



**MAKERERE UNIVERSITY
MAKERERE UNIVERSITY BUSINESS SCHOOL**

**WORK ENVIRONMENT, TEACHER QUALITY AND EDUCATION QUALITY IN UPE
SCHOOLS IN SHEEMA MUNICIPALITY**

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**A RESEARCH DISSERTATION SUBMITTED TO THE FACULTY OF GRADUATE
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PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD
OF A MASTER OF BUSINESS ADMINISTRATION OF
MAKERERE UNIVERSITY**

PLAN A

NOVEMBER, 2023

DECLARATION

I, Atusasire Mercy, declare that this research dissertation has been prepared based on my own research and efforts with assistance of the research supervisor and acknowledge to the best of my knowledge that this dissertation has never been presented by any other person in any institution of higher learning. Any citation used in this dissertation has been acknowledged in the reference list.

Signed... Atusasire Mercy Date... 20/11/2023

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APPROVAL

This research dissertation has been submitted for review with our approval as University Supervisors.

Signed

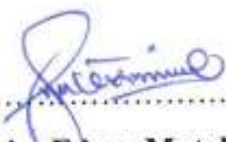


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DEDICATION

This piece of work is dedicated to my beloved parents Mr. and Mrs. Beingana Man Joram, my husband Mr. Tumuhimbise Edson, brothers and sisters for their financial efforts, resilience and determination that has greatly inspired and modeled me up to the end of the course. May the Almighty God bless them abundantly.

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LIST OF ABBREVIATIONS AND ACRONYMS

COVID	Corona Virus Disease
DEO	District Education Officer
DIS	District Inspector of Schools
FMECD	Federal Ministry for Economic Cooperation and Development
MDG	Millennium Development Goal
MOES	Ministry of Education and Sports
PLE	Primary Leaving Examinations
SDG	Sustainable Development Goals
TQM	Total Quality Management
UNDP	United Nations Development Programme
UNEB	Uganda National Examinations Board
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPE	Universal Primary Education

ABSTRACT

This study examined work environment, teacher quality and education quality in UPE schools in Sheema municipality. A cross sectional survey design was employed whereby data were collected at a specific point in time. Given the nature of research objectives, correlation analysis was performed to test associations between the study variables, while a hierarchical regression analysis was used to test both the individual and combined predictive power of work environment and teacher quality on education quality

The study results show that there is a positive and significant relationship between work environment and teacher quality, a positive and significant relationship between work environment and education quality; and a positive and significant relationship between teacher quality and education quality. The results further show that teacher quality mediates the relationship between work environment and education quality.

The study recommends that there is need for public primary schools to be equipped with the necessary work equipment and ensure good working spaces. The government should therefore take it upon themselves to ensure that these schools have enough physical equipment like boards, offices, furniture and also ensure that the work conditions are favorable if quality education is to be achieved. Also the teachers should be given chance to enhance their experiences in these schools so as to improve their expertise and effectiveness. This can be ensured through continuous on job training and job rotation such that they are exposed to different work activities. This will increase their esteem and confidence to execute their roles as required which will improve education quality.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter comprises of the background to the study, statement of the problem, purpose of the study, objectives of the study, study scope, significance of the study and the conceptual framework

1.1 Background of the study

Over the years, achieving quality universal primary education has been one of the global efforts to achieve a better and more sustainable future for all and address the global challenges related to poverty, illiteracy and inequality as stipulated in the Millennium Development Goals (MDG2) (The World Bank, 2012; UNDP, 2016; Vinayagum, Mikiko, & Sarit, 2013) and Sustainable development Goals (SDG4) (UNESCO, 2020; UNEP, 2018). Education quality is one that improves the social, emotional, mental, physical, and cognitive development of each student regardless of gender, race, ethnicity, socioeconomic status, or geographic location (Sean, 2016). Education quality helps to increase literacy rates, increase people's capacity to gain employment opportunities, utilize idle resources for economic gain and empowers people to live healthier and sustainable lives (Nelson, 2015; Serrano, 2017).

The world has gone through a great expansion in education quality over the past two centuries which has resulted into a rise in global literacy rates from 83 per cent to 91 per cent mainly through increasing rates of enrollment in primary education (Ortiz-Ospina, 2018). Despite this drastic increase, regional disparities persist with higher literacy rates being reported in Asia, Latin America, Europe and Northern Africa leaving Sub Saharan Africa at the bottom line with

literacy rates below 50% (Roser & Ortiz-Ospina, 2013; UNESCO, 2014). In Uganda, primary education is universal and free under a program called Universal Primary Education (UPE) whose major goals are to achieve 100 per cent enrolment and eliminate drop-out rates up to the primary 7th level of education (Mpyangu, Ochen, Onyango, & Lubaale, 2014). However, this has not been the case with most UPE schools as evidenced by high school drop-out rate (42.8 per cent) and poor academic performance for the last 20 years (Kamugisha, 2017; UNEB, 2017).

According to the total quality management (TQM) theory, schools as open social systems must define appropriate internal components such as work environment, teaching procedures and other resources to achieve specific educative goals. These components interact together to produce the desired education outcomes (Alvarez, 2012). Good working environment which includes physical setting, job profile, organizational culture and surrounding facilities (Tripathi, 2014; Oswald, 2012) provides a foundation for effective teaching and learning and therefore influence teacher productivity and academic performance as determinants of education quality (Al-Tawil, Abed, & Lameeha, 2011).

Likewise, teacher quality relates to teaching competences such as teacher qualification, teacher characteristics, teacher practices and teacher effectiveness (Goe L. , 2007), has also been reported to be one of the most important predictors of improved student achievement and success hence influence education quality (Rueckert, 2019). Teachers and their classroom practices are central to enhancing student learning and thus ensuring quality schooling and quality learning outcomes (Hayes, Christie, & Lingard, 2016; Hattie, 2019). Teachers integrate a specific pedagogy background that defines practices that they adopt in the classroom influencing students' learning experience and outcomes.

However, various studies in Sub Saharan Africa (Ortiz-Ospina, 2018; Chinapah, 2010; Caillods, Phillips, Poisson, Talbot, 2009) have clearly indicated that work environment and teaching quality in government-aided primary schools are still poor and this has often been reported as one of the factors contributing to low achievement in quality education for all. Evidence of this has been reported in several countries like Malawi, Chad, Cameroon, South Sudan, Central African Republic and Uganda to mention but a few, that pupils in government aided primary schools are often squeezed into overcrowded classrooms which are in most cases in dilapidated state, schools lack scholastic materials and basic facilities like running water and adequate toilets for pupils as well as competent teachers (Rueckert, 2019). Evidence of poor quality of teaching in these countries has been explained by lack basic skills in reading, writing and arithmetic among children who have completed primary school, use of outdated teaching methods and lack of adequate trained teachers (Rueckert, 2019; FMECD, 2017).

In Sheema Municipality for example, education service quality particularly in public primary schools is still poor as evidence from the low levels of school performance at PLE. In 2018 for instance, only 11 schools out of the 34 schools, got at least a first grade pupil with majority of schools and pupils recording 3rd and 4th grades (UNEB, 2017). The Inspector of schools pointed that poor education quality is attributed to absenteeism that is very rampant, insufficient physical facilities and equipment in UPE schools and non-coverage of the syllabi by teachers. With regard to the above background, it can be hypothesized that there could be a significant relationship between working environment, teacher quality and education quality in government aided primary schools in Uganda though no studies have been conducted yet, to confirm this in the Ugandan setting particularly in Sheema Municipality where education quality has been low.

Against the above background, this study seeks to examine the relationship between work environment and education quality and assess the mediating effect of teacher quality on the relationship between work environment and education quality in government aided primary schools in Sheema municipality.

1.2 Statement of the problem

Primary schools are globally accepted as the foundation of education system in any country including Uganda (Duze, 2012). The quality of education provided by school teachers to learners in the primary school level determines the education outcomes in the entire education system up to tertiary level. Improving working and learning environment for teachers and pupils is therefore key to providing equitable access to quality education (Kigenyi, Kakuru, & Ziwa, 2017). In Uganda, the government has tried to improve education quality through teacher training and eliminating tuition payments in government aided primary schools. Despite these efforts, education quality in government aided primary schools is still considered low (Rabbani, 2017; UNDP, 2016). In most UPE schools, learning outcomes of pupils are very poor with a high number of pupils (67%) in P3 to P7 unable to read primary two material while the primary seven pupil completion rate as low as 57.2% (Kamugisha, 2017).

In Sheema municipality, significant improvements in quality education have only been noticed in private primary schools but worst for UPE schools. UPE schools are characterized by poor academic performance (3rd and 4th grades), low English vocabulary, high school dropout rate (43.3%) and low progression rate (Pallegedara & Yamano, 2011; Bitunga, 2018). In Sheema district, 12.8% of the primary school going age (6-12) are not in school. In addition, 58% of the persons who complete primary seven do not progress to high levels. Instead, they drop out of school to involve in casual labour, drug abuse and other informal activities. Out of those who

continue to secondary, 76.6% do not complete senior four (4). The statistics also indicate that 9.3% of the persons aged 10-17 years are considered do not know how to read and write and 18.1% of the persons aged 18 and above who have drop out of school do not know how to read and write and therefore considered illiterate (UBOS, 2017; Bitunga, 2018).

Poor education quality in UPE schools could be attributed to low teacher quality and poor work environment though no studies have been conducted yet in Ugandan government aided primary schools to examine the relationship between work environment, teacher quality and education quality, hence the need for the study.

1.3 The purpose of the study

The purpose of the study was to examine the relationship between work environment, teacher quality and education quality in public primary schools in Sheema Municipality

1.4 Research objectives

- i. To establish the relationship between work environment and teacher quality in public primary schools in Sheema Municipality
- ii. To establish the relationship between work environment and education quality in public primary schools in Sheema Municipality
- iii. To establish the relationship between teacher quality and education quality in public primary schools in Sheema Municipality
- iv. To establish the mediating effect of teacher quality in the relationship between work environment and education quality in public primary schools in Sheema Municipality

1.4.1 Research questions

- i. What is the relationship between work environment and teacher quality in public primary schools in Sheema Municipality?
- ii. What is the relationship between work environment and education quality in public primary schools in Sheema Municipality?

- iii. What is the relationship between teacher quality and education quality in public primary schools in Sheema Municipality?
- iv. What is the mediating effect of teacher quality in the relationship between work environment and education quality in public primary schools in Sheema Municipality?

1.5 Scope of the study

1.5.1 Geographical scope

The study took place among public schools in Sheema Municipality distributed within all the four divisions in the municipality which include Sheema Central division, Kabwohe division, Kagongi division and Kashozi division which has 34 public schools in total.

1.5.2 Conceptual scope

The study was limited to teacher quality and work environment as independent variables and quality education as a dependent variable. Therefore, the study sought to examine the relationship between work environment and education quality; teacher quality and education quality and the mediating effect of teacher quality in the relationship between work environment and education quality in public primary schools in Sheema Municipality.

1.5.3 Time scope

The study adopted a cross sectional research design where data is collected at one point in time and therefore was carried out within one year from June 2022 to June 2023

1.6 Significance of the study

It is hoped that the findings of the study may help school administrators reflect upon various factors that influence the teaching-learning process and education quality in government aided primary schools. In so doing, they could investigate the possibility of introducing those factors to

their schools which may consequently lead to reducing absenteeism, dropouts and repetition and consequently effective teaching-learning process.

These findings may also help the government through the Ministry of Education and Sports (MOES) to provide more funds for schools to procure instructional materials and conduct repair and maintenance of the available physical facilities, thus improving the education quality.

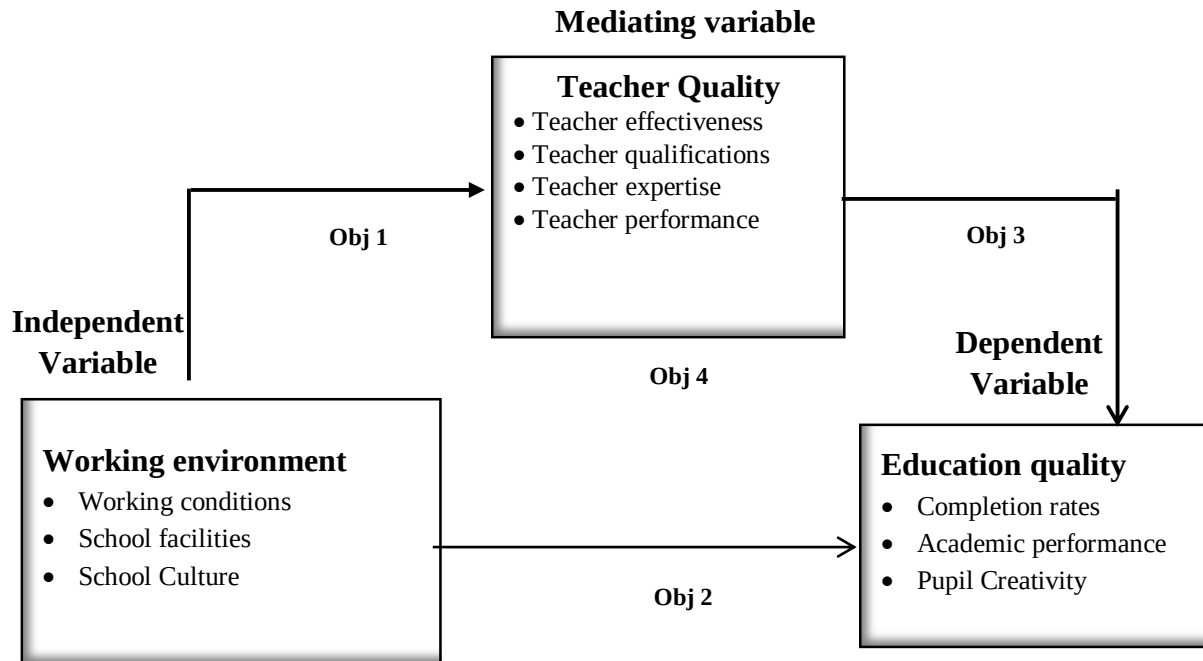
Parents as stakeholders may also use findings from this study to help improve the school facilities by organizing for fundraisers for instance to construct a classroom, laboratory, library among other facilities, which would further improve education quality.

Future researchers would use the study in identifying priority areas and gaps on which to carry more research about public primary schools.

1.7 Conceptual framework

The conceptual framework above explains the relationship between the variables under study. The independent variable is work environment which is the environment/ physical setting in which teachers and pupils work or live. This was looked at in terms of teaching facilities, school culture, job safety and security as well as sanitary facilities (Tripathi, 2014; Oswald, 2012). Teacher quality was assessed in terms of teacher qualifications, teacher experience, teacher behavior, teacher commitment and Teacher value-added (Ndungo, 2018; Bietenbeck, 2017; Hommes, Weel, & van der Wiel, 2016; Rice, 2013).

Figure 1: Conceptual framework



Source: Developed from review of literature review (Tripathi, 2014; Oswald, 2012; Ndungo, 2018; Bietenbeck, 2017; Hommes, Weel, & van der Wiel, 2016; UNESCO-UIS, 2019; UNESCO-UIS, 2018).

On the other hand, education quality was looked at in terms of output indicators which reveal how the education system is performing in terms of subject knowledge, competencies, repetition, progression and completion rates, and employer satisfaction. According to UNESCO, output indicators typically involve measurement of learning outcomes based on national examinations or international assessments (PLE results trend). This is because output indicators provide the most important data for understanding whether educational quality and learning outcomes are

improving as intended (Scheerens, Luyten, & Van Ravens, 2012; Saito, Schleicher, & Mahshi, 2012; UNESCO-UIS, 2018; UNESCO-UIS, 2019).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides the theoretical and conceptual review as well as the empirical findings from past studies that have been done on each of the specific objectives highlighted in previous section.

2.1 Theoretical review

The present study relies on total quality management (TQM) theory which was developed and advances by Deming (1986) and its relevance to the education world. Primary schools can be considered as open social systems, because they are social structures and cannot survive without continuously exchanging resources and information with their environment. It means that they have interacting matter and energy with other systems outside themselves (Terzić, 2017). On the other hand, schools as open social systems must define appropriate internal components such as work environment, teaching procedures and other resources to achieve specific educative goals. Thus, all of these components interact together in order to produce the best outcomes such as education quality to assure the organizational success. This last element relates to total quality management theory (Alvarez, 2012).

Total quality management is an approach to improving the effectiveness and flexibility of organizations as a whole. It is essentially a way of organizing and involving the whole organization: every department, every activity, and every single person at every level. It provides a framework for transforming manufacturing and service industries into efficient organizations able to develop effective quality operations aimed at satisfying the present and future needs of the customers. This theory provides an organizational paradigm for the expansion of the quality

culture in all kind of organizations, which implies the notion of shared attitudes, behaviors, values and assumptions within the organization (Geoff, 1997).

Consequently, TQM is based on change towards the development of quality values which might include a customer focus, teamwork, safety for all stakeholders, total involvement, intimacy, integrity, consensus and excellence (Hart & Shoolbred, 1993). The concept of TQM requires that schools are perceived as service organizations designed to fulfill the needs of their clients or customers. Thus, the emphasis for TQM could be on transforming teaching, curriculum, organizational and management processes within schools in a way which serves student, parent, and community interests (Geoff, 1997). The key task of a service organization, like a school, is to build effective processes to respond efficiently to the present and future social-educative needs. Based on this notion, schools can be analyzed as systems and sub-systems which function as a unified whole, with emphasis on the quality interface between the various elements of the organization as much as on the nature of the elements themselves.

In this case, schools under TQM not only must develop the capacity and competences to maintain current levels of performance but also generate continuous improvement to reach high Teacher quality and student achievement levels of performance (Fitzgerald, 2014). Consequently, TQM in schools implies two main levels. First, it requires a system to assure that the organization carries out its function of developing all aspects of education services. Second, the system must be developed to ensure that a consistent approach is taken by all stakeholders in the delivery of a quality service to their students.

The first element above-mentioned refers to the need for the school to be a quality organization at the macro level through the development of standards according to other educational

organizations performance. The second refers to the development of internal quality management processes to enable the school to achieve its mission. Both levels require schools to develop a quality management approach which permeates the whole organization. TQM provides to schools a standard framework for the analysis and development of the quality culture necessary for the providing educational services to continually meet the emerging needs of students (Geoff, 1997).

This study is focused on one particular aspects of TQM theory, the relation between teacher's quality and education quality. Secondly, the study seeks to develop a system to ensure that a consistent approach is taken by all teachers in the delivery of a quality service to their learners. This will provide insight into future research to more fully examine the gaps in the qualitative characteristics, quality of working environment and education quality (Farooq, Akhtar, Ullah, & Memon, 2007). Considering the teaching/learning process as one of the most critical within the schools' organization, teacher quality becomes a fundamental aspect of the school quality concept, because the quality management processes in schools concentrates on the relationships between teacher and students in the learning process. In this sense, teachers are encouraged to accept responsibilities for the quality of their work ensuring emotional, physical and psychological conditions for appropriate leaning environment (Gossen & Anderson, 1995).

2.3 Empirical findings

This section presents the empirical findings on the specific objectives of the study. Basically, this section presents past studies that have been done on the relationships between variables;

2.3.1 Work environment and education quality in public primary schools

School environment is one of the factors which affect the effectiveness of teacher motivation on education quality. The school environment is a composition of such aspects as adequate classroom space, enough teaching and learning materials, availability of staffroom, and well-established spaces for convenience, among other great infrastructures which make up a conducive environment for teaching (Al-Tawil, Abed, & Lameeha, 2011). Much as school environment is an effect of education quality, it is also viewed differently by authors. According to Al-Tawil, Abed, & Lameeha (2011), the school environment affects academic achievement of pupils in relation to facilities such as, desks, seats, chalkboard, teaching aids, and cupboard considered as ingredients for effective teaching and learning.

Work environments that support autonomy promote one's intrinsic value for work (Baard, Deci, & Ryan, 2014). Specifically, studies have found that the level of autonomy support provided by managers is associated with numerous adaptive psychological outcomes including job satisfaction, high work performance, and persistence (Baard, Deci, & Ryan, 2014; Gagné & Deci, 2015). Managers who foster an autonomy-supportive work environment recognize the views of their employees, guide employees in a non-controlling way, encourage employees to be proactive, and allow employees to make independent decisions (Gagné & Deci, 2015).

Employees seek to be treated with respect by those they work with. A hostile work environment with rude or unpleasant coworkers usually has lower job satisfaction. Managers and supervisors need to step in and mediate conflicts before they escalate into more serious problems requiring disciplinary action (Mbogo, 2015). Employees may need to be reminded what behaviors are considered inappropriate when interacting with coworkers. Similarly, provision of adequate physical resources including facilities, equipment and maintenance can help in influencing

attitudes and facilitating program success (Akporehe, 2011). Lack of facilities makes teaching ineffective for the teacher and this demoralizes the teacher no matter how determined he/she may be in achieving certain goals. In such cases the teacher is left to teach without essential facilities and where possible forced to improvise in order to make learning effective. This becomes more difficult especially in the teaching of technical subjects and science subjects, which are even compulsory in the Ugandan education system. This affects performance of the students and also demoralizes the teacher. While the vice versa is true (Hill B. , 2010).

Hill (2014) stated that employees spend so much time in their work environment each week and therefore it is important for organizations to try to optimize their working conditions like providing spacious work areas rather than cramped ones because adequate lighting and comfortable work stations contribute to favorable work conditions. Providing productivity tools such as upgraded information technology to help employees accomplish tasks more efficiently and contributes to job satisfaction as well (Hill, 2014). Nganzi (2013) reported that teacher's job satisfaction is unavoidable phenomenon in school environment. Teachers need to be motivated and reinforced in their career if they are to execute a quality job in schools. Dealing with a workload that is far too heavy and deadlines that are impossible to reach can cause job satisfaction to erode for even the most dedicated employee (Nganzi, 2013).

Zingesser (2012), reported that career satisfaction and job satisfaction both relate to happiness with one's work environment, but contribute to contentment in separate ways. Career satisfaction may be defined as the level of overall happiness experienced through one's choice of occupations. Job satisfaction relates to one's current work situation and is dependent on many factors, including the marketplace, work conditions, job location, and other dynamic influences. An individual may feel very certain of having made a correct career choice but be experiencing

an unsatisfactory current work experience. Conversely, a current job situation may have many positive components but not be fully satisfying as a career choice (Zingesser, 2012). Fatuma (2012) reported that the role of teacher is pivotal in education and training. It is on his teaching and guidance that the future of countless generations depends. If a teacher is satisfied with his job, much can be expected from him. A satisfied teacher might be successful in improving the quality of his/her teaching and improve the quality of students as well (Fatima, 2012).

McGuire & McLaren (2009) believe that an organization's physical environment particularly its layout and design can impact employee behaviour in the workplace. As indicated by (Nitisemito, 2011), some of the factors that influence the workplace include: cleanliness, water, lighting, colouring, security and music. Many work environment studies have shown that workers are satisfied with reference to specific work environment features. These features preferred by users significantly contribute to their workspace satisfaction and performance. Those features include ventilation rates, lighting and access to natural light and acoustic environment (Humphries, 2015; Veitch & Newsham, 2010). Lighting and other factors like ergonomic furniture have been found to have positive effect on employees' health and so on employees' productivity (Dilani, 2014; Veitch & Newsham, 2010). Hameed & Amjad (2009) in a survey of 31 bank branches confirmed that convenient and ergonomic office design encouraged the employees and increased their performance significantly. Chandrasekar (2011) also assert that unhealthy and unsafe work environment in terms of poor ventilation, immoderate noise, inadequate lighting etc. affect employees' productivity and health.

Various studies have indicated that significant gaps in the provision of physical facilities in the school environment are considered among the factors affecting academic performance and morale of teachers and learners. (Barasa, et al., 2015) in Kenya revealed that the state of sanitary

facilities in schools was poor, unmaintained and inadequate in almost 50% of schools. This posed negative effects on health of pupils and teachers due to inaccessible safe drinking water and inadequate sanitary infrastructure. Marie (2010)'s study in 6500 schools in South Africa revealed that majority of the schools in the Eastern Cape which performed poorly had pit latrines which were poorly maintained with most of them full and therefore no longer in use. This forced the pupils to look for alternative places where they could relieve themselves when answering to calls of nature (Marie, 2010). According to (Gould, 2012), learners' toilets in a school reflect the school's image and may have an influence on the learners' morale, behavior and health. (Pilliteri, 2011) reported that in Malawi, one school had an open pit full of used sanitary towels which were being removed by birds and dogs. He was supported by Crofts (2011) when he recorded similar observations in Uganda. This behavior can easily lead to land pollution and force the governments of the affected countries to spend huge amounts of money in rehabilitating such a land (Crofts & Fischer, 2011).

Alternatively, Joseph et al, (2012) in India revealed that out of the 30 schools surveyed, 83.3% of the schools which performed better were well placed with approachable roads and at a fair distance from busy places like markets and away from polluting atmosphere such as factories. All the schools surveyed in this study had fencing around school campus. All schools had a playground which is important for healthful school environment. Almost all schools, (96.7%) had verand has attached to class rooms. Day light and ventilation in terms of floor, door/window area and cross ventilation was observed to be adequate in (96.7%) schools. (73.3%) schools had windows place at a right height (two or more feet) above the floor but walls were not whitewashed in (6.7%) schools. Although all schools had a separate desk and chair, the

recommended minus desk was present only in (23.3%) schools and chairs with back rest was present in (63.3%) schools (Joseph et al, 2012).

As an element of a constructive school environment, trust in colleagues also plays important roles in teachers' emotion regulation processes. People may feel more comfortable being themselves when safety has been ensured (Edmondson, 1999). Therefore, teachers in a trustful environment may evaluate their work as less stressful and more relaxed, thus, needing no coping strategy. In addition, teachers who trust their colleagues tend to be more authentic, and thus reduce the use of reappraisal or suppression strategies. Therefore, it is credible to assume that trust in colleagues may decrease teachers' use of both reappraisal and suppression strategies, even though relevant empirical results are rare. The results of structural equation modelling by (Yin, Huang, & Wang, 2016) indicated that: (1) the emotional job demands of teaching were detrimental to teacher well-being, whereas trust in colleagues was beneficial; (2) both emotion regulation strategies mediated the relationships between both emotional job demands and trust in colleagues and teacher well-being; and (3) teachers who tend to use more reappraisal may be psychologically healthier than those tend to adopt more suppression (Yin, Huang, & Wang, 2016).

Jones (2015) sought to establish how classroom composition affected learning outcomes in Ugandan primary schools. The study revealed that a classroom compositional factor like class size had little influence on learning outcomes to justify stand-alone policy interventions. This study focused on pupil learning outcomes using test score data for over 250,000 children. The studies highlighted above are inadequate as they did not address the effect of school environment on teachers' performance in public primary schools in Bugisu sub region in Uganda (Jones, 2015).

According to (Ntho, 2013), teachers are a crucial resource and a key determinant of quality in education and if they are unmotivated, then development in a nation is doomed because education is a fundamental instrument of social, economic and political transformation. This is in congruence (Khan & Mansoor, 2013) and (Awan & Asghar, 2014) who point to the fact that the performance of teachers is critical to the survival of quality education.

Duze (2012) analyzed educational policies/programmes in relation to the school environment that were responsible for high pupil attrition or dropout in Nigeria. He found out that dropout rates were at 50% and above, and that this was not only high but also embarrassing considering the huge inputs in the education system in Nigeria. He recommended the creation of a data bank to continuously capture the flow of students in each cohort from start to graduation to facilitate analysis on cumulative dropout and attrition rates (Duze, 2012).

H1: There is a significant relationship between work environment and education quality

2.3.2 Work Environment and Teacher Quality in Public Primary Schools

According to Nakpodia (2011), good work environment has positive influence on teacher's attitude towards their job. Research by Rahardjo (2014) showed that work environment influential significantly towards motivation and performance. This means improved teacher performance and motivation of elementary school in Surakarta City effectively can be increased with an increase in the work environment (Rahardjo, 2014). Nakpodia (2006) believes that job security of workers in terms of income and employment will enhance stability of personnel and a long-term commitment. When teacher's salaries are not paid as at when due the level of commitment is reduced. Incessant industrial actions due to non-payment of teachers' salaries leave and other allowances are common occurrence among the primary school teachers. Many

teachers now resort engaging in other businesses which take so much of their time and interest that teaching becomes a secondary assignment. This they do because they are never sure when the next salary would be paid. The culture of paying primary school teachers' salaries well in areas has created a very poor work environment, which has taken its toll on their productivity (Nakpodia, 2011).

According to Al-Tawil, Abed, El-Rahman, & Lameeha (2011), facilities such as, desks, seats, chalkboard, teaching aids, and cupboard are ingredients for effective teaching and learning. A good education policy or programmed to guarantee quality outputs, it must be serviced optimally with appropriate trained and motivated teaching staff, adequately supplied with necessary facilities and equipment. In other words, a good school must have adequate resources which may be divided into three categories: Financial resources, human resources and physical resources (Al-Tawil, Abed, & Lameeha, 2011).

Akporehe (2011) examined the influence of work environment on teachers' productivity in Secondary schools in Nigeria. When students are accommodated in overcrowded rooms, the degree of concentration of the students is impeded. The teachers should feel at home and be very happy with their work environment in order to bring up the children in the proper way that will make them become useful and productive citizens. Good work environment provides job satisfaction to employee. If all the necessary conditions and facilities that will assist the teachers to do his work are provided, teachers use such facilities to prove quality work to the learners. In this situation, the teacher will have a good image, high esteem, and love for job and will accomplish the syllabus in the shortest time possible which improves teacher quality (Akporehe, 2011).

Whereas, McGuire & McLaren, (2007) believes that an organization's physical environment especially its design and layout can affect employee behaviour in the workplace. They therefore investigated the mediating role of employee well-being in the relationship between physical work environment and job commitment in Call Centres (McGuire & McLaren, 2009). They not only found strong evidence of a mediation effect evidencing the importance of both physical environment and employee well-being to employee commitment, but also found that there exists a strong positive relationship between physical environment and employee commitment. These findings are in agreement with earlier study of De Croon, Sluiter, Kuijer and Frings-Dresen (2005) that did a review on the effect of office concepts (such as office location, design, layout and usage) on employees' health status and job satisfaction. They found these factors to be significant in increasing employee convenience at work as they boost morale and job satisfaction. These findings corroborate several other findings.

Butt, Khan, Rasli and Iqbal (2012) found that work and physical environment of hospitals significantly influence nurses commitment to work while Oludeyi (2013) who did a research on classroom design among secondary schools teachers also found similar results. None of these studies was done in university environment; there is still much to understand about physical working conditions in campus communities and level of job commitment staff therein. The air in the work environment especially its components can play a considerable function in relation to the work behaviour, specifically job performance. As indicated by (Ossama, Gamal, & Amal, 2016), indoor air quality is very significant to the health, comfort, and job performance among employees. Indoor contamination levels frequently exceed open air levels and most of the time workers might spend up to 90% of time alone inside. Most possibly perilous indoor air pollutants are radon, asbestos, inorganic material, environmental tobacco smoke, organics, biological and

non-ionizing radiation. Other pollutants such as odours and dusts can cause critical discomfort and feelings of unwillingness that may lead to a reduction in productivity and job performance (Ossama, Gamal, & Amal, 2016).

Good room temperature increases productivity and reduces stress in workers as it plays notable role in workplace environment. Effective temperature indicates how hot or cold our environment really makes us feel (Aamodt, 2014). High temperatures can affect employee's performance, particularly duties required on cognitive, physical, and perceptual duties (Badayai, 2012). Chandrasekar (2011) state that high temperatures can have a direct impact on health and lead to heat stress and heat exhaustion. Furthermore, (Sehgal, 2012) clarified that according to a thin person, a higher temperature may be better. However, for somebody not as thin, a lower temperature may work better.

Research by Moore (2012) on the role of the school environment on teacher dissatisfaction among US school teachers suggests that a positive school environment includes a supportive administration, enforcement of rules by the principal and other teachers, shared beliefs and values, communication among principal and staff, cooperation and hard work by the principal and the belief that the school is run well. The study further suggests that teachers who perceive a more positive school environment have more control over their classrooms and are more satisfied with their jobs. Teachers' perceptions of student and community problems also increase teacher dissatisfaction (Moore, 2012).

In Delta States in Nigeria, Nakpodia (2011) investigated the degree to which the performance of teachers in secondary schools depends on the capacity of school principals to maintain and enforce adequate supervision. The findings of the study revealed that teachers' performance

significantly depended on the principal's capacity to effectively conduct adequate and valuable supervision which validates the importance of discipline, record keeping and teaching aids. The researcher recommended that school principals should routinely adopt reasonable supervisory behaviour to improve teachers' performance in the classroom (Nakpodia, 2011).

H2: There is a significant relationship between work environment and Teacher quality

2.3.3 Teacher quality and education quality in public primary schools

Researchers have yet to reach consensus on these issues and challenges. We do not have a method for confirming whether a value-added model has attributed the “right” amount of variance in student achievement to teachers; other factors that impact student learning may have influenced students' achievement in a particular classroom. Although teacher effectiveness scores may seem like “magic bullets” that allow us to rank and reward teachers for improving student achievement, policymakers should be wary that various models may attribute changes in student achievement to teachers when these changes are actually the result of factors outside the teacher's control—such as community and school resources, parent involvement, family socioeconomic status, student effort, and the impact of other students in the classroom, to name just a few.

Overall, studies that examine the use of teacher effectiveness ratings consistently indicate that the majority of variation in teachers' effectiveness at raising student achievement scores is due to “unobserved” variables. That is, the changes cannot be specifically attributed to the influence of teacher qualifications, teacher characteristics, or teacher practices (Aaronson et al., 2003; Nye, Konstantopoulos, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2004). These studies also suggest that teacher effectiveness may not be a stable value, as indicated by large, overlapping

confidence intervals between teachers of varying levels of effectiveness (Noell, 2006; Thum, 2003).

Studies show a stronger positive relationship between teacher experience and student outcomes in some, but not all, cases they reviewed (Greenwald, Hedges, & Laine, 1996). Murnane, Willett, & Levy (1995) suggests that the typical teaching learning curve peaks in a teacher's first few years. It is also plausible that a positive finding on experience actually results from the tendency of more senior teachers to select higher-level classes with higher achieving students (Hanushek, 2012).

There is a wide consensus among researchers and policy makers that teacher quality is an essential component of school quality, perhaps the key component (Stephens, 2013; Rugraff, 2014; Laczko-Kerr, 2012; Rockoff J. E., 2013). Thus, teacher quality becomes a most important issue in current movements of education reform and school improvement (Wei, Andree, & Darling-Hammond, 2019; Rockoff J. E., 2013). Because quality teachers are critical for improving student achievement and success, governments are expending considerable effort and resources to promote and expand the knowledge regarding teaching quality and effectiveness. As the teacher quality issue becomes an important national priority, research efforts are focusing on understanding of the relationship between teacher quality and education quality (Heitman, 2016).

It has been widely acknowledged that teachers are among the pivotal agents of improving the educational quality, especially in the context of student learning outcome. Teachers are central to any consideration of schools, and a majority of education policy discussions focus directly or indirectly on the role of teachers (Jamil, 2014). Moreover, parents, teachers, and administrators emphasize repeatedly the fundamental role that qualified teachers play in the determination of

school quality (Bossaert, Doumen., Buyse, & Verschueren, 2011). Previous studies on the estimated effects of teacher quality showed that teacher quality has a statistically significant effect on student achievement and education quality (World Bank, 2014; Stephens, 2013; Rugraff, 2014; Chinapah, 2010; Laczko-Kerr, 2012; Rockoff J. E., 2013).

Harweel (2013) states that competence and quality teacher is important to nurture student's capabilities. It was proven in previous studies on the teacher's effect towards student achievement and there is a strong relationship between the professionalism and quality of teachers and the performance of their students (Wei, Andree, & Darling-Hammond, 2019; Desimone, 2009; Yoon, Duncan, Lee, Scarloss, & NShapley, 2017). Research also recognizes teachers and their classroom practices are central to enhancing student learning and thus ensuring quality schooling and quality learning outcomes (Hayes, Christie, & Lingard, 2016; Hattie, 2019). In this sense, teacher quality is perhaps the most important in-school factor contributing and influencing student achievement (Hattie, 2019), and high-quality and professional teachers can increase student learning outcome beyond the amount contributed by a low-quality teacher (Hanushek, 2012).

Teacher quality and quality teaching are highly interconnected, one without the other can do little for student success. Jamil (2014) revealed that the Malaysian strategy for making teaching as a prestige profession to ensure that schools get qualified and quality teachers improved the quality of education in the school system for the years (2006-2010) (Jamil, 2014). Thus, having a high-quality teacher who can bring her/his professional attributes and skills into the classroom is not enough to achieve higher gains in student outcomes. Without a well-prepared instruction process and strong support, quality teaching is impossible to achieve (Mammadova, 2019).

Song (2012) studied the factors affecting Academic Achievement of Primary School Pupils in Cambodia and the study revealed that the major significant predictor of academic achievement is teacher quality determined by teacher experience. The result showed that, holding other factors in control, the higher the percentage of experienced and qualified teachers a school had, the higher the pupils in that school performed in achievement test. Compared to the other predictors, teacher experience and qualification had the highest magnitude of effect on academic achievement, suggesting that one of the best ways to improve pupil learning is to make use of teacher experience (Song, 2012; Harwell, 2013).

Alvarez (2012) used two main statistical tests: the multivariate analysis of variance (MANOVA) and the multiple regression analysis tests to study the relationship of teacher quality and student achievement in elementary schools from the New York City. As this study attempted to explain how observable teacher characteristics are related to the student achievement, this study concluded that some observable teacher quality characteristics such as the educational background, certification & training status and professional development activities are significantly related to the student achievement (Alvarez, 2012). Particularly, Alvarez (2012) verified that teachers' educational background characteristics such as highest degree earned, major field of study and the pre-teaching tests are significantly related to the student achievement. In the same way, this study confirms that teachers' certification area is significantly related to the student achievement. Also, this study confirms that teachers' professional development components such as participation in professional development activities, support received, rewards gained and collaboration activities are statistically related to the student achievement (Alvarez, 2012).

Teachers' credentials such as certification status were considered by Stephens (2013) who found that there was no significant impact on scores (student achievement) of students served by National Board-Certified Teachers and equivalent students served by non-National Board Certified teachers (Stephens, 2013). Two studies (Kirkpatrick, 2013; Alvarez, 2012) revealed that teachers' use of recommended instructional practices do appear to have a positive impact on student achievement. This research supports prior research which indicated that more use of the NCTM-recommended instructional practices is associated with higher student achievement (Kirkpatrick, 2013; Alvarez, 2012).

Heitmann's (2016) examined the relationship between professional development and student achievement and reported the importance of both internal and external support to enhance both teacher quality and student learning (Heitman, 2016). On the one hand, Gibson's (2014) conclusions revealed that professional development, as an indicator of teacher quality, can affect positively on student achievement in mathematics and reading (Gibson, 2014). Rugraff (2014) analyzed how teachers' salaries, teachers' level of education, and teachers' years of experience affect student achievement and student dropout rates. This study showed significance in how teachers' salaries and teachers' level of education affect student achievement and dropout rates. Additionally, Rugraff's findings demonstrated that the years of experience of teachers has not a significant effect on student achievement (Rugraff, 2014).

Despite all of these above-described studies, it is difficult to arrive at generally accepted conclusions. However, according to the latest investigations, there is a wide consensus among researchers that teacher quality is a key component of education quality (Heitman, 2016). In effect, there is consistent evidence that the individual teacher qualitative characteristics contributes to student achievement, though most studies measured the education quality using

student achievement ignoring other measures such as completion rates, academic performance and pupil Creativity (Stephens, 2013; Gibson, 2014; Rockoff, 2013).

H3: There is a significant relationship between Teacher quality and education quality

2.3.4 Mediating effect of Teacher Quality on the relationship between work environment and education quality

Fitchett & Heafner (2018) revealed that eighth grade social studies teachers with academic backgrounds in history and secondary education were associated with increased use of disciplinary practices valued by the field and performance-based assessment. Furthermore, when accounting for both teacher characteristics and instructional decision-making, alternatively licensed middle grades teachers were associated with lower average student achievement (Fitchett & Heafner, 2018). Tao (2013) pointed out poor working conditions of teachers and the need to generate extra income from other businesses due to insufficient salaries as some of the causes of teachers' poor performance and poor education quality. However, this study did not address the effect of school environment on teachers' performance in public primary schools (Tao, 2013).

Research by Ofejebe and Chinelo (2010) on teachers' motivation and its influence on quality assurance in the Nigerian educational system, points to the fact that satisfaction of the motivational factors leads to quality performance and high production which improves quality assurance in the education sector. They recommended a good learning environment and good working conditions to guarantee good quality assurance in education. And that teachers' welfare was another important factor of good working conditions. Good working environment implies

availability of facilities and materials needed for teachers to perform their duties as educators (Ofojebe & Chinelo, 2010).

Mkumbo (2012) examined teachers' commitment to, and experience of, the teaching profession in six regions in Tanzania. This study revealed that a poor teacher working environment and poor government and community attitudes towards the teaching profession were the key demotivators for the teachers that affected education quality. From this study, it was recommended that the government of Tanzania and other education stakeholders improve teachers' working conditions such as housing and social welfare facilities and services (Mkumbo, 2012).

Research by Musau, Migosi and Muola (2013) on determinants of girls' performance in science and mathematics in Kitui central district, Kenya, suggests that the more the number of lessons a teacher had, the lower, the girls' academic performance. They found that the larger the class size, the lower the girls' academic performance in science and mathematics. The researchers recommended that school management should provide sufficient classrooms, to improve interaction between teachers and learners which would help teachers to give and correct several assignments immediately and also be in position to manage students' behaviour in class more effectively hence improving education quality. Some of the recommendations of this study concerned the school environment in which teachers operate but it did not establish its effect on their performance (Musau, Migosi, & Matee-Muola, 2013).

H4: Teacher quality has a mediating effect on the relationship between work environment and education quality

2.4 Conclusion

According to the literature review, it is shown that there is a relationship between working environment and education quality. If working environment is favorable, there is a likelihood of improvement in education quality. Likewise, poor working environment has a negative influence on education quality. Like working environment, the literature indicates that teacher quality plays a big role in improving education quality. Teachers with high qualifications, expertise/ experience and effectiveness in teaching and having characteristics of enthusiasm, care and sensitivity are likely to foster higher education quality than less qualified, experienced, ineffective and less enthusiastic. However, the literature also indicates that at some point, good work environment may improve teacher quality through increased motivation and morale for/commitment to work. The literature however does not indicate clearly, the mediating role of teacher quality on the relationship between work environment and education quality. The literature however reveals significant research gaps. Most of the empirical literature has been carried out in other countries like Kenya, South Africa, Malawi, India, Nigeria, United States, Cambodia, Malaysia and Saudi Arabia. Yet due to differences in education system, remuneration system and teacher grading systems, the findings may be different in the Uganda. Hence, this study seeks to prove the hypotheses in the Ugandan context.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the research methodology which includes the research design, target population, sample size determination, sampling techniques, data collection procedure, research instruments, validity and reliability of the instruments and data analysis.

3.1 Research Design

The study adopted a cross-sectional research design exploiting a quantitative approach. Generally, a cross-sectional survey design was used in obtaining an overall ‘picture’ about work environment, teacher quality and education quality as it stands at the time of the study (Kowalczyk, 2014; Kumar, 2011). Cross-sectional design involves analysis of data collected from a population or sample at a specific point in time. A quantitative approach will be used to determine the population and sample; and to draft a questionnaire based on likert scales which will enable the researcher to carry out descriptive and inferential statistics to address the study objectives

3.2 Study Population

In Sheema municipality which is the area under study, there are 34 primary schools registered and licensed by the ministry of education. These were considered as the population for this study. Given the fact that this study sought to investigate education quality in UPE schools, the unit of analysis were primary schools. The unit of inquiry was teachers

3.3 Sample Size Determination

Given the population of 34 primary schools, a sample size of 32 schools was considered using the sample size determination table by Krejcie and Morgan (1970). Four employees were selected per school to fill the questionnaire; that is class teachers (2), head teachers (1) and the director of studies (1). Responses from these four individuals were aggregated at the level of a school during the data analysis stage.

3.4 Sampling Techniques

The study employed simple random sampling and purposive sampling technique under non probabilistic sampling techniques. Specifically, a lottery method was employed to select the number of respondents required to ensure representativeness. Information on the population was obtained from Sheema municipality education office. Numbers from 1 - 34 were written on small pieces and placed in a box. The researcher then picked the papers one by one until the sample size of 32 is reached. This method ensures that all the respondents have an equal chance of participating in the study. Purposive sampling was used to select the respondents that would fill the questionnaire and these included class teachers (2), head teachers (1) and the director of studies (1). The choice is because these are the people that deal with the pupils and also are involved in making reports concerning education quality.

3.5 Data collection methods

The study collected data from primary sources. A questionnaire survey was used in collection of primary data from teachers, head teachers and directors of studies in UPE primary schools in Sheema municipality because it is considered efficient in terms of research time, cost and energy. The questionnaires was close-ended in nature prepared based on standard tools published and tested by scholars containing statements on work environment, teacher quality and education

quality in accordance with the conceptual framework. The questionnaire contained an introductory section describing the researcher's name, topic, university, purpose of the study and request for consent that would be personally read by each respondent before answering it. The tool also contained the information on bio data of the respondents such as gender, age, marital status, level of education and period spent on the position held by respondents. Other sections presented different standard statements on each variable in the study with a 5-point Likert scale from strongly agree (5) to strongly disagree (1) where respondents responded by ticking. Questionnaires were used because they are cheap to administer and have standardized answers that make data analysis easy. They also make it easy to run inferential statistics that show the relationship between the variables.

3.7 Operationalization and Measurement of Variables

There are three major variables in the study. The main independent variable is work environment whose dimensions include; working conditions, school facilities, school culture. The mediating variable is teacher quality whose dimensions are teacher qualifications, teacher expertise/experience and teacher effectiveness. The dependent (outcome variable) is education quality whose dimensions are completion rates, enrollment rates, dropout rates, academic performance, pupil future success in employment, progression rate to high levels of education.

Table 1: Operationalization and Measurement of variables

Global variable	Dimensions	Issue to examine	Measurement	Sample qnnr items
Work Environment The setting, social aspects, and physical conditions in which an individual performs their job (Sedarmayanti, 2013; Chaddha, Ravi, & Noida, 2011; Yusuf & Metiboba, 2012; Al-Omari & Okasheh, 2017; Akporehe, 2011; Ossama, Gamal, & Amal, 2016; Yin & Lee, 2012).	Working conditions	Office and workspace design, level of general cleanliness, comfortability and adequacy of furniture, ventilation of classrooms and offices, standard teaching/ break hours, amount of workload, level of overcrowding and noise	Respondents' mean score of the 7 items included in the questionnaire on a five-point Likert scale	“‘Our offices and workspaces are well designed” “‘The furniture is suitable and comfortable”
	School facilities	Adequacy and comfortability of classrooms, sanitary facilities, office space and staff quarters, teaching tools and materials, sports equipment and facilities for children with disabilities	Respondents' mean score of the 7 items included in the questionnaire on a five-point Likert scale	“‘The school desks are comfortable and adequate” “‘The school has adequate and clean sanitary facilities”
	School culture	School rules and policies, pupil-teacher interactions, response to pupil/teacher queries, recognition of high achievers, schedule for academic and extracurricular activities, access to libraries and other resources and media for communication and interaction in school	Respondents' mean score of the 7 items included in the questionnaire on a five-point Likert scale	“‘The school has written rules and policies which enforce discipline and stimulate learning and teaching”
Teacher Quality Skills and capabilities of teachers to provide a road map to expertise and performance (Coggshall, 2017; Goe & Stickler, 2008; Goe L. , 2007)	Teacher qualifications	Subject-matter education, grades and degrees held, test scores in college, certification(s) and registrations and trainings attained	Respondents' mean score of the 5 items included in the questionnaire on a five-point Likert scale	“I have all the necessary knowledge in all subjects I teach” “I passed with higher scores in my college”
	Teacher expertise/ experience	Length of time spent in the teaching profession, Skills in pupil evaluation and test setting, Skills in interacting with pupils, Use pupil centred teaching methods in their lessons and Discipline management skill	Respondents' mean score of the 5 items included in the questionnaire on a five-point Likert scale	“I have spent a long time in the teaching profession” “I have adequate skills in pupil evaluation and test setting”
	Teacher effectiveness	Teaching portfolio/syllabus, regular pupil assessment, remedial lessons to low performers, pupil interviews, subject matter knowledge and lessons plans & work scheme	Respondents' mean score of the 5 items included in the questionnaire on a five-point Likert scale	“‘In all my subjects, I prepare and use lesson plans and schemes of work in order to complete the syllabus before the end of term”
Education Quality Equitable and standard education for all that will promote lifelong learning and the urge to gather knowledge. (Scheerens J. , 2010)	-	School academic performance in the last 5 years, pupil progression rates to other levels, subject-wise performance per class, trend of pupils' enrollment per class, drop out rates, literacy level by P3, performance in sports and extracurricular activities at and level of success in future employment	Respondents' mean score of the 10 items included in the questionnaire on a five-point Likert scale	“‘This school has been considered among the top 10 best schools in PLE results for the last 5 years” “‘In all the subjects, most of the pupils pass beyond 50% mark”

3.8 Validity and Reliability of the Instruments

Validity of instruments

Validity is the extent to which research instruments measure what they are intended to measure (Carmines & Zeller, 1991). The researcher used the expert judgment to verify the validity of the instruments. Two academicians were requested to rate the questionnaire items as either relevant or not irrelevant. This is because these parties are deemed to have knowledge about the variables under study. The responses from these experts were then used to determine validity using Content Validity Index (CVI). $CVI = \frac{\text{Items rated relevant by both judges}}{\text{Total number of items in the questionnaire}}$ as shown here under.

$$CVI = \frac{\text{No. of items rated relevant}}{\text{Total no. of items}}$$

As recommended by Amin (2005), for the instrument to be valid, the CVI should be at least 0.7, a condition that was met as indicated in the table below

Table 2: Validity results

Variable	Number of items	CVI
Work environment	21	0.80
Teacher quality	15	0.73
Education quality	8	0.95

Source: primary data

Reliability

Reliability is the extent to which a research instrument yields consistent results across the various items when it is administered again at a different point in time (Sekaran, 2003). It indicates the extent to which it is without bias or free from error, and hence ensures consistent measurement across time and across the various items in the instrument. In order to ensure reliability, the Cronbach alpha's coefficient test was used to measure the consistency of the scale used in this study. The recommended threshold for reliability test is above 0.7 alpha coefficient (Nunnally, 1978) and this was achieved for all variables as indicated below

Table 3: Reliability test results

Variable	Number of items	Cronbach alpha coefficient
Work environment	21	0.852
Teacher quality	15	0.967
Education quality	8	0.744

Source: primary data

3.9 Research Procedure

After the completion and approval of the research proposal, the researcher obtained an introductory letter from Makerere University Business School which was presented to the head teachers to seek permission to conduct research in their schools. Upon their permission, the researcher approached each respondent targeting the head teacher, class teachers and Director of studies and a questionnaire was administered to these people in every UPE primary school.

3.10 Data processing and analysis

Data from the field were processed and analyzed using Statistical Package for Social Scientists (SPSS version 21). The data was cleaned by checking for missing values and outliers. Descriptive statistics to explore the characteristics of respondents were determined. Given the nature of the research objectives, the data analysis technique adopted was Pearson's correlation to address objectives which seek to establish relationships between variables. Regression analysis was also carried out to establish the predictive power of variables on education quality.

3.11 Ethical considerations

The researcher observed all ethical considerations such as high level of confidentiality, truth and seeking consent of participants during data collection. Confidentiality was ensured by not indicating the name and identity of the respondent anywhere in the report. Response was therefore upon the consent of the respondent and respondents were free to withdraw from participation at any time they want. The researcher ensured that all sources of information from other scholars are acknowledged/cited in the text and shown in the reference list.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF RESULTS

4.0 Introduction

This chapter presents the results from descriptive and inferential analyses. The descriptive analysis was performed to describe the relevant aspects of the phenomena under consideration and provide detailed information about each relevant variable. For the inferential analysis, the study used the Pearson correlation to measure the degree of association between variables under consideration and the regression analysis to estimate the contribution of working environment and teacher quality on education quality. The mediation of teacher quality on working environment and education quality was also established

4.1 Response rate

The study population comprised of 136 respondents from 34 primary schools registered and licensed by the ministry of education. Given the population of 34 primary schools, a sample size of 32 schools (with 128 respondents) was considered using the sample size determination table by Kreijce and Morgan (1970). The researcher obtained responses from 120 respondents from 30 primary schools representing 93% percent response rate.

4.2 Demographic characteristics

Respondents were asked to provide information about their demographic characteristics which includes their gender, age, and education level, and the time they have been in the teaching profession. The results from their responses are presented in the table below.

Table 4: Demographic characteristics

Characteristic	Item	Frequency	Percent
Gender	Male	86	71.7
	Female	34	28.3
Age	20 to 35	46	38.3
	36 to 51	52	43.3
	52 and above	22	18.3
Education level	Certificate -G3	20	16.7
	Diploma -G5	62	51.7
	Graduate	29	24.2
	Others	9	7.5
Marital status	Single	32	26.7
	Married	49	40.8
	divorced/separated	18	15.0
	Widowed	21	17.5
Time in teaching profession	3 to 5 years	10	8.3
	6 to 10 years	33	27.5
	above 10 years	77	64.2

Source: primary data

Results in table 4 indicate that majority of the respondents were male (71%). The female were represented at 28%. This shows the disparity in gender among employees in these schools which may contribute to poor education quality. Majority of the respondents were aged between 36 and 54 (43%), followed by those aged between 19 and 35 (38%). The least number of respondents were aged above 55 years (18%). This indicates that UPE schools employ a considerably mature workforce in the major positions who are assumed to have the experience and capability to deliver quality education to the pupils. Majority of the respondents had a diploma (51%), followed by graduates (24%) and then those with a certificate (9.6%). The least group had other qualifications (7%). This indicates that the employees in the UPE schools are

highly educated. Highly educated teachers are expected to deliver quality education since they are assumed to have adequate information to be delivered to the pupils. Majority of the respondents were married (40%) followed those that were single (26%) and then those who were widowed (17%). The least group of respondents was divorced (18%). Senior positions in UPE schools are held by employees who are married. This could be because married employees tend to exhibit a high level of responsibility at the workplace thus earning higher positions. Majority of the respondents have been in the teaching profession for more than 10 years (64%) followed those that have been in the profession for 6 to 10 years (27%) and then those who have been in the profession for 3 to 5 years (8%). Senior positions in UPE schools are held by those who have been in the profession for quite a long period of time. This implies that they have served long enough to understand the impact of having a good work environment and quality teachers in a school system.

4.3 Correlation analysis

Objective one, two and three sought to establish the relationship between work environment and teacher quality; establish the relationship between work environment and education quality; and the relationship between teacher quality and education quality respectively. In order to achieve these objectives, correlation analysis was carried out. The rule of Pearson correlation is that a value of 0 indicates that there is no relationship between the two variables. A value below zero indicates a negative association between variables which means that as the value of one variable increases, the other decreases. A value greater than 0 indicates a positive association between variables in that as the value of one variable increases, so does the other variable. Results for associations are presented in the table below

Table 5: correlation results

	1	2	3	4	5	6	7	8	9
Work environment -1	1								
Working conditions-2	.799**	1							
School facilities -3	.872**	.599**	1						
School culture -4	.815**	.417**	.576**	1					
Teacher quality -5	.390**	.273**	.337**	.355**	1				
Teacher qualifications -6	.251**	.115	.235**	.265**	.755**	1			
Teacher expertise -7	.298**	.290**	.250**	.205**	.825**	.315**	1		
Teacher effectiveness -8	.406**	.276**	.329**	.397**	.772**	.271**	.727**	1	
Education quality	.369**	.260**	.358**	.298**	.524**	.438**	.349**	.446**	1

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

Source: primary data

Results from table 5 indicate that there is a positive and significant relationship between work environment and teacher quality ($r = .390^{**}$). The measures for work environment of working conditions, school facilities and school culture were also found to have a positive and significant relationship with teacher quality ($r = .273^{**}$, $.337^{**}$, $.355^{**}$). This implies that when the working environment is improved in terms of working conditions, school facilities and school culture, teacher quality also improves.

Further, the results indicate that there is a positive and significant relationship between work environment and education quality ($r = .369^{**}$). The indicators for work environment of working conditions, school facilities and school culture were also found to have a positive and significant relationship with education quality ($r = .260^{**}$, $.358^{**}$, $.298^{**}$). This implies that when the

working environment is improved in terms of working conditions, school facilities and school culture, education quality also improves.

In regards to the relationship between teacher quality and education quality, the results indicate that there is a positive and significant relationship between these variables ($r = .524^{**}$) implying that a positive change in teacher quality will lead to a positive change in education quality. The indicators for teacher quality of teacher qualifications, teacher expertise and teacher effectiveness were also found to be positively associated with education quality ($r = .438^{**}, .349^{**}, .446^{**}$)

4.4 Regression analysis

Regression analysis was also carried out to determine the predictive power of the variables on education quality. The results are presented in the table below.

Table 6: regression results

	Model 1			Model 2		
	B	Std. Error	Beta	B	Std. Error	Beta
Constant	2.806	0.288		1.557	0.312	
Work environment	0.397	0.07	0.369**	0.209	0.068	0.194**
Teacher quality				0.469	0.066	0.449**
R		.369a			.554b	
R Square		.136			.307	
Adjusted R Square		.153			.303	
R Square Change		.136			.171	
F Change		32.446			50.487	
Sig. F Change		.000			.000	

Source: primary data

Model 1 – work environment was regressed against education quality. The results show that the addition of work environment to the equation, accounts for 13.6% of the variance explained by the model ($R^2\Delta = .136$). The results also confirm a significant relationship between work environment and education quality among UPE schools ($\beta = .369^{**}$).

Model 2 – teacher quality was added in model 2. The results show that the addition of teacher quality to the equation, accounts for an extra 17.1% of the variance explained by the model ($R^2\Delta = .171$). The results further confirm a positive relationship between teacher quality and education quality ($\beta = .449^{**}$).

Overall final model explains 30.3% of variance in education quality. This means that the remaining 69.7% is explained by factors other than gender, age, and work environment and teacher quality.

4.5 Mediation results

The four steps of Baron and Kenny 1986 were followed to ensure the tests for mediation are necessary and valid. Baron and Kenny (1986) method is an analysis strategy for testing mediation hypotheses. In this method for mediation, there are two paths to the dependent variable. The independent variable (work environment) must predict the dependent variable (education quality), and the independent variable must predict the mediator (teacher quality). Mediation was tested through three regressions:

1. Independent variable (work environment) predicting the dependent variable (education quality)
2. Independent variable (working environment) predicting the mediator (teacher quality)

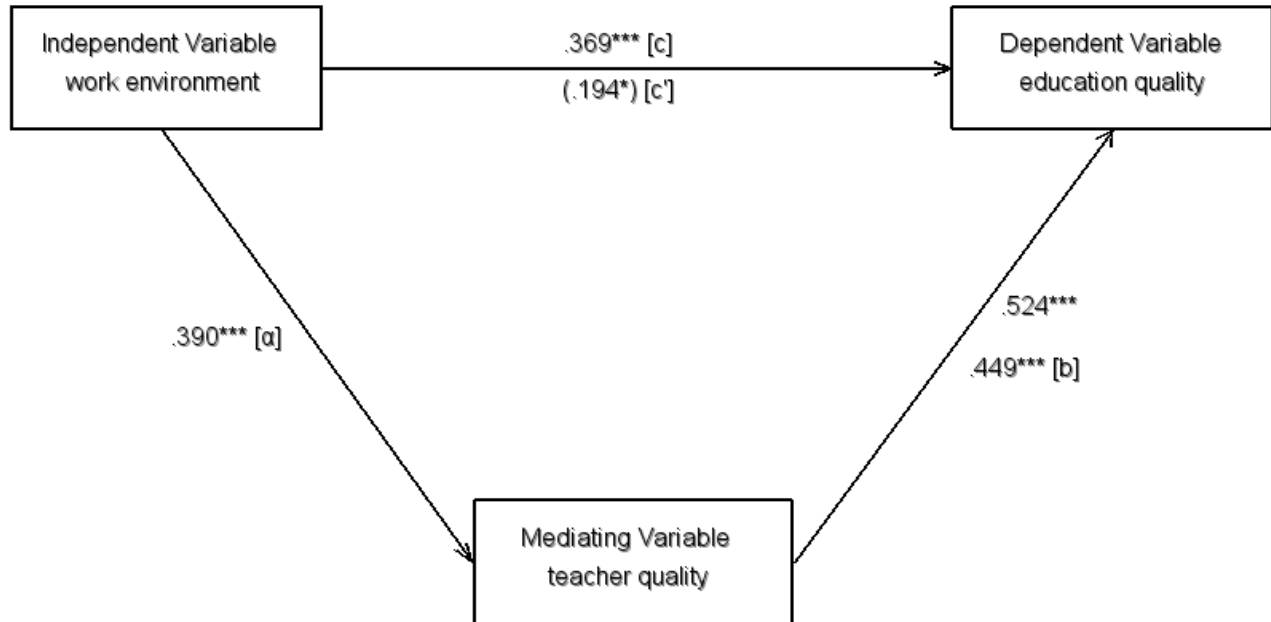
3. Independent variable (working environment) and mediator (teacher quality) predicting the dependent variable (education quality)

Below are the mediation results

Table 7: mediation results

Significance of Mediation			Significant
Sobel z-value	4.634167		$p = 4.0E-6$
95% Symmetrical Confidence Interval			
	Lower	.10257	
	Upper	.25293	
Unstandardized indirect effect			
	a*b	.17775	
	Se	.03836	
Effect size Measures			
	<u>Standardized Coefficients</u>		<u>R² Measures (Variance)</u>
	Total:	.369	.136
	Direct:	.194	.032
	Indirect:	.175	.104
	Indirect to Total Ratio:	.474	.765

Standardized Coefficients



NOTE: The numerical values in the parentheses are beta weights taken from the second regression and the other values are zero order correlations.

There was a significant direct effect of work environment and education quality (Beta=.369; $p < .05$). There was a significant direct effect of work environment and teacher quality (Beta=.390; $p < .05$). There was also a significant direct effect of teacher quality and education quality (Beta=.524; $p < .05$).

When controlling for teacher quality, the direct effect work environment and education quality reduced from Beta=.369 to Beta=.194 and remained significant. This is an indication that the relationship between work environment and education quality is partially mediated by teacher quality. This is further indicated by the indirect to total ratio of .474 (47.4%) meaning that direct effect is explained by 52.6% in the model. These results mean that work environment have both a direct effect on education quality and an indirect effect on education quality through teacher quality.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses and concludes the findings of the study, recommendations and areas for further research. The study investigated work environment, teacher quality and education quality in UPE schools in Sheema municipality.

5.1 Discussion of findings

This section covers the discussion of findings in the order of objectives of the study. Objective one was to establish the relationship between work environment and teacher quality. Results indicate that there is a positive and significant relationship between work environment and teacher quality. This implies that an improvement of work environment in terms of working conditions, school facilities and school culture will improve the teacher quality in public primary schools in Sheema municipality. If all the necessary conditions and facilities like well-ventilated classrooms and adequate teaching materials that will assist the teachers to do his work are provided, teachers use such facilities to prove quality work to the learners. In this situation, the teacher will have a good image, high esteem, and love for job and will accomplish the syllabus in the shortest time possible which improves teacher quality. Also job security of workers in terms of income and employment will enhance stability of personnel and a long-term commitment. When teacher's salaries are not paid as at when due the level of commitment is reduced.

School culture further shapes the effectiveness and expertise of teachers in the school. A supportive administration, enforcement of rules by the principal and other teachers, shared

beliefs and values, communication among principal and staff, cooperation and hard work by the principal and the belief that the school is run well are aspects that encourage the teachers to be as effective as they can in the face of the task of teaching.

These findings are in line with Rahardjo (2014); Al-Tawil, Abed, El-Rahman, & Lameeha (2011) and Moore (2012) who also found a positive and significant relationship between work environment and teacher quality. According to Al-Tawil, Abed, El-Rahman, & Lameeha (2011), facilities such as, desks, seats, chalkboard, teaching aids, and cupboard are ingredients for effective teaching and learning. A good education policy or programmed to guarantee quality outputs, it must be serviced optimally with appropriate trained and motivated teaching staff, adequately supplied with necessary facilities and equipment. These scholars concluded there is a positive relationship between work environment and education quality. They observed that the school environment affects academic achievement of pupils if schools do not have facilities such as, desks, seats, chalkboard and teaching aids considered as ingredients for effective teaching and learning. Whereas, McGuire & McLaren, (2007) believes that an organization's physical environment especially its design and layout can affect employee behaviour in the workplace.

Objective two was to establish the relationship between work environment and education quality. The study findings indicate that there is a positive and significant relationship between work environment and education quality. This implies that an improvement of work environment in terms of working conditions, school facilities and school culture will improve the education quality in public primary schools in sheema municipality. In regards to working conditions, it is important for schools to facilitate a good work space that helps the teachers to comfortably execute their duties. Schools should try to optimize their working conditions like providing spacious work areas rather than cramped ones because adequate lighting and comfortable work

stations contribute to favorable work conditions. Providing productivity tools such as upgraded information technology to help employees accomplish tasks more efficiently and contributes to job satisfaction as well and consequently leading to high education quality.

In regards to school facilities, provision of adequate physical resources including teaching equipment and their maintenance can help in influencing attitudes and facilitating program success. Lack of facilities makes teaching ineffective for the teacher and this demoralizes the teacher no matter how determined he/she may be in achieving certain goals. In such cases the teacher is left to teach without essential facilities and where possible forced to improvise in order to make learning effective. This becomes more difficult especially in the teaching of technical subjects and science subjects, which are even compulsory in the Ugandan education system. This affects performance of the students and also demoralizes the teacher. While the vice versa is true

In regards to school culture, school leaders who foster an autonomy-supportive work environment recognize the views of their employees, guide employees in a non-controlling way, encourage employees to be proactive, and allow employees to make independent decisions contribute to the quality of education received by the pupils. Also teachers in a trustful environment may evaluate their work as less stressful and more relaxed, thus, needing no coping strategy. In addition, teachers who trust their colleagues tend to be more authentic, and thus reduce the use of reappraisal or suppression strategies and work harder towards the success of the pupils entrusted to them

The findings are in line with those of Jones (2015); Zingesser (2012); Humphries (2015); Veitch and Newsham (2010). McGuire & McLaren (2009) believe that physical environment particularly its layout and design can impact teacher quality. As indicated by (Nitisemito, 2011),

some of the factors that influence the workplace include: cleanliness, water, lighting, colouring, security and music.

Objective three was to establish the relationship between teacher quality and education quality. The findings in this study indicate that there is a positive and significant relationship between teacher quality and education quality. An improvement of teacher quality in terms of teacher qualifications, teacher expertise and teacher effectiveness will improve education quality. A qualified teacher has the knowledge and expertise to teach their students effectively. They know how to engage their students in learning and ensure they understand the material being taught. They can identify each child's strengths and weaknesses and adapt their teaching methods accordingly. This ensures that each child can learn at their own pace and reach their full potential. Qualified teachers create a positive learning environment. They make sure that their classroom is a safe and supportive place where all students can feel comfortable and confident.

Teacher expertise facilitates education quality since the teachers can explain concepts and ideas to their students clearly. They also listen carefully to their students and give them time to express their thoughts and opinions. They challenge their students to reach their full potential and help them to develop a love for learning and encourage them for their future careers thus enhancing the capabilities of pupils towards performance. Effective teachers prepare and use lesson plans and schemes of work in order to complete the syllabus before the end of term. This allows pupils time to revise hence facilitating the continuous improvement in their grades. These teachers use different teaching methods and give detailed explanation to make all pupils understand. They believe that all children have the right to a good education and are committed to ensuring that all their students reach their full potential.

These findings are in line with those of Stephens (2013); Rugraff (2014); Laczko-Kerr (2012) and Rockoff (2013) who also found a positive and significant relationship between teacher quality and education quality. Harweel (2013) states that competence and quality teacher is important to nurture student's capabilities. It was proven in previous studies on the teacher's effect towards student achievement and there is a strong relationship between the professionalism and quality of teachers and the performance of their students (Wei, Andree, & Darling-Hammond, 2019; Desimone, 2009; Yoon, Duncan, Lee, Scarloss, & NShapley, 2017). They concluded that teachers and their classroom practices are central to enhancing student learning and thus ensuring quality schooling and quality learning outcomes

Objective four was to establish mediating effect of teacher quality in the relationship between work environment and education quality. The relationship between work environment and education quality was found to be partially mediated by teacher quality. This implies that the presence of teacher quality helps to improve the impact of work environment on education quality. Therefore an improvement in work environment will lead to an improvement in teacher quality which in turn leads to an improvement in education quality. When the school environment is good with sufficient facilities and good working conditions, it aids the teachers to enhance their expertise and effectiveness through application of proper instruction methods which in turn leads to education quality by improving student grades and increasing the completion rates. These findings are in line with (Fitchett & Heafner, 2018) who indicated that satisfaction of the motivational factors leads to quality performance and high production which improves quality assurance in the education sector. They recommended a good learning environment and good working conditions to guarantee teacher quality leading to good quality assurance in education.

5.2 Conclusion

From the findings of this study, the following conclusions are made;

An improvement of work environment in terms of working conditions, school facilities and school culture will improve the teacher quality in public primary schools in sheema municipality. a good school must be adequately supplied with necessary facilities and equipment if they are to improve the quality of their teaching staff

An improvement of work environment in terms of working conditions, school facilities and school culture will improve the education quality in public primary schools in sheema municipality. The school environment affects academic achievement of pupils if schools do not have facilities such as, desks, seats, chalkboard and teaching aids considered as ingredients for effective teaching and learning.

It can also be concluded that there is a positive and significant relationship between teacher quality and education quality. Teachers and their classroom practices are central to enhancing student learning and thus ensuring quality schooling and quality learning outcomes

Finally, an improvement in work environment will lead to an improvement in teacher quality which in turn leads to an improvement in education quality. A good learning environment and good working conditions guarantee teacher quality leading to good quality assurance in education.

5.3 Recommendations

There is need for public primary schools to be equipped with the necessary work equipments and ensure good working spaces. The government should therefore take it upon them selves to ensure that these schools have enough physical equipment like boards, offices, furniture and also ensure that the work conditions are favorable if quality education is to be achieved

The teachers should be given chance to enhance their experiences in these schools so as to improve their expertise and effectiveness. This can be ensured through continuous on job training and job rotation such that they are exposed to different work activities. This will increase their esteem and confidence to execute their roles as required which will improve education quality.

Teachers should further be encouraged to upgrade their studies so as to attain higher education standards. Education helps them to acquire more and current knowledge on the subject matters that they have to deliver in class. This will help to give articulate information to the pupils increasing their chances of excelling in their exams

School management need to foster a good school culture that encourages autonomy and good communication such that the teachers have the freedom to decision making. This acts as a motivator for teachers to work even harder to improve the quality of education passed on to the pupils.

5.4 Limitations of the study

Overall final model explains 30.3% of variance in education quality. This means that the remaining 69.7% is explained by factors other than gender, age, and work environment and teacher quality

The current study also adopted a cross sectional research design where data is collected at one point in time which may not indicate the long term effects of work environment and teacher quality on education quality

The current study concentrated on primary level schools leaving other institutions of learning like secondary schools, colleges and universities

5.5 Areas for further research

Future research may find out the relationship of other variables like top management support, information sharing and teacher motivation to find out if they explain the remaining percentage education quality.

A longitudinal research design may also be adopted to determine the long term effects of of work environment and teacher quality on education quality among UPE schools.

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MAKERERE UNIVERSITY
MAKERERE UNIVERSITY BUSINESS SCHOOL

Questionnaire for teaching staff (Teachers, Head teacher, DOS)

Dear respondent,

My name is **ATUSASIRE MERCY**, a postgraduate student who is pursuing a Master's Degree in Business administration of Makerere University. As part of my academic requiring, I am currently undertaking a research study on ***“Work Environment, Teacher Quality and Education Quality in UPE Schools in Sheema Municipality”*** in partial fulfillment for the award of a Master degree. You have therefore been identified as a resourceful person for this study since you are one of the persons contributing directly to education quality in Uganda. Please take a few minutes of your precious time and answer the following questions. Whatever response you give is purely for academic purposes and will be kept with utmost confidentiality. Thank you so much in advance.

Respondent ID: _____ **Date:** _____ **SCHOOL ID** _____

Section A: Background information (*Tick on one option in the **boxes** provided or write your response in the **dashed horizontal lines** provided*)

No.	Question	Category	Response
1	Gender	i) Male ☐	ii) Female ☐
2	Age	i). 18 and below ☐ iii). 36-54 years ☐	ii). 19-35 years ☐ iv) 55years and above ☐
3	Highest level of education	i) Certificate (G3) ☐ iii). Graduate ☐	ii). Diploma (G5) ☐ iii). Others _____
4	Marital status	i) Single ☐ iii) Divorced/Separated ☐	ii) Married ☐ iv) Widow/Widower ☐
5	Period spent in teaching profession	i). Less than 1 year ☐ iii). 3-4 years ☐ v). 8-10 years ☐	ii). 1-2 years ☐ iv) 5-7 years ☐ vi). Above 10 years ☐

SECTION B: WORK ENVIRONMENT SCALE ((Mbogo, 2015; Public Service Secretariat, 2010).

Please rate the following statements according to what applies to you on the scale

1-Strongly Disagree, 2-Disagree, 3- Not Sure, 4-Agree, 5-Strongly Agree

Code	Statements	SA (5)	A (4)	NS (3)	D (2)	SD (1)
WC	Working conditions	5	4	3	2	1
WC1	Our offices and workspaces are well designed					
WC2	The level of general cleanliness in this school is good					
WC3	The furniture here is suitable and comfortable					
WC4	The classrooms and offices are well ventilated					
WC5	There are standard hours for teaching and break					
WC6	My workload is bearable and not stressing					
WC7	The level of overcrowding and noise at workplace is low					
SF	School facilities	5	4	3	2	1
SF1	The school has adequate and comfortable classrooms					
SF2	The school desks are comfortable and adequate					
SF3	The school has adequate and clean sanitary facilities					
SF4	The school has adequate staff offices and quarters					
SF5	The teaching tools and materials are adequate					
SF6	The school has enough games/sports equipment					
SF7	The school provides facilities for children with disabilities					
SC	School Culture	5	4	3	2	1
SC1	The school has written rules and policies which enforce discipline and stimulate learning and teaching					
SC2	The school allows pupils space to interact and share with teachers their interests and experiences					
SC3	The school administration listens and attends to staff and pupil queries in time					
SC4	The school recognizes, praises and labels high achievers					
SC5	There is a standard schedule for academic and extra-curricular activities					
SC6	Pupils have easy access to libraries and other resources					
SC7	The school culture recognises English and other local languages as media for communication in school					

SECTION C: TEACHER QUALITY SCALE

Please rate the following statements according to what applies to you on the scale

- 1-Strongly Disagree, 2-Disagree, 3-Not Sure 4- Agree, 5-Strongly Agree

Code	Statements	SA (5)	A (4)	NS (3)	D (2)	SD (1)
T.Qul	Teacher qualifications					
T.Qul1	I have all the necessary knowledge in all subjects I teach					
T.Qul2	I passed with higher scores in my college					
T.Qul3	I am registered with the ministry of education and sports					
T.Qul4	I have all the necessary certifications that describe a qualified teacher					
T.Qul5	I usually attend trainings and workshops for curriculum reviews and capacity building					
T. Exp.	Teacher expertise					
T.Exp1	I have spent a long time in the teaching profession					
T.Exp2	I have adequate skills in pupil evaluation and test setting					
T.Exp3	I create a friendly learning environment for pupils to identify hidden problems that may limit their success					
T.Exp4	I use pupil centred teaching methods in my lessons					
T.Exp5	I am skilled at managing pupils discipline in class					
T.Cha5	I am genuine to pupils and I tell them whatever bothers me					
T.Eff	Teacher effectiveness					
T.Eff1	In all my subjects, I prepare and use lesson plans and schemes of work in order to complete the syllabus before the end of term					
T.Eff2	At the end of every lesson, I always evaluate my pupils with exercises and mark them					
T.Eff3	I always conduct remedial lessons to slow learners and regularly reassess their level of improvement					
T.Eff4	I use different teaching methods and give detailed explanation to make all pupil understand					
T.Eff5	I usually conduct interviews with low performing pupils to understand why they are not performing					

SECTION D: EDUCATION QUALITY SCALE

Please rate the following statements according to what applies to you on the scale

5-Strongly Agree, 4- Agree, 3-Not Sure, 2-Disagree, 1-Strongly Disagree

code	Statements	SA (5)	A (4)	NS (3)	D (2)	SD (1)
EQ1	This school has been considered among the top 10 best schools in PLE results for the last 5 years					
EQ2	This school is considered among the schools with well-disciplined/behaved pupils					
EQ3	In all the subjects, most of the pupils pass beyond 50% mark					
EQ4	In our school, pupils' enrollment per class has been increasing year after					
EQ5	In this school, at least 95% of the pupils who complete primary seven receive a pass slip and progress to higher levels of education					
EQ6	The pupils' dropout rate in this school before completing primary seven is below 5%					
EQ7	At least 95% of the students in this school understand how to read and write by primary three					
EQ8	We have some pupils who have ever represented our school in sports and extracurricular activities at the district/regional level					

Thank you for your time

Krejcie and Morgan Table for sample size determination

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	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384
Note: N is Population Size; S is Sample Size									
Source: Krejcie and Morgan (1970)									

LIST OF SCHOOLS IN SHEEMA MUNICIPALITY

1. Kagongi primary school
2. Karushegu primary school
3. Mukinga primary school
4. Mushanga mixed primary school
5. Rwentunda primary school
6. Rwabutura primary school
7. Kyabandara primary school
8. Kyabandara madarasat primary school
9. Ishekye primary school
10. Nganwa junior primary school
11. Nyabishera primary school
12. Kabwohe mixed primary school
13. Nyamiyaga primary school
14. Rwemiko primary school
15. Katwe primary school
16. Kyengando primary school
17. Nshongi primary school
18. Rwamujojo primary school
19. Migina primary school
20. Rwampororo primary school
21. Butagatsi primary school
22. Rwengiri primary school
23. Bwayegamba primary school
24. Nyakasharara primary school
25. Nyakwebundika primary school
26. Bwoma primary school
27. Itendero primary school
28. Kyamungwe primary school
29. Ndeebo primary school
30. Kamurinda primary school
31. Runyinya primary school
32. Kanegyere primary school
33. Kibingo primary school
34. Nyakashambya primary school