FACILITIES AND ACADEMIC PERFORMANCE IN BIOLOGY AMONGST STUDENTS OF KIRIRWA SECONDARY SCHOOL, MURANG'A SOUTH DISTRICT KENYA

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DECLARATION

I KENNETH KAMAU NJOROGE declare that the material in this book has not been presented elsewhere for any academic qualification.

KENNETH KAMAU NJOROGE

DATE

10/09/2008
APPROVAL

This research report is submitted for examination with my approval as a University Supervisor.

Signed

Ms Nankya Oliver

Date

20-11-2021
DEDICATION

This work is affectionately dedicated to my wife and children for their support patience and understanding during this period of study not forgetting all those who constantly wished me success.
AKNOWLEDGEMENTS

I also owe a lot of appreciation to all those who assisted me in carrying out this research. I am grateful to my supervisor Ms. Nankya Oliver who tirelessly went through my work and inspired me to dig deeper into the core of the matter. Her kind criticism, patience and understanding, assisted me a great deal.

I am indebted to my friends who gave me encouragement in time of difficulties. Thanks also go to all those lecturers who impacted professionalism into my work.

I wish to thank my family for their love, financial support and inspiration during my stay in Kampala International University (K.I.U).

Finally, I would like to thank all my respondents and those within a short notice without which this work would not have been possible.
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ABSTRACT

The purpose of this study was to investigate the factors affecting the performance in Kirirwa Secondary school Murang’a South District. The specific objectives of the study were to determine if discipline affects the students’ academic performance in Biology in Kirirwa Secondary school, to determine if science teacher quality affects the students’ academic performance in Kirirwa Secondary school; and to determine if school science facilities affect the students’ academic performance in Kirirwa Secondary school. The methods used for data collection was questionnaires and interview guides to students, teachers and head teachers of the schools involved in the study. In chapter four, the findings were presented and interpreted in relation to the study objectives and research questions. While linking to the existing literature, results included demographic characteristics, frequency and percentages. Based on the findings it was observed that teacher qualities, discipline of students; and school facilities have a direct impact on the students’ academic performance. In chapter five, development of solutions to the problem, summary of the findings and conclusions were attempted. The findings suggested recommendations that the Government should provide more teaching learning facilities in schools to make the learning environment more attractive to students and teachers among other recommendations.
CHAPTER ONE
INTRODUCTION

1.0 Introduction
This is the first research chapter in this paper. It vies the background of the study, problem statement, objectives and others.

1.1 Background to the study
The government of Kenya attaches great importance to the development of education sector, for it recognizes that education is a powerful tool for transformation of society (Education White Paper 1992). Education plays a key role in achieving moral, intellectual, ideological, cultural and social development of the people in society, as well as the national goals of unity, democracy, economic progress and security of all its citizens. Emphasis is put on the role of education in liberating people from the vicious cycle of poverty, dependence, ignorance, disease and indignity, and in the process of building a self reliant nation with a sustained independent economy.

The government notes with concern the problems it faces in its effort to cause rapid development of education. The quality of education has been seriously eroded at all levels due to civil strife and economic decline. Schools are ill-equipped, instructional materials are in short supply, teachers are poorly remunerated and many of them are unqualified or incompetent.

Although the government has undisputed need for bringing about the desired changes and improvement in the system of education, it is at this stage having severe resource constraints. It’s therefore, quite a challenging task to cater for the development needs of education.
The Kenyan Human Rights Commission Report (KHRCR 1999) notes that there are not enough secondary schools to absorb all children who qualify for secondary education. Many school administrators overwhelmed with pressure from parents, admit large numbers of students which do not march with the available facilities and teachers. A lot of discipline problems have been reported in schools due to unmanageable numbers.

Chaube (2000) explained that it’s a right of the individual to receive at least primary and secondary education which is important in democratization of any society. Secondary education is designed to provide children with the academic knowledge and skills they need to function successfully in society and to prepare them to pursue further education, to enter the work force to be responsible active citizens.

The Education office noted that while performance in other subjects was above average, that of Biology was much below the average. The quality of the teaching force, alongside the completion rates and transition rates, are some of the key determinants of efficiency and effectiveness at any level of Education (MOEST 2000) According to UNESCO (1964), whatever the pattern of teaching may be, the teachers part in it is the most important single factor.

If students do not receive the knowledge and skills they need to be productive, then the schools have not succeeded in their mission (US Department of Education 1991). It’s upon this background that the study will be undertaken to investigate the influence of teachers’
competence, quality of teachers and discipline of students on academic performance of Biology.

1.2 Statement of the problem
According to the Ministry of Education (MOE) report of the third Teacher Education Conference in Njoro (1995) the student’s performance in Biology heavily depends on a number of factors. According to data obtained from Murang’a South District Education Office (District Education Office) teaching of Biology is likely to be wanting as reflected in the poor performance of students in KCSE results of all the previous years. This therefore necessitates the need to carry out the study into the factors affecting the performance of Biology in Murang’a South District.

1.3 Research Objectives
1.3.1 General objective
The general objective of the study was to investigate the factors affecting the performance of Biology in Kirirwa Secondary school Murang’a South District.

1.3.2 Specific objectives
1. To determine if discipline affects the students academic performance in Biology

2. To determine if teacher qualities affects the students academic performance in Biology

3. To determine if school facilities affect the students academic performance in Biology
1.4 Research questions

1. What is the relationship between discipline and the students’ academic performance in Biology?

2. What is the relationship between teacher qualities and the students’ academic performance in Biology?

3. What is the relationship between school facilities and the students’ academic performance in Biology?

1.5 Significance of the study

This research is significant in a number of ways:

It tries to provide information to policy makers in the education ministry, administration of schools; teachers, parents and other stakeholders who will enable them make improvements in education service delivery.

It tries to guide students together with their parents to identify means of improving upon academic performance in Biology.

It tries to contribute to the existing literature about better education service delivery and provoke further research in this field.
1.6 Limitations of the research

The first limitation of this study was time constraints. There was little time given for the study and yet a lot was required in terms of finding the required information from the respondents.

Also there was the issue of some respondents who failed to return the questionnaires as the research had to consider other people who in the first place were not supposed to be part of the study.

Finally the issue of financial resources needed to carry out the study as there was no body who offered to sponsor the researcher. He had to foot all the bills on his own.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter reviews literature as an account of the knowledge and ideas that have been established by accredited scholars and experts in the field of study. It is guided by the objectives of the study outlined in chapter one.

2.1 Discipline of students and academic performance of Biology
In recent years, policy makers, educators, parents and students increasingly have expressed concern about the incidence of school related criminal/behaviour. Although concern has grown, several researchers show that violent behaviours, smoking, theft have increased especially in secondary schools.

School discipline has a diversity of connotations, as many people perceive it to mean many different things. According to Kasozi (1997) discipline refers to a situation of remaining inside legal bounds of law as laid down by the school administration.

Scheviakore (1955), Musaazi (1982) emphasize the need for orderliness in the school. They emphasize that students, teachers, school employers and administrators should all be orderly as school discipline and good academic performance is a collective responsibility and a prerequisite for school success.
The Education Policy Review Commission Report (EPRCR 1992) clearly spells out discipline as one of the aims and objectives of education at all levels of the education system.

According to Mafabi (1995) discipline is the underlying factor in all school activities; they cannot be pursued without it. In the absence of discipline, there is anarchy, a situation which makes it impossible for schools goals to be achieved. Most of these writers emphasize the need for discipline as a prerequisite for school success; however, they do not explicitly illustrate how discipline can be enforced in the school setting. School of authorities should not only stress the importance of discipline they also need to put mechanisms of enforcing it.

Okumbe (1998) describes discipline as the action by management to enforce organizational standards. He stresses that all members of educational organization are required to strictly adhere to the various behavioral patterns necessary for maximum performance. In support of this, Chaube (2000) contends that an opinion may be formed about the school by observing the discipline among students. It is necessary for every school to enforce certain rules of conduct to ensure discipline and discipline is essential if rules are to be implemented.

According to Musaazi (1982) student discipline means that students are provided with an opportunity to exercise self control to solve school problems, to learn and to promote the welfare of the school. Ssekamwa (2000) in agreement with Musaazi adds that discipline is the development of self worth, self control, respect for self and others and the adherence to the school routine set up in terms of schedules and school regulations.
It is very important for school authorities to give freedom to the students to develop the self esteem and exercise self control. There are many school authorities who use this approach to enforce discipline in schools. The researcher however feels that this method could be effective for post secondary school students and may not be appropriate for secondary Scholl students.

Docking (1980) considers discipline as an important element in the process of socialization formation of character, a system of controls, which enables teaching to take place on as conceptually related to the process of education.

According to Mafabi et al (1995) symptoms of indiscipline include; habitual absenteeism from class and from school as a whole, late coming, telling lies, rudeness, vandalism, aggression, smoking and drinking while at school, evading school activities, bullying of new students, indecent forms of dressing. These however do not explain how these behaviours affect academic performance because there are many students involved in these kinds of bahaviour but perform well.

Zoe Bellars and Brad McGann, eighth-graders at Swanson Middle School in Arlington, do their homework faithfully and practice their musical instruments regularly. In a recent delayed gratification experiment, they declined to accept a dollar bill when told they could wait a week and get two dollars. Those traits might be expected of good students, certainly no big deal. But a study by University of Pennsylvania researchers suggests that self-discipline and self-denial could be a key to saving U.S. schools.
According to a recent article by Angela L. Duckworth and Martin E.P. Seligman in the journal Psychological Science, self-discipline is a better predictor of academic success than even IQ. "Underachievement among American youth is often blamed on inadequate teachers, boring textbooks, and large class sizes," the researchers said. "We suggest another reason for students falling short of their intellectual potential: their failure to exercise self-discipline. We believe that many of America's children have trouble making choices that require them to sacrifice short-term pleasure for long-term gain, and that programs that build self-discipline may be the royal road to building academic achievement." But how, educators, parents and other social scientists want to know, do you measure self-discipline? Duckworth, a former teacher studying for a doctorate in psychology, and Seligman, a psychology professor famous for books such as "Learned Optimism," used an assortment of yardsticks, including questions for the students (including how likely they are to have trouble breaking bad habits, on a 1-to-5 scale), ratings by their teachers and parents and the $1-now-or-$2-later test, which the researchers call the Delay Choice Task.

The results: "Highly self-disciplined adolescents outperformed their more impulsive peers on every academic-performance variable, including report card grades, standardized achievement test scores, admission to a competitive high school and attendance. Self-discipline measured in the fall predicted more variance in each of these outcomes than did IQ, and unlike IQ, self-discipline predicted gains in academic performance over the school year."

The study looked at one group of 140 eighth-graders and another group of 164 eighth-graders in a socio economically and ethnically diverse magnet school in a Northeast city. The names of the city, the
school and the students were not revealed, so this reporter attempted
a very small and unscientific version of the Delay Choice Task at
Swanson.

Of the 10 eighth-graders approached during their lunch period, eight
chose to forgo $1 right away in exchange for $2 in a week. The
mothers of Zoe and Brad, who both declined the $1 offer, said they
were not surprised by their children's decisions and thought the
correlation of self-discipline with academic success made sense.

"I remember when Zoe was in the second grade, they had to do this
poster of what they would do with $1 million," recalled her mother,
Arlene Vigoda-Bellars, a former journalist. Her daughter said she
would use it to go to Harvard. In preparation for that college
competition, Zoe is taking intensified algebra and second-year
Spanish, has a voice scholarship at a music school and plays first flute
in Swanson's symphonic band.

Bertra McGann, (2000) a technical writer married to a Foreign Service
officer, said that when Brad was 4, the family lived in Kenya and he
was put in a class with older students. "He would come home from
school and hand me the flashcards and work on his sight reading -- an
extraordinary amount of self-discipline for a 4-year-old," she said. Now
13, Brad plays clarinet and basketball and earned his black belt in tae
kwon do by practicing two hours a day, six days a week for two years.

Some experts expressed doubt about the Delay Choice Task. "I'd
assume it was some kind of scam, take the buck and run," said Bob
Schaeffer, public education director of FairTest, the National Center for
Fair & Open Testing, a nonprofit group that is critical of over-reliance
on testing in U.S. schools. Zoe refused to take the $2 at the end of the
experiment. "I think it is rude to take money from strangers," she said. (Bertra McGann, 2000)

Zoe always does her homework the minute she gets home from school at 2:30 p.m. Her friends, however, are not so diligent. During a telephone interview, Zoe noted that several of her friends' "away messages" -- put up on their online instant-messaging systems to explain why they aren't responding -- said they were doing their homework. "It's Sunday night," she said. "I finished mine Friday." (Bertra McGann, 2000)

According to Bertra McGann (2000), some educators said schools can teach self-discipline. Rafe Esquith, an award-winning Los Angeles teacher, often tells his low-income fifth-graders about a study that showed that hungry 4-year-olds willing to wait for two marshmallows were more successful years later than those who gobbled up one marshmallow immediately.

Ryan Hill, director of the TEAM Academy Charter School in Newark, N.J., said students at his school, a Knowledge Is Power Program middle school in a low-income neighborhood, are required to stay at school until their homework is done if TV interfered with study the night before. "Over time, they learn to just do their homework before watching TV, delaying gratification, which becomes a habit of self-discipline," Hill said. (Bertra McGann, 2000)

Educational psychologist Gerald W. Bracey noted the power of self-discipline in sports, citing tennis star Chris Evert, who triumphed over more talented players because she practiced more. Martha McCarthy, an education professor at Indiana University, said such habits could be taught in early grades, with methods such as "giving students time to
visit with their friends if they have been attentive during a lesson." (Bertra McGann, 2000)

Will there be a Self-Discipline Test, the SDT, to replace the SAT? Most experts don't think so. Clever but lazy college applicants could "pretty easily figure out what the right answers would be to appear self-disciplined," said University of Virginia psychology professor Daniel T. Willingham. Bruce Poch, vice president and dean of admissions at Pomona College in Claremont, Calif., said self-discipline was good but not necessarily the only key to success. Albert Einstein, Poch said, "wasn't the most self-disciplined kid, at least according to his math grades through school." (Bertra McGann, 2000)

That hasn't stopped Duckworth, who has two small daughters, from using her findings at home. Her eldest daughter, Amanda, 4, gets only one piece of saved Halloween candy each night after dinner. Asked why, Amanda says slowly and carefully, "It is de-LAY of gra-ti-fi-ca-tion. (Bertra McGann, 2000)

2.2 Quality of teachers and academic performance of Biology
Various writers have come up with views about the characteristics of competent teachers and benefits of having such teachers as follows:

Craig et al (1998) holds the view that the quality of the teachers' performance determines the students' achievement. Factors such as the year of teacher training, the teachers verbal fluency, subject matter knowledge, having books and materials, knowing how to use them, teacher expectation of pupil performance, time spent on classroom preparation and frequent monitoring of student progress determine the quality of performance of a teacher.
Regardless of the training, the experience and the preparation undergone, a teacher should have adequate motivation to teach. Lack of incentives in schools and small salaries offered to teachers compel them to work in many places to make ends meet. This renders many teachers ineffective at their work.

The commonwealth Report (1974) explains teacher competence as having a knowledge of child development, of the material to be taught and suitable methods, his skills must enable him to teach, advice and guide his pupils, community and culture with which he is involved; his attitudes should be positive without being aggressive, so that his examples are likely to be followed as he transmits explicitly, and implicitly the national aims and moral and social values.

In support of this, Konchhar (2000) contends that discipline problems cannot be prevented yet most of them will not arise in the classroom of intelligent, hardworking, teachers who plan their work effectively, motivate their students skillfully and provide a friendly climate.

Rayns (1969) holds the view that, “Teaching is complex and many sided demanding a variety of human traits and abilities. These may be grouped into two, first those involving the teacher’s mental abilities and skills, his understandings of psychological and educational principles and his knowledge of general and specific subject matter to be taught and second; those qualities stemming from the teacher’s personality, his interest attitudes and beliefs, his behaviour in working relationships with pupils and other individuals and the like”.
In time with these views, Brinkerhott and white (1988) argued that teachers have the authority to control what goes on in classrooms and that authority must be established with each separate class. Some teachers are unable to do this; their classes run wild and their students terrorize them.

Anderson, et al (1992) contends that nothing is more critical to the quality of school than its staff. Teachers contribute to the whole development of children both inside and outside the classroom and not simply through the transmission of information and skills. Teachers need to interact with children even outside class. This instills confidence among the children in dealing with the teacher and enhances free interaction even in class.

Hargreaves and Fullan (1992) hold the view that on top of having deeper knowledge of and confidence in teaching their subject(s), the teacher should know how to teach mixed ability classes and how to respond to different learning styles of their pupils.

It’s from the above many; writers give many characteristics and qualities, which effective teachers should posses. There are many students who perform well without teachers in some subjects while others will well-qualified teachers perform poorly. The researcher therefore aims at establishing the effect of teacher competence on academic performance of students in secondary schools.

2.3 Facilities in schools and academic performance of Biology
The success or failure of secondary schools is measured against the presence or absence of structures and facilities provision and
management. Nsubuga (1977) holds the view that an important element of a good school is that of facilities. He emphasizes that a good school should have adequate facilities which help with teachers and pupils to effectively teach and effectively learn in a convenient and comfortable environment.

According to Kochhar (2001) physical facilities contribute a lot to the general atmosphere of the school. He suggests that healthy surroundings, good sanitary arrangement leave little scope for irritation. Adequate library and reading room facilities, special room for different subjects, common room and so will keep the children busy and away from indiscipline.

Musaazi (1982) and Ssekamwa (2000) agree that most programmes of instruction and pupil services require some physical facilities such as school building, school grounds, enough desks, chairs, teaching materials and laboratories needed in instruction and incidental to institution. The possession of adequate facilities in the school for studying is a characteristic of an effective school.

However, there are many students who perform well in schools with limited facilities and there are also many students who perform poorly in schools, which are well facilitated. The researcher therefore aims at carrying out a critical analysis of the correction between academic performance and the availability of facilities in secondary schools.
CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction
This chapter explains the methods that the researcher used to select the geographical areas, from which research was carried out and methods of selection of respondents. It also explains the methods used to collect process and analyze data.

3.1 Research Design
This study followed a descriptive research design because the researcher will use one school in the District as a case study. Both qualitative and quantitative methods were used. The quantitative and qualitative techniques were used to collect and analyze data on the impact of school facilities in relation to the academic performance of students.

3.2 Study Population
The study was carried out in Kirirwa Secondary school, in Murang’a South District. The study involved students, and teachers in this study.

3.3 Sample Framework
3.3.1 Sample Size
A total of one hundred forty nine respondents were used from the total population of the schools which were used for this study as illustrated by the table 3.1
Table 3.1: Categories of Sample

<table>
<thead>
<tr>
<th>Categories of Respondents</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>9</td>
</tr>
<tr>
<td>Students</td>
<td>140</td>
</tr>
<tr>
<td>Total</td>
<td>149</td>
</tr>
</tbody>
</table>

3.3.2 Sample Technique

Using a convenient sampling technique, a total of one hundred forty nine respondents were picked at random to participate in this study.

3.3.3 Sample Procedure

In carrying out research the researcher first got a release letter from the course administrators which the researcher took to the schools under study. The researcher then was given permission by the authority to access information from the school.

3.4 Methods for Data Collection

3.4.1 Instruments

- **Questionnaires**
  These were used to collect information from some students since these respondents are literate and are able to understand the language being used.

- **Interviews**
  Interviews were held with teachers since they are busy and have no time to answer questionnaires.

3.4.2 Sources of Data

This study used both primary and secondary data:
Primary data was collected using Questionnaires and Interview Guides, which was given to students and teachers respectively.

Secondary data was through Document analysis in the form of Reports, training manual, news papers, and journals for the period under study was read and the required data collected from them.

### 3.5 Data Processing and Analysis

Qualitative data involved three sets of activities which included editing, coding and frequency tabulations. Editing was done by looking through each of the field responses from questionnaires and interview guides ascertaining that every applicable question has an answer and all errors eliminated for the completeness, accuracy and uniformity.

The researcher then proceeded on to coding the various responses given to particular questions that lack coding frames, he then established how many times each alternative response category was given an answer using tally marks which was later added up.

Data was then presented in frequency tabulations rendering it ready for interpretation. Quotations and field notes made were also included.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction
The study investigated the factors affecting the performance of Biology in Kirirwa Secondary school Murang'a South District. The findings from the respondents are presented in chapter four below:

4.1 Discipline in schools and academic performance of Biology.
When the students and teachers were requested to respond to the question on what they considered to be the level of discipline in their school, the following were the results.

Table 1: The level of discipline in the school

<table>
<thead>
<tr>
<th>Comment</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>24</td>
<td>16.1%</td>
</tr>
<tr>
<td>High</td>
<td>30</td>
<td>20.1%</td>
</tr>
<tr>
<td>Moderate</td>
<td>78</td>
<td>52.4%</td>
</tr>
<tr>
<td>Low</td>
<td>17</td>
<td>11.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Students and teachers had different views about the level of discipline in their schools. However, quite a small number respondent that the level of discipline was very good which represented 54 of the total number of respondents. Majority were of the opinion that discipline was moderate or low 95.
The responses about the level of academic performance in schools judged at national level were as follows:

**Table II: Level of academic performance of Biology in school**

<table>
<thead>
<tr>
<th>Comment</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td>High</td>
<td>41</td>
<td>27.5%</td>
</tr>
<tr>
<td>Moderate</td>
<td>77</td>
<td>51.7%</td>
</tr>
<tr>
<td>Low</td>
<td>15</td>
<td>10.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The results were statistically significant. The students and teachers had different views on the level of academic performance of their schools judged at national level. Those who stated that performance was very high or high were 57 while those who were of the view that performance was moderate or low were 92. These meant that the majority of students and teachers recognize the importance of discipline vis-à-vis academic performance.

**Table III: Combining table I and II the results are as follows**

<table>
<thead>
<tr>
<th>Comment</th>
<th>Level of discipline in school</th>
<th>Academic performance at national standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>16.1%</td>
<td>10.7%</td>
</tr>
<tr>
<td>High</td>
<td>20.1%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Moderate</td>
<td>52.4%</td>
<td>51.7%</td>
</tr>
<tr>
<td>Low</td>
<td>11.4%</td>
<td>10.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
From table III, the researcher established that responses on discipline and academic performance moved in the same direction.

A big number of respondents whose responses on moderate and low discipline tallies with an equally big number of responses on academic performance. This implies that when discipline is moderate or low 95, academic performance is equally moderate or low 92. Conversely when discipline is very high or high 54 academic performance is equally very high or high 57.

Students were asked to state the most common types of indiscipline in their schools and the responses were as follows;

**Table IV: Types of indiscipline in schools**

<table>
<thead>
<tr>
<th>Comment</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late coming</td>
<td>60</td>
<td>40.1</td>
</tr>
<tr>
<td>Dodging classes</td>
<td>45</td>
<td>30.0</td>
</tr>
<tr>
<td>Escaping from school</td>
<td>38</td>
<td>25.3</td>
</tr>
<tr>
<td>Disrespect for teachers</td>
<td>4</td>
<td>3.6</td>
</tr>
<tr>
<td>Others e.g. vandalism</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Immorality, bullying, drug abuse, noise making.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The research established that late coming, escaping from schools, dodging classes are indiscipline cases common in the schools. From
Table IV, it can be observed that most types of indiscipline are associated with deviance from schools routine represented by 95.4%. This includes late coming (40.1%), dodging lessons (30%), and escaping from school (25.3%). Only 4.6% are other types of indiscipline. Students miss classes and this directly affects their performance.

4.2 Quality of teachers and academic performance of Biology
To establish the effect of quality of teachers on academic performance in the schools, a number of items were included in the questionnaire that required head teachers to state the teachers in each school and their qualification.

Table V: Qualification of science teachers

<table>
<thead>
<tr>
<th>Classes</th>
<th>Graduate teachers</th>
<th>Diploma teachers</th>
<th>License teachers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form 1</td>
<td>10(40%)</td>
<td>15(60%)</td>
<td>-</td>
<td>65(32.5%)</td>
</tr>
<tr>
<td>Form 2</td>
<td>10(52.6%)</td>
<td>9(47.4%)</td>
<td>-</td>
<td>29(24.7%)</td>
</tr>
<tr>
<td>Form 3</td>
<td>1(8.2%)</td>
<td>9(75%)</td>
<td>2(16.7%)</td>
<td>19(15.6%)</td>
</tr>
<tr>
<td>Form 4</td>
<td>8(38.1%)</td>
<td>13(61.9%)</td>
<td>1(48%)</td>
<td>31(27.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>29(36.4%)</td>
<td>46(59.7%)</td>
<td>3(3.9%)</td>
<td>149(100%)</td>
</tr>
</tbody>
</table>

According to EPRCR (1992) both graduate and diploma teachers are qualified to teach secondary schools. Only 3.9% of teachers do not have the teaching qualification.

However, the teacher pointed out that although the available teachers are qualified they are not enough to effectively handle the large numbers of students.
Responses about the experience of teachers were as follows;

**Table VI: Experience of science teachers**

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 yrs</td>
<td>83</td>
<td>55.8</td>
</tr>
<tr>
<td>3-5yrs</td>
<td>19</td>
<td>13.0</td>
</tr>
<tr>
<td>6-8yrs</td>
<td>18</td>
<td>11.7</td>
</tr>
<tr>
<td>Above 8yrs</td>
<td>29</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The results show that 68.8% have experience of less than 5yrs of teaching while 31.2% have more than 5yrs of teaching.

To establish whether the limited experience had any effect on the quality of teaching, questionnaire were administered to Heads of departments and students. A number of observations were also made to assess the performance of teachers during the teaching learning process.

The questionnaire for heads of departments required them to assess their teachers in as far as quality teaching is concerned.

The responses were in table VII below;
Table VII: Rating of Heads of departments about science teachers

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of schemes of work</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Giving exercises</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Making exercise</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Making corrections with students</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Completion of the syllabus</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>20</strong></td>
<td><strong>10</strong></td>
<td><strong>4</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

The table VII shows the responses of Heads of Departments about the performance of teachers in the four schools.

93% of the heads of departments were of the view that teachers make preparations for teaching while 6.8% commented that teachers don’t make adequate preparations for teaching.

Students were also asked to assess the quality of teaching in their schools.
The results are shown in table VIII below;

**Table VII: Students rating of science teachers’ performance**

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation of subject matter concepts</td>
<td>41</td>
<td>89</td>
<td>9</td>
<td>1</td>
<td>140</td>
</tr>
<tr>
<td>Giving exercises</td>
<td>25</td>
<td>89</td>
<td>25</td>
<td>2</td>
<td>140</td>
</tr>
<tr>
<td>Making exercise</td>
<td>40</td>
<td>81</td>
<td>17</td>
<td>2</td>
<td>140</td>
</tr>
<tr>
<td>Making corrections</td>
<td>20</td>
<td>91</td>
<td>22</td>
<td>7</td>
<td>140</td>
</tr>
<tr>
<td>Free interaction with students</td>
<td>31</td>
<td>76</td>
<td>20</td>
<td>13</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>157</strong></td>
<td><strong>517</strong></td>
<td><strong>93</strong></td>
<td><strong>25</strong></td>
<td><strong>140</strong></td>
</tr>
</tbody>
</table>

Results from table VII show that 90.48% of the students were of the view that teachers explain the subject concepts thoroughly on the other hand 9.52% responded that the explanations of subject concepts were not clear. 74.29% indicate that teachers give exercises in class while 25.71% were of the view that teachers don’t give exercises in class. Also, students revealed that 81.9% of the teachers mark exercise while 18.1% do not mark exercises. 72.4% of the students further held the view that teacher make corrections after making the exercising while only 27.6% did not. This therefore means that students were satisfied with the quality of teaching.
4.3 Facilities in school and academic performance of Biology

The students head teacher and heads of department were requested to rate the adequacy of facilities in schools for teaching and learning. The results were summarized and presented in the table IX below.

### Table IX: Rating of adequacy of science facilities in schools

<table>
<thead>
<tr>
<th>Rating</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>6</td>
<td>4.5</td>
</tr>
<tr>
<td>Agree</td>
<td>45</td>
<td>30.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>68</td>
<td>45.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>31</td>
<td>19.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

From table IX the respondents who were of the view that the schools had adequate facilities for teaching and learning were 34.6%, while those who were of the view that the facilities were not adequate were 65.4%.

Interviews with head teachers revealed that schools depend mainly on fees from parents which is not even paid on time. Any capital developments in these schools are done from the fees raised. Most of the parents are poor and cannot afford high fees for their children.

Students also pointed out that they lack important facilities like computers and televisions in their schools. Therefore they are not kept abreast of the innovations, inventions and current issues important for academic work. This puts them at a competitive disadvantage in
relation to those students who use internet and other facilities to access information which is not available in text books.

From the questionnaire responses, interviews and observations, there are limited facilities in schools. Lack of facilities for teaching and learning is negatively affecting the academic performance of these schools.
CHAPTER FIVE
DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

5.0 Introduction
This chapter deals with the summary of the findings, conclusions and recommendations. These are presented according to each of the objectives for purposes of being systematic and they are discussed in relation to research carried out (library research, interviews) that was used to guide the student where applicable.

5.1 Discussions
5.1.1 Discipline of students and academic performance of Biology
Students and teachers were asked about the level discipline of students in their schools. The respondents had different views about this issue. 36.2% were of the view that discipline was high while 36.8% were of the opinion that discipline was low. The respondents also had varying views about the level of academic performance in their schools. 38.8% were of the view that the level of academic performance was high or very high while 61.7% were of the view that academic performance was moderate or low. Therefore it was discovered that the indiscipline of students affected negatively their achievement in biology.

5.1.2 Quality of science teachers and Academic performance
The teachers were found to be 36.4% graduate, 59.7% diploma holders. Only 3.9% were licensed teachers. Therefore 96.1% of the teachers have the required qualifications to teach.
83.18% of the teachers commented that the teaching is done satisfactorily while 16.82% were of the view that the teaching is poorly done. 77.5% of the students had the view that the teachers perform well in class while 22.5% commented that the quality of teaching was not good. The results were therefore statically significant that teachers perform their work well.

5.1.3 Science Facilities in schools and Academic performance of students
Students, teachers and head teachers were asked to rate the adequacy of facilities in their schools. 34.6% responded that facilities were adequate and 68.4% commented that facilities were inadequate. It was therefore concluded that there were inadequate facilities in school and this therefore affected negatively the students’ performance in Biology.

5.2 Recommendations
As a result of the above conclusions, the researcher finally makes the following recommendations to the various stakeholders.

- School children should be encouraged to work hard by providing scholarships to the best students in class. This will encourage competition among the students.

- Some of the schools can be made partly day and partly boarding to cater for students who come from far and can afford boarding fees. This could reduce on late coming and escaping from school.
• More meetings between school administrators, teachers, students and parents should be organized to sensitize the parents about their roles in disciplining their children.

• To retain teachers in upcountry schools, government should consider introducing upcountry allowance in the remuneration scheme of teachers.

• Government should provide more teaching learning facilities in schools to make the learning environment more attractive to students and teachers.

• Computer facilities with internet should also be provided in schools so that students can access information relevant to their studies and to expose them to what is happening in the world like their counter parts in other schools.

5.3 Conclusions
The following conclusions were generated from the findings of the study.

The results obtained indicate that when the students are indiscipline the time for the study is disrupted and wasted. This greatly affects academic performance.

Science teachers in Kirirwa Secondary school, in Murang’a South District are qualified and perform their work well. Therefore the poor academic performance is not attributed to the teachers.
Kirirwa Secondary school, in Murang’a South District was found to have limited science facilities and this contributes to the poor academic performance. The schools with more facilities obtain better quality results than those with fewer facilities.
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Nsuguba (1977) *Help yourself with education ideas*. Kampala: M.K


QUESTIONNAIRE FOR HEADS OF DEPARTMENT

Dear respondent,
I am a student of Kampala International University carrying out an academic research on the topic “facilities and academic performance of students in Biology in Kirirwa Secondary school Murang’a South District.” You have been randomly selected to participate in the study and are therefore kindly requested to provide an appropriate answer by either ticking the best option or give explanation where applicable. The answers provided will only be used for academic purposes and will be treated with utmost confidentiality.

NB: do not write your name anywhere on this paper

1. Age
   a) 20-25  
   b) 26-30  
   c) 30-35  
   d) 36-40  
   e) Above 40

2. Sex
   a) Male  
   b) Female  

3. Highest qualification attained
   a) Certificate  
   b) Diploma  
   c) Degree  
   d) Other  

4. State whether you are a trained or licensed Teacher
   a) Trained teacher  
   b) Licensed teacher  

34
5. How long have you taught in this school?
   a) 1-3 yrs [ ]
   b) 4-6 yrs [ ]
   c) 7-9 yrs [ ]
   d) 10 yrs and above [ ]

Please indicate the number that is appropriate to you or your situation on the right side boxes using the rates given below:

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Teachers in this school make schemes of work and lesson plans before going to teach.</td>
</tr>
<tr>
<td>2.</td>
<td>Teachers in this school give exercises while teaching.</td>
</tr>
<tr>
<td>3.</td>
<td>Teachers make corrections in class with students after marking exercises.</td>
</tr>
<tr>
<td>4.</td>
<td>Teachers in the school interact freely with students in class.</td>
</tr>
<tr>
<td>5.</td>
<td>Students in this school are committed to studies.</td>
</tr>
<tr>
<td>6.</td>
<td>Teachers in this school cover the designed syllabus adequately and in time to allow for revision by students.</td>
</tr>
<tr>
<td>7.</td>
<td>This school has adequate facilities for teaching and learning.</td>
</tr>
</tbody>
</table>
8. What types of indiscipline commonly occur in this school?

9. What do you consider to be the cause of indiscipline in this school?

10. In your view how can the academic performance in your school be improved?
QUESTIONNAIRE FOR STUDENTS

Dear respondent,
I am a student of Kampala International University carrying out an academic research on the topic “facilities and academic performance of students in Biology in Kirirwa Secondary school Murang’a South District.” You have been randomly selected to participate in the study and are therefore kindly requested to provide an appropriate answer by either ticking the best option or give explanation where applicable. The answers provided will only be used for academic purposes and will be treated with utmost confidentiality.

NB: do not write your name anywhere on this paper

Background information

1. Age
   a) 13-15  [ ]  b) 16-18  [ ]  c) 19-21  [ ]

2. Sex
   a) Male  [ ]  b) Female  [ ]

3. Class
   S.1  [ ]  S.2  [ ]  S.3  [ ]
Please indicate the number that is appropriate to you or your situation on the right side boxes, using the rates given below.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>agree</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

(a) **Discipline of students and academic performance**

1. Students regard towards school regulations
2. The level of discipline in our school is low
3. Teachers concern towards discipline is low

(b) **Facilities in school and academic performance**

1. We have adequate furniture in classrooms
2. We have a library with relevant books we use for academic purposes
3. The available facilities are adequate for studies
QUESTIONNAIRE FOR TEACHERS

Please kindly spare time and respond to the following questions. The information is solely for academic purposes. You are assured that the information given shall be treated with utmost confidentiality therefore do not disclose or write your name on the questionnaire.

1. Age
   20 – 25 □
   26 – 30 □
   30 – 35 □
   36 – 40 □
   Above 40 □

2. sex
   Male □
   Female □

3. Highest qualification attained
   Certificate □
   Diploma □
   Degree □
   Other □

4. State whether you are a trained or licensed teachers
   a) Trained teacher □
   b) Licensed teacher □
Please indicate the number that is appropriate to you or your situation on the right side boxes using the rates given below;

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>agree</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Quality of teachers and academic performance

1. Teachers in this school make schemes of work and lessons plans before going to teach.

2. Teachers in this school give exercises while teaching.

3. Teacher make corrections in class with students after marking exercises.

(c) Facilities in school and academic performance

1. We have adequate furniture in classrooms

2. We have a library with relevant books we use for academic purposes

3. The available facilities are adequate for studies
INTERVIEW GUIDE FOR THE HEAD TEACHER

1. How long have you been a Head teacher in this school?
2. How do you rate the academic performance of your school nationally?
3. How many teachers do you have in your school? Please state the number of each group based on their academic qualifications.
   Graduate ------------
   Diploma teachers----------
   Licensed teachers--------
4. How is the relationship between students and teachers in your school?
5. Do you give guidance to students about their academics?
6. Could you account for the fact that some few students perform better than others under the same learning conditions?
7. What type of indiscipline commonly occurs in your school?
8. What do you consider to be the cause of indiscipline in your school?
9. Does indiscipline affect students’ academic performance?
10. Could you suggest ways of minimizing indiscipline in your School?
11. Does your school have adequate facilities for teaching and learning?
12. If not which facilities are missing?