

# **KIBOGORA POLYTECHNIC**

## **FACULTY OF EDUCATION**

### **DEPARTMENT OF SCIENCES**

#### **INFLUENCE OF TEACHING AIDS ON LEARNERS' ACADEMIC PERFORMANCE IN BIOLOGY**

Case study: G.s Munanira

Undergraduate thesis submitted in partial fulfillment of the requirements for the award of Bachelor degree with honor in Biology and Chemistry with Education.

**PREPARED BY:**

Jean Claude NYANDWI

**Reg.N<sup>0</sup>:** 2001301

And

Laurent ISHIMWE

**Reg.N<sup>0</sup>:** 2001543

**SUPERVISOR:** RUHUMURIZA JURU Alain(MSc.)

Kibogora, September,2022

## DECLARATION

We, **Jean Claude NYANDWI** and **Laurent ISHIMWE** hereby declare that this is our own original work and not a duplication of any similar academic work. It has therefore not been previously or currently submitted for any other degree, diploma or other qualification to KIBOGORA POLYTECHNIC or any other institution. All materials cited in this paper which are our own have been duly acknowledged.

Laurent ISHIMWE

Signed

Date

And

Jean Claude NYANDWI

Signed

Date

Declaration by Supervisor

I declare that this work has been submitted for examination with my approval as KP

Supervisor's name: RUHUMURIZA JURU Alain (MSc.)

Signed

Date

## **ABSTRACT**

The study entitled influence of teaching aids on learners' academic performance in biology, case study: Gs Munanira was directed with three objectives which were to examine the effect of teaching aids on learners' performance in biology at GS Munanira,

To determine the use of teaching aids in the subject of biology especially at GS Munanira, to find out the challenges of using teaching aids and its impact on students' performance at GS Munanira. The study adopted both qualitative and quantitative methods. The study design was descriptive analysis. The targeted population was 612 students of Ordinary level, 20 teachers of GS Munanira and 4 administrative staff, all targeted population was in total 636 and sample size was also 86 Respondents which were selected randomly and 5 respondents which were selected purposively in total the sample size is 91 respondents. The data were implied, presented and analyzed. The software used in the analysis of data are Microsoft excel and Tabulation The results exposed that students taught using Teaching aids performed better than students taught without teaching aids these have been exposed by their performance in the national exam since the teaching aids came at Groupe Scolaire Munanira. The research reveals that influence of teaching aids on academic learners' performance in biology is that the learning becomes active and learner-centered. Based on the teaching aids which are used at GS Munanira, it was also found that teaching aids especially those improvised by both students and teachers stimulate the interest, and motivation of learners while raising the knowledge acquisition level and retention capacity; Hence improving the students' performance in biology. Based on the findings and implications, it was recommended that teaching of Biology in secondary school should be conducted in a manner that students will effectively understand and learn the concept taught. It was suggested that further research could be carried out on creativeness skills using true experimental research design.

## **DEDICATON**

To:

Our Parents,

Our family members,

Our friends and classmates,

This work is dedicated.

## ACKNOWLEDGEMENTS

Firstly, we thank God and our parents to take care of our lives and all persons who offer a support for us whether directly and indirectly in conducting this research.

We also precise our gratitude to the Kibogora Polytechnic Faculty of Education, Department of sciences, combination of Biology and Chemistry for hardworking of looking out right lecturers from different parts of the country that had great impact to our learning. in this regard we wish to acknowledge with much thanks all lecturers who contribute all to the achievement of this education level and only the sky will be the limit.

Our great thank fullness goes to our Supervisor **RUHUMURIZA JURU Alain** who gave his time to us, his support and his guidance, his suggestions and his constructive ideas that led us to success full completion of our thesis.

Also great thanks to the Head teacher of Gs Munanira who allowed us to collect the data in his school. Moreover, we thank all teachers and students who participated and provided useful information while we were in data collection.

We are highly appreciative to our classmates and friends for intellectual and emotional sharing we have had with them during our academic journey.

## TABLE OF CONTENTS

### Table of Contents

DECLARATION.....	i
ABSTRACT .....	iii
DEDICATON.....	iv
ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES .....	ix
LIST OF TABLES .....	x
LIST OF ABBREVIATIONS.....	x
LIST OF APPENDICES.....	xi
<b>CHAPTER ONE: GENERAL INTRODUCTION.....</b>	<b>1</b>
1.0 INTRODUCTION.....	1
1.1 BACK GROUND OF THE STUDY .....	1
1.2 PROBLEM STATEMENT.....	4
1.3 OBJECTIVES OF THE STUDY .....	5
1.3.1 General objective .....	5
1.3.2 Specific objective.....	5
1.4 RESEARCH QUESTIONS .....	5
1.5 SIGNIFICANCE OF THE STUDY .....	6
1.5.1 To Researcher .....	6
1.5.2 To Gs Munanira .....	6
1.5.3 To Education .....	6
1.5.4 TO Rwandan community .....	6
1.6 LIMITATION OF THE STUDY .....	6
1.7 SCOPE OF THE STUDY.....	7
1.7.1 Geographical scope.....	7
1.7.2 Time scope.....	7
1.7.3 Content scope .....	7

<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>8</b>
2.0. INTRODUCTION.....	8
2.1. DEFINITIONS OF KEY TERMS AND CONCEPTS .....	8
2.1.1. Influence.....	8
2.1.2. Teaching aids.....	8
2.1.3. Academic.....	8
2.1.4. Performance.....	9
2.1.5 Academic performance .....	9
2.1.6. Biology .....	9
2.2 Factors Influencing Students’ Academic Performance in Biology.....	9
2.2.1 Enhancement in discipline .....	9
2.2.2 Teacher’s attitudes and skills.....	10
2.2.3 School feeding program .....	10
2.2.4 Availability of conventional instructional materials.....	10
2.2.5 Commitment to success for all .....	10
2.2.6 Shared vision .....	10
2.2.7 Climate of challenging and stimulating teaching .....	10
2.3 Types of Teaching and Learning Aids Used in Teaching and Learning Process .....	11
2.3.1 Overhead Projector (OHP) And Transparency.....	11
2.3.2 Flipcharts .....	11
2.3.2 Power Point Presentation (PPT) .....	12
2.3.3 Black Board or White Board Teaching.....	12
2.4 Importance of instructional resources in biology.....	13
2.5 Conceptual framework .....	14
<b>CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY .....</b>	<b>15</b>
3.0 INTRODUCTON .....	15
3.1 RESEARCH APPROACHES AND DESIGN .....	15
3.1.1 Research approaches .....	15
3.1.2 Research design .....	15
3.2 TARGET POPULATION .....	16
3.3 Sampling procedures and techniques .....	16
3.3.1. Sample size selection technique .....	16
3.3.2. Purposive and stratified random sample .....	17
3.4 SAMPLE SIZE .....	17
3.5 RESEARCH INSTRUMENTS FOR DATA COLLECTION.....	18

3.5.1. Primary data.....	18
3.5.2. Secondary data.....	19
3.6 DATA ANALYSIS .....	19
3.6.1 Editing.....	20
3.6.2 Coding.....	20
3.6.3 Tabulation.....	20
3.7.2 Reliability.....	21
3.8 Ethical consideration.....	21
<b>CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDING .</b>	<b>22</b>
4.0 INTRODUCTION.....	22
4.1 DATA PRESENTATION AND ANALYSIS .....	22
4.1.1 Gender of the respondent .....	22
4.1.2 age of respondent.....	23
4.1.3. Marital status of respondents.....	24
4.1.4 Education of respondents .....	24
4.2 PRESENTATION OF FINDINGS .....	26
4.2.1 The effect of teaching aids on learner’s performance in biology at Gs Munanira .....	26
4.2.2. Uses of teaching aids can be in the subject of Biology especially at Gs Munanira .....	28
4.2.3 the challenges for using teaching aids on students’ performance at Gs Munanira.....	29
4.3 DISCUSSIONS OF FINDINGS .....	31
4.4 SUMMARY OF FINDINGS .....	31
<b>CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS .....</b>	<b>33</b>
5.0 INTRODUCTION.....	33
5.1 CONCLUSION.....	33
5.3 SUGGESTIONS FOR FURTHER STUDIES.....	34
References.....	35



## **LIST OF FIGURES**

Figure1: Conceptual frame work

Figure2: Gender of respondents

Figure3: Age of respondents

Figure4: Marital status of respondents

Figure5: Educational back ground of respondents

## **LIST OF TABLES**

Table1: Target population

Table2: effect of teaching aids on learner's performance in biology at Gs Munanira

Table3: uses of teaching aids in the subject of biology especially at Gs Munanira

Table4: challenges for using teaching aids

Table5: Table of teaching aids at Gs Munanira

## **LIST OF ABBREVIATIONS**

GS: Groupe scolaire

O'LEVEL: Ordinary level

REB: Rwanda basic Education Board

NESA: National Examination and School Inspection Authority

UNICEF: United Nations Children's Fund

UNESCO: United Nation Educational and Scientific culture

ICT: Information Communication and Technology

CD: Compact Disc

OHP: Over Head Projector

PPT: Power Point Presentations

CGPA: Cumulative Grade Point Average

#: Percentage

Freq: frequency

## **LIST OF APPENDICES**

APPENDIX 1: Introductory letter

APPENDIX2: Research letter

APPENDIX3: Questionnaire for the respondents

APPENDIX4: List of respondents



## **CHAPTER ONE: GENERAL INTRODUCTION**

### **1.0 INTRODUCTION**

This chapter present the background of the study in which the researchers provided the detailed information about the topic of the study. It was deals also with the statement of the problem where the researchers were explained the reasons of conducting this research, the chapter presented the research objectives and research questions, significance, limitation and scope of the study.

### **1.1 BACK GROUND OF THE STUDY**

As it was introduced by European commission report (2010b cited in 2011) that “education and training can be effective and innovative only if the institutions themselves are innovative learning organizations and open to interactions with the world.

Higher education systems are expected to promote effective teaching methods that integrate practical activities to play essential roles in creating high quality of experience and enabling biology graduates the achievement of knowledge, competences and skills works.

European Universities Association (2015) described that “institutions should ensure that the programs are delivered in a way that encourages students to take an active role in creating the learning process that assessments of students reflect the same approach, monitor, respond to the needs of students and society and review programs periodically”

Teaching biology needs to concentrate on the delivery methods that address what and how a learner practically understands, avoid misconceptions and make use of the knowledge. But, the higher education system missed the ability to construct transferable competencies needed to succeed and skills to perform professional works after graduation.

In reference to this point, UNESCO (2009) described that “good teaching would focus on what teachers do primarily on what students learn”. It was due to the reason that most of the higher education systems ignored attentions to the development of thoughtful experience and responsibilities of imparting practicable knowledge to the students.

In an article written by Mamokhele Julia Maduna entitled as " AN ANALYSIS OF THE USE OF TEACHING AIDS AND THE IMPLICATIONS FOR TEACHING AND LEARNING MATHEMATICS IN QWAQWA PHASE ONE SCHOOLS (SOUTH AFRICA) " he stated that Teaching Aids have been a common feature in mathematics classrooms although in some instances they were not appropriately used. This study was undertaken to explore whether teaching aids have any impact on teaching and learning mathematics, especially in the Foundation Phase classes. It was conducted in two Secondary schools in QwaQwa, in the Free State Province in South Africa.

He found that Teaching aids, as educational materials, create opportunities which may reveal misconceptions on the part of both teachers and learners. Some teaching aids are quite simple to use and others require training to be able to extract mathematics from them.

And he demonstrated that without strictly classifying them in any preferential groupings, teachers provide varying justifications for using teaching aids in their classrooms. In most cases they incorporate in their mathematics lessons any concrete material that will help pupils to relate mathematics to the real world and provide pupils with hands-on activities that will de-emphasize routine and memorizing facts, algorithms formulas and theorems.

Most importantly the study revealed that teaching aids have a positive effect on teaching mathematics even in less than optimal circumstances, that is, under-resourced, rural, second language classrooms.

However, the Ministry of Education Republic of Rwanda, Ministry of Education, Science, Technology and Scientific Research (2009) reports that although the achievements in school standards, constraints are aggravated by the fact that supplementary reading materials are inadequate, particularly for the lower primary and secondary school grades, textbook and other resource distribution is heavily dependent on the availability of funds, which affects the government's ability to conduct adequate planning, and may not effectively respond to supply and demand.

Consequently, all levels include insufficiency of infrastructure, equipment and lack of didactic materials. Different people including the Ministry of Education and teachers stress

the scarcity of resources in education area in Rwanda. Teachers on the other side link ineffective teaching and learning, ineffective classroom management and content delivery to this scarcity of resources. It is against this backdrop that this study which investigated the level of teaching and learning resource availability and their influence on teacher effective classroom management and content delivery in Rwandan schools was based.

The Republic of Rwanda, Ministry of Education, Science, Technology and Scientific Research (1998) committed to match resource availability with resource requirements, increase infrastructure and provide equipment in accordance with set standards, provide relevant textbooks, equip Science and ICT labs in schools to meet curricula demands especially teaching and learning materials for science and technology, expand education facilities specifically laboratories and equipment for priority subjects, improve learning environment in terms of space, equipment and learning materials taking into account gender differences.

During our observation in the school (GS MUNANIRA) where the study took place, there were insufficient teaching aids used in teaching and learning process especially in biology, there were another problem of lacking special room designed for scientific experiments and where the available materials were equipped and managed.

Therefore, to solve this issue we have to recommend the room and sufficient materials to school administration and also together with students we try to create and improve the teaching aids that can be used in teaching and learning biology as subject.

The search for efficient and effective delivery of instruction to students has always been major concern of science educators. This is so as a result of repeated mass failure recorded by Rwanda Basic Education Board (REB). Among other factors that could be responsible for this failure, are the teaching aids which definitely must have a significant role to play in teaching and learning processes.

They stated that many Rwandans science teachers were aware of possibility of improvisation. They also noted that few teachers practice while majority depends on imported equipment and claim that improvisation is time consuming and often depleting. These authors also noted that students possessed little or no interest in improvisation.

Whether teaching aids are categorized as spontaneous or imported, the most important effect of these aids is to support in accomplishing the specified behavioral objectives when evaluation is carried at the end of a lesson or program.

## **1.2 PROBLEM STATEMENT**

Biology is a science subject that student often find very difficult and this is why student always have low achievement in the subject. According to (Adeniran, 2006) student usually performed very poorly in biology in all level of education. Many researchers have equally supported the view that students performed poorly in biology ( (Daniel, 2001). One major reason for this poor performance might not be separated from the abstract nature of the course as observed by (Besty, 2012). The teaching of biology in schools has not been encouraging due to this abstract nature of the subject that is why the use of teaching aid is needed to facilitate students' learning of biology. (Ajileye, 2006) stressed that mastery of biology concepts cannot be fully achieved without the use of teaching aids. Another problem confronting teaching and learning of biology in Rwanda is the unavailability of these teaching aids in schools; therefore, there is the need for improvisation. (Fakomogbon, 2006) said many of the equipment used in teaching biology can be improvised that is why biology teacher should endeavor to utilize the use of discarded resources around them to improvised teaching aids for biology. Teaching aids helps teacher to meet individual differences of the learners in the class by using aids that appeal to different senses (Morohunfula, 1983). Instructional materials are used to supplement verbal explanation of concepts or any description so that the lesson could be real to the students. These instructional materials are categorized into audio visual, audio and visual. These are materials that when teacher used them can appeal to student (Morohunfula, 1983) both sight and hearing. These can be electronically operated materials like Television, Radio, Film, Slide motion; Computer and non-electronic ones such as Chalk board, Charts, Models and many more. The absence of these materials in teaching of biology could make the class very uninteresting to student and discourage learning thereby lead to low or poor achievement. Instructional materials are very important because what



students hear can easily be forgotten but what they see cannot be easily forgotten and last longer in their memory. the importance of instructional materials to teaching and learning process, he stressed that the primary purpose of instructional materials is to make learning more effective and also facilitate it. He averred further that teachers would not be able to do much where these materials are not available; therefore, improvisation become necessary. (Fakomogbon, 2006) posited that instructional media or materials can be used by lecturers to overcome noise factors, such as misconception, referent confusion and daydreaming.

With regard to different views held on importance of teaching aids by different authors and the observed progressive decline in secondary school students' academic performance in National Examination and School Inspection Authority (NESA), there is need to further investigate the influence of teaching aids on the academic performance in biology in Rwanda to fill the gap.

### **1.3 OBJECTIVES OF THE STUDY**

The objectives of the study consist of general and specific objectives.

#### **1.3.1 General objective**

The aim of this study is to investigate the influence of the teaching aids on learners' academic performance in biology especially in GS Munanira.

#### **1.3.2 Specific objective**

- ✓ To examine the effect of teaching aids on learners' performance in biology at GS Munanira.
- ✓ To determine the use of teaching aids in the subject of biology especially at GS Munanira.
- ✓ To find out the challenges of using teaching aids on students' performance at GS Munanira

### **1.4 RESEARCH QUESTIONS**

1. What are the effect of teaching aids on learners' performance in biology at GS Munanira?
2. What are the uses of teaching aids in teaching and learning process in the subject of biology at GS Munanira?
3. What are the Challenges for using teaching aids on learners' performance in biology at GS Munanira?

## **1.5 SIGNIFICANCE OF THE STUDY**

The current research aims are important in different participants especially to the researchers themselves, the school, Education and to community.

### **1.5.1 To Researcher**

From this study the current researchers increase information about the influence of teaching aids on learners' academic performance in biology. This similarly will help for researchers as dishonorable of practice in conducting research as it is essential as partial fulfillment of candidate to be awarded a bachelor degree in education with biology and chemistry.

### **1.5.2 To Gs Munanira**

The study will help this school to benefit from this research in the way that they will gain a sight of how they can foster the teaching and learning process in sciences especially in biology.

### **1.5.3 To Education**

This study will help as proper of reference to other scholars who will be inspired to conduct further studies related to the field of education.

This study serves learners to use teaching aids in his teaching and learning process in order to improve their performance in biology especially in Education.

### **1.5.4 TO Rwandan community**

United Nations Children's Fund(UNICEF) will work with Rwanda basic Education Board(REB) to produce accessible and inclusive learning and teaching materials for students in secondary school especially in biology.

## **1.6 LIMITATION OF THE STUDY**

The limitation was to analyze whole population, time costing and respondents' attitudes. To solve this issue, researchers used sampling method in order to choose sample size which enabled them to get findings representing whole population, this sampling method also reduced time cost of studying whole studying whole population.

## **1.7 SCOPE OF THE STUDY**

### **1.7.1 Geographical scope**

This research was limited to GS Munanira located in Kabagali sector, Ruhango District, Southern province.

### **1.7.2 Time scope**

This study covered the interval of period from 2021 to 2022

### **1.7.3 Content scope**

The research focused on the way of increasing learners' performance by using different method especially teaching aids in biology.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0. INTRODUCTION**

The second chapter named Literature review concerns different ideas to support the research topic. Many researchers show how the lack of teaching aids in teaching and learning can lead to poor academic performance. This how the use of teaching aids can be the tool of success in sciences especially in biology. This chapter includes: definitions of key concepts, and literature review related to three objectives listed above. The study defines only the key words and concepts related to topic: influence, teaching aids, academic, performance, biology. Moreover, it shows the impact of using teaching aids in GS MUNANIRA

### **2.1. DEFINITIONS OF KEY TERMS AND CONCEPTS**

#### **2.1.1. Influence**

Influence is the power to have an effect on people or things, or a person or thing that is able to do this.(Cambridge dictionary)

#### **2.1.2. Teaching aids**

Teaching aids are those objects that can be used in the educational environment to support learning and to make life easier for the teacher teaching-strategies), (<https://www.itac.edu.au> ).

they support the professional practice of teaching. Common examples include timers, flip charts, world globes and flashcards.

#### **2.1.3. Academic**

It is term used to describe things that relate to the work done in schools, colleges, and universities, especially work which involves studying and reasoning rather than practical or technical skills.(Collins dictionary)

#### **2.1.4. Performance**

Performance refers to the extent to which how well an activity or job is done.

(Cambridge dictionary).

#### **2.1.5 Academic performance**

Academic performance is the extent to which a student, teacher, or institution has attained their short or long-term educational goals and is measured either by continuous assessment or cumulative grade point average (CGPA) (Talib N, 2012)

#### **2.1.6. Biology**

Biology is a branch of science that deals with living organisms and their vital processes. (www.britannica.com).

Biology encompasses diverse fields, including botany, conservation, ecology, evolution, genetics, marine biology, medicine, microbiology, molecular biology, physiology, and zoology.

### **2.2 Factors Influencing Students' Academic Performance in Biology**

There are factors that researchers and school systems point when describing quality schools and features of schools that have improved in effectiveness. According to Zepeda (2004) and Fullan (1991), such factors include:

#### **2.2.1 Enhancement in discipline**

Discipline is the key for success. School is an institution for teaching and learning. To realize this, all the activities of the school must be managed effectively. The management functions take place against the background of the school's policy and within specific management spheres. Pupils' management is an important management sphere in school management. The rules of conduct and internal regulations set by the school must be in accordance with the rights of students within the country of Rwanda. This fosters the discipline of learners hence their academic performance increases as a result of having controlled all kinds of disruptive behaviours that may raise in classroom.

### **2.2.2 Teacher's attitudes and skills**

Teacher is the source of classroom instruction but not the only source of knowledge. Teachers with positive attitudes in terms of what learners know and need to know will enhance the performance of learners in academic activities since they will start from what learners know from their home life and facilitate learners to discover their inborn potentials. Classroom management skills are indispensable for the teacher to promote academic performance among his/her students.

### **2.2.3 School feeding program**

Students dining at school will perform well compared to students who don't feed at school. School feeding when properly managed fosters enthusiasm among learners. It reduces the lateness and increases students' retention.

### **2.2.4 Availability of conventional instructional materials**

Instructional materials draw the lesson into learners' real life. They help learners to acquire knowledge accurately and they foster further learning whenever the learner observe the teaching and learning aid used for a subject matter. Thus, the performance will be promoted as the level of memorization and understanding the content increases.

### **2.2.5 Commitment to success for all**

When all education stakeholders at school level are committed to success, the academic performance will undoubtedly increase since there will be further funding and investment to achieve the target of the school. Parents and teachers strive to success by making sure that all required resources are available for the learners to learn conveniently.

### **2.2.6 Shared vision**

Sharing the school vision makes teachers, students and parents to focus on what is indispensable to reach that vision. The target of any educational organization is to produce skilled and competent generations. Thus, the academic performance will be affected positively when all concerned people are sharing the same vision.

### **2.2.7 Climate of challenging and stimulating teaching**

The school environment plays more on promoting the academic performance. The school environment should be conducive for learners and teachers. When the school environment is resourceful, teachers can improvise instructional materials which arouse learner's interest in

learning and promote the knowledge acquisition and transfer. A good climate promotes harmony among teachers and students hence the teaching and learning process is made friendly and learner-centered.

### **2.3 Types of Teaching and Learning Aids Used in Teaching and Learning Process**

Teaching and learning aids that are used in teaching and learning situation may be conventional or improvised ones. Conventional teaching and learning aids are produced from industry with a high quality and cost whereas improvised teaching and learning aids are locally produced from available raw materials at low cost. The set of these teaching and learning is made mainly of charts, radios, projectors, plant samples, some bottles and many other local tools. Teaching and learning aids may also be classified into audio and visual teaching and learning aids.

#### **2.3.1 Overhead Projector (OHP) And Transparency**

The OHP is an electrically operated instrument used for projecting written information or drawn images onto a screen. It is one of the most commonly used versatile types of audiovisual aids. Transparency is a plastic or acetate sheet whereon information can be written with CD marker pens of the different colors.

The advantages of using OHP and transparency include that:

They are Simple and comfortable to use; Transparency can be prepared easily and quickly; Transparency can be used repeatedly; It covers large group of audiences Constant eye contact with the audiences can be maintained; It can attract proper attention of the audiences

However, OHP presents some disadvantages such as:

Information from the printed pages cannot be projected, adequate electric voltage is required for proper visualization, transparency sheet and marker pen may be expensive

#### **2.3.2 Flipcharts**

The flip chart is one of the simplest and most reliable tools of teaching. Especially, during participatory activities as well as training session use of flip chart is effective way of boosting up visual impact in participants. Different diagrams, photographs, charts and graphs can be used as flip charts.

The advantages of using flip charts are mainly they are:

Portable, easy and convenient to use and store, excellent way to record learners' suggestions, ideas and opinion, key point of presentation can be displayed, results of group discussion can be captured on the chart to summarize the discussion.

### **2.3.2 Power Point Presentation (PPT)**

The PPT presentation is the most widely used method of teaching students as well as conducting seminars, workshop and conferences in recent years. The presenter should have only basic knowledge of computer in order to prepare PPT. It can be made attractive with proper animation, downloaded photographs, graphs, tables and videos.

PPT presents the following advantages: Easy to create colorful, attractive design using standard templates and themes; Easy to modify whenever required, compared to other visual aids; Easy to present and maintain eye contact with large audience by simply advancing the slide key stroke and Low cost, assuming projection facilities are available.

The following are some disadvantages associated with the use of PPT during teaching and learning:

Basic equipment like computer and projector are required for presentation, need of electricity  
Linear nature of power point slides sometime forces the presenter to reduce complex subject to set a bullet items which are too weak to support decision making or show the complexity of an issue. Lack of interactivity: Teacher most of the time do not interact with the media which promote passive learning.

Feature abundance: More animation, too many flying letters, sound effect etc. distract attention of audiences if not utilized properly.

### **2.3.3 Black Board or White Board Teaching**

Black board or white board is powerful educational tools but making good use of them is much more complicated than merely writing on them. It can be used more effectively for discussing brain storming session and note taking rather than taking lecture.



These are the advantages:

Easily available, easy to use, less expensive, excellent use for participatory activities like brain storming, problem solving, making list etc.

Some of the disadvantages of black board are include making always eye contact to the spectators is not possible; talking and writing at the same time is quite difficult; time consuming; difficult to hold adequate amount of materials in stipulated duration and messy and blurred hand writing may create problem for participants.

## **2.4 Importance of instructional resources in biology**

The use of biology instructional resources has diverse importance not only for preservice biology teachers' education but also for all kinds of students, and their use becomes fruitful, especially when students manipulate the used materials. For instance, (Adebule, 2016) affirmed that instructional resources use in teaching raises students' level of discovery and stimulates students to learn more as they see what they are taught.

Besides, (Johnson, 2015) found that the use of video clubs increased the pre-service science teachers' understanding of their science subject content. Technology related instructional resources are more imperative for training pre-service science teachers, as they afford the required technology skill essential for a qualified teacher of this digitalized world (Oren, 2017). Besides, (Arokoyu, 2017) attested that the teaching process becomes less stressful for both teachers and students when instructional materials are used. Therefore, identifying available instructional materials at schools, especially at higher learning institutions, is of imperative need as learning by hands-on and observation of instructional resources raise students' level of memory and enhance learning achievement.

(Ong'amo, 2017) confirmed that there is an excellent achievement for students taught with instructional resources comparing to those educated without any teaching material. The difference is because instructional materials ease the communication between teachers and students and promote active teaching and learning, thus facilitate understanding of concepts that become complex by words only.

## 2.5 Conceptual framework

This research agrees independent variable named influence of Teaching aids and its adopt the dependent variable named learners 'academic performance in biology

### Independent variables

Influence of Teaching aids

### Dependent variable

Learners 'academic performance in biology

### Intervening variables

- School administration
- Teachers 'qualification skills
- REB

## **CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY**

### **3.0 INTRODUCTON**

The researcher describes the research approach design, population, sample population, instruments, procedures of data collection and data analysis.

### **3.1 RESEARCH APPROACHES AND DESIGN**

#### **3.1.1 Research approaches**

This study was both quantitative and qualitative type. Therefore, quantitative and qualitative data collection methods were used. These research works were qualified to be of quantitative study because during the study, numerical data were used, collected and analyzed. But also qualitative data collection technique was also used in non-numerical study than numbers (D Bailey, 1973).

#### **3.1.2 Research design**

This study adopted a descriptive survey research design. Kombo and Tromp (2000) cite Kerlinger who paid credence to the use of this research design. They inform that a descriptive study not only restrict itself to fact findings but also aid in generation of knowledge and solutions to pertinent problems. The studies involve classification, analysis, comparison and interpretation of data collected.

The descriptive survey design was preferred as it is used to explain the existing status. Descriptive research permits the explanation of phenomena as they naturally transpire and without intervention from the researcher. Both qualitative and quantitative data have been used and manipulated accordingly. These researchers were in favour of this design in view of the fact that data to be collected included: respondents' opinions among other issues which, according to Orodho and Kombo (2002) can easily be collected and manipulated using the design in question.

A descriptive technique is used for its adequateness to the study. in order to achieve the research goals, two kinds of data collection techniques are used. the quantitative data collection methods which include a questionnaire and the qualitative data collection methods which include sampling in this research in order to have more interpretation by asking the somebody in duty.

### 3.2 TARGET POPULATION

The target population is defined as the group of individuals that the intervention intends to conduct research in and draw conclusions from. In analysis the characteristics of the target population should be described clearly. The targeted population were the students of GS MUNANIRA in ordinary level which is 612 students in all levels and 20 teachers teaching in ordinary level, 4 administrative staff and they are represented in the table below:

Table: Target population

Strata	Number of people
Students of S <sub>1</sub> at GS MUNANIRA	291
Students of S <sub>2</sub> at GS MUNANIRA	199
Students of S <sub>3</sub> at GS MUNANIRA	122
Teachers of GS MUNANIRA	20
Administrative staff	4
<b>Total</b>	<b>636</b>

Source: School administration, 2022

### 3.3 Sampling procedures and techniques

#### 3.3.1. Sample size selection technique

Due to financial means, time constraints and the need of precision of results, it is impossible to study all population. That is why the study was took some selected students, teachers and the staffs of GS Mnanira<sup>4</sup>. If the sample were collected properly the information it represents the entire population (Kakooza, "Research Methodology", Second Edition, 1996) A smaller sample size, but well selected may be superior to a larger badly selected sample. Therefore, our research was used the good method and techniques to select smaller sample size. The correct sample size depends on population, research objectives. The sample size must also be considered in relation to the number of categories required.

### 3.3.2. Purposive and stratified random sample

Stratified random sample is to divide population into subgroups called strata, then a simple random sample is selected from each stratum, and the simple random samples in the strata are selected independently (GUPTA, 2001). The strata are often subgroups of interest to the investigator. The research was picked some respondents randomly without considering the favors, so they had equal chance to be selected, the purposive or judgment sampling was also used for not excluding some important respondents the target population include the teachers and the staff of GS Munanira.

### 3.4 SAMPLE SIZE

Yamane (1967) provides a simplified formula to calculate sample size. This formula was used to calculate the sample size

$$\text{Sample size}(n) = \frac{N}{1+N(e)^2} = \frac{612}{1+612(0.1)^2} = 86 \text{ people}$$

Where n= sample size , N= The population and e=the precision error which is assumed to be 10%).

The sample size of our study will be composed of 91 people from 636 individuals as it is given by the Yamane's formula.

To select respondents, the following stratification will be used:

$$\text{For } S_1 \text{ students : } \frac{291 \times 86}{612} = 40.89 \approx 41$$

$$\text{For } S_2 \text{ students: } \frac{199 \times 86}{612} = 27.96 \approx 28$$

$$\text{For } S_3 \text{ students: } \frac{122 \times 86}{612} = 17.14 \approx 17$$

For teachers: Among 20 teachers in the GS Munanira we have select only 3 teachers of biology purposively.

For Administrative staff: Among 4 administrative staff we have select only 2 of them purposively including The Director of Study and the Head Teacher.

Table 1: Sample size

<b>N<sup>o</sup></b>	<b>Category</b>	<b>Total population</b>	<b>Sample size</b>	<b>Sampling technics</b>
<b>1</b>	S <sub>1</sub> students	291	41	Random sampling
<b>2</b>	S <sub>2</sub> students	199	28	Random sampling
<b>3</b>	S <sub>3</sub> students	122	17	Random sampling
	<b>Subtotal</b>	<b>612</b>	<b>86</b>	
<b>4</b>	Teachers	20	3	Purposive sampling
<b>5</b>	Administrative staff	4	2	Purposive sampling
	<b>Total</b>	<b>636</b>	<b>91</b>	

Source: Primary data, 2022

### **3.5 RESEARCH INSTRUMENTS FOR DATA COLLECTION**

The research instruments for data collection techniques were used as a practical means of attaining or achieving relevant information related to the Influence of teaching aids on learners' academic performance in biology at GS Munanira of Ruhango district Southern province. Those (methods or technics) are the instruments used by the researcher to gather information from respondents and other sources that are relevant to the study. Information can be obtained by the use of primary and secondary data. Data in this study were collected by using different methods:

#### **3.5.1. Primary data**

Primary data are those which are collected at first hand either by the researcher or someone else especially for the purpose of the study. Therefore, they are those data collected at first time and it happens to be original data in character. In collection of primary data the observation and interview methods were used.

### **3.5.1.1 Interview method**

This method involves exchange of idea between the interviewer (researcher) and the interviewee. The information obtained supplements the information obtained through interview in departments. The researcher will be much better acquainted with the knowledge in respect to the topic under study and thus the attainment of the research objectives.

### **3.5.1.2 Observation method**

The researcher was collected the relevant information about the topic through instrument observation where by the information is recorded as it occurred. Observation may be made by eyes estimation, judgments and by recording answers obtained from interviews.

### **3.5.1.3 Questionnaire**

Structured questionnaire was used to get information from saving; the types of questionnaire are preferred because of its importance. Firstly it facilitates the collection of information in a systematic and orderly manner as the question have been formulated in advance. Secondly since the questions by the interviewer happen to be identical and are asked in the same order, the information gathered generally does not deviate from the asked questions.

### **3.5.2. Secondary data**

Secondary data means those already available. They refer to the data, which have already been collected and analyzed by someone else. The use of secondary data has to look into various sources from which they are obtained. Those data may be published data or unpublished data. In this study, documentation was the main methods for secondary data. The researcher also was recourse to document analysis and use online sources for more detailed information about the topic under the study.

## **3.6 DATA ANALYSIS**

Is a semantic content analysis of all the interview responses was conducted to identify categories and subcategories to describe the content .Content analysis investigates the thematic content of text and serves as a basis of inference (Dean-Brown, 2002).The data obtained from questionnaire and interview have been analyzed quantitatively and qualitatively. Descriptive statistics such as percentage, frequency, graphs (for quantitative data) were used. The data have interpreted and concluded basing on the findings of the study.

Editing data in which Information gathered during data collection may lack uniformity. Bringing uniformity to the collected data, checking error and re-arranging; Coding of data: Coding is translating answers into numerical values or assigning numbers to the various categories of a variable to be used in data analysis. Coding is done by using a code book, code sheet, and a computer card. Coding is done on the basis of the instructions given in the codebook. The code book gives a numerical code for each variable.

### **3.6.1 Editing**

Editing is the process whereby errors made are identified and get corrected. It is a work that involves noticing and detecting errors in order to correct them at the end of the day. Furthermore, through editing, the researcher was attentive for a careful verification whether all questions were answered according to instructions or not (Nikhil, 2011).

### **3.6.2 Coding**

Smith and Davies (2010:155) argue that coding does not constitute the totality of data analysis, but it is a method to organize the data so that underlying messages portrayed by the data may become clearer to the researcher. (Charmaz, 2006) describes coding as the pivotal link between data collection and explaining the meaning of the data. During the coding process, some codes may appear repeatedly and that may be an indication of emerging patterns. These emerging patterns or similarity among the codes may give rise to categories. Coding is not only labeling, but also linking, that is, linking data to an idea. It is a cyclic process. By incorporating more cycles into the coding process, richer meanings, categories, themes and concepts can be generated from the data (Saldana, 2013)

### **3.6.3 Tabulation**

Tabulation is the process of summarizing raw data and displaying the same in compact form (i.e., in the form of statistical table) for further analysis. When mass data has been assembled, it becomes necessary for the researcher to arrange the same in some kind of concise logical order, which may be called tabulation.

## **3.7 RELIABILITY AND VALIDITY OF MEASUREMENTS**

### **3.7.1 Validity**



Kakooza (1996) defines validity as” extent to which different found with a measuring instrument reflects true differences among those being tested.” “Validity is extent to which an instrument measures what it is supposed to measure. It attempts to check out whether the meaning and interpretation of the event is sound or whether a particular measure is an accurate reflection of what you intends to find out.”

Validity is concerned with the way in which the researcher valued information from analysis and took into account what he observed. It was found that every item was meaningful. Besides, validity of research outcomes refers to extent to which what is observed reflects what was expected. This is manifest by accuracy and authenticity of the method applied, and the potential for generalization this consideration was used in this research.

### **3.7.2 Reliability**

As for reliability, (Kothari, 2004) said that, a measurement instrument is reliable if it provides consistent results. “accuracy or consistency of measurement. That is, the extent to which the results remain similar over different forms of the same instrument. Reliability is the level of internal consistency or stability of the measuring device overtime.” In this study, reliability is on how the results/findings were consistent and stable.

### **3.8 Ethical consideration**

To ensure confidentiality of the information provided by the respondents and to ascertain the practice of ethics in this study, the following activities are implemented by the researcher: Seek permission to adopt the standardized questionnaire on influence of teaching aids on learners academic performance in Biology at GS Munanira through a written communication, The respondents are coded instead of reflecting the names, Solicit permission through a written request to the concerned officials of the selected schools included in the study, Acknowledge the authors quoted in this study and the author of the standardized instruments through citations and referencing.

## **CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDING**

### **4.0 INTRODUCTION**

In this chapter, the researchers present and analyze data collected from respondents. These data collected are analyzed and deduced in agreement with research objectives and research questions. It deals with the influence of teaching aids on learners' academic performance in Biology subject. The findings are also presented in form of tables by considering percentages and occurrences, finally the data analyzed and interpreted.

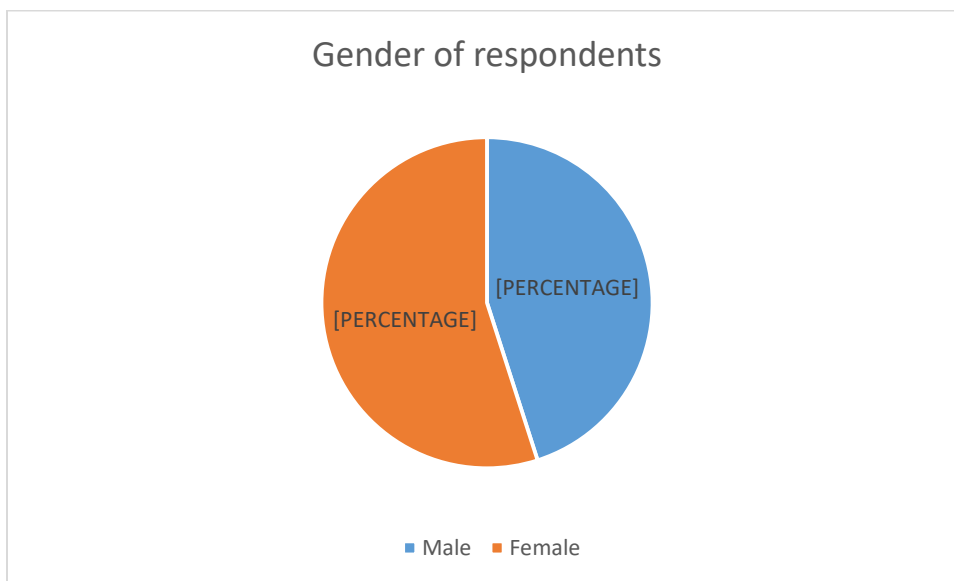
### **4.1 DATA PRESENTATION AND ANALYSIS**

#### **4.1.1 Gender of the respondent**

Any research cannot consent out gender question. Therefore, it was found very significant to label the sex of the respondent under this research.

Figure: gender of respondent.

The figure below shows the sex of the respondent.



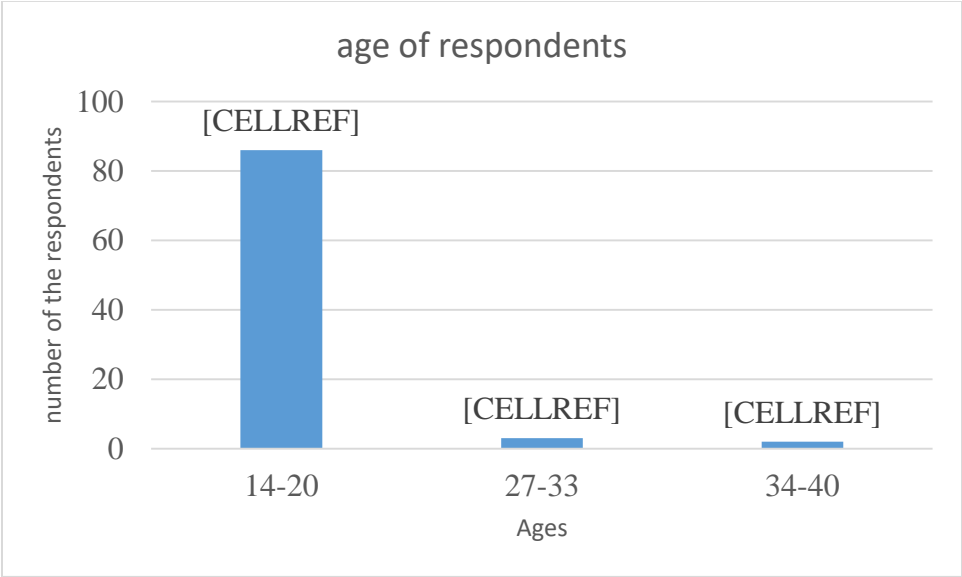
**Source:** Primary data, 2022

The figure presents the gender of the respondents. The majority of the participant in this research were 50 females with 55% while the number of 41 males were 45% of the respondents. This means that females were greater than males.

**4.1.2 age of respondent**

The figure below shows the age of respondent. This research went further to analyze the allocations age of the respondent.

Figure: age of respondents



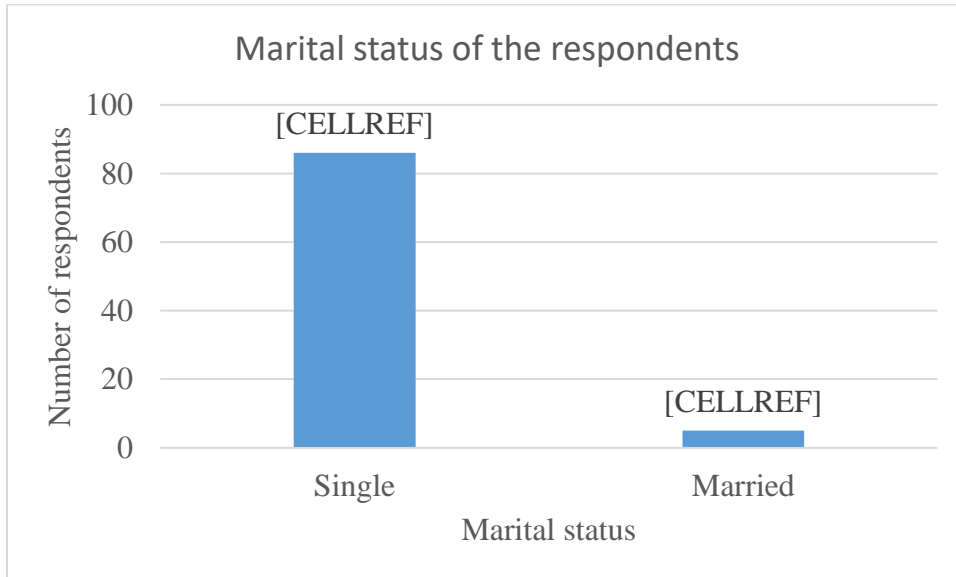
**Source:** primary data, 2022

The age of the respondents were grouped in different group, in this research the widely held of respondent, their age were grouped between 14 to 20 years with 86 respondents corresponding 94.5%, the next group of respondent were between 27 to 33 years with 3 respondents corresponding 3.2%, the next group of respondent were 34 to 40 years with 2 respondents corresponding 2.3%, we believe that the reason for the majority of group ranged from 14years to 20 years were due to the case of students.

### 4.1.3. Marital status of respondents

This figure shows the marital status of respondents where all 59 respondents their marital status were presented in this figure.

Figure: Marital status of respondents



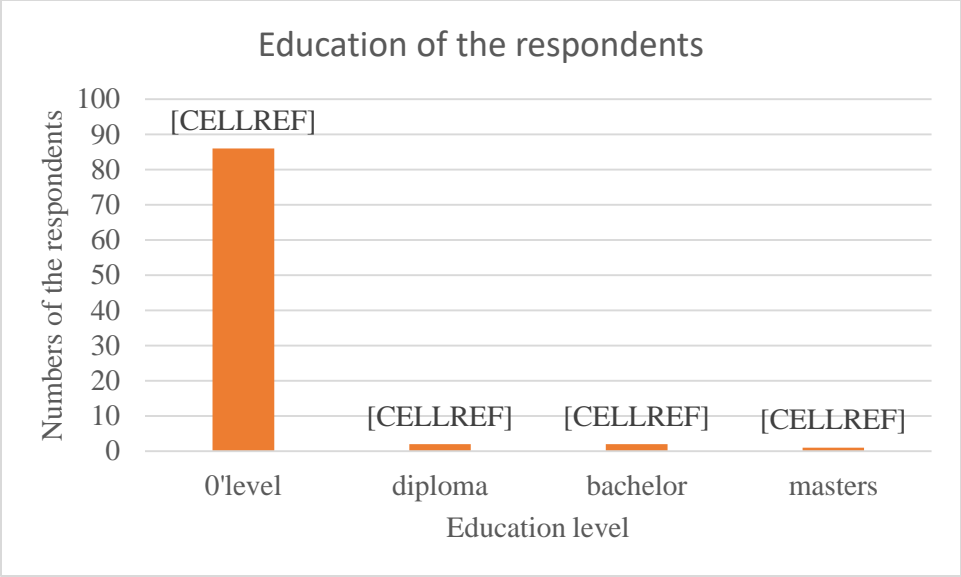
**Source:** Primary data, 2022

From the findings in the figure above, it is clear that the majority in this research were single with 86 respondents corresponding to 94.5% while married were 5 respondents corresponding to 5.5%. the big numbers of the respondent were proportioned to be single because big numbers were students.

### 4.1.4 Education of respondents

Figure: Educational back ground of respondents

This figure shows the education of respondents, where respondents education for all are presented here.



**Source:** Primary data, 2022

The above figure of respondents in this research shows the people that have O’level were 86 respondents with 94.5%, 2 respondents with 2.2% stand for the people who had diploma, the people who had bachelor were 2 respondents with 2.2% and those who had master’s degree were 1 respondent with 1.1%. this is because in research a huge number of respondent were student

## 4.2 PRESENTATION OF FINDINGS

### 4.2.1 The effect of teaching aids on learner's performance in biology at Gs Munanira

The table below shows the effect of teaching aids on learner's performance in biology at Gs munanira

Table1: effect of teaching aids on learner's performance in biology at Gs munanira

STATEMENT	SD		D		UD		A		SA	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Enable learners to remember what they had learnt for every long period of time	0	0	0	0	10	11	31	34	50	55
It enhance ,facilitate and make teaching and learning easy , lively and concrete	8	9	6	6.5	5	5.5	45	49	27	30
Teaching aids develop the proper image when the student see,hear,taste and smell properly	0	0	0	0	12	13	57	63	22	24
Teaching aids create the environment of interest for the students	6	6.5	4	4.5	0	0	70	77	11	12

**Source:** Primary data, 2022

In the above table, 10 respondents corresponding to 11% undecided that to enable learners to remember what they have learnt for long period of time is an effect of teaching aids; 31 respondents corresponding to 34% agreed to enable learners to remember what they have learnt for long period of time is an effect of teaching aids, 50 respondents corresponding to 55% strongly agreed that to enable learners to remember what they have learnt for long period of time is an effect of teaching aids, 8 respondents corresponding to 9% strongly disagreed that It enhance, facilitate and make teaching and learning easy, lively and concrete is the effect of teaching aids, 6 respondents corresponding 6.5% disagreed that It enhance, facilitate and make teaching and learning easy, lively and concrete is the effect of teaching aids, 5 respondents corresponding to 5.5% undecided that It enhance, facilitate and make teaching and learning easy, lively and concrete is the effect of teaching aids, 45 respondents corresponding to 49% agreed that It enhance, facilitate and make teaching and learning easy, lively and concrete is the effect of teaching aids, 27 respondents corresponding 30% strongly agreed that It enhance, facilitate and make teaching and learning easy, lively and concrete is the effect of teaching aids, 12 respondents corresponding 13% undecided that Teaching aids develop the proper image when the student see, hear, taste and smell properly as effect, 57 respondents corresponding 63% agreed that Teaching aids develop the proper image when the student see, hear, taste and smell properly as effect, 22 respondents corresponding 24% strongly agreed that Teaching aids develop the proper image when the student see, hear, taste and smell properly as effect, 6 respondents corresponding 6.5% strongly disagreed that Teaching aids create the environment of interest for the students as effect, 4 respondents corresponding to 4.5% disagreed that Teaching aids create the environment of interest for the students as effect, 70 respondents corresponding to 77% agreed that Teaching aids create the environment of interest for the students as effect, 11 corresponding 12% strongly agreed that Teaching aids create the environment of interest for the students as effect.

#### 4.2.2. Uses of teaching aids can be in the subject of Biology especially at Gs Munanira

The table below shows how teaching aids can be used in the subject of biology especially at Gs Munanira

Table2: uses of teaching aids in the subject of biology especially at Gs Munanira

STATEMENT	SD		D		UD		A		SA	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Uses of teaching aids										
Motivation	0	0	2	2.2	7	8	70	77	12	13
Clarification	9	10	10	11	0	0	56	62	16	17
Discouragement of cramming	13	14	0	0	8	9	70	77	0	0
Class room live and active	0	0	0	0	0	0	76	84	15	16

**Source:** Primary data,2022

In the above table, 2respondents corresponding to 2.2% disagreed that motivation is one of uses of teaching aids ; 7 respondents corresponding to 8% undecided that Motivation can be uses or not ,70respondents corresponding to 77% agreed that Motivation is one of uses of teaching aids , 12 respondents corresponding to 13% strongly agreed that Motivation is one of uses of teaching aids , 9 respondents corresponding 10% strongly disagreed that clarification is one of uses of teaching aids, 10 respondents corresponding to 11% disagreed that clarification is a use of teaching aids, 56 respondents corresponding to 62% agreed that clarification is a use of teaching aids, 16 respondents corresponding 17% strongly agreed that clarification is a use of teaching aids, 13respondents corresponding 14% strongly disagreed that discouragement of cramming in is one of use of teaching aids, 8respondents corresponding 9% undecided that discouragement of cramming is a use of teaching aids , 70 respondents corresponding 77% agreed that discouragement of cramming is a use of teaching aids,76 respondents corresponding 84% agreed



that class room live and active is a use of teaching aids and 15 respondents corresponding 16% strongly agreed that class room live and active is a use of teaching aids.

### 4.2.3 the challenges for using teaching aids on students’ performance at Gs Munanira

#### 4.2.3.1 challenges for using teaching aids

The table below shows the challenges for using teaching aids

Table3: challenges for using teaching aids

STATEMENT	SD		D		UD		A		SA	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Challenges of teaching aids										
Lack of time for making teaching aids	0	0	0	0	0	0	30	33	61	67
Lack of training on using electronic teaching aids	4	4.5	9	10	0	0	65	71.5	13	14
Lack of space in the classroom to keep teaching aids	0	0	0	0	15	16	76	84	0	0
Limited resources in their schools	0	0	7	8	0	0	9	10	75	82

**Source:** Primary data, 2022

In the above table, 30 respondents corresponding to 33% agreed that lack of time for making teaching aids is the challenge; 61 respondents corresponding to 67% strongly agreed that lack of time for making teaching aids is the challenge ,4respondents corresponding to 4.5% strongly disagreed that lack of training on using electronic teaching aids is the challenge, 9 respondents corresponding to 10% disagreed that lack of training on using electronic teaching aids is the challenge , 65 respondents corresponding 71.5% agreed that lack of training on using electronic teaching aids is the challenge, 13 respondents corresponding to 14% strongly agreed that lack of

training on electronic teaching aids is the challenge, 15 respondents corresponding to 16% undecided that lack of space in the class room to keep teaching aids can be challenge or not, 76 respondents corresponding 84% agreed that lack of space in the class room to keep teaching aids is the challenge, 7 respondents corresponding 8% disagreed that limited resources in school is a challenge, 9 respondents corresponding 10% agreed that limited resources in school is a challenge , 75 respondents corresponding 82% strongly agreed that limited resources is a challenge .

#### 4.2.3.3 Table of teaching aids of biology available at Gs Munanira

N <sup>o</sup>	Teaching aid items	Present and mostly used	Present and Rarely used	Present and not used	Absent and never used
1	Projectors		60(66%)	31(34%)	
2	Biology laboratory				91(100%)
3	Microscope	20(22%)	71( 78%)		
4	Audio-Visual Materials			91(100%)	
5	Botanical gardens				91(100%)
6	Library Resources	80(88%)	11 (12%)		
7	Biology text Books	91(100%)			
8	Biology hand outs	65(71%)	26(29%)		
9	Computer-laboratory	91(100%)			
10	Class white board				91(100%)
11	Class chalk board	91(100%)			
12	student's Lap-top				91 (100%)
13	charts	91(100%)			
14	Models	50(55%)	41(45%)		

The mostly used teaching aids were present and used with corresponding to 55% and above as shown in the stable, there were also absent and never used teaching aids with 100% answered.

### **4.3 DISCUSSIONS OF FINDINGS**

The first objective was to examine the effect of teaching aids on learners' performance in biology at GS Munanira. the findings of this research has shown that the effect of teaching aids on learners' performance such as enable learners to remember what they had learnt for every long period of time, it enhances, facilitate and make teaching and learning easy, lively and concrete, teaching aids develop the proper image when the student see, hear, taste and smell properly, teaching aids create the environment of interest for the students.

These findings were supported by the finding of (Besty, 2012)

The second objective was to determine the use of teaching aids in the subject of biology especially at GS Munanira. The findings of this research has shown the uses of teaching aids such as Motivation, clarification, discouragement of cramming, classroom live and active. these findings were supported by (Daniel, 2001)

The third objective was to find out the challenges of using teaching aids and its impact on students' performance at GS Munanira. The findings have shown the challenges for using teaching aids such as lack of time for making teaching aids, lack of training on using electronic teaching aids, lack of space in the classroom to keep teaching aids and limited resources in their schools where as the impact of teaching aids are: facilitate the teaching –learning processes and increases interest of learners, it makes the lessons enjoyable and attractive for the students, it gives meaning to what has been learned and gives stability and strength, increasing the ability of reasoning and thinking and increasing creativity. These findings was supported by the findings of (Ajileye, 2006; Ajileye, 2006).

### **4.4 SUMMARY OF FINDINGS**

The first objective was to examine the effect of teaching aids on learners' performance in biology at GS Munanira. the findings of this research has shown that the effect of teaching aids on learners' performance such as enable learners to remember what they had learnt for every long period of time, it enhances, facilitate and make teaching and learning easy, lively and concrete, teaching aids develop the proper image when the student see, hear, taste and smell properly, teaching aids create the environment of interest for the students.

The second objective was to determine the use of teaching aids in the subject of biology especially at GS Munanira. The findings of this research has shown the uses of teaching aids such as Motivation, clarification, discouragement of cramming, classroom live and active.

The third objective was to find out the challenges of using teaching aids and its impact on students' performance at GS Munanira. The findings have shown the challenges and impacts for using teaching aids such as lack of time for making teaching aids, lack of training on using electronic teaching aids, lack of space in the classroom to keep teaching aids and limited resources in their schools where as the impact of teaching aids are: facilitate the teaching – learning processes and increases interest of learners, it makes the lessons enjoyable and attractive for the students, it gives meaning to what has been learned and gives stability and strength, increasing the ability of reasoning and thinking and increasing creativity.

## **CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS**

### **5.0 INTRODUCTION**

This chapter consists of conclusion and recommendations of the research.

### **5.1 CONCLUSION**

The first objective was to examine the effect of teaching aids on learners' performance in biology at GS Munanira. The findings of this research has shown that the effect of teaching aids on learners' performance such as enable learners to remember what they had learnt for every long period of time, it enhances, facilitate and make teaching and learning easy, lively and concrete, teaching aids develop the proper image when the student see, hear, taste and smell properly, teaching aids create the environment of interest for the students.

The second objective was to determine the use of teaching aids in the subject of biology especially at GS Munanira. The findings of this research has shown the uses of teaching aids such as Motivation, clarification, discouragement of cramming, classroom live and active.

The third objective was to find out the challenges of using teaching aids and its impact on students' performance at GS Munanira. The findings have shown the challenges and impacts for using teaching aids such as lack of time for making teaching aids, lack of training on using electronic teaching aids, lack of space in the classroom to keep teaching aids and limited resources in their schools where as the impact of teaching aids are: facilitate the teaching – learning processes and increases interest of learners, it makes the lessons enjoyable and attractive for the students, it gives meaning to what has been learned and gives stability and strength, increasing the ability of reasoning and thinking and increasing creativity

## **5.2 RECOMMENDATIONS**

Based on the results of the study, the following recommendations were made:

1. To education representatives, to organize training about improvisation of Teaching aids since this will help to overcome the insufficiency of conventional teaching aids.
2. To all teachers, to be resourceful and have that commitment to improving quality education through the use of local materials in teaching and learning situation. Teachers are recommended to use effectively the teaching aids.
3. To all students, they are recommended to be innovative and creative. They are requested to produce teaching and learning materials for a further understanding of the taught content.

## **5.3 SUGGESTIONS FOR FURTHER STUDIES**

After carrying out the research and learning some difficulties in the field on the project entitled " Influence of teaching aids on learners' academic performance in biology " a study is suggested that education is the base of socioeconomic development of any society. In order to promote the positive change in the education system, the further research is proposed to involve in the study of the improvisation of Teaching aids. So they can deeply enhance the quality education in teaching and learning sciences. Here they can go in-depth on the role of improvised teaching materials in secondary schools.

## References

- Adebule, S. .. (2016). *Impact of Instructional Materials on Students ' academic performance in Biology* (Vol. 2). Ekiti: Research journal of educational studies.
- Adeniran, M. (2006). *STrategies and Utilization of improvised instructional materials and student's achievement and attitude in Ekite secondary school* (Vol. 3). EKITE: International Journal in Education.
- Ajileye, O. (2006). *Towards effective science education: issues in universal basic education program* (Vol. 1). Journal of sports management and Educational Research.
- Arokoyu, A. A. (2017). *Biology Teachers Methods of Teaching and Academic Performance of Secondary School Students* (Vol. 8). Abia State, Nigeria.: Journal of Emerging trends in Educational Research and policy studies.
- Besty, L. (2012). *APPLICATION OF COMMUNITY SERVICE LEARNING IN SCIENCE EDUCATION* (Vol. 13). kenya: Asia -Pacific Forum on science learning and teaching.
- Charmaz, K. (2006). *Constructing grounded theory:A practical guide through qualitative analysis,*. Sage: Tousand Oaks.
- Conference., E. U.-U. (2015). *Standards and Guidelines for Quality Assurance in the European* . Yervan.
- Daniel, I. (2001). *IMPROVISATION AND USE OF INSTRUCTIONAL MATERIALS IN SCIENCE TEACHING* (Vol. 2). UNESCO Work shop.
- Dean-Brown, J. R. (2002). *Oxford Handbooks for Language Teachers:Doing Second Language Research*. New York: Oxford University Press.
- dictionary, C. (n.d.).
- Fakomogbon, M. &. (2006). *INSTRUCTIONAL MEDIA AND THEIR SOURCES FOR TEACHING AND LEARNING IN TERTIARY INSTITUTION* (Vol. 4). African journal educational studies.
- Johnson, H. J. (2015). *Developing preservice teachers' knowledge of science teaching through video clubs*. (Vol. 26). Journal of Science Teacher Education.
- Morohunfula, P. (1983). *A study of relationship between instructional resources and students' academic performance*.
- Nikhil. (2011, May 14). <http://mass-communication-tutorials.blogspot.com>. Retrieved July 15, 2018, from Mass Communication at Indianedu: <http://mass-communication-tutorials.blogspot.com>
- Ong'amo, B. L. (2017). *Effects of Uilization of Biology Teaching and Learning resources on students academic performance in secondary schools* (Vol. 5). Kenya: International Journal of Education and Research.

report, E. c. (2010b). *European Commission Working document on recent developments of European higher education systems. An agenda for the modernization of Europe's higher education systems as cited in European commission report (2011).*

Republic of Rwanda. (1998). *Ministry of Education, Science, Technology and Scientific Research . Education Sector Policy.* KIGALI: MINEDUC.

Saldana, J. (2013). *The coding manual for qualitative researchers.* London: Macmillan Publishers Ltd.

Talib N, S. S. (2012). *Determinants of academic performance of University students.* (Vol. 27). *J Psychol* les.

UNESCO. (2009 ). *Trends in Global Higher Education: Tracking an academic revolution, a report prepared for the UNESCO, . World Conference on Higher Education .*



**APPENDIX: Introductory letter**

**KIBOGORA POLYTECHNIC**

**FACULTY OF EDUCATION**

**DEPARTMENT OF SCIENCES**

**COMBINATION OF BIOLOGY AND CHEMISTRY**

Dear respondent, we are here Jean Claude NYANDWI with Reg no 2001301 and Laurent ISHIMWE with Reg no 2001543 – students of Kibogora polytechnic, faculty of education.

We are carrying out a research on influence of teaching aids on learners ‘academic performance in biology case study: GS MUNANIRA, Period 2021-2022 for seeking of completing bachelor’s degree in education at Kibogora polytechnic.

We here by request you to fill this questionnaire in order to get relevant information of our research. your responses kept confidential and are only used for academic purpose.

Your cooperation is our promotion

Jean Claude NYANDWI

Laurent ISHIMWE

**APPENDIX: RESEARCH LETTER**

 **KIBOGORA POLYTECHNIC**  
Email: info@kibogora.ac.tz  
Phone: +255789342653

**RESEARCH LETTER**

Date: 07-2022  
Received on: 21/07/2022  
HT of AS Mwanika

To whom it may concern:

We write this letter to humbly request you to allow:  
NAME: ASAMBAWA Jean Claude REG N°: 200A302  
NAME: ISHIAWE Laurent REG N°: 200A543

to conduct research in your organization/institution/territorial entity.

The above mentioned are bonafide students of Kibogora Polytechnic pursuing Bachelor's degree in Education with Biology and Chemistry.

These Candidates are currently conducting research entitled:  
Influence of teaching aids on learners academic performance in Biology

We are convinced that your organization/institution/territorial entity will constitute a valuable source of information pertaining to their research. The purpose of this letter is to humbly request you to avail them with the pertinent information they may need. We pledge to ensure that all provided information will be used in the strict academic purpose.

Any assistance rendered to the candidates will be highly appreciated.

Yours,  
  
  
Dr M/INYENGABE Sylvestre, PhD  
Ag Deputy Vice Chancellor  
Kibogora Polytechnic

## APPENDIX: QUESTIONNAIRE OF RESPONDENTS

INSTRUCTIONS: This is not a test. there is no right and wrong answers to any of the questions just answer them as truthfully as you can, tick  [✓] the correct answer in the box and I request you to answer the all questions

### Section A: Attempt all question

#### 1. Sex

a. Male

b. Female

#### 2. Age

a. 14-20 years

b. 21-27 years

c. 28-35 years

d. 36-41years

e. 42-48 years

3. Profession and title .....

#### 4. Marital status

a. Single

b. Married

#### 5. Level of education

a. O'level

b. diploma

c. Bachelor

d. Masters

## SECTION B

6. The following table shows the effect of teaching aids on learners' performance at Gs Munanira. the respondent provides the response by ticking the column of given effect of his/her choice.

STATEMENT	SD	D	UD	A	SA
Enable learners to remember what they had learnt for every long period of time					
It enhance ,facilitate and make teaching and learning easy , lively and concrete					
Teaching aids develop the proper image when the student see,hear,taste and smell properly					
Teaching aids create the environment of interest for the					

students				
----------	--	--	--	--

**SD: Strongly disagree D: Disagree UD: Undecided A: Agree SA: Strongly Agree**

7. the following table shows the uses of teaching aids in the subject of biology especially at Gs Munanira. the respondent provides the response by ticking the column of each given use of his/her choice.

STATEMENT	SD	D	UD	A	SA
Motivation					
Clarification					
Discouragement of cramming					
Class room live and active					

**SD: Strongly disagree D: Disagree UD: Undecided A: Agree SA: Strongly Agree**

8. the following table shows the challenges for using teaching aids at Gs Munanira. the respondent provides the response by ticking the column of given challenge his/her choice.

STATEMENT	SD	D	UD	A	SA
Lack of time for making teaching aids					
Lack of training on using electronic teaching aids					
Lack of space in the classroom to keep teaching aids					
Limited resources in their schools					

**SD: Strongly disagree D: Disagree UD: Undecided A: Agree SA: Strongly Agree**

### INTERVIEW GUIDE QUESTIONS

1. How can teaching aids can be used in the subject of Biology in your school?

.....  
.....  
.....

2. What are the effect of teaching aids on learners' academic performance especially in the subject of Biology?

.....  
.....  
.....  
.....

3. Are there any challenges of using and creating teaching aids in your schools?

.....  
.....  
.....

4. In your school, do you have enough teaching materials in the subject of biology? if yes how can be equipped and managed?

.....  
.....  
.....

**APPENDIX 4: LIST OF RESPONDENTS**

N <sup>o</sup>	SIGNATURE		N <sup>o</sup>	SIGNATURE
<b>R1</b>			<b>R29</b>	
<b>R2</b>			<b>R30</b>	
<b>R3</b>			<b>R31</b>	
<b>R4</b>			<b>R32</b>	
<b>R5</b>			<b>R33</b>	
<b>R6</b>			<b>R34</b>	
<b>R7</b>			<b>R35</b>	
<b>R8</b>			<b>R36</b>	
<b>R9</b>			<b>R37</b>	
<b>R10</b>			<b>R38</b>	
<b>R11</b>			<b>R39</b>	
<b>R12</b>			<b>R40</b>	
<b>R13</b>			<b>R41</b>	
<b>R14</b>			<b>R42</b>	
<b>R15</b>			<b>R43</b>	
<b>R16</b>			<b>R44</b>	
<b>R17</b>			<b>R45</b>	
<b>R18</b>			<b>R46</b>	
<b>R19</b>			<b>R47</b>	
<b>R20</b>			<b>R48</b>	
<b>R21</b>			<b>R49</b>	
<b>R22</b>			<b>R50</b>	
<b>R23</b>			<b>R51</b>	
<b>R24</b>			<b>R52</b>	



<b>R25</b>			<b>R53</b>	
<b>R26</b>			<b>R54</b>	
<b>R27</b>			<b>R55</b>	
<b>R28</b>			<b>R56</b>	
<b>R57</b>			<b>R86</b>	
<b>R58</b>			<b>R87</b>	
<b>R59</b>			<b>R88</b>	
<b>R60</b>			<b>R89</b>	
<b>R61</b>			<b>R90</b>	
<b>R62</b>			<b>R91</b>	
<b>R63</b>				
<b>R64</b>				
<b>R65</b>				
<b>R66</b>				
<b>R67</b>				
<b>R68</b>				
<b>R69</b>				
<b>R70</b>				
<b>R71</b>				
<b>R72</b>				
<b>R73</b>				
<b>R74</b>				
<b>R75</b>				
<b>R76</b>				
<b>R77</b>				
<b>R78</b>				
<b>R79</b>				
<b>R80</b>				
<b>R81</b>				
<b>R82</b>				

<b>R83</b>	
<b>R84</b>	
<b>R85</b>	