THE RELATIONSHIP BETWEEN SCHOOL INFRASTRUCTURE AND STUDENTS ACADEMIC PERFORMANCE IN TWELVE YEARS BASIC EDUCATION IN GASABO DISTRICT- RWANDA

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MED/2018/21518

A Research Project Submitted in Partial Fulfilment of the Requirement for the Awards of Master of Education (Educational Planning, Management and Administration) of Mount Kenya University

FEBRAURY 2020
DECLARATION

This part of the study presents the originality of my work which was not demonstrated in any
other or from any other author in Mount Kenya University.

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Sign: …………………………………, Date: …………….

Name of supervisor: Dr Hesbon O. Andala (PhD)

Sign: ……………………………, Date: …………………………

DEDICATION

The presentation of dedication is directed to Buhuru Pierre Celestin as well as Benurugo Genevieve.
ACKNOWLEDGEMENT

I appreciated our father almighty God for whatever he did towards to my life. I specifically appreciated my supervisor Dr. Hesbon Andala (PhD) who guided me to get relevant concept of this research. I also acknowledged him because of his intellectual and invaluable suggestion that helped me to understand the academic paper. I also appreciate Mount Kenya University for admitting me to the Master of Educational Planning, Management and Administration Option. Finally, I acknowledge my classmates at Mount Kenya University for their close collaboration.
ABSTRACT

This study aimed at investigating the relationship between school infrastructure and students’ academic performance in twelve years’ basic education in Rwanda. It took place in Gasabo district, Kigali city, Rwanda. It was guided by three specific objectives: to identify the availability of school infrastructure in 12YBE, to examine the level of students’ academic performance due to the availability of school infrastructures in 12YBE in Gasabo district, to establish the relationship between school infrastructure and students’ academic performance in 12YBE in Gasabo district in Rwanda. Correlational research design was employed. The study population was 400 people including headteachers, deputy headteachers in charges of study, teachers, parents and students. The Slovin’s formula was used to select 200 respondents as sample size for the study. Questionnaire, guided interview and document review schedules were used as data collection instruments. Descriptive statistics were used to analyze quantitative data, thematic approach to analyze qualitative data, Karl Pearson product moment correlational coefficient was used to establish relationship between variables. Tables, graphs and textual model were used to present analyzed data. Statistical Package for the Social Sciences (SPSS) 21st version was used assisting software. Findings of this this study will be helpful to MINEDUC, various educational stakeholders to elaborate the adequate school infrastructures that can promote the students’ academic performance. It will also be helpful to school leaders, teachers and parents whose students in 12YBE to identify the ways through which school infrastructure can contribute to students’ academic performance. The researcher found that 81% for students, 82.5% for teachers and 48% for deputies in charge of study disagreed on the availability of school infrastructures in 12YBE in Gasabo district such as well completed classrooms, well equipped libraries and laboratories, adequate playgrounds and school sanitation. It was also perceived by 69.3% for students, 79.4% for teachers and 70% for deputies in charge of studies in which they disagreed the improved students’ academic performance like students’ grades and scores in class assignment as well as class participation and students’ termly scores due to the availability of school infrastructures in 12YBE in Gasabo district. The researcher also found that there was a significant low positive correlation between school infrastructures and students’ academic performance in 12YBE in Rwanda as it was proved by Karl Pearson coefficient of correlation (r) was +0.275 between availability of school infrastructures and improved students’ grade, +0.201 between availability of sanitation facilities and improved class participation, +0.408 between well prepared classrooms and students grades and +0.480 between well prepared classroom and students exam results and also there was high degree of positive correlation as it was also proved by Karl Pearson coefficient of correlation (r) which was +0.763 between well prepared classrooms and students exam results and +0.660 between well prepared classrooms and students grade. It was recommended that educational planners should make effective set up which could enhance 12YBE to be equipped. MINEDUC should provide regular financial support needed to allocate the infrastructures in schools and focus on regular maintenance. The school head teachers should make effective management of the allocated school infrastructures and address their related issues. Parents school also have their participation in the development of school infrastructures. The study suggested that the same study can be conducted in public boarding secondary school to find out the influence of school infrastructures on students’ academic performance in in public boarding secondary schools in Rwanda so as to come with comparative analysis.
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# LIST OF ABBREVIATIONS AND ACRONYMS

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<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>12YBE</td>
<td>Twelve Years Basic Education</td>
</tr>
<tr>
<td>ESSP</td>
<td>Education Sector Strategic Plan</td>
</tr>
<tr>
<td>GS</td>
<td>Groupe Scolaire</td>
</tr>
<tr>
<td>MINEDUC</td>
<td>Ministry of Education</td>
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# OPERATIONAL DEFINITION OF KEY TERMS

**Academic performance:** It refers to students outcomes after doing school or national examination.

**Infrastructures:** Refer to the buildings used by an organization to run smoothly.

**School infrastructures:** Refer to physical infrastructures that support students to conduct their academic studies and they are considered as the key base for learning in schools.
CHAPTER ONE: INTRODUCTION

1.0 Introduction

Basing on this first chapter, it details what could be discussed in the first chapter of the research, including the background of the study, problem statement as well as research objectives with respective research questions, significance of the study, limitation of the study as well as scope of the study and organization of the study.

1.1 Background of the Study

Education in world is taken as the root of socio-economic, scientific and technological advancement (Olufunke, 2012). The researcher also said that quality education has to be equipped with sufficient facilities so as to get productivity.

Education is also important for economic and social development of any given country (Shannon, 2013). Schools are one of the key directions related to getting the required education. The effective school settings should be equipped with complete infrastructures which can allow different educators to provide effective education by making teaching and learning process adequately. This can promote all angles of students’ academic outcomes.

The condition of getting interest in education, school infrastructure which is well equipped is one of the factors that can promote the school performance (stream, 2006). The researcher also discovered that, a big number of insufficient school infrastructures in rural, urban and suburban areas bring a challenge related to school performance as performance of students. The advantages of allocating sufficient school infrastructures which are also equipped can support educational effort (Bruner, 2001). Education reforms need educational stakeholders to support
effective teaching and learning styles such as provision of well-equipped laboratories, libraries and also effective classrooms settings.

Lanham (2000) said that the priorities of school infrastructures is to enhance teaching and learning process and care and also, he added that the school infrastructures should be maintained regularly in order to provide effective students’ academic performance.

UNESCO (2007) did a report on school facilities that can support the working condition of the schools in rural areas noted that the schools without school infrastructures or those with unmaintained equipment affect learners’ achievements in schools.

In Africa, the instructions of formal education in our days require higher school infrastructure. Academic achievement of learners is highly affected by available educational infrastructure in the given school (Karue & Amukowa, 2013). This implies that the school whose standard infrastructures which are also well equipped provides better students’ academic performance rather than the school which doesn’t have complete school infrastructures and well equipped. Furthermore, Furniture, indoor air quality and class size are important infrastructures related variables that impact teaching and learning achievement.

MINEDUC (2007), elaborated education sector policy which stated the strategic plan of establishing the shape of new school infrastructures such as adequate classrooms and well-equipped libraries and laboratories in schools in order to enhance quality education in Rwanda effectively and efficiently mainly students’ academic performance.

In Rwanda as it’s the same case in all developing country, one of the biggest problems hindering education goals achievement is infrastructure related problems. The government of Rwanda has
put in place different measures to overcome this problem, some of measures put in place are involving communities in classroom construction through community work Umuganda, Army week problems where Rwanda defense forces played a role in classroom construction in different part of the country. Thus, researcher wants to investigate the relationship which can be found in the distribution of physical plants in the school settings in terms of students’ daily outcomes or results.

1.2 Problem statement

Basing on Education Sector Strategic Plan (ESSP), the three main goals of education to be achieved, were like developing student participation in education so as to standardize skills, to improve in service of educational delivery effectively and efficiently by the purpose of acquiring the related education which can help the students to perform and compete at the labor market (ESSP, 2013). By the time the government of Rwanda established the sight which was directed 2020, the government introduced free education to be delivered from primary up to secondary level so as to reduce the level of illiteracy to citizens within the country. This was done in terms of making educational decentralized in the country. This program of free education came for the purpose to increase literacy rate and to fight against ignorance among the citizens. Through this effect, education become free up 12YBE (EDPRS, 2011; JICA, 2012; IDCJ, 2012). The enrollment in 12YBE was significantly increased since the system was made free of charge. This created the shortage of school infrastructure that affects the level of students’ academic performance where the level of students’ academic performance in 12YBE in selected schools was at the level 69.3percent. McGowen (2007) noted that school infrastructure has significant influence on student academic performance. This means that the schools with inadequate
infrastructure such as school libraries, laboratories, adequate classrooms, playgrounds do not reach to the effective productivity.

In Rwanda, the earlier study showed that student in 12YBE increase day to day but infrastructures in these schools are not expanding proportionally. Classrooms are not enough to accommodate available learners, laboratories and libraries are not equipped adequately to support students learning and practice hence their academic achievement being affected. The students, parents and society in general are complaining for poor performance of the students enrolled in 12YBE especially in national examination done at the end of their advanced level. As this problem of lower performance continue to resist in 12YBE in Rwanda and also, the earlier studies did not show extent to which available school infrastructure affect student academic performance in 12 YBE, this study was therefore, seek to establish the relationship between school infrastructure and students’ academic performance in 12YBE in Gasabo District.

1.3 Objective of the Study

1.3.1 General Objective

The purpose of this study was to establish the relationship between school infrastructure and students’ academic performance in 12YBE in Gasabo district Rwanda.

1.3.2 Specific Objective

This research to be done, was based on these specific objectives:

i. Identify the school infrastructure in 12YBE in Gasabo district Rwanda.
ii. To evaluate academic performance of students due to school infrastructures in 12YBE in Gasabo District Rwanda.

iii. To establish the relationship between school infrastructure and students’ academic performance in 12YBE in Gasabo District Rwanda.

1.4 Research Questions

The main research questions to be solved were:

i. What are the school infrastructures in 12YBE in Gasabo district in Rwanda?

ii. How is the academic performance of students due to of school infrastructure in 12YBE in Gasabo District in Rwanda?

iii. What is the relationship between school infrastructure and students’ academic performance in 12YBE in Gasabo District in Rwanda?

1.5 Significance of the Study

The significant of the research be acknowledged because it is objected on improving quality education in 12YBE through the increase those who had attended the class mainly in terms of class out comes. Therefore, agencies known as literacy stakeholders in the country especially in Gasabo district will benefit from this study.

The findings of this research will come as an advantageous to school leaders, educational stakeholders in Rwanda in the management which in charge of development of literacy skills among new generation. In addition, the research findings will help educational leaders to understand the correlation of the link which can be found between variables as well as the
indicators of the study and also it will help the government of Rwanda which is represented by MINEDUC to solve the problems of students’ academic performance in 12YBE in Rwanda due to the school infrastructures.

1.6 Limitation of the Study

This was a part of the research which may bring some obstacles that may affect the research. The respondents might be doubtful where the researcher did not cover the information related to the school. Researcher ensured them confidentiality of the given data. The students might tend to provide positive information instead of providing both strength and weakness related to their academic performance. A large number of schools of 12YBE in whole district was another limitation in which various learning environments are found in the high land places and it can be difficult to get adequate information in each school located in Gasabo district whose 12YBE. To handle these limitation, the researcher used sampling techniques to select sample which was manageable.

1.7 Scope of the Study

1.7.1 Content Scope

This study was to find out the relationship between school infrastructures and students’ academic performance in twelve years basic education. This study was also to identify the degree to which school infrastructure can be correlated with students’ academic performance in twelve years basic education in Rwanda.
1.7.2 Geographical Scope

This study was conducted in Gasabo district, Kigali in Rwanda specifically in twelve years basic education in which head teachers, teachers, parents and students were selected during data collection.

1.7.3 Time Scope

The structured activities of this study were covered in the desired timeline. The researcher accepted that the planned activities were completed in the correct structures range time of the study and also all planned activities were done effectively and efficiently.

1.8 Organization of the Study

This study was organized in five chapters. Chapter one focused on an overview of the chapter content, Background of the study, problem statement of the study, objective of the study, research questions, significant of the study, Limitation, scope, and organization of the study. Chapter Two comprised review of related Literature, Empirical Literature, Critical Review. Chapter two will be done on the review of the related literature, empirical literature, critical and research Gap identification, Theoretical Framework, Conceptual framework and summary of the Literature. Chapter three is made of research design, target population, sample design and sampling procedures, Data collection method, validity and reliability, data analysis procedure and ethical consideration.
CHAPTER TWO: REVIEW OF RELATED LITERATURE

1.0 Introduction

Literature review can be stated as helpful part the research as it helps the researcher to find out the findings of the other researchers that they obtained while conducting their academic research. This chapter also helps the researcher to get meaningfully the methodologies others researchers used (Kombo & Tromp, 2006). Therefore, this study sought to present the perceptions of other scholars developed various study related to school infrastructures or physical plant of the school and also studies related to academic performance of students and also school in general in order to indicate the level through which the two variables are associated.

This chapter discussed, Empirical Literature, Critical Review Chapter two will be done on the review of the related literature, empirical literature, critical and research Gap identification, Theoretical Framework, Conceptual framework and summary of the Literature

2.1 Theoretical Literature

The school infrastructure is one of the factors that help in the development of educational program delivery (Lanham, 2010). School infrastructures should have an environment which is conducive and which meets the educational requirements in terms accommodation of the students’ wellbeing and also, they should be the integral component that provide effective teaching and learning process. According to Eduard (2006), there is a real linkage which should be found with in learning environment mostly by age status in terms of students’ outcomes which is recognized as students learning results.
The condition of the school buildings and provision of effective education within the condition of historical change of the school, provide unique opportunities understanding how and why developing school infrastructures conditions and effective educational achievement (Lanham, 2010).

Teachers, students, school infrastructures curriculum were considered as input variables while students’ academic performance was considered as output variables (McGwen, 2007). He also stated various problems of students’ academic performance such as student grade in national examination, school exam results and student competence. Researchers identified the most frequent forms that can affect the students’ academic performance are inadequate classrooms, libraries and laboratories which can also be adopted by school location, involvement of parents and socio-economic status of the school.

2.1.1 School infrastructures

Osahon (2010), defined the school infrastructures as physical structures which are known as shelter for educational activities including classrooms, laboratories, workshop, teachers and administration offices, toilets, reading rooms, dispensaries, libraries, dining halls and assembly halls. Ogunsaju and Oyedeji (2012), defined school infrastructures as the school buildings in which they also said that school infrastructures embrace permanent structures that includes laboratories, classrooms and libraries. Abraham (2003), said that all physical structures with in the school can also be used by the school community. All physical infrastructures in the school are grouped in the category of school plants (Ehiemetalor, 2011). This implies that the school physical plants should be evaluated accordingly in fact there is lack students’ standard skills needed to perform what they have learnt.
2.1.2 Important of school infrastructures in education

The school physical infrastructures like classrooms, libraries laboratories and staff houses enhance physical learning environment in terms of the provisional technical skills and to develop qualitative and adequacy aspects that are needed in the school (Maron & Brooth, 2007). Housing teachers and students according to the school environment, improve student’s performance where teachers can get opportunity of providing special courses whenever it is needed like remedial teaching (Watson, 2013). Sanitation facilities which comprise waste disposal, drainage and adequate water for personal hygiene, cleaned toilets and other materials used while making school infrastructures modify the level of cleanliness which attract and motivate students that lead to effective students’ academic performance (Kinder, 2013).

According to Sidhul (2012), the character of school infrastructures presents the real current extent, types and quality of curricular and co-curricular activities provided in that school. The Nature and size of school infrastructures presents the shape and size of classrooms. The shape and size of classrooms with their educational materials which are available change the way through which learners are conducted and organized for instruction. Practical courses could not be maintained for science students in school setting without science laboratories (Sidhu, 2012). The appearance of school infrastructures and other school of conduct are striking due to parents and educational stakeholders which provide their views about the quality of what goes on the school (Mgbodile, 2010). The extent to which school administrators perform the organizational goals depends on the combination of various variables which lead to the effective management of school infrastructures (Obi, 2011).
2.1.3 Students’ academic performance

In the view point of Nyongesa (2011), academic achievement of students is the result of the school available infrastructure such as classrooms, libraries, sanitation facilities class assignments, homework assignments, tests, examinations and participations. The pressure of parents and other individuals like teachers and school administrators to improve the academic performance that also help the school to come with the new updated advanced strategies like introduction of effective teaching and learning methods, instructional strategies and rewarding students for good performance so as to encourage the motivating factors in schools which tend to work more and to make improvements (Nyongosa, 2011).

The academic concepts are made to the student by teachers within the classroom. It is vital that classroom environment should be maintained and well organized (Kudari, 2016). The efficiency in the management of the classroom, introduces a well-organized and efficient of management of the lesson delivery, instructional strategies and teaching and learning process so as to make effective discipline and communication in the classroom and also to help the students to learn better and improve their academic performance (Kudari, 2016). The school resources should be maintained and used so as to promote the academic performance in such way that school textbooks should be always updated, learning materials, hand-outs and technology should be available in the school setting and also well -organized library facilities and laboratory facilities specifically in science subjects in order to develop the school outcomes known as students’ academic performance (Maina, 2010). The student will be helped to get the related learning concepts that make them to understand their focus as academic concept where students’
dependent upon the library facilities in order to obtain textbooks and other material needed and well-equipped laboratories (Maina, 2010).

### 2.1.4 School infrastructures and students’ academic performance

School infrastructures like school library keeps all forms of information needed to enhance and develop positive teaching and learning activities like textbooks, charts, magazines, maps, journals, newspapers, programmed textbooks and non-printed materials such as films, records, pictures and audio and also science apparatus and chemicals (National examinational research center, 2002).

According to Gidado (2010), school infrastructure like school classrooms are needed to perform various activities of school program as well as for extra-curriculum activities. School plants facilitate the implementation of teaching and learning activities so as to achieve the specific objectives of curriculum, to encourage and promote self-instruction of teachers, to present learning task of teachers and to motivate students (Agun, 2009).

The school libraries and laboratories which are equipped serve various benefits which lead to the effect of academic performance like provision of students’ direct interaction with the realities found in social and physical environment, promoting the acquisition and retention of actual knowledge, simulating the interest of voluntary reading, facilitating the attitudes and behavior change and also illustrating and clarifying non-verbal symbols (Alcon, 2007).

### 2.1.5 Effects of school infrastructures on students’ academic performance

The school infrastructures like co-curricular infrastructures which is enclosed by music rooms and theater rooms help the students to be engaged in the participation of various activities done
in the school which help students to develop their social and mental skills as well as being developed physically and emotionally (Nganga, 2003). The availability of effective playground and equipment to be used help students to search and develop their talent. Therefore co-curricular facilities must be allocated effectively and efficiently and also structured properly for nurturing students’ talents (Khaemba, 2007).

Modern approaches developed in education should focus on the development of the students’ academic performance (stephens & schaben, 2002). The effective learning achievement show that co-curricular activities should be organized and supported accordingly by the school management holder so as to enhance the student’s academic outcomes in which curricular co-curricular must be balanced (Brosh, 2012).

2.1.6 Government policy on students’ academic performance in secondary schools

The government goal is to make sure that all citizens are getting quality education. The development physical and material resources are highlighted in laws and policies governing education system of the country. The students’ academic performance is developed due such factors like libraries and laboratories that are well equipped and maintained school classrooms and having trained teachers.

The school administrators should put much effort on school infrastructures to be available in school setting so as to provide effective and efficient quality and quantity education since enrollment has increased (Mworia, 2013). The implementation of educational policies and improvement of the school infrastructure has reduced the problem of poor performance of the students (Mworia, 2013).
2.2 Empirical literature review

While reading the other researches related to the school infrastructures and students’ academic performance which were done, you can find a number of people showing that school infrastructures has a significant impact on students’ academic performance.

Paul (2015), conducted a research in Latin America which was entitled as school infrastructures and education outcomes in which the researcher used questionnaires and interview guide during data collection where he found that school libraries and creation of new schools lead to the development of learning and enrollment. The researcher also found that toilets enhance students learning so as to solve their personal needs he also continued developing that laboratories and drinking water facilities also promote enrollment of the students.

David (2012), conducted a study in USA, at Michigan University. The study was entitled importance of school infrastructure on quality education improvement. Structured questionnaires were used as data collection instruments. The study findings indicated that school infrastructure influence students’ academic performance is highly correlated in the university.

Gidado (2010), conducted the study in Africa which was related to the characteristics of school physical plants. The researcher employed descriptive survey research design and also used two research instruments during data collection such as structured questionnaire and interview schedule. The study found that the school physical plants which adequate is characterized by equipped school library and laboratories, well-structured school playgrounds, equipped school classrooms as well as school administrative and teaching staffs. However, the study added that such school plants were indicated to inadequate.
Nyongesa (2011), carried out the study in South Africa which was related the factor that can affect the school performance. The study established guided interview and education documents analysis review during data collection as the research instruments of the study. Therefore, the study revealed that the school performance is significantly affected by various factors like school environment and location as well as school facilities.

2.3 Critical review and research gap identification

The time you look at the findings of the other researchers which were done related to the school infrastructures, you can realize that there is a gap in the understanding of the relationship between school infrastructures and students’ academic performance.

Paul (2015), carried out a research which took place in Latin America where his study was to investigate the school infrastructures and education outcomes. The found that school infrastructures like libraries promote learning and enrollment rate but the study didn’t show the impact of school infrastructures on students’ academic performance in classroom setting and competition done at national level.

David (2012), conducted the study in the University of Michigan located in United States which was entitled as the importance of infrastructure development to high quality literacy instruction and study found that the school systems should be developed in terms of curriculum, students’ examination and decentralization of teachers but the study did not specify the level of the developed students literacy due to the development of the school infrastructures.

Joy (2016), did the study whose the case study in Nigeria and it was entitled as the impact of the school facilities on students’ academic performance in which the study concluded that school
facilities should be considered as factors that enhance goals of secondary school education but the study did not demonstrate the impact of school facilities on students’ academic performance especially in classroom setting.

Gidado (2010), conducted the study in Africa which was related to the characteristics of school physical plants. The researcher employed descriptive survey research design and also used two research instruments during data collection such as structured questionnaire and interview schedule. The study found that the school physical plants which adequate is characterized by equipped school library and laboratories, well-structured school playgrounds, equipped school classrooms as well as school administrative and teaching staffs. However, the study added that such school plants were indicated to inadequate but the study did not indicate the level of association between school physical plants and school academic performance.

Chirstine (2010), did a study whose case study in South Africa in which her study was entitled as the school infrastructures and quality learning and the study found that the school were having poor sanitation state and lack of sport equipment facilities and other need school facilities like well -equipped school libraries and laboratories but the study did not show the effect caused by the lack of effective school facilities on students’ academic performance.

2.4 Theoretical framework

The study should present the correlation between school infrastructures and students’ academic performance in 12YBE so as to find out what might be contributed in order to improve the level of students’ academic performance in such schools. Thus, this study should put the emphasis on some theories of learning so as to make the study more understandable. Theoretical framework
of the study will be based on two learning theories such as constructivism theory and production theory.

2.4.1 Constructivism theory

Constructivism theory was developed by a pedagogue John Dewey by basing on the thought rooted from two psychologists known as Piaget and Vygotsky in which developed this theory saying that knowledge must be applied as an interpretation of the society (Jia, 2010). The discussion done by the psychologists on this theory of constructivism, teaching and learning activities must be conducted by relating to the practical real world as to help both students and teachers to design and shape effective classroom and also to share knowledge and experience actively (Gul, 2016). Constructivism theory used in this study, as it indicates how a student can improve knowledge and skills by mitigating various factors that can affect the academic performance.

The constructivisim views showed that knowledge is formed as an active subject that develop cognitive structures within the students’ interaction of the environment where cognitive structure should be always be altered and adopted basing on the needs of the environment and changing organism (Amineh & Davatgari, 2015). Learning should be engaged directly to the experimental learning where the humanitarian adaptation should be based on concrete experience done especially in laboratories and the discussion done in classroom by classmates so as to develop a new concept. Teachers should provide all necessary care that help the students to develop their willingness of accepting learning conditions, to organize and put in place the instruction to be used during teaching and learning process, to encourage students to be self-oriented in the
academic field and also to promote the development of students’ social skills and self–regulation (Korpershoek et al., 2014)

2.4.2 Production theory

Production theory presents that the effective performance of each organization requires the minimum organization investment which lead to getting maximum output (Duyar & Kara, 2006). This study therefore, performed in this study as it shows that the level of student academic performance might depend on the level of adequate school infrastructures.

Walberg states that three groups: student attitude, instruction, and environment influence educational outcomes. This implies that the students’ outcomes know as students’ academic performance is developed due to the effective maintenance of learning environment.

2.5 Conceptual framework

This is the part of this study which can show the diagrammatic linkage between the variables of the study such as independent and dependent variables.
Conceptual framework presented in the figure 2.1 shows how school infrastructures relate to students’ academic performance in twelve years basic education in Rwanda. School infrastructure was taken as independent variable (cause) and students’ academic performance was taken as dependent variable (effect). This shows as that student performance in 12YBE education in Gasabo district can be influenced by available school infrastructure. Classrooms, libraries, laboratories, playgrounds, dining halls and sanitation materials are taken as indicators of school infrastructures (independent variable) on the other hand student grade in national examination, school exam result and students’ promotion are taken as indicators of students’ academic performance (dependent variable).
2.6 Summary

This chapter presents the thoughts of the other researchers. It presents the review of the infrastructure, importance of school infrastructure in education, students’ academic performance, school infrastructures and students’ academic performance, effects of school infrastructures on students’ academic performance and government policy on students’ academic performance in secondary schools. Empirical literature review helped the researcher to presents the views of the other related research done so as to identify the research gaps while critical review and research gap identification was developed on the basis of the studies of the other researchers in order to clarify the effects of school infrastructures on students’ academic performance. Theoretical framework was developed basing on the existing knowledge of the other scholars. Finally, conceptual framework presented independent variable as the school infrastructure and effects of this study which is intended to be measured so as to come up with some specific measures.
CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

The study specifies the methods and techniques which can be used to conduct the research basing on the objectives of the study where each objective was presented as a unique. Therefore, the researcher himself or herself should be the first priority of determining how the study could be carried out in conducive and systematic ways so that the readers can get the meaning of the study. This implies that coherent and relevant research should be conducted in systematic manner effectively and efficiently.

3.1 Research design

This study suggested using two research designs which are descriptive survey design on objective one in order to describe the school infrastructures that are available in 12YBE in Gasabo district. On the other hand, objective two was to identify the level of students’ academic performance in 12YBE in Gasabo district due to the availability of school infrastructures. The researcher also used correlation research design in order to find out the correlation which can be found in terms of school infrastructures and students’ academic performance. These were important as they were being based on the progressiveness of the study which was done due to school infrastructures and students’ academic performance in 12YBE in Gasabo district in Rwanda and also they were done for the purpose of making some advocate on the quality education that should be given in the country to young generation in general.
3.2 Target population

The target population refers to that can be given chance to participate in the study during the collection of the study data. Burns and Grove (2013) defined target population as all elements (individuals, objects and events) that have the characteristics related to the study. The population of this research comprised 400 respondents including 10 head teachers, 40 parents, 250 teachers and 100 students enrolled in 12YBE in schools located in Gasabo district. Due to the fact that the time and financial are limited, the researcher selected a sample to represent the entire population.

3.3 Sample design

Sample design was composed by sample size determination and sampling technique. Sampling technique is defined as the procedures that a researcher can use in order to get sample size from targeted population.

3.3.1 Sample size determination

The respondents of this research were determined by using Slovin’s formula where \[ n = \frac{N}{1 + N(e^2)} \]

(Yamane, 1967).

Where \( n \): Respondents,

\( N \): Target participants,

\( e \): margin of error,

The formula considers the confidence level of 95% with the maximum variance (\( P = 0.05 \)).

\[ e = 1 - \text{precision, } P = 0.05 \]

\[ e = 1 - 0.95 = 0.05 \] and this implies that \( e = 0.05 \) and \( N = 400 \)
Therefore, 

\[ n = \frac{400}{1 + 400(0.05^2)} \]

\[ n = \frac{400}{1 + 400(0.0025)} = 200 \]

To obtain sample size in each stratum, proportionate method will be applied.

**Table 3.1 shows target population and proportionate sample size**

<table>
<thead>
<tr>
<th>No</th>
<th>Participants</th>
<th>Target population</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Head teachers</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Deputies in charge of studies</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Parents</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Teachers</td>
<td>240</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>Students</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>Total</td>
<td>400</td>
<td>200</td>
</tr>
</tbody>
</table>

*Source: Primary data (2019)*

**3.3.2 Sampling Techniques**

The findings of this study were obtained from different strata such as head teachers, deputies in charge of studies, parents, teachers and students. The researcher employed stratified random sampling technique.

**3.4 Data collection method**

Burns and Grove (2013), defined the possible ways that the researcher can get the findings of the study which can help him or her to reach to the conclusion.
3.4.1 Data collection instruments

The researcher uses different ways of data collection so as to make the study more effective. The researcher employed the methods during collecting data such as questionnaires, observation schedule and interview guide in which all of these data collection instruments. The section A of the research instruments indicated the background information of the respondents while section B of the questionnaire which was very important to get useful data of this study that was being comprised by closed ended questions but section B of interview guide was comprised by an open ended questions. The questionnaire was considered as the main instruments of data collection in this research as it was used by a big number of respondents of this study as well as the researcher to get opportunity of getting quantitative data of the research from teachers and students while interview guide was used by the researcher in order to get qualitative data from head teachers of twelve years’ basic education in Gasabo district and parents.

3.4.2 Administration of data collection instrument

The findings of this study were obtained due the individual distribution of the research instruments so as to get both qualitative as well as quantitative data of the study. The researcher also distributed questionnaires basing on the validity of the study. The submission of questionnaires was done after completing the given questionnaires due to the availability of respondents.

The researcher also conducted interview schedules to head teachers and parents about school infrastructures and students’ academic performance in 12YBE in Gasabo district in which the researcher tried to make the questionnaire more meaningful in order to avoid any difficulty that
can disturb respondents. The data and time of conducting interview guide was also done due to the availability of the respondents.

3.4.3 Validity and reliability

i. Validity

Validity is defined as the level through which the research findings cover the actual area of the research (Ghauri & Grohaug, 2005). The instruments to be used in data collection, measure what they are supposed to measure. This implies that the researcher made the validity of the study as questionnaires and interview guide were given by a right person at a right time. Researcher shared study tools used in data collection so as to check if the research tools were valid enough to achieve the objectives of the study.

ii. Reliability

Reliability in the other hand is also defined as the level by which the methods used in data collection provided the unchanging results as well as they have been used by the same researcher (polit & Hungler, 2005). To maintain the reliability of the data collection instrument, the researcher considered any condition that may disturb the respondent to fill out the research questionnaires with their own skills and knowledge researcher will also apply the test rest method. Therefore, the questionnaires distributed to the respondents of this study were reliable at the level above 70 percent by using Cronbach's Alpha where the students’ questionnaire was reliable at the level of 71 percent while teachers’ questionnaire was reliable at the level of 87.6 percent. The deputies in charge of studies questionnaire were also reliable at the level of 88.8 percent.
3.5 Data analysis procedure

The researcher analyzed quantitative data by using descriptive statistics such as frequencies, percentages, mean and Karl Pearson coefficient of correlation(r) and SPSS version 21. Relationship between school infrastructures and students’ academic performance was measured by using Karl Pearson coefficient of correlation(r) in SPSS version 21.

3.6 Ethical consideration

The aim of the ethics in this study was to ensure that no one of the research participants was disturbed due to the conduct of the research especially during data collect. This implies that the researcher was vigilant during data collection so as to keep the ethics of the research. The rights of respondents were highly protected in order to avoid any risk regarding to them. The researcher analyzed the collected data for academic purpose.
CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter four, covers the research findings of the study, data analysis, presentation of data as well as data interpretation due to the data given by the research participants including demographic characteristics of the respondents which were categories in their respective strata such as students, teachers, deputies in charge of studies, school head teachers as well as parents whose children studying in twelve years basic education located in Gasabo district. The discursions which were developed were based on the specific research objectives of the study. Therefore, the researchers provided some interpretation based also on the research objectives of the study. The presentation of findings and summary were given in form of tables and figures. After discussion, conclusion and recommendations were developed.

4.1 Demographic characteristics of respondents

This chapter also presents the information related to the background of the respondents basing on different categories such as respondents’ gender, age, marital status as well as their educational level. The number of the research participants that provided the research findings, were at the total number of 200 respondents including 5 school head teachers representing twelve years basic education located Gasabo district like G S Gihogwe, G S Kacyiru, G S Kinyinya, G S Kagugu and G S Kabuga. The researchers also collected the research findings from 5 deputies in charge of studies, 120 teachers teaching in twelve years basic education located in Gasabo district, 50 students as well as 20 parents whose children in twelve years basic education located in Gasabo district.
4.1.1 Demographic characteristics of students

i. Demographic characteristics of students basing on their gender

Table 4.1: Distribution of students by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>15</td>
<td>30.0</td>
</tr>
<tr>
<td>Female</td>
<td>35</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.1 presents the distributions of 50 students studying in twelve years basic education located in Gasabo district as the respondents of the study where 30 percent of students were male while 70 percent of students were female. This implies that, the students who provided the findings of the study, most of them were female.

ii. Demographic characteristics of students basing on their age

Figure 4.1: Distribution of students by age

Source: Field data (2019)
Basing on the figure 4.1, it presented the information of the students in twelve years basic education as the respondents of the study in terms of their age where 60 percent of the students were below 20 years old, 32 percent of the student were in the range of 20 and 25 years old while the remaining 8 percent were in the range of 26 and 30 years old.

**iii. Demographic characteristics of students basing on their educational level**

**Figure 4. 2: Distribution of students by educational level**

![Bar chart showing distribution of students by educational level](image)

**Source: Field data (2019)**

Basing on the figure 4.2, it presented the background information of the students as the respondents of the study basing on their education level where 48 percent of the students have completed primary level of education while the remaining 52 percent of the students have completed ordinary level of education knowns as nine years basic education.
4.1.2 Demographic characteristic of teachers

i. Demographic characteristics of teachers basing on their gender

**Table 4.2: Distribution of teachers by gender**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>63</td>
<td>52.5</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>47.5</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Basing on the table 4.2, it showed the demographic characteristics of teachers as the respondents of the study basing on their gender where 52.5 percent of teachers were male while 47.5 percent of teachers were female. This indicated that most teachers teaching in twelve basic education in Gasabo district participated in this study were male.

ii. Demographic characteristic of teachers basing on their marital status

**Figure 4.3: Distribution of teachers by marital status**

**Source: Field data (2019)**
The figure 4.3, it showed the demographic characteristics of teachers who participated in the study, basing on their marital status, so as to capture to whom the information was gathered. The study collected the information from teachers where 34.2 percent of them were single, 60 percent of teachers were married while 4.2 percent of teachers were divorced and also 1.7 percent of teachers were widow. It was indicated that most of teachers teaching in twelve years basic education in Gasabo district participated in the study were married.

### iii. Demographic characteristics of teachers basing on their educational level

**Table 4.3: Distribution of teachers by educational level**

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate level</td>
<td>105</td>
<td>87.5</td>
</tr>
<tr>
<td>Post-graduate level</td>
<td>15</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Source: Field data (2019)**

Basing on the table 4.3, it showed the demographic characteristics of teachers as the respondents of the study basing on their educational level. It was indicated that 87.5 percent of teachers were having graduation level while 12.5 percent were having post-graduate level. This also indicated that the research collected the data from some the teachers who were having post-graduate level.

### 4.1.3 Demographic characteristics of deputies in charge of studies

**i. Demographic characteristics of deputies in charge of studies basing on their gender**
Table 4.4: Distribution of deputies in charge of studies by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4</td>
<td>80.0</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Source: Field data (2019)**

Basing on the table 4.4, it showed the demographic characteristics of deputies in charge of studies who were in charge of conducting the academic activities within twelve years basic education in Gasabo district as the respondents of this study. The findings presented that 80 percent of deputies in charge of studies were male while 20 percent of deputies in charge of studies were female. This also indicated that most deputies in charge of studies participated in this research were male.

**ii. demographic characteristic of deputies in charge of studies basing on their marital status**

Table 4.5: Distribution of deputies in charge of studies by marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>2</td>
<td>40.0</td>
</tr>
<tr>
<td>Married</td>
<td>3</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Source: Field data (2019)**

The table 4.5, showed the demographic characteristics respondents as deputies in charge of studies working in twelve years basic education located in Gasabo district. Therefore, the findings related to the background information of these respondents indicated that 40 percent were female while 60 percent of were married. This also indicated that the researcher did not collect the data from deputies in charge of studies who were divorced or widow.
iii. demographic characteristics of deputies in charge of studies by educational level

Figure 4.4: Distribution of deputies in charge of studies by educational level

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-graduate</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Graduate</td>
<td>4</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Basing on the figure 4.4, showed the demographic characteristics of the respondents as deputies in charge of the studies in twelve years basic education related to their educational level. The findings presented that 80 percent of deputies in charge of studies were having graduate level while 20 percent of graduate were having post-graduate level. This indicated that the researcher did not collect any information from the deputies in charge of the studies who were having the educational levels below undergraduate.
4.1.4 Demographic characteristics of head teachers

i. Demographic characteristics of head teachers basing on their gender

Table 4. 6: distribution of head teachers by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3</td>
<td>60.0</td>
</tr>
<tr>
<td>Female</td>
<td>2</td>
<td>40.0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.6. presented the demographic characteristics of respondents as the school head teachers heading twelve years basic education located in Gasabo district basing on their gender. The findings indicated that, 60 percent of the school head teachers were male while 40 percent of the school head teachers were female.

ii. Demographic characteristics of head teachers basing on their marital status

Table 4. 7: Distribution of head teachers by marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>Married</td>
<td>4</td>
<td>80.0</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.7, showed the demographic characteristics of the respondents as the school head teachers basing on their marital status. The findings collected indicated that 20 percent of the school header teachers participated in this study were male while 80 percent of the school head teachers also participated in the study were female. This also indicated that, the study did not collect the data from the school head teachers working in twelve years basic education who were divorced or widow.
iii. Demographic characteristics of head teachers basing on their educational level

Figure 4.5: Distribution of head teachers by educational level

![Bar chart showing distribution of head teachers by educational level.]

Source: Field data (2019)

Basing on the figure 4.5, it showed the demographic characteristics of the respondents as the school head teachers basic on their educational level. It was indicated that 60 percent of the school head teachers were having graduate level while the remaining 40 percent were having post-graduate level.

4.1.5 Demographic characteristics of parents

i. Demographic characteristics of parents basing on their gender

Table 4.8: Distribution of parents by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>8</td>
<td>40.0</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)
The table 4.8, presented the demographic characteristic of the respondents as parents whose children studying in twelve years basic education located in Gasabo district basing on their gender. The findings presented that 40 percent of parents were male while 60 percent of parents were female. This also indicated that the parents participated in this study, most of them were female.

ii. Demographic characteristics of parents basing on their marital status

Figure 4. 6: Distribution of parents by marital status

![Pie chart showing marital status distribution]

Source: Field data (2019)

Basing on the figure 4.6, it showed the demographic characteristics of respondents as parents considered as the participant of the study basing on their marital status. It was indicated that 80 percent of the parents were married while 5 percent of the parents were divorced and also 15 percent of parents were widow.
iii. demographic characteristics of parents basing on their educational level

Figure 4.7: Distribution of parents by educational level

Source: Field data (2019)

The figure 4.7. it showed the demographic characteristics of parents as the respondents of this study, the finding from the parents having children in twelve years basic education indicated that 15 percent of parents were having primary level while 55 percent of parents were having secondary level and also the remaining of 30 percent of parents were having graduate level. It was also indicated that the researcher did not collect the data from parents whose post – graduate level of education.
4.2. Presentation of Findings

Considering the research objectives, the presentation of findings was done due to specific research objectives of this study such as availability of the school infrastructures in 12YBE in Gasabo district, students’ academic performance in 12YBE in Gasabo district due to the availability of the school infrastructures and to establish the relationship between school infrastructures and students’ academic performance in 12YBE in Gasabo district.

4.2.1 The case of the school infrastructures in 12YBE in Gasabo district

By solving the research questions of this study which were developed, the questionnaires were distributed to get the findings from students, teachers and deputies in charge of studies and also the guided interview was given to school head teachers and parents whose children in 12YBE in Gasabo district. The findings related to this objective one, were presented and discussed. SPSS 21 version was used to analyze quantitative findings while thematic method was used to analyze qualitative findings. The presentation of findings to this objective was also done in form of tables, graphs, pie charts and themes.

The findings to be presented, were obtained from the field and they focused on the case of school infrastructures available in schools of 12YBE located in Gasabo district.

i. The perception of students on the availability of the school infrastructures in 12YBE

Students who participated in this study, where 50 students studying in 12YBE located in Gasabo district and they presented their perceptions related to this study 100 percent. Therefore, 50 questionnaires which were distributed to students were submitted 100 percent and presented in research findings.
Table 4.9: perception of 50 students on the availability of school infrastructures in 12YBE

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School has enough classrooms</td>
<td>8</td>
<td>16</td>
<td>30</td>
<td>60</td>
<td>8</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Equipped school library</td>
<td>15</td>
<td>30</td>
<td>28</td>
<td>56</td>
<td>5</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Adequate school playground</td>
<td>15</td>
<td>30</td>
<td>27</td>
<td>54</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Cleaned school dining hall</td>
<td>16</td>
<td>32</td>
<td>22</td>
<td>44</td>
<td>8</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>Adequate school sanitation facilities</td>
<td>18</td>
<td>36</td>
<td>24</td>
<td>48</td>
<td>6</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>


Basing on the table 4.9, it presented the perceptions of 50 students studying in twelve years basic education in Gasabo district in which they perceived on the availability of school infrastructures in 12YBE so as to identify whether the schools of 12YBE in Gasabo district have well completed classrooms, libraries and laboratories well equipped, adequate playgrounds and well cleaned dining hall as well as having adequate sanitation facilities. Therefore, the students’ perception on the availability of school infrastructures in terms of having enough classrooms was responded at the mean of 2.16 and the standard deviation of 0.79 where 76 percent of students in 12YBE in Gasabo district disagreed that they have enough classrooms in their schools while 8 percent agreed on having enough classrooms in their schools. The students also perceived on the availability of having equipped library, their perceptions were provided at the mean of 1.88 and standard deviation of 0.75 and 86 percent of the students disagreed on the availability of having
equipped library while 4 percent agreed. According to Ogunsju and Oyedeji (2012), well equipped school physical plants like school libraries enhance the effective working condition of the school setting.

On the other hands, the students provided their perceptions on having adequate playgrounds where they respondents at the mean of 1.94 and the standard deviation of 0.84 and 84 percent of the students disagreed on the availability of adequate playgrounds while there is no student agreed on the availability of adequate playgrounds in school. About the availability of cleaned dining hall in 12YBE, it was responded at the mean of 2.02 and standard deviation of 0.96 where 76 percent of students disagree on the availability of cleaned in schools while 8 percent of students agreed. Osohon (2010), revealed that the adequate school playgrounds enhance the students cooperation and making physical exercises that strengthen their body fitness and learning activities.

The students also perceived on the availability of having sanitation facilities where it was responded at the mean of 1.84 and standard deviation of 0.79 where 84 percent disagreed on the availability of sanitation facilities in school while 4 percent agreed. Therefore, this implies that 12YBE do not have sufficient infrastructures due to the fact that greater number of students disagreed on the availability of school infrastructures. Kinder (2013), conducted the study related to school sanitation facilities and revealed due to the absence of school cleanness, the school activities cannot be maintained and developed effectively.
ii. The perception of teachers on the availability of school infrastructures in 12YBE

Teachers, who participated in this study, were 120 teachers teaching in 12YBE located in Gasabo district and they presented their perceptions related to this study 100 percent. Therefore, 120 questionnaires which were distributed to these teachers were submitted 100 percent and presented in research findings.
### Table 4.10: Perception of teachers on the availability of school infrastructures in 12YBE

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students use school library</td>
<td>54</td>
<td>45.0</td>
<td>46</td>
<td>38.3</td>
<td>4</td>
<td>12.5</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.86</td>
<td>1.02</td>
</tr>
<tr>
<td>School has sufficient classrooms</td>
<td>34</td>
<td>28.3</td>
<td>65</td>
<td>54.2</td>
<td>4</td>
<td>9.2</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.08</td>
<td>1.07</td>
</tr>
<tr>
<td>School has laboratory</td>
<td>61</td>
<td>50.8</td>
<td>37</td>
<td>30.8</td>
<td>7</td>
<td>12.5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Students make research from school library</td>
<td>32</td>
<td>26.7</td>
<td>66</td>
<td>55.0</td>
<td>8</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.2</td>
<td>2.08</td>
</tr>
<tr>
<td>Students use videos from school library</td>
<td>35</td>
<td>29.2</td>
<td>65</td>
<td>54.2</td>
<td>7</td>
<td>5.0</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.04</td>
<td>1.04</td>
</tr>
</tbody>
</table>

**Source:** field data (2019). **SD:** Strongly Disagree, **D:** Disagree, **N:** Neutral, **A:** Agree, **SA:** Strongly Agree, **Std:** Standard deviation

The table 4.10, showed the perception of teachers on the availability of school infrastructures in 12YBE like having school library. This was perceived by the teachers at the mean of 1.86 and standard deviation of 1.02 where 83 percent of teachers disagreed that students use school library effectively while 13.3 percent agreed. On another hand related to having sufficient classrooms in school, teachers responded at the mean of 2.08 and 1.07 of standard deviation where 82.5 percent disagreed that their respective schools had sufficient classrooms while 14.2 percent of teachers agree. According to Agun (2009), the school classrooms equipped effectively, promote both students and teachers’ performance as adequate classrooms make easy implementation of the school curriculum as well as conducive school learning environment.

On the availability of school laboratory, it was responded at the mean of 1.8 and standard deviation of 1.0 where 81.6 percent disagreed of teachers disagreed while 12.5 agreed. They also
perceived on the researches done by students from school library, where it was perceived at the mean of 2.08 and 1.0 of standard deviation where 81.7 percent disagreed on the statement while 11.7 percent agreed. Teachers were asked if students use videos from school library while learning, teacher perceived on this statement at the mean of 2.04 and the standard deviation of 1.04 where 83.4 percent of teachers disagreed while 10.8 agree with the statement.

iii. The perception of deputies in charge of studies on the availability of school infrastructures in 12YBE.

Deputies in charge of studies who participated in this study, were 5 Deputies in charge of studies representing 5 schools of 12YBE located in Gasabo district accessed during data collection and they presented their perceptions related to this objective of the study 100 percent. Therefore, 5 questionnaires which were distributed to these deputies in charge of studies, were submitted 100 percent and presented in research findings.

Table 4.11: Perception of Deputies in charge of studies on the availability of school infrastructures in 12YBE.

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
<td>%</td>
</tr>
<tr>
<td>Students use school library</td>
<td>1</td>
<td>20</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>School has sufficient classrooms</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>20</td>
<td>1</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>School has laboratory</td>
<td>1</td>
<td>20</td>
<td>2</td>
<td>40</td>
<td>1</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Students make research from school library</td>
<td>1</td>
<td>20</td>
<td>2</td>
<td>40</td>
<td>1</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Students use videos from school library</td>
<td>2</td>
<td>40</td>
<td>2</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
The table 4.11, showed the perception of deputies in charge of studies (DOS) on the availability of school infrastructures in 12YBE like having school library. This was perceived by the deputies in charge of studies at the mean of 3.0 and standard deviation of 1.41 where 40 percent of DOS disagreed that students use school library effectively while 60 percent agreed. On another hand related to having sufficient classrooms in school, DOS responded at the mean of 3.6 and 1.14 of standard deviation where 20 percent of DOS disagreed that their respective schools had sufficient classrooms while 60 percent of DOS agree. On the availability of school laboratory, it was responded at the mean of 2.4 and standard deviation of 1.14 where 60 percent of DOS disagreed while 20 agreed. They also perceived on the researches done by students from school library, where it was perceived at the mean of 2.4 and 1.14 of standard deviation where 60 percent of DOS disagreed on the statement while 20 percent agreed. DOS were also asked if students use videos from school library while learning, they perceived on this statement at the mean of 2.0 and the standard deviation of 1.22 where 80 percent of DOS disagreed while 20 percent agreed with the statement.

iv. The perception of head teachers from the interview on the availability of school infrastructure in 12YBE

There were five school head teachers of 12YBE in schools located in Gasabo district who were interviewed. The findings from the interviews given to them, were categories in the theme related to the specific objective of the study “availability of school infrastructures in 12 YBE in school located in Gasabo district”. The school head teachers responded that the availability of school
infrastructures in 12YBE were classrooms, laboratories as well as libraries though they were not equipped accordingly. In fact, some students do not get text books from school libraries or some instructional materials to be used from school laboratories.

**Figure 4. 8: Perception of head teachers to the availability of adequate school infrastructures**

![Figure 4. 8](image)

**Source: Field data (2019)**

The figure 4.8, presented the level through which the school head teachers perceived the availability of school infrastructures in 12YBE, where 40 percent of the school head teachers agreed that the schools of 12YBE in Gasabo district have adequate instructional materials while 60 percent of the school head teachers stated that 12YBE do not have adequate school infrastructures. They also added that they had staff rooms as well as toilets and playgrounds however, they were equipped accordingly. They also concluded that their school playgrounds were not maintained effectively.
v. The perception of parents from the interview on the availability of school infrastructures in 12YBE.

Twenty parents whose children in 12YBE located in Gasabo district were interviewed on the availability of the school infrastructures in 12YBE and they responded that the school infrastructures available were computer laboratory, library, classrooms and various equipment like desks and computers.

Table 4.12: Perception of parents on the availability of adequate school infrastructures

<table>
<thead>
<tr>
<th>Perceptions</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>30.0</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.12, presented the level through which parents perceived the availability of school infrastructures in 12YBE, where 30 percent of parents agreed that the schools of 12YBE in Gasabo district have adequate instructional materials while 70 percent of parents stated that 12YBE do not have adequate school infrastructures. They also added that, there were offices, toilets and electricity. Though, they stated that students get aware of accessing on computer as it was needed in their learning process. However, in some 12YBE, computers were not maintained so as to be used.

4.2.2 The case of school infrastructures on students’ academic performance in 12YBE in Gasabo district

The second specific research objective was to evaluate students’ academic performance due to the availability of school infrastructures in 12YBE Gasabo district so as to respond the research question which was presented in term of this specific research objective. Therefore, the
questionnaires were distributed to students, teachers and deputies in charge of studies and also guided interviews which were given to school head teachers and parents whose children in 12YBE located in Gasabo district.

i. The perception of students on students’ academic performance in 12YBE in Gasabo district

Table 4.13: Perception of 50 students on students’ academic performance in 12YBE

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading textbooks from school library</td>
<td>6</td>
<td>12</td>
<td>18</td>
<td>36</td>
<td>14</td>
<td>2.64</td>
<td>0.98</td>
</tr>
<tr>
<td>School laboratory improved students’ academic performance</td>
<td>12</td>
<td>24</td>
<td>20</td>
<td>40</td>
<td>11</td>
<td>2.28</td>
<td>1.03</td>
</tr>
<tr>
<td>Well performed in class assignment due to availability school infrastructures</td>
<td>17</td>
<td>34</td>
<td>21</td>
<td>42</td>
<td>11</td>
<td>1.92</td>
<td>0.80</td>
</tr>
<tr>
<td>Cleaned dining hall influence student’ participation</td>
<td>12</td>
<td>24</td>
<td>30</td>
<td>60</td>
<td>5</td>
<td>1.98</td>
<td>0.77</td>
</tr>
<tr>
<td>Sanitation facilities improve class participation</td>
<td>17</td>
<td>34</td>
<td>22</td>
<td>44</td>
<td>6</td>
<td>1.98</td>
<td>0.94</td>
</tr>
<tr>
<td>Playground influence class participation</td>
<td>18</td>
<td>36</td>
<td>15</td>
<td>30</td>
<td>12</td>
<td>2.10</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Basing on the table 4.13, it presented the perception of 50 students on students’ academic performance in 12YBE. Their perceptions on the level of reading textbooks from school library were presented at the mean of 2.64 and 0.98 where 48 percent of students disagreed on this statement of reading textbooks from the school library while 24 percent agree. Secondarily, students were asked on how the school laboratory improved their academic performance, it was perceived at the mean of 2.28 and 1.03 of standard deviation where 64 percent of students disagree on their improvement of academic performance due to the availability of school laboratory while 14 percent agree with the statement. According to Kudari (2016), the school academic performance, varies with both internal and external factors including well structures school environment or physical plants.

Thirdly, the students provided their perceptions on the performance of class assignments due to the availability of school infrastructures, this statement was perceived by students at the mean of 1.92 and 0.80 of standard deviation where 76 percent of students disagreed while 2 percent of students agreed with the statement. Kudari (2016), also added that the performance of students in various school activities like assignments and other school exams need a high level of commitment among educational stakeholders that responsible to strengthen the quality of education.

Fourthly, the students were also asked on how the students’ perception can be influenced by the availability of cleaned dining hall and they provided their perceptions at the mean of 1.98 and the standard deviation of 0.77 where 84 percent of students disagreed and 6 percent agreed on the availability of cleaned dining hall to students’ participation. They also provided their perceptions on class participation due to the availability of sanitation facilities in 12YBE, they responded this
statement at the mean of 1.98 and the standard deviation of 0.94 where 78 percent of students
disagree on the role of sanitation facilities to class participation and 10 percent agreed with the
statement.

Finally, the students provided their perceptions on class participation due to the availability of
school playgrounds. It was perceived by students at the mean of 2.10 and the standard deviation
of 1.05 where 66 percent of students disagreed on the role of school playgrounds available in
12YBE to class participation while 10 percent agreed with the statement.

ii. The perception of teachers on students’ academic performance in 12YBE in Gasabo
district

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD Freq</th>
<th>SD %</th>
<th>D Freq</th>
<th>D %</th>
<th>N Freq</th>
<th>N %</th>
<th>A Freq</th>
<th>A %</th>
<th>SA Freq</th>
<th>SA %</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School classrooms affect students results</td>
<td>36</td>
<td>30.0</td>
<td>52</td>
<td>43.4</td>
<td>13</td>
<td>10.8</td>
<td>13</td>
<td>10.8</td>
<td>6</td>
<td>5.0</td>
<td>2.18</td>
<td>1.04</td>
</tr>
<tr>
<td>Students class assignment is done from school library</td>
<td>29</td>
<td>24.1</td>
<td>67</td>
<td>55.8</td>
<td>5</td>
<td>4.2</td>
<td>11</td>
<td>9.2</td>
<td>8</td>
<td>6.7</td>
<td>2.18</td>
<td>1.11</td>
</tr>
<tr>
<td>Students of 12YBE are facilitated to prepare school exams</td>
<td>46</td>
<td>38.3</td>
<td>53</td>
<td>44.2</td>
<td>4</td>
<td>3.3</td>
<td>11</td>
<td>9.2</td>
<td>6</td>
<td>5.0</td>
<td>1.98</td>
<td>1.12</td>
</tr>
<tr>
<td>School infrastructures of 12YBE help students to promote academic performance</td>
<td>39</td>
<td>32.5</td>
<td>59</td>
<td>49.2</td>
<td>7</td>
<td>5.8</td>
<td>9</td>
<td>7.5</td>
<td>6</td>
<td>5.0</td>
<td>2.03</td>
<td>1.07</td>
</tr>
</tbody>
</table>

Basing on the table 4.14, it presented the perception of 120 teachers teaching in 12YBE located in Gasabo district in which they provided their perceptions on students’ academic performance due to the availability of school infrastructures. They were asked their perception on how the students results cab affected by well allocated school classrooms. It was perceived at the mean of 2.18 and the standard deviation of 1.04 where 73.3 percent of teachers disagreed on the increase of students results due to the allocation of school classrooms while 15.8 percent of teachers agreed with the statement. Teachers provided their perceptions on class assignment done by students from school library and they perceived at the mean of 2.18 and the standard deviation of 1.11 where 79.9 percent of teachers disagreed and 15.9 agreed with the statement. Teachers also raised their perception related to the ways through which students are facilitated to prepare school exams in which they perceived at the mean of 1.98 and the standard deviation of 1.12 where 82 percent of teachers disagreed on how students in 12YBE were facilitated to prepare their school exams while 14.2 agreed. Finally, teachers also presented their perceptions related to the ways through which school infrastructures of 12YBE helped the students to promote their academic performance, they responded at the mean of 2.03 and the standard deviation of 1.07 where 81.7 percent of teachers disagreed while 12.5 agreed with the statement.
iii. The perception of deputies in charge of studies on students’ academic performance in 12YBE in Gasabo district.

Table 4. 15: Perception of deputies in charge of studies on students’ academic performance in 12 YBE in Gasabo district

<table>
<thead>
<tr>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
<th>Mean</th>
<th>Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School classrooms affect students results</td>
<td>1</td>
<td>20</td>
<td>3</td>
<td>60</td>
<td>0</td>
<td>0</td>
<td>2.2</td>
</tr>
<tr>
<td>Student class assignment is done from school library</td>
<td>1</td>
<td>20</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>1.82</td>
</tr>
<tr>
<td>Students of 12YBE are facilitated to prepare school exams</td>
<td>3</td>
<td>60</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>1.3</td>
</tr>
<tr>
<td>School infrastructures of 12YBE help students to promote academic performance</td>
<td>2</td>
<td>40</td>
<td>2</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>1.64</td>
</tr>
</tbody>
</table>

**Source:** Field data (2019). **SD:** Strongly Disagree, **D:** Disagree, **N:** Neutral, **A:** Agree, **SA:** Strongly Agree, **Std:** Standard deviation

Basing on the table 4.15, it presented the perception of Deputies in charge of Studies (DOS) in 12YBE located in Gasabo district in which they provided their perceptions on students’ academic performance due to the availability of school infrastructures. They were asked their perceptions on how the students’ results can be affected by well allocated school classrooms. It was perceived at the mean of 2.2 and the standard deviation of 1.1 where 80 percent of DOS disagreed on the increase of students’ results due to the allocation of school classrooms while 20 percent of DOS agreed with the statement.
DOS also provided their perceptions on class assignment done by students from school library and they perceived at the mean of 3.14 and the standard deviation of 1.82 where 40 percent of DOS disagreed and 60 agreed with the statement. DOS also raised their perception related to the ways through which student were facilitated to prepare school exams in which they perceived at the mean of 1.8 and the standard deviation of 1.3 where 80 percent of DOS disagreed on how students in 12YBE were facilitated to prepare their school exams while 20 agreed.

Finally, deputies in charge of studies also presented their perceptions related to the ways through which school infrastructures of 12YBE helped the students to promote their academic performance, they responded at the mean of 2.2 and the standard deviation of 1.64 where 80 percent of DOS disagreed while 20 agreed with the statement.

iv. The perception of head teacher from the interview on students’ academic performance in 12YBE in Gasabo district

They were asked on how students increase their academic performance, through the availability of school infrastructures. They responded that they used the school infrastructures like school libraries, laboratories and classrooms to prepare the school exams, doing class assignment and also making their own research.
Figure 4.9: Perception of head teachers on the effect of student academic performance due to school infrastructures

![Pie chart showing the perception of head teachers on the effect of student academic performance due to school infrastructures](image)

Source: Field data (2019)

The figure 4.9 showed the perception of the school head teachers on the level through which school infrastructures affect students’ academic performance and 40 percent of head teachers indicated that there was the low extent that the availability of the school infrastructures affect students’ academic performance while 20 percent were moderate extent and 40 percent of the school head teachers were high extent. They also added that the student academic performance was not effectively increased due to the fact that text books supposed to be used related to the current curriculum, were not sufficient in school libraries and even the school materials in laboratories were not maintained at the level of being used.
v. The perception of parents from the interview on students’ academic performance in 12YBE in Gasabo district

Parents were interviewed on how students improved their academic performance. They responded that, students read books and did their homework by using school library.

Table 4.16: Perception of parents on the effect of students’ academic performance due to school infrastructures

<table>
<thead>
<tr>
<th>Perception</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low extent</td>
<td>6</td>
<td>30.0</td>
</tr>
<tr>
<td>Moderate extent</td>
<td>4</td>
<td>20.0</td>
</tr>
<tr>
<td>High extent</td>
<td>10</td>
<td>50.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.16, showed the perception of parents on the level through which school infrastructures affect students’ academic performance and 30 percent of parents indicated that there was the low extent that the availability of the school infrastructures affects students’ academic performance while 20 percent were moderate extent and 50 percent of parents were high extent. They also added that, some school infrastructures like library and laboratory help their children practical knowledge.

4.2.3 The relationship between school infrastructures in 12YBE in Gasabo district and students’ academic performance

The third specific objective of this study was to establish the relationship between school infrastructures and students’ academic performance 12YBE located in Gasabo district. Therefore, the findings related to school infrastructures like school laboratories, library, school
playgrounds, sanitation facilities and well-prepared classrooms enhance the students’ academic performance in 12YBE in Gasabo district.

i. perception of students on the relationship between school infrastructures in 12YBE and students’ academic performance

Table 4.17: Perception of students on the relationship between availability of school infrastructures and improved students’ grades

<table>
<thead>
<tr>
<th>Availability of school infrastructure</th>
<th>Correlations</th>
<th>Improved student grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.275**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Improved student grade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.275**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Field data (2019) **. Correlation is significant at the 0.05 level (2-tailed).

Basing on the table 4.17, it showed the correlation between the availability of school infrastructures and the improvement of the students grades due to the perceptions of student. It was noted that the relationship between the two variables (school infrastructures and students’ grade) was significant due to the fact that P-Value was .003 which was less than the level of significant of 0.05. It was also presented low degree of positive correlation between school infrastructures and students’ grade of the students in 12YBE where Karl Pearson coefficient of correlation (r) was .275.
Table 4.18: Perception of students on the relationship between availability of sanitation facilities and improved class participation

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Availability of sanitation facilities</th>
<th>Improved class participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of sanitation facilities</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>50</td>
</tr>
<tr>
<td>Improved class participation</td>
<td>Pearson Correlation</td>
<td>.201**.</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>50</td>
</tr>
</tbody>
</table>

**Source: Field data (2019)**. Correlation is significant at the 0.05 level (2-tailed).

The table 4.18, it showed the relationship availability of the school infrastructures and class participation through the perceptions of students. It was found that the relationship between school infrastructures and class participation was significant due to the fact that the P-value was .008 which was less than 0.05 as the level of significant. It was also found that there was a low positive correlation between school infrastructures and class participation where Karl Pearson coefficient of correlation was .201.
ii. Perception of teachers on the relationship between school infrastructures in 12YBE and students’ academic performance.

Table 4. 19: Perception of teachers on the relationship between well prepared classrooms and students’ exam results

<table>
<thead>
<tr>
<th></th>
<th>Well prepared classrooms</th>
<th>Students exam results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well prepared</td>
<td>Pearson</td>
<td>.763**</td>
</tr>
<tr>
<td>classrooms</td>
<td>Correlation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Pearson</td>
<td>.763**</td>
</tr>
<tr>
<td></td>
<td>Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Students exam results</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>120</td>
</tr>
</tbody>
</table>

Source: Field data (2019). **. Correlation is significant at the 0.05 level (2-tailed).

Basing on the table 4.19, it presented the relationship between well prepared classrooms and students’ exam results due to teachers’ perceptions. It was perceived that well prepared classrooms in 12YBE and students’ exam results were significantly correlated at the P-value of .000 which was less than the level of significant of 0.05. It was also noted that there was a high positive correlation between well prepared classrooms of 12YBE in Gasabo district and students’ exam results as it was proved by Karl Pearson coefficient correlation (r) of .763. According to Gidado (2010), the school physical plants help mostly school students to extend their level of knowledge and also perform various academic school activities.
Table 4.20: Perception of teachers on the relationship between well prepared classrooms and students’ grades

<table>
<thead>
<tr>
<th></th>
<th>Well prepared classrooms</th>
<th>Students grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson</td>
<td>.660**</td>
</tr>
<tr>
<td>Correlation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Pearson</td>
<td>.660**</td>
<td>1</td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

Source: Field data (2019). **. Correlation is significant at the 0.05 level (2-tailed).

Basing on the table 4.20, it showed the perceptions of teachers on the relationship between well prepared classrooms and students’ grade in 12YBE located in Gasabo district. It was perceived that well prepared classrooms and students’ grade were significantly correlated at the P-value of .000 which was less than 0.05 of significant level. It was also noted that there was a high positive correlation between well prepared classroom and students’ grade in 12YBE in Gasabo district as it was proved by Karl Pearson coefficient of correlation (r) of .660. Alcon (2007), revealed that well equipped school classrooms are highly associated with grades of students and other scores from various school activities.
iii. Perception of deputies in charge of studies on the relationship between school infrastructures and students’ academic performance

Table 4.21: Perception of deputies in charge of studies on the relationship between well prepared classrooms and students’ grades

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Well prepared classrooms</th>
<th>Students grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well prepared classrooms</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
</tr>
<tr>
<td>Students grades</td>
<td>Pearson Correlation</td>
<td>.408**.</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.495</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Field data (2019). **. Correlation is significant at the 0.05 level (2-tailed).

Basing on the table 4.21, it presented the perception of five deputies in charge of studies on the relationship between well prepared classrooms and students’ grades. They presented that well prepared classrooms and students’ grades were not significantly correlated due to the fact that P-value was .495 which was greater than 0.05 as the level of significant. It was perceived that there was a low positive correlation between well prepared classrooms and students’ grades as it was proved by Karl Pearson coefficient of correlation ($r$) of .408.
Table 4.22: Perception of deputies in charge of studies on the relationship between well prepared classrooms and students’ exam results

<table>
<thead>
<tr>
<th></th>
<th>Well prepared classrooms</th>
<th>Student exam results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Well prepared classrooms</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.480**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
</tr>
<tr>
<td><strong>Student exam results</strong></td>
<td>Pearson Correlation</td>
<td>.480**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.413</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>5</td>
</tr>
</tbody>
</table>

**Source: Field data (2019).** **. Correlation is significant at the 0.05 level (2-tailed).**

Basing on the table 4.22, it showed the perception of 5 deputies in charge of discipline in 12YBE located in Gasabo district in which they perceived on the relationship between well prepared classrooms and students’ exam results. It was indicated that well prepared classrooms and students’ exam results were not significantly correlated due to the fact that the P-Value was .413 which was greater than the level of significant of 0.05. It was also indicated that there was a low positive correlation between well prepared classrooms and students’ exam results as it was proved by Karl Pearson coefficient of correlation (r) of .480.

iv. The perception of head teachers from the interview on the relationship between school infrastructures and students’ academic performance.

The school head teachers were also asked on the relationship between school infrastructures and students’ academic performance. They responded that due to insufficient school materials, big number of students in classroom (teacher: students ration), lack of regular financial support to maintain the school infrastructures, it was not easy to students to improve their academic
performance. They also added that, some students of 12YBE did not access to school library as well as school laboratory due to insufficient equipment.

v. The perceptions of parents from the interview on the relationship between school infrastructures and students’ academic performance.

When interviewed the effect of school infrastructures on students’ academic performance to parents whose children in 12YBE located in Gasabo district, they responded that in schools of 12YBE, there were insufficient instructional materials as well as insufficient school classrooms that may lead to having a big number of class size and also lack of ICT facilities and internet connection which may also lead to the reduction of academic performance of their children.
CHAPTER V: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter covers the research findings, presents conclusion as well as recommendation and also suggestion for further study. The conclusion which was presented was done due to specific research objectives used to guide this study related to school infrastructures and student academic performance in 12YBE located in Gasabo district.

5.1 Summary of findings

The title of the study which was conducted was “influence of school infrastructures on students’ academic performance in 12YBE in Rwanda”. A case study of Gasabo district. The study was conducted due to general objective “to establish the influence of school infrastructures on students’ academic performance in twelve years basic education in Rwanda”. Therefore, this general objective was achieved basing on three specific objectives such as to identify the availability of the school infrastructures in twelve years basic education in Gasabo district, Rwanda, to evaluate the students’ academic performance due to the availability of the school infrastructures in 12YBE in Gasabo district and also to establish the relationship between school infrastructures and students academic performance in twelve years basic education in Gasabo district, Rwanda.

5.1.1 Availability of school infrastructures

Basing on the first specific research objective of the study which was to identify the availability of school infrastructures. The objective was measured by six indicators such as classroom well completed, libraries well stocked, laboratories well equipped, adequate playgrounds, dining hall well cleaned and having adequate sanitation. It was confirmed at 81.2 percent for students, 82.5
percent for teachers and 48 percent for deputies in charge of studies that 12YBE education do not have well completed classrooms adequate libraries and laboratories, adequate sanitation and playgrounds and dining hall well cleaned as it was presented by the table 4.9, 4.10 and 4.11 where the majority of respondents were disagreed and strongly disagreed.

5.1.2 Students’ academic performance

Basing on the second specific research objective of this study which was to evaluate the students’ academic performance in twelve years basic education in Gasabo district in Rwanda. It was measured by four indicators such improved students’ grades, improved students’ scores in class assignment, improved class participation as well as improved students’ termly scores. It was indicated that 69.3 percent for students, 79.4 percent for teachers and 70 percent for deputies in charge of studies disagreed that on improved grades, scores in class assignment, class participation as termly scores of the students in 12YBE in Gasabo district in Rwanda as it was presented in table 4.13, 4.14 and table 4.15.

5.1.3 The relationship between school infrastructures and students’ academic performance

Considering the third specific research objective which was to establish the relationship between school infrastructures and students’ academic performance in twelve years basic education in Rwanda. The perception from the respondents indicated that there was a significant low positive correlation between school infrastructures and students’ academic performance as it was proved by Karl Pearson coefficient of correlation (r) was .275 between availability of school infrastructures and improved students’ grade, .201 between availability of sanitation facilities and improved class participation, .408 between well prepared classrooms and students grades and .480 between well prepared classroom and students exam results and also there was high degree of positive correlation as it was also
proved by Karl Pearson coefficient of correlation (r) which was .763 between well prepared classrooms and students exam results and .660 between well prepared classrooms and students grade.

5.2 Conclusion

The conclusion was done so as to solve the presented research questions which were mentioned basing on the three specific research objectives and the conclusion below was captured from the analysis of the findings presented within chapter four.

The first research questions of this study which was presented was “what were the availability of school infrastructures in twelve years basic education in Gasabo district, Rwanda?” classrooms well completed, libraries and laboratories well equipped, adequate sanitation and playgrounds as well as dining hall are one of the indicators of the school infrastructures to be available in 12YBE in Gasabo district in Rwanda. However, the findings on this study presented that such infrastructures were not available accordingly.

The conclusion was also done basing on the second research question of this study which was “how was the academic performance of the students due to the availability of the school infrastructures in twelve years basic education in Gasabo district in Rwanda?” the improved students’ grades and scores in class assignment and also improved class participation and students termly scores are one of the indicators of students’ academic performance. However, such academic performance was not improved accordingly due to insufficient school infrastructures and equipment.

Basing on the third research question of this study which was “ what was the relationship between school infrastructures and students academic performance in twelve years basic
education in Gasabo district in Rwanda?" it was concluded that there was a significance of low positive correlation found between school infrastructures and students’ academic performance in 12YBE in Gasabo district in Rwanda.

5.3 Recommendations

Basing on the findings of this study and the presented conclusion, the following recommendations were addressed to educational planners, ministry of education and school head teachers as well as parents.

1. Educational planners should make effective set up that could enhance the schools of 12YBE to be equipped accordingly and to have all necessary infrastructures needed in school setting so as to accommodate all registered students which also tends to achieve the school productivity effectively.

2. The ministry of education, should provide regular financial support needed to allocate the infrastructures in schools and focus on regular maintenance so as to enhance daily school activities as well as teaching and learning outcomes.

3. The school head teachers should make effective management of the allocated school infrastructures and address any issue related to school infrastructures that can discourage or be an obstacle to the effective working condition of the school activities.

4. Parents should also have their participation in the development of the school infrastructures so as to promote teaching and learning conditions of their children in order to enhance the academic performance of their children.
5.4 Suggestion for further research

This study was conducted in twelve years basic education in schools located in Gasabo district. The researcher suggested that the same study can be conducted in public boarding secondary school in Rwanda so as to come with comparative study. Therefore, the further research can be conducted to find out the relationship between school infrastructures and students’ academic performance in public boarding secondary school in Rwanda.
REFERENCES


Mahwali.


World Bank. (1990). *Improving Primary Education in Developing Countries*, OUP, USA.
APPENDICES
APPENDIX I: LETTER OF RESPONDENTS

Mount Kenya University
MED/2018/21518
Phone: 0788409792
Email: ishassoumpta@gmail.com

10th June 2019

To head teachers, deputies in charge of studies, teachers, students and parents

Dear respondents,

RE: Consent letter

My name is UWIMANA ISHIMWE Assoumpta, I am currently conducting a research project whose title is “The relationship between school infrastructures and students’ academic performance in twelve years basic education”. Therefore, you are requested to answer the questions provided trustfully with your own confidence. Whenever you need some qualification of any given question, you are allowed to ask the researcher. Thanks in advance for your participation.

Yours faithfully

UWIMANA ISHIMWE Assoumpta
APPENDIX II: QUESTIONNAIRE FOR THE STUDENTS

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

1. G. of participants
   M: [ ]    F: [ ]

2. A. of participants
   Belo 20: [ ] 20-25: [ ] 25-30: [ ]

3. Educational background
   Ordinary level: [ ]  Advanced level: [ ]

SECTION B: Shows the level through which school infrastructures relate with the students’ academic performance in 12YBE. Tick with (V) in the box provided to match the statement and level where: 1: SD, 2: D, 3: N, 4: A, 5: SA

<table>
<thead>
<tr>
<th>NO</th>
<th>Statements</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Availability of school infrastructures in 12YBE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>My school has enough classrooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>My school library is well equipped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>My school has adequate playground</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dining hall in my school is well cleaned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sanitation facilities in my school are adequate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Students’ academic performance due to the availability of school infrastructures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I read textbooks from library while preparing my national examinations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>My performance in last term examinations has been improved due to the use of school laboratories which is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
well stocked.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>I performed well in class assignments because I read books from my school library.</td>
</tr>
<tr>
<td>9</td>
<td>Dining hall well cleaned in my school influence students’ participation.</td>
</tr>
<tr>
<td>10</td>
<td>Improved class participation in my school is due to the available adequate sanitation facilities.</td>
</tr>
<tr>
<td>11</td>
<td>Adequate playground in my school influence students’ class participation.</td>
</tr>
</tbody>
</table>

**Relationship between school infrastructure and students academic performance**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Availability of improved school infrastructures influence students’ grade scores in national examination.</td>
</tr>
<tr>
<td>13</td>
<td>Availability of improved school infrastructures influence students’ grade scores at the end of national examinations.</td>
</tr>
<tr>
<td>14</td>
<td>Availability of improved school infrastructures influence students’ grade scores in class assignments.</td>
</tr>
<tr>
<td>15</td>
<td>Availability of improved school infrastructures’ influence students’ class participation.</td>
</tr>
</tbody>
</table>
APPENDIX III: INTERVIEW GUIDE FOR HEAD TEACHERS AND PARENTS

SECTION A: Demographic characteristics of participants

1. G. of participants
   M: ___ F: ___

2. Current marital status of participants
   Single: ___ Married: ___
   Divorced: ___ Widow: ___

3. Educational level of participants
   Primary level: ___ Secondary level: ___
   Graduate level: ___ Post - graduate level: ___

1. What are the school infrastructures that are being in this school of 12YBE?
   ………………………………………………………………………………………………

2. In your own opinion are the school infrastructures in this school adequate to serve the students interest in this school? Explain your answer.
   ………………………………………………………………………………………………

3. In which ways do the students of this school use the school library?
   ………………………………………………………………………………………………

4. To what extent does the use of library affect the students’ academic performance? Explain your answer.
   Low extent: ___ Moderate extent: ___ High extent: ___
   ………………………………………………………………………………………………

5. What are the possible constraints in the implementation of government policy in this school specifically learning outcomes of students?
   ………………………………………………………………………………………………
TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: UWIMANA ISHIMWE ASSOUMPTA-MED/2018/21518

This is to confirm that the above named person is a bonafide student of Mount Kenya University Rwanda.

She is currently carrying out research work to enable her complete her Master of Education (Project Management Option) Degree Program. The title of her research is: INFLUENCE OF SCHOOL INFRASTRUCTURE ON STUDENTS ACADEMIC PERFORMANCE IN TWELVE YEARS BASIC EDUCATION IN GASABO DISTRICT - RWANDA

The information received will be confidential and for academic purposes only.

Any assistance accorded to her to complete this study will be highly appreciated.

Thank you.

Alice Kinyanjui Keveka (PhD)
Ag. DIRECTOR INSTITUTE OF POST GRADUATE STUDIES & RESEARCH
To Mayor of Gasabo District.

Dear Sir/Madam,

RE: Applying for an authorization of Conducting Education Research

I am humbly to submit my letter your district in order to request the authorization of conducting academic research in public secondary schools located in your district. The study aims to investigate the impact of influence of school infrastructure on students’ academic performance in twelve years basic education in Gasabo District-Rwanda.

In fact, I am a student in masters of education at Mount Kenya University Kigali Campus. I am conducting a research project entitled “Influence of school infrastructure on students’ academic performance in twelve years basic education in Gasabo District. Case of selected Twelve years basic education in Gasabo District - Rwanda.”

Where sampled school will be in public secondary schools with 200 respondents in which they will be grouped into Teachers, Dean of studies and Head teachers in your District.

I will be highly appreciated if my request of conducting research to the above cited schools will be accepted.

Yours Faithfully

UWIMANA ISHIMWE Assoumpta
APPENDIX VI: AUTHORIZATION LETTER FROM THE DISTRICT

REPUBLIC OF RWANDA

CITY OF KIGALI
GASABO DISTRICT
WEBSITE: www.gasabo.gov.rw
E-mail: info@gasabo.gov.rw
BP. 7866 KIGALI

Mrs UWIMANA ISHIMWE Assoumpta
C/O MOUNT KENYA UNIVERSITY
Tel.: 0788409752

Ref: Response to your letter.

Dear Mrs Assoumpta,

With reference to your letter requesting for the permission to conduct a research on "<INFLUENCE OF SCHOOL INFRASTRUCTURE ON STUDENTS ACADEMIC PERFORMANCE IN TWELVE YEARS BASIC EDUCATION>" Gasabo District, as the case study.

I would like to inform you that the permission you requested for has been granted.

Sincerely,

INGABIRE Augustin
Executive Secretary of Gasabo District

Ce: Director of Human Resource and Administration

KIGALI
APPENDIX VII: MAP OF GASABO DISTRICT