29.0%) were between 31 and 40 years, 88(35.5%) were between 41and 50 years and 56(22.6%) were 51 years and above. This means that respondents were got from different age groups and therefore could represent a commendable sample.

Table 4.1.3.length of service

The study also intended to find out the length of service of the respondents and the results are presented in the Table below;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than a year	8	3.2	3.2	3.2
	1-5 years	24	9.7	9.7	12.9
	6-10 years	64	25.8	25.8	38.7
	10 years and above	152	61.3	61.3	100.0
	Total	248	100.0	100.0	

Source; field data 2022

According to the Table above, 8(3.2%) had served for less than a year in their schools, 24(9.7%) had served between one and five years, 64(25.8%) had served between six and ten years, and 152(61.3%) had served for 10 years and above. This means that the responses obtained from the study are spread over a long experience of the respondents.

4.2 CONTRIBUTION OF THE LIBRARY

Table 4.2 To examine the contribution of adequate library on students' academic achievement in selected public secondary schools in Mbale, Uganda

Interpretation of computed mean is as follows:

	S.D	D	N.S	A	S.A	Mean	Std. Dev
In my school there is a designated building as a library	32(12.9%)	16(6.5%)	0(0%)	32(12.9%)	168(67.7%)	**4.161**	1.462
In my school the library has all the assorted and reference books required for students' use	0(0%)	64(25.8%)	24(9.7%)	120(48.4%)	40(16.1%)	**3.548**	1.059
In my school the library receives daily newspapers which are accessible to both teachers and students	104(41.9%)	40(16.1%)	8(3.2%)	56(22.6%)	40(16.1%)	**2.548**	1.609
The library has enough furniture for all students who want to read	48(19.4%)	64(25.8%)	24(9.7%)	80(32.3%)	32(12.9%)	**2.935**	1.388
In my school the library has a designated officer serving as a librarian	24(9.7%)	8(3.2%)	8(3.2%)	64(25.8%)	144(58.1%)	**4.193**	1.275
In my school the library has audio facilities for	144(58.1%)	48(19.4%)	8(3.2%)	24(9.7%)	24(9.7%)	**1.935**	1.388

students and teachers to use							
In my school the library has computers accessible to students and teachers	48(19.4%)	40(16.1%)	24(9.7%)	80(32.3%)	56(22.6%)	**3.225**	1.476
In my school the library has internet connection and is available for research by students and teachers	88(35.5%)	56(22.6%)	16(6.5%)	48(19.4%)	50(16.1%)	**2.580**	1.544
Overall Mean $\bar{X}$						**3.141**	

Primary source of data (2022)

Legend

Mean Range	**Response Mode**	**Interpretation**
1.00-1.49	Strongly disagree	Insufficient
1.50-2.49	Disagree	least sufficient
2.50-3.49	Neutral	Null
3.50- 4.49	Agree	sufficient
4.50-5.00	Strongly Agree	Very sufficient

From the above table, respondents were given the item: *In my school there is a designated building as a library* 32(12.9%) Strongly disagreed with the statement, 16(6.5%) disagreed 0(0%) were undecided, 32(12.9%) agreed with the statement and 168(67.7%) Strongly agreed with the statement with a mean of $\bar{X}$= **4.161** and SD= **1.462**. From the legend above the mean indicates that there was sufficient provision of library space. In fact, a total of 200(80.6%) consented that there was a place or a

building in their schools where students went to do personal study and it was called a library. However, this study also found out that in some schools there were no designated building as a library and this was at a level of 19.4%.

When one respondent was asked whether they had a library, the answer was;

> *'No, we do not have a library yet but we are keeping our books in the head teachers' office where, if we want books we just collect them and only distribute to the students in the classroom and collect them and return to the head teacher's office. I am told there is a plan to build one but not too soon'*

Also, respondents were posed with the item: *In my school the library has all the assorted and reference books required for students' use*

0(0%) Strongly disagreed with the statement, 64(25.8%) disagreed 24(9.7%) were undecided, 120(48.4%) agreed with the statement and 40(16.1%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.548** and SD= 1.059. And from the legend above, respondents 64.5% indicated that there was sufficient assorted and reference books in their libraries whereas 25.8% said that there were insufficient assorted and reference books in their libraries.

Furthermore respondents were given the item: *In my school the library receives daily newspapers which are accessible to both teachers and students* 104(41.9%) Strongly disagreed with the statement, 40(16.1%) disagreed 8(3.2%) were undecided, 56(22.6%) agreed with the statement and 40(16.1%) Strongly agreed with the statement with a mean of $\bar{X}$= **2.548** and SD= 1.609 and from the legend this indicates that the respondents were not sure whether their libraries received Newspapers on a daily basis. This fact is represented by 58.0% of the respondents who disagreed with the statement.

In addition, respondents were posed with the item: *The library has enough furniture for all students who want to read* 48(19.4%) Strongly disagreed with the statement, 64(25.8%) disagreed 24(9.7%) were undecided, 80(32.3%) agreed with the statement and 32(12.9%) Strongly agreed with the statement with a mean of $\bar{X}$= **2.935** and SD= 1.388. In this case, 45.2% of the respondents disagreed and 45.2% agreed with the statement. All in all, from the legend above it shows that respondents were noncommittal on the statement.

Also, respondents were given the item: *In my school the library has a designated officer serving as a librarian* 24(9.7%) Strongly disagreed with the statement, 8(3.2%) disagreed 8(3.2%) were undecided, 64(25.8%) agreed with the statement and 144(58.1%) Strongly agreed with the statement with a mean of $\bar{X}$= **4.193** and SD= 1.275. this shows that schools where respondents came from had officers designated as librarians, being represented by 83.9% and those who did not have an officer designated as a librarian were 12.9% which is not a small percentage.

In addition, respondents were posed with the item: *In my school the library has audio facilities for students and teachers to use* 144(58.1%) Strongly disagreed with the statement, 48(19.4%) disagreed 8(3.2%) were un decided , 24(9.7%) agreed with the statement and 24(9.7%) Strongly agreed with the statement with a mean of $\bar{X}$= **1.935** and SD= 1.388. it shows that 77.5% of the respondents indicated that in their libraries there were no audio facilities that were being used by students and teachers although 19.4% indicated that they had the facilities. And from the legend above it shows a level of insufficiency.

Furthermore, respondents were given the item: *In my school the library has computers accessible to students and teachers* 48(19.4%) Strongly disagreed with the statement, 40(16.1%) disagreed 24(9.7%) were undecided, 80(32.3%) agreed with the statement and 56(22.6%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.225** and SD= 1.476. This shows that 54.9% of the respondents agreed that their libraries had computers which were accessible to students and teachers although 35.5% disagreed with the statement. And from the legend, the respondents were noncommittal.

Lastly, respondents were given the item: *In my school the library has internet connection and is available for research by students and teachers* 88(35.5%) Strongly disagreed with the statement, 56(22.6%) disagreed 16(6.5%) were undecided, 48(19.4%) agreed with the statement and 50(16.1%) Strongly agreed with the statement with a mean of $\bar{X}$= **2.580** and SD= 1.544. From this statement, 58.1% disagreed that their schools had internet connection whereas 35.5% agreed that their schools had internet connection. This shows that a big majority of schools do not have internet connection, although from the legend above it shows that respondents were noncommittal.

Also a correlation was done to find out the correlation between the presence of a library and students' achievement and the results are presented in the table below;

Correlations

		Achievement	Library
Pearson Correlation	Achievement	1.000	.329
	Library	.329	1.000
Sig. (1-tailed)	Achievement	.	.035
	Library	.035	.

From the table above, the Pearson Correlation r=.329, *P*=.035, which shows that there is a weak positive relationship between the presence of a library and students' achievement.

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	.329[a]	.109	.078	3.68469	.109	3.531	1	29	.070

a. Predictors: (Constant), Library

From the model summary above R^2=.109 which shows that 10.9% of students' achievement is accounted for by the presence of a library in the school and89.1% of students' achievement is accounted for by other factors. This therefore means it is a fit model. However, p=.070 which makes it insignificant.

4.3 SANITATION IN THE SCHOOLS.

	S.D	D	N.S	A	S.A	Mean	Std. Dev
My school has adequate pit latrines/toilets for both teachers and students	0(0%)	8(3.2%)	8(3.2%)	128(51.6%)	104(41.9%)	**4.322**	.701
My school has adequate pit latrines for both female and male students	0(0%)	8(3.2%)	8(3.2%)	136(54.8%)	96(38.7%)	**4.290**	.692
My school has adequate pit	8(3.2%)	32(12.9%)	8(3.2%)	112(45.2%)	88(35.5%)	**3.967**	1.110

latrines/toilets for Kitchen staff							
My school has adequate urinals for both teachers and students	0(0%)	24(9.7%)	16(6.5%)	120(48.4%)	88(35.5%)	**4.096**	.907
My school has adequate dustbins for solid waste disposal	8(3.2%)	72(29.0%)	24(9.7%)	112(45.2%)	32(12.9%)	**3.354**	1.141
My school has adequate hot and cold water for both teachers and students	80(32.3%)	96(38.7%)	24(9.7%)	8(3.2%)	0(0%)	**2.161**	1.098
My school has adequate bathrooms for both teachers and students	104(41.9%)	80(32.3%)	8(3.2%)	48(19.4%)	8(3.2%)	**2.096**	1.247
My school has adequate facilities for washing raw food	56(22.6%)	48(19.4%)	32(12.9%)	80(32.3%)	32(12.9%)	**2.935**	1.412
My school has adequate washing tanks with water and soap for use after visiting toilet and before eating food	32(12.9%)	32(12.9%)	24(9.7%)	112(45.2%)	48(19.4%)	**3.451**	1.312
Overall Mean $\bar{X}$						**3.408**	

Source: Field data

Legend

Mean Range	Response Mode	Interpretation
1.00-1.49	Strongly disagree	Ineffective
1.50-2.49	Disagree	Least effective
2.50-3.49	Neutral	Moderate
3.50- 4.49	Agree	Effective
4.50-5.00	strongly agree	Very effective

From the above table, respondents were given the item: *My school has adequate pit latrines/toilets for both teachers and students* 0(0%) Strongly disagreed with the statement, 8(3.2%) disagreed 8(3.2%) were undecided, 104(41.9%) agreed with the statement and 128(51.6%) Strongly agreed with the statement with a mean of $\bar{X}$= 4.322 and SD=.701.This means that 8(3.2%) disagreed, while 8(3.2%) were undecided and 232(93.6%) agreed with the statement. This shows that a good majority of the schools from which data were obtained had adequate latrines for both teachers and students and the mean of $\bar{X}$=4.322, it shows that there was an effective coverage of these facilities.

In addition, respondents were given the item: *My school has adequate pit latrines for both female and male students* 0(0%) Strongly disagreed with the statement, 8(3.2%) disagreed 8(3.2%) were undecided, 136(54.8%) agreed with the statement and 96(38.7%) Strongly agreed with the statement with a mean of $\bar{X}$= **4.290** and SD=.692.This means that , 8(3.2%) disagreed and , 8(3.2%) disagreed while 232(93.6%) agreed that their schools had adequate pit latrines for both female and male students and from the mean of $\bar{X}$=4.290, it shows that there a very effective coverage of pit latrines in these schools.

Also, respondents were posed with the item: *My school has adequate pit latrines/toilets for Kitchen staff* 8(3.2%) Strongly disagreed with the statement, 32(12.9%) disagreed 8(3.2%) were undecided, 112(45.2%) agreed with the statement and 88(35.5%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.967** and SD= 1.110. From this data, it shows that 40(16.1%) of the respondents disagreed that their schools had adequate pit latrines for the Kitchen staff while 8(3.2%) were not sure and yet 200(80.7%) of the respondents agreed that these facilities were adequate. However, from the mean of X=3.967, it means that there was an effective coverage of pit latrines for the Kitchen staff.

Furthermore, respondents were given the item: *My school has adequate urinals for both teachers and students* 0(0%) Strongly disagreed with the statement, 24(9.7%) disagreed 16(6.5%) were undecided, 120(48.4%) agreed with the statement and 88(35.5%) Strongly agreed with the statement with a mean of $\bar{X}$= **4.096 and** SD=.907. Given this data, it shows that 24(9.7%) disagreed, and 16(6.5%) were not sure whether there were adequate urinals for both teachers and students while 208(83.9%) agreed with the statement. From the average mean of $\bar{X}$=4.096 as shown in the legend given above, it means that there was an effective coverage of urinals in these schools.

Also, respondents were given the item: *My school has adequate dustbins for solid waste disposal* 8(3.2%) Strongly disagreed with the statement, 72(29.0%) disagreed 24(9.7%) were undecided, 112(45.2%) agreed with the statement and 32(12.9%) Strongly agreed with the statement with a mean of $\bar{X}$= 3.354 and SD= 1.141. This means that 80(32.2%) disagreed that their schools had adequate dustbins for solid waste disposal while 24(9.7%) were not sure and 144(58.1%) agreed. Using the legend provided above, it means that there was moderate coverage of dustbins in those schools where the study was carried out.

In addition, respondents were posed with the item: *My school has adequate hot and cold water for both teachers and students* 80(32.3%) Strongly disagreed with the statement, 96(38.7%) disagreed 24(9.7%) were undecided, 8(3.2%) agreed with the statement and 0(0%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.161 **and** SD= 1.098. From this data, it shows that 176(70.0%) of the respondents disagreed that there were adequate hot and cold water for both teachers and students, while 24(9.7%) were not sure and yet 8(3.2%) agreed. This data shows that from the legend, there was least effective supply of both hot and cold water for both staff and students.

Furthermore, respondents were posed with the item: *My school has adequate bathrooms for both teachers and students* 104(41.9%) Strongly disagreed with the statement, 80(32.3%) disagreed 8(3.2%) were undecided, 48(19.4%) agreed with the statement and 8(3.2%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.096 **and** SD= 1.247. This data shows that 184(74.2%) disagreed that their schools had adequate bathrooms for both teachers and students while 8(3.2%) were not sure and 56(22.6%) agreed. However, from the legend provided above, it shows that there was least coverage of bathrooms in the schools where the study was done.

Also, respondents were given the item: *My school has adequate facilities for washing raw food* 56(22.6%) Strongly disagreed with the statement, 48(19.4%) disagreed 32(12.9%) were undecided, 80(32.3%) agreed with the statement and 32(12.9%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.935 and SD= **1.412.** Also from this data, it shows that 104(42.0%) disagreed that their schools had adequate facilities for washing raw food, while 32(12.9%) were not sure and 112(45.2%) agreed.

From the legend given above, it means that there was moderate supply of facilities for washing raw food in those schools.

Conclusively, respondents were given the item: *My school has adequate washing tanks with water and soap for use after visiting toilet and before eating food* 32(12.9%) Strongly disagreed with the statement, 32(12.9%) disagreed 24(9.7%) were undecided, 112(45.2%) agreed with the statement and 48(19.4%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.451** and SD= **1.312.** From this data, it shows that 64(25.8%) disagree, while 24(9.7%) were not sure and 160(64.6%) agreed that their schools provided facilities for washing with soap to be used after visiting toilets and before eating. And from the legend provided above, it shows that there was effective provision of washing facilities and soap for sanitary use.

Correlations

		Achievement	Sanitation
Pearson Correlation	Achievement	1.000	.628
	Sanitation	.628	1.000
Sig. (1-tailed)	Achievement	.	.000
	Sanitation	.000	.

Source: Field data.

When a Pearson correlation was done to find out whether there was a correlation between achievement and sanitation, it was found out that r=.628, p=.000. This means that there was a strong and positive relationship between sanitation and achievement.

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	.628[a]	.394	.373	3.03706	.394	18.885	1	29	.000

a. Predictors: (Constant), Sanitation

A regression was also done to find out the contribution of sanitation to achievement and results indicate that R^2=.394, p=.000. This means that 39.4% of achievement can be predicted by sanitation and 60.6% of achievement can be predicted by other factors. This therefore means it is a fit model. Therefore using the p value of .000 sanitation is significant.

4.3 STATUS OF CLASSROOMS

	S.D	D	N.S	A	S.A	Mean	Std. Dev
My school has adequate classrooms for all students from S.1-S6.	32(12.9%)	32(12.9%)	24(9.7%)	48(19.4%)	112(45.2%)	**3.709**	1.487
In my school the classrooms have adequate space to facilitate learning	32(12.9%)	40(16.1%)	8(3.2%)	72(29.0%)	96(38.7%)	**3.645**	1.473
My school has adequate instructional area for teachers	40(16.1%)	24(9.7%)	24(9.7%)	104(41.9%)	56(22.6%)	**3.451**	1.386
In my school there are adequate teachers to attend to learners	16(6.5%)	64(25.8%)	16(6.5%)	72(29.0%)	80(32.3%)	**3.548**	1.362
In my school there are adequate tables, desks and chairs for each classroom	16(6.5%)	48(19.4%)	32(12.9%)	72(29.0%)	80(32.3%)	**3.612**	1.308
In my school there is adequate ventilation for all classrooms in the school	0(0%)	16(6.5%)	0(0%)	136(54.8%)	96(38.7%)	**4.258**	.773
In my school there are	32(12.9%)	32(12.9%)	8(3.2%)	112(45.2%	64(25.8%)	**3.58**	1.360

big blackboards/whiteboards in all classrooms				)		**0**	
In my school there are sufficient lights and fans in the classrooms	64(25.8%)	64(25.8%)	16(6.5%)	72(29.0%)	32(12.9%)	**2.774**	1.453
In my school there are clear rules for each class to enforce students' discipline	16(6.5%)	32(12.9%)	56(22.6%)	104(41.9%)	40(16.1%)	**3.483**	1.121
In my school classrooms are secure to enforce learning	0(0%)	32(12.9%)	32(12.9%)	152(61.3%)	32(12.9%)	**3.741**	.855
Overall Mean $\bar{X}$						**3.580**	

Source: Field data

Legend

Mean Range	**Response Mode**	**Interpretation**
1.00-1.49	Strongly disagree	Inadequate
1.50-2.49	Disagree	Least adequate
2.50-3.49	Neutral	Moderately adequate
3.50- 4.49	Agree	Adequate
4.50-5.00	Strongly Agree	Very adequate

From the above table, respondents were posed with the item*: My school has adequate classrooms for all students from* S.1-S6. 32(12.9%) Strongly disagreed with the statement, 32(12.9%) disagreed 24(9.7%) were undecided, 48(19.4%) agreed with the statement and 112(45.2%) Strongly agreed with the statement with a mean of $\bar{X}$= 3.709 and SD= 1.487. From the data given above, it shows that 64(25.8%)

disagreed that their schools had adequate classrooms for all students from S.1 to S.6, while 24(9.7%) were not sure and 160(64.6%) agreed. From these figures given, it shows that there were adequate and this is confirmed from the legend provided above.

Furthermore, respondents were posed with the item: *In my school the classrooms have adequate space to facilitate learning* 32(12.9%) Strongly disagreed with the statement, 40(16.1%) disagreed 8(3.2%) were un decided, 72(29.0%) agreed with the statement and 96(38.7%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.645** and SD= **1.473.** This shows that 72(29.0%) of the respondents disagreed that their schools had adequate space to facilitate learning, while 8(3.2%) were not sure and 168(67.7%) agreed. From the legend provided above, it means that there was adequate space in those schools to facilitate learning.

In addition, respondents were given the item: *My school has adequate instructional area for teachers* 40(16.1%) Strongly disagreed with the statement, 24(9.7%) disagreed 24(9.7%) were undecided, 104(41.9%) agreed with the statement and 56(22.6%) Strongly agreed with the statement with a mean of $\bar{X}$= 3.451 and SD= **1.386.** This data shows that 64(25.8%) disagreed and 24(9.7%) were not sure while 160(64.5%) agreed that their schools had adequate instructional area for the teachers and from the legend above, it means that the schools had adequate instructional areas for teachers.

Respondents were posed with the item: *In my school there are adequate teachers to attend to learners* 16(6.5%) Strongly disagreed with the statement, 64(25.8%) disagreed 16(6.5%) were undecided, 72(29.0%) agreed with the statement and 80(32.3%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.548** and SD= **1.362.** This shows that 80(32.3%) disagreed and 16(6.5%) were not sure while 152(61.3%) agreed that there were adequate teachers to attend to learners. And from the legend, it means that there were adequate numbers of teachers in those schools to attend to the learners.

Additionally, respondents were given the item: *In my school there are adequate tables, desks and chairs for each classroom* 16(6.5%) Strongly disagreed with the statement, 48(19.4%) disagreed 32(12.9%) were undecided, 72(29.0%) agreed with the statement and 80(32.3%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.612** and SD= 1.308. This data shows that 64(25.9%) disagreed and 32(12.9%) were not sure while 152(61.3%) agreed that there were adequate tables and chairs for each classroom. The legend above confirms from the level of agreement that there were adequate tables, desks and chairs in the schools where the study was done although it appears that in some schools they were not adequate.

Also, respondents were posed with the item: *In my school there is adequate ventilation for all classrooms in the school 0*(0%) Strongly disagreed with the statement, 16(6.5%) disagreed 0(0%) were undecided, 136(54.8%) agreed with the statement and 96(38.7%) Strongly agreed with the statement with a mean of $\bar{X}$= 4.258 and SD= **.**773. This data shows that 16(6.5%) disagreed and 236(93.5%) agreed that in their schools there was adequate ventilation for all classrooms in their schools and this is confirmed from the average mean of X=4.258 which according to the legend means that there were adequate ventilation in the classrooms.

In addition to that, respondents were given the item: *In my school there are big blackboards/whiteboards in all classrooms* 32(12.9%) Strongly disagreed with the statement, 32(12.9%) disagreed 8(3.2%) were undecided, 112(45.2%) agreed with the statement and 64(25.8%) Strongly agreed with the statement with a mean of $\bar{X}$= **2.774** and SD= 1.360. This data shows that 64(25.8%) disagreed that in their schools there were big blackboards/ white boards in all classrooms and 8(3.2%) were not sure while 176(71.0%) agreed. This means that a big majority of respondents agreed that their schools had big blackboard. However, from the legend provided above, it means that the schools had moderately adequate provision of big blackboards and whiteboards.

Furthermore respondents were posed with the item: *In my school there are sufficient lights and fans in the classrooms* 64(25.8%) Strongly disagreed with the statement, 64(25.8%) disagreed 16(6.5%) were undecided, 72(29.0%) agreed with the

statement and 32(12.9%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.774 and SD= **1.453.** From this data, it shows that 128(51.6%) disagreed while 16(6.5%) were not sure and 104(40.9%) agreed that their schools had sufficient lights and fans in their classrooms. From the level of agreement provided for by the legend, it means that there were moderately adequate lights and fans in their classrooms.

Additionally, respondents were given the item: *In my school there are clear rules for each class to enforce students' discipline 16*(6.5%) Strongly disagreed with the statement, 32(12.9%) disagreed 56(22.6%) were undecided, 104(41.9%) agreed with the statement and 40(16.1%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.483** and SD= **1.121.** In essence, this data shows that 48(19.4%) of the respondents disagreed that there were clear rules for each class to enforce students' discipline, and 56(22.6%) were undecided while 144(58.0%) agreed that their classrooms had clear rules on students' discipline. This is in line with the legend given above which shows that there were moderately adequate rules for each classroom.

Lastly, respondents were posed with the item: *In my school classrooms are secure to enforce learning* 0(0%) Strongly disagreed with the statement, 32(12.9%) disagreed 32(12.9%) were un decided, 152(61.3%) agreed with the statement and 32(12.9%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.741 and** SD= **.**855. This data shows that 32(12.9%) disagreed with the statement that their classrooms were secure to enforce learning, and 32(12.9%) were not sure while 184(74.3%) agreed. This means that there was adequate security in the classrooms of these schools, enough to enforce learning.

Correlations

		Achievement	Classrooms
Pearson Correlation	Achievement	1.000	.288
	Classrooms	.288	1.000
Sig. (1-tailed)	Achievement	.	.058
	Classrooms	.058	.

When a correlation was done to find out whether there was a correlation between nature of classrooms and student achievement, it was found out that r=.288, p=.058. This means that there is a positive but weak relationship between nature of classrooms and student achievement.

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	.288[a]	.083	.051	3.73713	.083	2.625	1	29	.116

a. Predictors: (Constant), CLASSROOMS

A regression was done to find the level of prediction that the nature of classrooms had for students' achievement and it was found out that R^2=.083 and p=.116. This means that 8.3% of students' achievement is accounted for by nature of classrooms and the remaining percentage of students' achievement is accounted for by other factors and therefore this is a fit model. However from the p value of .116 this is insignificant could be because the respondents could have not understood the items.

4.4 STUDENTS' ACHIEVEMENT

	S.D	D	N.S	A	S.A	Mean	Std. Dev
In my school the students' grades at UCE are high for the last five years	24(9.7%)	80(32.3%)	80(32.3%)	48(19.4%)	16(6.5%)	**2.806**	1.077
In my school teachers administer students' continuous assessments	0(0%)	0(0%)	8(3.2%)	168(67.7%)	72(29.0%)	**4.258**	.514
In my school teachers impart academic skills and competencies in their students	0(0%)	0(0%)	8(3.2%)	144(58.1%)	96(38.7%)	**4.354**	.550

In my school students' retention and completion rate is high	8(3.2%)	64(25.8%)	48(19.4%)	104(41.9%)	24(9.7%)	**3.290**	1.070
In my school teachers promote critical thinking among learners	0(0%)	24(9.7%)	24(9.7%)	160(64.5%)	40(16.1%)	**2.806**	1.077
In my school teachers sensitize students about the knowledge of career success	0(0%)	0(0%)	16(6.5%)	176(71.0%)	56(22.6%)	**3.871**	.805
Overall Mean $\bar{X}$						**3.564**	

Source: Field data

Legend

Mean Range	**Response Mode**	**Interpretation**
1.00-1.49	Strongly disagree	Very low
1.50-2.49	Disagree	Low
2.50-3.49	Neutral	Moderate
3.50- 4.49	Agree	High
4.50-5.00	Strongly Agree	Very High

According to the above table, respondents were given the item: *In my school the students' grades at UCE are high for the last five years* 24(9.7%) Strongly disagreed with the statement, 80(32.3%) disagreed 80(32.3%) were undecided, 48(19.4%) agreed with the statement and 16(6.5%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.806 and SD= **1.077.** This shows that 104(42.0%) disagreed that the grades of students at UCE were high for the last five years, and 80(32.3%) were not sure while 64(25.9%) agreed. From the legend provided above , it shows that there is moderate students' achievement in those schools.

Also, respondents were posed with the item*: In my school teachers administer students' continuous assessments* 0(0%) Strongly disagreed with the statement, 0(0%) disagreed 8(3.2%) were undecided , 168(67.8%) agreed with the statement and 72(29.0%) Strongly agreed with the statement with a mean of $\bar{X}$= **4.258 and** SD=.514. This data shows that 8(3.2%) of the respondents were not sure that in their schools, teachers administered students' continuous assessments, while 240(90.7%) agreed and the legend provided above shows that there was a high level of administering of continuous assessments.

Additionally, respondents were given the item: *In my school teachers impart academic skills and competencies in their students* 0(0%) Strongly disagreed with the statement, 0(0%) disagreed 8(3.2%) were undecided, 144(58.1%) agreed with the statement and 96(38.7%) Strongly agreed with the statement with a mean of $\bar{X}$= 4.354 **and** SD=.550. This shows that 8(3.2%) of the respondents were not sure whether their teachers impart academic skills and competencies in their students, while 240(96.8%) agreed and this means from the legend that there was a high level of imparting of academic skills and competencies among students.

In addition, respondents were posed with the item: In my school students' retention and completion rate is high 8(3.2%) Strongly disagreed with the statement, 64(25.8%) disagreed 48(19.4%) were undecided, 104(41.9%) agreed with the statement and 24(9.7%) Strongly agreed with the statement with a mean of $\bar{X}$= **3.290 and** SD= **1.070.** According to this data, it shows that 72(29.0%) of the respondents disagreed that students' retention and completion rate was high in their schools and 48(19.4%) were not sure while 128(51.6%) agreed. This, from the legend provided means that there were moderate retention and completion rates in those schools.

Furthermore, respondents were given the item: *In my school teachers promote critical thinking among learners* 0(0%) Strongly disagreed with the statement,

24(9.7%) disagreed 24(9.7%) were undecided, 160(64.5%) agreed with the statement and 40(16.1%) Strongly agreed with the statement with a mean of $\bar{X}$= 2.806 and SD= **1.077.** This data shows that 24(9.7%) disagreed and 24(9.7%) were undecided while 200(80.6%) agreed that teachers in their schools promote critical thinking among learners. From the legend however, it means that there was moderate promotion of critical thinking among learners by teachers in those schools.

Finally, respondents were posed with the item: *In my school teachers sensitize students about the knowledge of career success* 0(0%) Strongly disagreed with the statement, 0(0%) disagreed 16(6.5%) were undecided, 176(71.0%) agreed with the statement and 56(22.6%) Strongly agreed with the statement with a mean of $\bar{X}$= 3.871 **and** SD= .805. This data also shows that 16(6.5%) were not sure that teachers in their schools sensitized students about the knowledge of career success, while 232(93.5%) agreed. From the legend provided, it means that there was a high degree of sensitization of students about career success.

Correlations

		Achievement	Classrooms	Sanitation	Library
Pearson Correlation	Achievement	1.000	.288	.628	.329
	Classrooms	.288	1.000	.522	.454
	Sanitation	.628	.522	1.000	.287
	Library	.329	.454	.287	1.000
Sig. (1-tailed)	Achievement	.	.058	.000	.035
	Classrooms	.058	.	.001	.005
	Sanitation	.000	.001	.	.058
	Library	.035	.005	.058	.

When a correlation of student achievement, Nature of classrooms, sanitation and library was done it was found out that the Pearson correlation coefficients for Classrooms with achievement was r= .288, *p*=.058. , Classroom with Sanitation was r=.522,*p*=.001 and Classroom and library was r=.454. While Sanitation with achievement was r=.628,*p*=.000 and Sanitation with library was r=.287,*p*=.058.

Model Summary

Model	R	R Square	Adjusted R	Std. Error of	Change Statistics

			Square	the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.657[a]	.431	.368	3.05003	.431	6.826	3	27	.001

a. Predictors: (Constant), LIBRARY, SANITATION, CLASSROOMS

From the regression table above, it shows that the net prediction of Library, Sanitation and Classrooms on students' achievement was R^2=.431, *p*=.00. This means that the combined effect of prediction was 43.1% of students' achievement and the remaining 56.9% of students' achievement could be accounted for by other factors.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	11.429	3.276		3.489	.002
	CLASSROOMS	-.057	.073	-.143	-.778	.443
	SANITATION	.432	.115	.642	3.765	.001
	LIBRARY	.116	.090	.210	1.284	.210

a. Dependent Variable: ACHIEVEMENT

From the formula Y=(β_1+β_2+β_3*constant)

Achievement= (Classrooms + Sanitation + Library * Constant)

Achievement= (-.057+.432+.116* 11.429)

Achievement=5.611639

From the data provided above, it shows that Sanitation predicts more of student achievement followed by sanitation and classrooms have the least.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0. Introduction.

This chapter discusses and interprets the findings of the study at the same time to explore the point to which the study fulfilled its objectives. The findings were triangulated with other studies and sources to strengthen and confirm the findings. This chapter further discusses and explains the results and their relationship to the set research questions as presented in chapter four.

5.1 Discussion of findings

5.1.1 Objective One; to examine the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question One; what is the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda?

From the data that was analysed in chapter four of this study, it was evident that there were a number of issues that were raised. The study found out that a good majority of schools had building space which they called library which means that these schools valued the use of libraries to the academic performance of students. This is in line with a study which was carried out by Odutuyi (2015) that examined the influence of laboratory learning environment on students' academic performance in secondary school chemistry in all the public secondary schools in Ondo State, Nigeria, the findings revealed that there was a significant relationship between the five dimensions of laboratory learning environment and students' performance in chemistry. Material environment had the highest contribution to students' performance in chemistry followed by student cohesiveness and rule clarity while open-endedness had the lowest contribution. It is recommended that to enhance chemistry teaching and learning, the government should provide secondary schools

with resources, teaching materials, models, equipment, and adequate laboratories for the teaching and learning of chemistry. Although Odutuyi (2015) used the library as the area of study, a laboratory also has a library that students use for their studies. However, this study also found out that there were schools that did not have designated space for a library as reported that; when one respondent was asked whether they had a library, the answer was;

> *'No, we do not have a library yet but we are keeping our books in the head teachers' office where, if we want books we just collect them and only distribute to the students in the classroom and collect them and return to the head teacher's office. I am told there is a plan to build one but not too soon'*

This is also in line with Duruji, Azuh & Oviasogie (2014), who contended that poor academic performance of students of secondary schools in external examinations in Nigeria was attributed to the quality of teachers and non-commitment of students to their studies due to distractions that hamper learning but very little attention has been given to the learning environment. But the environment in which the students learn such as classrooms, libraries, technical workshops, laboratories, play grounds, conveniences, sanitation, maintenance culture, aesthetics among others are variables that affect students learning and academic performance. Hence, the learning environment remains an important area that should be studied and well managed to enhance students' academic performance.

It should also be noted that not all schools had libraries that were to the same standard since some respondents when given certain statements would either tend to disagree or they would not be sure/undecided. Another fact about the libraries in these schools was that the respondents were not sure whether their libraries received Newspapers on a daily basis. This fact is represented by 58.0% of the respondents who disagreed with the statement. This points to the fact that a good

majority of schools do not value Newspapers as a source of information, or could be that the schools are constrained as far as finances are concerned.

Another point worth noting is that the world has moved digital with most libraries using ICT but from the findings, it is evident that the respondents indicated that in their libraries there were no audio facilities that were being used by students and teachers although 19.4% indicated that they had the facilities. This seems an area that schools may not afford due the costs involved.

5.1.2 Objective Two; to assess the contribution of sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question Two; What is the contribution sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda?

All students need clean water and adequate supply of latrines in order to be able to study well and perform well. This study found out that schools had adequate pit latrines for both female and male students, schools had adequate pit latrines/toilets for both teachers and students and that schools had adequate dustbins for solid waste disposal. Those among other provisions indicate that schools in the study area showed great emphasis in the provision of sanitary facilities. When a regression analysis was done it was found out that 39.4% of achievement can be predicted by sanitation and 60.6% of achievement can be predicted by other factors. This is in line with a study in Kenya, which found out that provision of safe toilets reduced girls' absenteeism by39 %(UNICEF, 2010). This study looked at how provision of sanitation increased enrolment and reduced absenteeism.

5.1.3 Objective Three; to examine the contribution of classroom facility on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question Three; What is the contribution classrooms on students' academic achievement in selected public secondary schools in Mbale, Uganda?

Students' education achievement remains a big challenge in many public secondary schools especially in low income countries. School environment refers to factors within the school setting that influence the teaching- learning process and these factors include; classrooms, library, workshops, laboratories, teachers , textbooks, peers.

In this study, respondents went a number of question items each, dealing with the nature of the classrooms in their schools. For example a good majority 144(57%) agreed that in their schools there were clear rules for each class to enforce students' discipline, however, 128(51. 6%) disagreed that in their schools there are sufficient lights and fans in the classrooms. These and many other responses give a mixed feeling about the situation in the different schools under study.

When a correlation was done to find out whether there was a correlation between nature of classrooms and student achievement, it was found out that r=.288, p=.058. This means that there was a positive but weak relationship between nature of classrooms and student achievement.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

This chapter presents the conclusion and the recommendations followed by recommendations for further research.

6.2 Conclusion

Objective One; To examine the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question One; What is the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda?

From the findings of this study, it was found out that presence of a library in a school has a positive correlation with students' achievement although the relationship is small.

Objective Two; To assess the contribution of sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question Two; What is the contribution sanitation on students' academic achievement in selected public secondary schools in Mbale, Uganda?

It can ably be concluded that sanitation plays a big part in students' achievement. This is from the correlation between sanitation and students' achievement which is positive and high.

Objective Three; To examine the contribution of classroom facility on students' academic achievement in selected public secondary schools in Mbale, Uganda.

Research question Three; What is the contribution classrooms on students' academic achievement in selected public secondary schools in Mbale, Uganda?

Presence of classrooms in the schools is good although when correlated with students' achievement shows that there is a positive but weak relationship.

Finally, it can be concluded that the magnitude of contributions to students' achievements are; sanitation, library and classrooms respectively.

6.2 RECOMMENDATIONS

1. It is recommended that schools should have well equipped libraries.
2. It is also recommended that schools should maintain high sanitation standards.
3. It is recommended that schools should have good classroom facilities so as to enhave students' academic achievement.

RECOMMENDATIONS FOR FURTHER RESEARCH

1. Research of the same type should be conducted in another region of Uganda.
2. Another research on the contribution of libraries be conducted.

REFERENCES

Agharuwhe, A.A & Nkechi, M.U. (2017). Teachers' Effectiveness and Students' Academic Performance in Public Secondary Schools in Delta State, Nigeria

Akankwasa, E. (2018). Teachers Impact on Student Academic Performance in Rwengoma Subcounty Kabarole District

Akinsolu, A.O. (2010). Teachers and Students' Academic Performance in Nigerian Secondary Schools: Implications for Planning

Amin, E.M. (2005). Social science Research: concepts, Methodology and analysis. Kampala: Makerere University.

Arul, A. S. L & Vimala, A. (2012). School environment and academic achievement of standard IX students. Journal of educational and instructional studies in the world. August 2012, Volume: 2 Issue: 3

Duruji, M.M., Azuh, D.E & Oviasogie, F.O. (2014). Learning Environment and Academic Performance of Secondary School Students in External Examinations: A Study of Selected Schools in Ota

Farooq, M.S., Chaudhry, A.H., Shafiq, M & Berhanu, G. (2011). Factors affecting students' quality of academic performance: a case of secondary school level. Journal of Quality and Technology Management, Volume VII, Issue II, December, 2011, Page 01 - 14

Hafiz, M.W.R., Tehsin, F., Malik, M.S., Muhammad, S & Muhammad, A.K. (2013). Parental Involvement and Academic Achievement; A Study on Secondary School Students of Lahore, Pakistan. International Journal of Humanities and Social Science, Vol. 3 No. 8 [Special Issue – April 2013]

Kelstrom, J.M (1998). The Untapped Power of Music: Its Role in the Curriculum and Its Effect on Academic Achievement.

Kimani, G.N., Kara, A. M & Njagi, L.W. (2013). Teacher Factors Influencing Students' Academic Achievement in Secondary Schools in Nyandarua County, Kenya

Kothari, C.R. (2004). Research methodology: Methods and techniques. New Delhi: New age International.

Korir, D.K & Kipkemboi, F. (2014). The impact of school environment and peer influences on students' academic performance in Vihiga County, Kenya.

Lee, V.E & Bryk, A.S. (1988). Curriculum Tracking as Mediating the Social Distribution of High School Achievement.

Lee, J. C & Dimmock, C. (1999). Curriculum Leadership and Management in Secondary Schools: A Hong Kong case study.

Lorraine, E. M. (2016). School building condition, social climate, student attendance and academic achievement: A mediation model.

Ndidi, M.A & Effiong, I.E. (2020). Influence of Classroom Environment on Senior Secondary School Students' Academic Achievement in Mathematics in Calabar Nigeria

Nzoka, J. T & Orodho, J. A. (2014). School Management and Students' Academic Performance: How Effective are Strategies being Employed by School Managers in Secondary Schools in Embu North District, Embu County, Kenya? International Journal of Humanities and Social Science, Vol. 4, No. 9; July 2014

Odutuyi, M. L. (2015). Influence of Laboratory Learning Environment on Students' Academic Performance in Secondary School Chemistry

Ouma, O., Akinyi, E & Aluko, O.J. (2015). Public secondary schools in Homa-Bay county, Kenya

Owoeye, J.S & Yara, P.O. (2011). School Location and Academic Achievement of Secondary School in Ekiti State, Nigeria. Asian Social Science, Vol. 7, No. 5; May 2011

Shwika, M.E.O., Steen, M & Fleet, J. (2021). A sequential explanatory mixed methods study design: An example of how to integrate data in a midwifery research project. Journal of Nursing Education and Practice 11(2):75

Ssebuyungo, E. (2016). Factors affecting academic performance of ordinary level students in selected government aided secondary schools in Kiboga district

Tehsin, M. W. R., Malik, F., Muhammad, M.S & Muhammad, A.K. (2013). Parental Involvement and Academic Achievement; A Study on Secondary School Students of Lahore, Pakistan. International Journal of Humanities and Social Science, Vol. 3 No. 8 [Special Issue – April 2013]

Tumusiime, P. (2019). The Impact of Poverty on Academic Performance of Students in Kagadi District.

World Education Services (2022). Education in Uganda

York, Travis T.; Gibson, Charles; and Rankin, Susan (2015) "Defining and Measuring Academic Success, "Practical Assessment, Research, and Evaluation: Vol. 20 , Article 5. DOI: https://doi.org/10.7275/hz5x-tx03

Available at: https://scholarworks.umass.edu/pare/vol20/iss1/5

Zulfiqar, A & Mushtaq-ur-Rehman, S. (2022). School Climate: Learning Environment as a Predictor of Student's Academic Achievement. *Journal of Research & Reflections in Education (JRRE). Jun2016, Vol. 10 Issue 1, p104-115. 12p.*

Alokan, F.B. (2010). *Influence of Sex and Location on Relationship between student problems and Academic* P*erformanc*e. *The Social Sciences (TSS),* 5(4), 340 – 345.

Axtell, B. and Bowers J. (1972). *Rural Urban Effects on the Common Entrance Examination*. TEDRO RP, 104.

Ayodele, S.O. (1988). *A study of the Relative Effects of the Problems of Class Sizes and Location of Schools on Performance of Pupils. Nigerian Journal of Curriculum Studies,* Vol. VI, No. 2.

Balogun, T. A. (1982). Improvisation of Science Teaching Equipment. *Journal of the Science Teachers Association,* Vol. 20, No. 2, pp.72-76.

Boot, M, adcairncross, S(1993) Actions speak: the study of hygiene behavior in water and sanitation projects. Delft, The Netherlands, IRC; and London, UK, London School of Nursing and tropical Medicine.

Agabi, co(2003) resources for infective classroom instruction in SB. Neideedduh(2003)(Ed) Focus on effective teaching in schools port Harcourt Paragraphics, p.45-58

Dike, VW (2002), the role of school library

Egesimba, NM and Aje E.N(2003) Fundamentals of library studies, Oweri, Anitto

Gojeh, L.A (2004) Government policy and school library in levels of school library in Nigeria

A study of secondary school library provision in Kadona State. Nigerian school library Journal 5(1)P.1-10

Ogunmilade S.O(1995) College Library practice for staff and students of library studies

Oti. A(2002) A practical guide to the use of library, library resources and services, Owerri Springfield

Child friendly hygiene and sanitation facilities in schools(UNICEF)

Zomerplaag, Saap and Mooijman, Annemarieke(2005) child-friendly hygiene and sanitation on schools

Erisa M Kigenyi 2016-school environment and performance of public primary school teachers in Uganda Mbarara university of science and technology.

Amin, EM (2005). Social science research; concepts, methodology and analysis ,Kampala Makerere university.

Kothari, CR (2010) research methodology; methods and techniques, new Delhi-new age international.

Koul, l, 2009 methodology of educational research, new delhi ;vikas publishing house. .

Bryman, A and Bell,E,(2011) Business research methods,3rd edition.

oxford university press

Mugenda,M.O,& Mugenda (1999). Research methods, quantitative and qualitative approaches, Acts,press,African centre for technology studies (acts) Nairobi,kenya.

Borg and Gall,2003 educational research ;An introduction .new Delhi; surjeet publications.

Lokesh Koul Methodology of education research .new Delhi;vikas publishing house pvt,ltd.

Bell, j (1999) doing your research project ,A guide for first time researchers, open university press ,London.

Erisa M.Kigenyi (2016) School environment and performance of public primary school teachers in Uganda Mbarara university of science and technology.

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Tadesse shiferaw Dimbisso (2009) Astudy of factors influencing student's academic performance.

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Alexandros, G. S., Christos, C. F., & Konstantinos, C. F. (2013). *The relationship between personality type and academic performance. The case of greek university's students.* Proceedings of the 3rd International Conference: Quantitative and Qualitative Methodologies in the Economics and Administrative Sciences (Q.M.A.S. 2013) Athens, Greece, pp. 333-344

Bell, M. J. (2017). Define academic performance. Classroom. *https://classroom.synonym.com/define-academic-performance-4740750.html*

Bhagat, V. (2013). Extroversion and academic performance of medical students. *International Journal of Humanities and Social Science Invention, 2(3)* 2319 – 7722.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). How people learn: Brain, mind, experience, and school. Washington DC: National Academiy Press.

Caine, R. N. & Caine, G. (1997). *Education on the edge of possibility*. Alexandria, VA: Association for Supervision and Curriculum Development.

Caine, R. N., Caine, G., McClintic, C., & Klimek, K. (2005). *12 Brain/mind learning principles in action*. Thousand Oaks, CA: Corwin Press.

Elger, D. (2007). Theory of performance. In S. W. Beyerlein, C. Holmes, & D. K. Apple, (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.

Engler, B. (2008). *Personality theories*. Cengage Learning. pp. 254-255. ISBN 978-0-547-14834-2

Kennedy, J. F. (1962). *Address given at rice university*. Public Papers of the Presidents of the United States, 1, 1962, 669-670.

Lawrence, A. A. S., & Lawrence, J. A. (2014). Personality type and academic achievement of secondary school students. *Indian e-Journal on Teacher Education (IEJTE)* 2(3)26-42

Mischel, Walter; Shoda, Yuichi (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review, 102*(2): 246–268. doi:10.1037/0033-295X.102.2.246.

Mohammed, C. (2006). Students' personality traits and academic performance: A five-factor model perspective. *College Quarterly Summer, 9*(3) *http://collegequarterly.ca/2006-vol09-num03-summer/chowdhury.html*

Pellegrino, J., Chudowsky, N., & Glaser, R. (Eds.). (2001*). Knowing what students know: The science and design of educational assessment*. Washington DC: National Academy Press.

Redhwan, A. A., Muhamed, T. O., Zaliha, I., Yuri, V. B., Muhammad, S. A., & Manuel, M. (2015). Relation between type of personality and academic performance among Malaysian health sciences students. 8, 182 doi: 10.3823/1781

Romerhausen, N. J. (2013). Strategies to enhance student success: A discourse analysis of academic advice in international student handbooks. *Journal of International Students*, *3*(2), 129–139.

Tomlinson, C.A., Kaplan, S. N., Renzulli, J. S., Purcell, J., Leppien, J., & Burns, D. (2002). *The parallel curriculum: A design to develop high potential and challenge high-ability learners*. Thousand Oaks, CA: Corwin Press.

Wiske, M. S. (Ed.). (1998). *Teaching for understanding: Linking research with practice*. San Francisco: Jossey-Bass

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Name of Candidate: **BUKOSELA J.K TESILAH**
Reg. No: **S19/MUC/MED/032**

Title of Dissertation: **SCHOOL ENVIRONMENT AND STUDENTS ACADEMIC ACHIEVEMENT IN SELECTED PUBLIC SECONDARYSCHOOLS IN MBALE, UGANDA**

S/N	COMMENTS BY REVIEWER	ACTION TAKEN	INDICATOR
	Interpret the p-value correctly because it is contradicting	Changed to the right interpretation.	Check pages 53 and 58
	Produce a multivariate table to looks the beta coefficients that individual model summaries	Included in the text	See page 68
	Library and classroom are insignificant basing on results. Why? Explain	Explained	See page 67
	Your conclusions should be based on findings	Rectified	See conclusions
	Use interview results to explain why classroom and library don't influence	Done	See explanations
	Check the questionnaire you used Your supervisor should look into the legend used	Legend corrected	See legend

Candidate's Name: **BUKOSELA J.K TESILAH** Signature: .....

Supervisor's Name: **OKURUT DAVID**..... Signature:
21/08/2024

NB: Post proposal compliance form is designed to capture all the corrections recommended by reviewer and panelists.

APPENDEX B: QUESTIONAIRE

Questionnaire

My name is Bukosela Jesca, a student at Uganda Christian University, Mbale University College, pursuing a Masters' Degree in Education Management and Planning. I am carrying out research about **"the influence of school environment on students' academic achievement in selected public secondary schools in mbale, Uganda"**. I kindly request you to provide me with information. The information from you will be treated as confidential and used for academic purposes only.

SECTION A: Demographic Characteristics of Respondents *(tick the right option or fill the right answer in the spaces provided)*

Gender of Respondent

Male ☐ Female ☐

Age of Respondent

21-30yrs ☐ 31-40yrs ☐ 41-50yrs ☐ 51-above ☐

Education level of Respondent

Diploma ☐ Degree ☐ Masters ☐ Ph ☐

Length in Service

Less than a year ☐ 1- 5 years ☐ 6-10 years ☐ 10 and above ☐

SECTION B: To examine the contribution of library on students' academic achievement in selected public secondary schools in Mbale, Uganda. Please the appropriate response: (*Strongly Disagree-1, Disagree-2, Not sure-3, Agree-4 and Strongly Agree-5).*

Construct		**Opinion**				
		SD	**D**	**NS**	**A**	**SA**
	To examine the contribution of adequate library on students' academic achievement in selected public secondary schools in Mbale, Uganda	**1**	**2**	**3**	**4**	**5**
1	There is a designated building as a library in school					
2	The library has all the assorted and reference books required for students' use					
3	The library receives daily newspapers which are accessible to both teachers and students					
4	The library has enough furniture for all students who want to read					
5	The library has a designated officer serving as a librarian					
6	The library has audio facilities for students and teachers to use					
7	The library has computers accessible to students and teachers					
8	The library has internet connection and is available for					

	research by students and teachers					
10	The student Vs. book ratio is adequate					

SECTION C: To assess the contribution of sanitary facilities on students' academic achievement in selected public secondary schools in Mbale, Uganda. Please the appropriate response: (*Strongly Disagree-1, Disagree-2, Not sure-3, Agree-4 and Strongly Agree-5).*

Construct		**SD**	**D**	**NS**	**A**	**SA**
	To assess the contribution of sanitary facilities on students' academic achievement in selected public secondary schools in Mbale, Uganda.	**1**	**2**	**3**	**4**	**5**
1	The school has adequate pit latrines/toilets for both teachers					
2	The school has adequate pit latrines/toilets for both female and male students					
3	The school has adequate pit latrines/toilets for both male student					
4	The school has adequate urinal for both teachers and students					
5	The school has adequate dustbins for solid waste disposal					

6	The school has adequate hot and cold water for both teachers and student					
7	The school has adequate bathrooms for both teachers and students					
8	The school has adequate facilities for washing raw food					
9	The school has adequate washing tanks with water and soap for use after visiting toilet and before eating food.					

SECTION D: To establish the contribution of classrooms on students' academic achievement in selected public secondary schools in Mbale, Uganda. Please the appropriate response: (*Strongly Disagree-1, Disagree-2, Not sure-3, Agree-4 and Strongly Agree-5).*

Construct		**SD**	**D**	**NS**	**A**	**SA**
	To establish the contribution of classrooms on students' academic achievement in selected public secondary schools in Mbale, Uganda.	**1**	**2**	**3**	**4**	**5**
1	The school has adequate classrooms for all students from S.1-S6					
2	The classrooms have adequate space to facilitate learning					
3	The school has adequate instructional area for teachers					
4	The ratio of student Vs. classroom is adequate					
5	There are adequate teachers to attend to learners					
6	There are adequate tables, desks and chairs for each					

	classroom					
7	There is adequate ventilation for all classrooms in the school					
8	There are big blackboards/ white boards in all classrooms in the school					
9	There are sufficient lights and fans in classrooms in the school					
10	The school has clear rules for each classroom to enforce students' discipline					

SECTION E: To establish Status of students' academic achievement in selected public secondary schools in Mbale. Please the appropriate response: (*Strongly Disagree-1, Disagree-2, Not sure-3, Agree-4 and Strongly Agree-5).*

Construct		**SD**	**D**	**NS**	**A**	**SA**
	Status of students' academic achievement in selected public secondary schools in Mbale	**1**	**2**	**3**	**4**	**5**
1	Student's grades(UCE) are high for the last five years					
2	Teachers administer students continuous assessments					
3	Teachers impart academic skills and competencies in their students					
4	Students' retention and completion rate is high					
5	Students' engagement in revision is high					
6	Teachers promote critical thinking among learners					

7	Teachers sensitize students about the knowledge of career success					

Thanks for your Cooperation

APPENDEX C

BUGDET ESTIMATE FOR THE RESEARCH STUDY

S/N	ITEM	COST	AMOUNT
1	Transport	30,000/=	210,000/=
2	Stationary	25,000/=	100,000/=
3	Typing, printing and photocopying	50,000/=	200,000/=
4	Internet	100,000/=	100,000/=
5	Airtime(communication)	100,000/=	100,000/=
6	Research assistance	100,000/=	100,000/=
	Total		810,000/=

Source: Personal research prediction June 2022 to December 2022

APPENDEX D

RESEARCH TIMEFRAME

TIME	**ACTIVITY**
1st-15th Feb	Problem identification
16th-30th Apr	Concept presentation
18th –date	Literature search and review
15th -30th May	Developing research design and proposal writing
15th-20th June	Developing tools/instruments
26th-30 June	Writing and submission of the proposal
1st- 2nd July	Proposal defense
2nd July-18th August	Responding to the comments concerning proposal defense
22nd August- 4th September	Pilot study and data collection
5th- 25th September	Analyzing data and submission of data report
26th – 9th October	Writing report
20th October	Submission of a report

APPENDEX E

SKETCH MAP OF UGANDA SHOWING MBALE DISTRICT

KEY

MBALE DISTRICT

APPENDIX: TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: “N” is population size “S” is sample size.

Krejcie, Robert V., Morgan, Daryle W., “Determining Sample Size for Research Activities”, Educational and Psychological Measurement, 1970