INSIGHT AND EXAMINATION PERFORMANCE AMONG SECONDARY SCHOOL STUDENTS IN KIMILILI SUB-COUNTY BUNGOMA COUNTY

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E55/13300/2005

A THESIS SUBMITTED IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY

OCTOBER 2014
DECLARATION

I declare that this thesis is my original work and has not been presented for a degree in any other university for consideration. This thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other sources, including internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

Signature ……………………………………… Date: ……………………

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This thesis has been submitted for examination with our approval as university supervisors.

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Signature ……………………………………… Date: ……………………

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Kenyatta University
DEDICATION

To my late grandfather Sir Canninghum [RIP].

You went away too fast.
ACKNOWLEDGEMENT

What I seem to have achieved academically and in life generally is the result of the combined efforts of all my family members. In a special way however I would like to single out my mom, Alice Nakapanka, dad, Philip Wawire, my best friend, Rosemary Namuyumbu, son, Jotham and daughter Sarah. In a special way too I thank my able, friendly and understanding mentors Prof. Fredrick Okatcha, Prof. Haniel Gatumu and Dr. Edward Kigen. I also thank all those who by their negative attitudes inspired me on and made me resolve to achieve.
The purpose of the study was to investigate the relationship between insight and students' academic performance in public secondary schools in Bungoma County. The specific objectives of the study were: to investigate the existence and strength of association between insight and students' academic performance. Correlation design was used for the study and data was collected using an insight test and merit mark lists. The sample population comprised of one thousand eight hundred and eighty form four students in the sub-county in the year two thousand and nine. Kimilili sub-county is found in Bungoma county. It comprises of a population of about ten thousand two hundred and fifty one inhabitants. The main economic activity is farming. The division boasts of one of the best performing schools in the country, Friends School Kamusinga. Other secondary schools include Moi Girls' High School Kamusinga, Kimilili Boys' High school, Maeni Girls' secondary school, St. Theresa's Girls' Secondary School and others. Though Kamusinga has for many years shown exemplary performance in national examinations, many schools within the sub-county still post dismal results in examinations especially national examinations. The study sample comprised of one hundred and eighty students drawn from ten of the twenty one public secondary schools within the division. The schools were stratified into girls only (seven), boys only (three) and mixed (eleven). Random point sampling was then used to select the various schools from which students took part in the study. Ninety students were drawn from five mixed schools, seventy two from four girls only schools and eighteen from one boys only school. The study was guided by the constructivist theory of learning and gestalt theory. A Pearson product moment correlation coefficient of 0.88 was obtained. An actual academic score was found to fall within the band of ± 5.13 from a predicted score in about 95 of 100 predictions.
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<th>Abbreviation</th>
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</tr>
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<tbody>
<tr>
<td>KCSE</td>
<td>Kenya Certificate of secondary Education</td>
</tr>
<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
</tr>
<tr>
<td>DOS</td>
<td>Director of Studies</td>
</tr>
<tr>
<td>IQ</td>
<td>Intelligence Quontient.</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

1.1 Background To The Study

The term examination is known to most students in formal learning institutions. It is a term which however ignites anxiety in many students. This is so, because of the role examination play in education systems. As in other Education Systems, examinations (formative and summative) play important roles in the Kenyan Educational System. Students’ future lives revolve around academic capability evidenced by performance in school examinations (Oliwa, 1998). These examinations are normally strongly grounded in school based curricula. At normative level (school or institution level), these examinations are used to gauge students understanding of taught concepts, being able to apply these concepts to new situations, being able to critically analyze and synthesize information and being able to remember information. This is normally done for instructional purposes majorly to identify students areas of weaknesses for development by teachers.

At summative (external and societal) level, these exams are used to measure students’ or learners’ final school (academic) achievement. At this level, these exams are highly competitive. They are highly relied upon as determinants (socially) of who goes where and gets what (educationally and occupationally). Kenya certificate of primary Education Examination for instance, is used to select students to join various tertiary institutions for
higher training. These selecting purposes served by school examinations, have made excelling in school examinations (especially summative ones) a fierce survival for the fittest game. Students however have no choice, while in school, taking examinations is a fact of life (Vincent, 1992; Somerset, 1988).

Why do examinations torment students? Examinations pose a lot of challenges to students - especially during their taking. Even with proper learning and good preparation, no student is ever wholly assured of good performance in any particular examination. Performance, apart from being largely dependent on the amount of examination specific knowledge a student brings to the examination, is also greatly influenced by how insightfully and decisively the student is able to manage and confront examination challenges; difficult examination items, memory let downs, fluctuations in motivational and attentional levels, mental fatigue, mental sets and failure of understanding of examination items.

Examination taking is therefore greatly influenced by students thought processes, strategies and mental decisiveness during the taking. This has to do with how well a student is mentally and tactically able to deal with examination elements, such as the items and the ever spontaneous challenges. Though examination experts such as Roger (2005) and Raphael (2004) have tried to come up with brilliant test strategies such as SCORER and QAR respectively, to help students handle examinations more intelligently, few of these strategies have seemed to address thought processes during examinations
especially when faced with hard examination conditions. How should students think through difficult examination items for example? How should they mentally process information (during examination taking) and use it to respond desirably to examination items?

1.2 Statement Of The Problem

Academic performance in formal learning institutions such as schools and colleges is majorly inferred from formally administered examinations. Such examinations (formative or summative) are normally administered after formal learning and instruction. Learning and instruction therefore greatly influence students’ performance in examinations. Other factors include formal preparations before the examinations, anxiety, motivation and students handling of the examination during its administration (Kibui, 1995; Maritim, 1984).

When taking examinations, students should be insightful. Insight is an interpretive ability that enables one to exhibit mental keenness and analytical astuteness when handling and processing information. An insightful individual exhibit mental flexibility and adaptability. This make him process information more diligently and open-mindedly making the chance element work for him during problem solving. Since the chance element only favour the most knowledgeable when undecided, insight is a major factor affecting students performance in examinations and thus affecting academic performance. Kimilili Sub- County happens to be home to one of the best performing schools in the
country, Friends school Kamusinga. This performance has however not been simulated in most of the schools within the Sub- County, with some schools posting very dismal results over the years in national examinations. There therefore existed need to find ways of improving students academic performance in national examinations within the Sub-County. Some of the challenges that have faced students are indiscipline, lack of proper preparations for examinations and lack of insight when handling examinations. As opposed to other traits such as testwiseness [which has to do with a student’s ability to spot and use clues and hints on the exam paper], insight has to do with how mentally skillful the student is when tackling examination items, spotting and blending existent answer leading clues and hints with his/her acquired knowledge, to come up with desirable academic performance. During the examination, a student may therefore be either insightful or uninsightful and this may greatly influence his/her ultimate performance. Insightful students are most likely to perform well in examinations than uninsightful students. Most empirical research on students academic performance have focused on learning, examination preparation and students disciple (Kibui, 1995). This study sought to establish how insight influenced students’ academic performance.

1.3 Purpose Of The Study

The purpose of this study was to find out the extent of association between students insight and their observable academic performances. It was also to ascertain the relevance of insight in predicting students likely future academic performances.
1.4 Objectives Of The Study

The study intended:

(i) To establish the relationship between students insight and academic performance.

(ii) To determine the strength of correlation between students insight and academic performance.

(iii) To ascertain how significantly predictive is insight of students likely future academic performances.

1.5 Research Questions

The research was guided by the following Questions:

(i) What relationship exist between insight and students academic performances in schools?

(ii) What is the strength of correlation between insight and students performance?

(iii) Can insight be a significant measure of students’ future academic performances?

1.6 Assumptions Of The Study

The following assumptions were made:

• That students who participated in the study were well motivated to take the insight test.

• The developed test would provide viable inferences about students’ insight.
1.7 Significance Of The Study

Academic performance plays an important role in the lives of all students in and after school [Oliwa, 1998]. Knowing how a factor such as insight influence examination taking may help students prepare for, and tackle exams more effectively. Findings of this study are therefore useful in sensitizing students and teachers on the importance of mental traits such as insight which may influence students mental processing especially during exams and consequently influence their academic performances. The findings of this study should also provide a basis for more advanced research on how students thought processing during exams affect their ultimate performance. Students and teachers may therefore be the immediate beneficiaries of the findings of this study.

1.8 Limitations Of The Study

The findings of this study should be interpreted in light of the following limitations:

There is no known standardized test for insight. The researcher may therefore not have been able to exactly measure participants exact insight but any available Insight Tests were studied before the Insight Test used in the study was developed, piloted, modified then used. Human behaviour is also complex. There are many variables that act upon observable behaviour. Students may therefore perform highly or lowly on any exam for reasons beyond the factors that were studied. It would therefore be far reaching, to assume that it was possible to get information on all variables that could have occurred
on the participants that took part in the study. Only 180 students drawn from ten public secondary schools out of the twenty one schools in the Sub-County took part in the study.

1.9 Delimitations Of The Study

The study was delimited to the following:

The dependent variable was students’ academic performance as represented by their cumulative points in the 2009 joint district examination. The independent variable was students’ insight as represented by students’ scores on an administered insight test.

1.10 Theoretical Framework

1.10.1 Gestalt Theory

The German psychologist, Kohler was the founder and major proponent of this theory. When faced with difficult mental tasks or situations, Kohler (a pioneer Gestalt) proposed that we usually found it easier to employ simple trial and error strategies, in attempts to solve or handle them. When this fail we try to engage in thoughtful analyses of the various elements of the contexts of our problems, till we attain some kind of insight (a sudden, abrupt understanding) that leads us to finding the solutions to the problems.

People differ in their interpretive capabilities. One can either be insightful or uninsightful when tackling things (ideas) mentally. An insightful individual is one who exhibits keenness and analytical prowess when tackling things mentally. He/she is the individual, who can detect details in situations, spot openings and be able to turn some sort of advantage from them, in reaching a desired goal. Insightfulness during examination
taking involves tactically and critically analyzing examination elements; items, information and clues in order to come up with desired responses. This, the researcher hypothesized greatly influenced students’ performances in examinations.

1.10.2 Constructivist Theory of Learning

This theory proposes that, we learn by making sense of things. Its Proponents include Jerome Bruner, David Ausubel and John Bransford. Constructivists propose that we make sense of things by constructing links between what we are learning and what we hold to be the case (our held schema or conceptions). If something appears to be extremely difficult to understand, the brain finds it hard to create links between present realities and past experiences, learning and knowledge, consequently making no sense. This theory is important in understanding how we learn insightfully. It involves mental structuring and restructuring of elements.

1.11 Conceptual Framework

Insight is a quality of the mind. It affects and influences all of our mental processing. It is acquirable and learnable, and is manifested in ways in which we cognitively perceive and interpret things. In schools, it is important during learning and taking exams. During exams, it involves the deliberate organization and reorganization of the various contextual exam elements in order to correctly respond to exam items.
**Figure 1.1** Diagrammatic models showing the variables and how they interrelate.

**INSIGHT**  
Influences:  
Examination taking-Testwiseness, Guessing, Analytical ability And Learning.  
(*Gestalt theory Constructivist theory*)

Lacking insight-analytical prowess  
ACADEMIC PERFORMANCE (Dismal)  
OTHER FACTORS AFFECTING EXAM TAKING  
Memory, mental speed, mental fatigue, motivation attention, anxiety, learning  
ACADEMIC PERFORMANCE (High)  
Insightful-Exemplary analytical Capability

Source: *Researcher, 2009.*

### 1.12 Operational Definition Of Terms

**Academic performance:** Refers to obtained, cumulative examination scores on school based domains of knowledge (subjects) at a particular time.
**Examination:** Refers to a series of items (questions), given to an examinee at a particular time, in order to facilitate behavioral inference.

**Insight:** Refers to being able, to analytically make the most of the existent situation, elements, in order to come up with some desirable goal. Score on the Insight Test.

**Items:** Refers to questions that make up an examination.

**Joint Sub-County Examination:** Refers to a joint examination done by students in various schools of the Sub-County.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews literature, and studies related to this study: In formal learning institutions, examinations come, after some kind of formal learning or instruction has taken place-unless the examination is meant to ascertain students, entry behavior. According to the many people, effective learning and instruction, should automatically lead to good examination performance. This notion is false. Learning does not necessarily lead to good examination performance though it majorly contributes to it. Performance in school examinations is majorly determined by how well the student is able to remember and use learnt knowledge in the examination room. It also majorly depends on how well he/she is able to confront the spontaneously emerging conditions and challenges during the examination: dealing with memory failures, difficulty items and mental sets and effectively dealing with the test situation. Insight is an important mental quality, when tacking examinations.
2.2 Learning

Learning is relatively permanent change in behavior, as a result of practice or experience.

Learning is a process that begins immediately one is born. It continues throughout one's lifetime. Depending on the way and place at which it takes place, it can usually be divided into three major categories: formal, informal and non-formal (Awino, 2004)

Formal learning is learning we get, when we follow a well structured, organized and systematic educational curriculum. It's the kind of learning we get in schools, colleges, and other institutions of formal learning. Informal learning (experimental learning) is learning we get from our day to day interactions with other people, situations and objects in our immediate physical environments. This is learning that is spontaneous and takes place everywhere we find ourselves. It's spontaneous and is not based on any particular curriculum. Non-formal learning is organized learning, systematic in nature, which we get outside formal learning institutions. Apprenticeship is a good example of this kind of learning.

2.2.1 How Do We Learn?

The question as to how we learn or get to know or understand anything, is a complex one. One important point to however note is that, learning is an active, conscious, cognitive process. It involves, consciously generating, receiving, checking and restricting ideas in
light of those already held (Bob & Ann, 1994). When children are born, they start developing cognitive conceptions about things. These conceptions may differ from one child to another and vary greatly in their degrees of correctness and completeness-as a result of differential cognitive preferences. We all have preferences-especially in ways, in which we prefer to use our brains and senses, perceive, organize, and make decisions and judgments about things. Some-especially in earlier years of development, prefer a subjective analysis of things (Considering whether whatever they are dealing with is pleasing or unpleasing, threatening or unthreatening). Depending on which process a child prefers, he/she will use it more oftenly when developing or modifying his/her conceptions (Shul, 1981; Wang, 1985). The child, who uses the impersonal, logical analysis (when organizing and developing his/she conceptions), will be more likely to develop and have more correct and complete conceptions (schemas) about things. Learning takes the form of extending, elaborating and modifying of these conceptions. No one enters any learning situation empty headedly. We say we have learnt something, when we have acquired a clear understanding (meaning) of it: we can explain it or demonstrate it. We do this, by constructing links, between our held conceptions (which may be right or wrong) and the realities at our disposal (Bruner & Hate, 1987; Edward & Mercer, 1987).
2.2.2 Constructivist Theory Of Learning

This theory proposes that, we learn by making sense of things. As cited in section 2.2.1, we do this by constructing links between what we are learning and what we hold to be the case (our held schema or conceptions). If something appears to be extremely difficult to understand, it is just that the brain is finding problems or difficulties in creating links between present realities and past experiences, learning and knowledge, consequently making no sense of whatever it is. If unfamiliar language is used for example, the brain finds problems creating connections (links). By constructing links and consequently making sense of things, we end up extending on our prior knowledge, modifying it, making it more clear to us (Bruner and Haste, 1987; Bob Moon and Ann, 1994) or, end up acquiring new knowledge (conceptions).

2.3 Learning In Schools

Schools offer formal learning to students: Knowledge and skills are systematically imparted in students following a well structured curriculum (Awino, 2004). Learners are made to acquire knowledge and skills, which they may, or may not have otherwise, had opportunities to acquire from firsthand life experiences. This learning follows a well structured syllabus and various domains of knowledge.
2.4 School Examinations

In concrete terms, learning cannot be measured. Measurement is the process of assigning a number to express in quantitative terms the degree to which an individual possesses a certain characteristic. In schools, measurement is done by administering school examinations. If a student scores 100% in a school examination, he/she is perceived to have learnt well whatever the examination was examining on. If he/she however scores 0%, he/she is perceived not to have learnt well whatever the examination was testing on. Measurement and evaluating are important in schools because, schools are supposed to accomplish various aims, goals and objectives. There would be no way of knowing whether these aims, goals and objectives are being accomplished without measurement and evaluation (Bob, Ann, 1994). Evaluation refers to the further step (after measurement), of comparing a student’s score in an examination, to those of others –in order to make comparative judgment: To judge it good or bad, pass or fail, satisfactory or unsatisfactory compared to others.

Both measurement and evaluation provide feedback to teachers, students and society about the on-goings of the teaching and learning processes respectively. Continuous assessment tests, mid-course, end of year examinations, have direct influence on the teachers’ instructive strategies. They also help students and teachers identify areas of strength and weakness, for consequential development.
Examinations also serve as means for communicating student’s levels of achievement, just before leaving school. This is the summative role of school examinations. They are used as a means of summarizing-majorly for purposes of selection, qualification and certification.

Due to scarcity of resources and opportunities, summative examinations act as the ethically and socially accepted means for directing and regulating entry into further trainings and occupations. They also act as acceptable certifiers for completion of various levels of education (Max E. & Harold N, 1992). In Kenya; KCPE certifies completion of primary education. KCSE certifies completion of secondary education. These examinations are the socially and politically accepted deciders of who goes where and gets what educationally and occupationally. Excelling in these examinations is an ongoing survival of the fittest game. Students are all ranked per their performances in these examinations. Students are socially expected to learn, and show their learning and academic intelligence, by performing in these examinations. Teachers are also expected to teach, and show their teaching, by their students performing in these examinations. Socially, effective teaching and learning (in the schools) should lead to good examination performance. Students who therefore score high marks in these examinations are therefore socially revered. Those who don’t are dismissed and are regarded as poor learners or unintelligent.
Performance in school examinations is however a complex phenomenon. It should be understood to be complexly influenced by not only learning, but a myriad of other complexly intertwined factors (Mbuca, 1985; Maritim, 1984; Kibui, 1995). This makes examination taking and performance a tricky affair: A student who scores everything in an examination, does not necessarily show that he/she learnt everything he/she was taught. It may just be, that he/she was lucky enough-the examination comprised of content areas he/she learnt, understood and revised well. The student may also just have been lucky, that his/her memory never failed him/her at that very crucial moment of the examination; or he/she may just have been lucky that hi/her answer sheet landed in the hands of a lenient marker/scorer.

Students learn many things (as specified in the syllabuses). They cannot be examined on all these content areas in the syllabuses. They can only be examined on a few, which are infact determined by the (teacher, examiner or examining body). The student does not also determine the time for the examination, the format or even the type or number of questions for the examination. The only thing he/she can to is to prepare well, confront the examination as it presents itself and pray for luck : A student ,who therefore scores a zero in an examination, does not necessarily show that he/she never learnt anything .He may just have been unlucky- whatever he /she may have understood well, never came in the examination. He/she may also just have been let down by his/her memory-at the
crucial time of the examination. A student may also perform dismally in any examination, because his/her attention or motivational levels kept fluctuating due to anxiety, distractions or emotional stress. A student may also perform dismally because of the examination itself—unclarity of the instructions, unsoundness of the items and so on.

Examinations therefore call for timely tactics. Whenever they are being taken, they require tactical brains that are insightful. Brains, that can probe the immediate examination situation, items and elements (as they present themselves at the time) and be able to exploit any favorable options or conditions within reach to succeed in correctly responding to the examination items. In the competitive (resource and opportunity scarce) society we live performance in examinations, is the key to everything.

2.5 Construction Of School Exams

An examination is a series of questions (items) or tasks given to an individual or group of individuals for specific purpose. In schools, examinations are used for various purposes. Normatively; they are used for instructional purposes. Summatively, they are used to give final achievement scores for certification and qualification purposes. Examinations are also used, for evaluating teachers’ competencies (for promotions and various placements). They are also used, to compare schools to others (for allocation of money, equipment and other resources). Depending on the specific purpose of an examination, it
will usually be constructed differently. The general paradigm followed however when a constructing school examination is as follows:

(i) Defining the purpose of the test.

(ii) Identifying and breaking down areas (content areas) deemed relevant to the purpose of the examination.

(ii) Designing a specification based on the identified areas.

(iv) Writing items that will comprise the test.

The test specification (or blue print), normally has a two dimensional structure: one axis contains content areas, the other, learning manifestations of the different content areas: knowledge, understanding of concepts, being able to apply acquired knowledge, analyze information and transfer knowledge. A biology teacher who wants to make an examination on the following content areas: *Digestion, gaseous exchange, and classification of animals*, may have a specification structure as the following-if he/she wants to test students’

- *Knowledge of important terms*

- *Understanding of the topics*

- *Being able to apply acquired knowledge on the topics.*
Table 2.1: Test specification table

<table>
<thead>
<tr>
<th></th>
<th>Digestion</th>
<th>Gaseous exchange</th>
<th>Classification of animals</th>
<th>Total</th>
<th>Can go to any number of topics the teacher wants to examine on.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of terms</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Understanding of topic</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Application of knowledge on the topic</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>10</strong></td>
<td><strong>10</strong></td>
<td><strong>30</strong></td>
<td>In this case the teacher’s examination will comprise of 30 items.</td>
</tr>
</tbody>
</table>

The teacher chooses what he/she wants to test.

Table 1.1 enables the teacher to determine the items he/she wants in each cell and the entire test (say 30 as above).

2.5.1 Examination Items

There are two major types of questions used in school examinations – essay and objective questions. Essay items got their name from the manner in which students are expected to respond to them by producing a written response (in their own words) ranging from a few sentences, to several pages. Essay questions are easier, quicker and less costly to construct. They are used for measuring students’ ability to organize information and communicate effectively. They are however the worst when considering inter-making...
reliability. Students’ responses vary greatly in completeness and accuracy. Different markers therefore subjectively give different scores. These items also require the most time, to score.

Objective items get their name from the scoring procedure used to score them. They are constructed in such a way that scoring is virtually objective. There are several varieties of objective items: short-answer, completion, true-false, multiple-choice and matching items. They all require supply of a word or phrase in answer, or recognizing a correct answer. Objective items are useful for determining whether the student possess (and can recall) various information, knowledge and facts. In Kenya, most primary level examinations comprise of these items. Secondary level exams are largely comprised of essay items though they also comprise of objective items (short-answer, completion and matching items).

School examinations normally come, with varied and specific regulations and instructions to students: these include the dos and don’ts for examinees. They may also contain certain hints, clues and information, the examiner feels are important, for the students (or examinees) to have. These examinations also normally have specific time limits within which the students are supposed to work. Since special and normally very
well stipulated curricula are followed in schools, school examinations are normally not expected to test outside these curricula (syllabuses).

Items in school examinations are expected to be responded to in the same manner: their answers are normally predetermined. Performance in these examinations is therefore greatly occasioned by how well a student or examinee is able to bring out these (examiner’s) predetermined or desired answers.

2.6 Factors Affecting Performance In School Exams

School examinations pose many challenges to students but students have no option but to confront them: Examinations—especially summative ones (KCSE and KCPE)—are the major yardsticks by which society judges students: poor or good learners, knowledgeable or unknowledgeable, intelligent or stupid, likely to be successful in future learning or not. Examination performance is therefore a cut throat, survival game, for students. The high scorers take it all: prestigious further trainings, jobs that are regarded as being prestigious, and various opportunities that arise from time to time. Students therefore have no choice but to find ways of performing in examinations. Some go to the extent of involving themselves in examination cheating or irregularities.
Performance in examinations is greatly influenced by how they are taken. Examination taking is an art which is variously influenced by complexity inter-connected factors: amount of examination specific knowledge a student is armed with to the examination, how test wise he/she is, how well prepared he/she is for the examination-revision and how recent it was, how competent he/she is in the language the examination is set and how well he/she is able to manage the examination situation. The later (management of the examination situation) is very important. Examination contexts keep changing: The same examination taken at different times of the day, different settings and moments, may pose different challenges and attract different confrontational strategies. Our physical and psychological states are also constantly changing. We will therefore differentially perceive and respond to situations a different moments. Though much research has been carried out on many factors that could be affecting students performances in examinations, much of these research has concentrated on factors which can be regarded as being peripheral to the real examination taking context or environment-though it is the most important aspect that affects and influences examination outcomes (Oliwa, 1998; Kibui, 1995; Mbuca, 1985; Maritim, 1984). During examination taking, students are advised, to be strong, confident and prayerful in order to perform well: In concrete terms, these are only pleasantries. They do little, or nothing, to help students handle and consequently perform well in examinations. Students need, to study hard and understand well, the content areas (as stipulated in the syllabuses), then brace themselves well, to tackle examinations-both physically and psychologically. As
much as the amount of examination specific content a student brings to the examination situation greatly influence his/her performance in the examination, in itself, it does not guarantee good performance in any particular examination. Examination taking should be taught to students. During the examination, they need to be organized, decisive but most important, insightful: examinations and bogged up by many uncertainties: memory failures for example, temporarily render examination content knowledge (carried to the examination, by the student) irrelevant. During examinations, students face, unsound (ambiguous) items, unclear instructions and most importantly, difficult items. Insight is required to deal with these. Insightful examinees are analytical and adaptable. They are logical (organized), and open minded (unprejudiced by mental sets). They are keen probers and perceivers’. They will rarely overlook anything-angles of approach, openings (clues, hints, details, or any other information) and opportunities that could help them respond correctly to examination items. Insight is therefore an important aspect of examination taking, learning and academic performance.

2.7 Gestalt Theory

Earlier researchers (Gestalt psychologists) perceived insight as a sudden, abrupt understanding of something as a result of mental operations. In several classical accounts, Kohler, a pioneer Gestalt psychologist used the term to explain findings from his experiments with Sultan (a chimpanzee that was the subject of his studies). In one
account, Kohler placed a banana on the ceiling of a room. There were boxes in the room which Sultan could use to reach the banana-by stacking one box on top of another. At first, Sultan made several frantic attempts to reach the banana-by standing on one box—but failed. He then sat down ‘contemplatively’ (for a few minutes), woke up, stacked a second box onto the first, and got to the banana. Kohler concluded that before any problem is solved, there are normally efforts to cognitively try and understand it-trying to make sense, see relationships and find meaning of the various elements it’s comprised of. If the meaning is obscure, the brain unconsciously continue to restructure and organize the various elements, till some kind of insightful understanding (abrupt, sudden understanding) is reached. During the few minutes Sultan was sitting down, his brain was unconsciously restructuring and organizing the various elements of his problem-in relation to its possible solutions. This was followed by a sudden flash of insight (understanding) and the solution to his problem became obvious. Kohler and his proponents (other Gestalts) attested that our brains have an innate ability, to unconsciously continue structuring and restructuring elements of problems till we attain some kind of insight-before we can solve them. Insight as explained by Gestalts is therefore an end product of some unconscious mental activity.

Herein, the researcher perceives insight as a quality of the mind and all of our conscious mental activities are affected by it. It has to do with our analytical abilities, keenness and
complexity when dealing with mental symbols and our depth of perception: We can be insightful every time we are consciously involved in mental operations. Like any other construct, insightfulness is manifested in ways in which we do things—most importantly, in ways in which we confront and solve problems. Insightful individuals are characterized by, keen, in-depth understanding of things. They exhibit, superb interpretive and analytical capability: they seem to have the ability to logically probe things (situations and problems) and come up with their true nature and some kind of deeper understanding. They are tactical in their thinking, skilled, in detecting and organizing mental images and symbols. Such individuals can see openings and opportunities that seem invisible to others. The most important point is however that, they have the capability to fully exploit these openings and opportunities to acquire desired goals. They are very adaptable individuals, able to analyze, scrutinize and work with, and within the existing environments.

2.7.1 Insightful Problem Solving

Generally, we say we have problems, when we find ourselves in situations we do not clearly understand, or do not know, what to purposefully do. Such situations are part of our daily lives. we are therefore continuously involved with problem solving. Insightfulness in problem solving begins with being able to clearly and correctly formulate problems—within the contexts in which they present themselves. Contexts are
constantly changing and so are problems. Once the problem is correctly formulated, what follows is the identification of the various resources, openings and opportunities available that can help to solve the problem in the best possible way—as dictated by the existing realities. Insightful problem solvers will leave nothing to chance. They are keen to blow away no chance of responding correctly to problems. They check and weave everything expertly—for advantage and opportunity. Identification of available resources is followed by struggling to find possible solutions to the problem. This is then followed by the decisive analysis of the possible positive and negative consequences of each of the structured possible solutions—before settling on one.

2.7.2 Insight In School Exams

Most school examinations are set. They are also strongly based on knowledge taught in the schools (content areas stipulated in the syllabuses). They therefore need a student to be highly knowledgeable and familiar with this knowledge to perform well (Stella Scottrell, 2003). The amount of examination specific knowledge a student brings to any examination greatly influence his/her performance in it. Insight helps, in selecting and deciding which knowledge is required and relevant in responding to the examination items correctly. Wholesomely, an insightful examinee is one who can probe around the immediate examination context (items and elements) and be able to detect and fully exploit any favorable options at hand (in memory and on exam paper). He/she is an
examinee, who will rarely blow away a chance, opening or opportunity that can help him/her respond correctly to examination items (Chi, Glaser, Farr, 1986). Such an examinee is keen to notice detailed aspects of the examination items. This gives him/her, interpretive advantage. He/she is also an examinee who will employ many angles of approach when dealing with items. Not much is documented on students’ insight in Kenyan examinations. Most local examination research has dwelt on general factors affecting students’ performances in examinations. Awino (2004) explored how differential learning styles affected students learning consequently influencing their later performances in examinations. Looking at factors that affect pupils’ performances in public and private primary schools, Kibui (1995) cited factors such as, examination drilling, availability of learning and instruction materials, competition and the urge to perform and outshine, in the case of private primary schools. Students Social-economic backgrounds also dramatically influence students performances in examinations (Mbuca, 1985). Maritim (1984) cited differences in academic performances as a result of gender. Most of these factors are alien to the examination taking context. Though authors such as Luciani and Okinda (2006) have tried to generally help students with general examination tips, little has been done, to ascertain the importance of insight as a factor that could greatly be influencing students’ performances in examinations. Much of Western research has also mostly focused on how to study for tests at the expense of focusing on students’ analytical and interpretive abilities during examinations.
2.7.3 Insight And Testwiseness

Testwiseness is a skill which allows a student to choose a correct answer especially when dealing with multiple choice questions without actually knowing the right answer. The student does this by looking for and spotting possible cues (hints) on the examination paper that could trigger him/her to the right answer. The difference between insight and testwiseness is that, after the student has spotted those clues, or hints, he/she critically analyzes them, in order to come up with the desired answers.

2.7.4 Insight And Guessing

Guessing in multiple choice examinations is essentially looking up and choosing answers without consciously thinking about them. In high stake examinations such as KCPE, pupils are normally advised to guess but not that kind of guessing. Experts such as Rodger (2005) advice students to make educated guesses. These are guesses that need analytical capability. The student does not just guess. He/she has to consciously and insightfully, think about all the elements of the situation before settling on any particular answer as a guess.
2.8 Summary Of Literature

Schools offer formal learning: knowledge and skills are systematically imparted in students through instruction-telling, demonstrating and explaining. School learning, like any other learning is not easy to measure. It is only inferred from measurement data obtained by administering examinations. Though that is so, society seems to perceive performance in these examinations, as a means of determining who is good and poor learner, intelligent and unintelligent student, who is likely to be successful in future or not. School examinations are also the socially, politically and ethically accepted defensible means for deciding who gets what and goes where educationally and professionally. These examinations are therefore acceptable means for selecting individuals for various purposes. This selecting purpose has made performance in examinations a fierce survival of the fittest game. Teachers teach to the test, learners learn to the test. Effective learning and teaching is expected to lead good examination performance. Examination performance is however a complex phenomenon. It’s affected by complexly interconnected factors. One can be knowledgeable yet perform very dismally in any particular examination. Insight is one of the very important factors—especially during the real examination taking context that greatly influence performance. Though much research has been done on many factors that variously affect performance in school examinations, much has mostly dwelt on factors that are peripheral to the examination taking context. It’s this gap this study intended to fill. Examinations pose many challenges to students: difficult items and many other unpredictable uncertainties.
These challenges need insight. Students who can analytically take time to structure given information, restructure it, organize it in lieu of available resources and conditions, and be able to come up with desirable answers to examination perform better.
CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter deals with the design, methods and instruments that were used in the study. It focuses on the research design, location of the study, population and sample size.

3.2 Research Design

Correlational study design was used in the study. A correlation is a measure of relationship between two variables in this case insight and academic performance. The variables are assumed to occur in the group or population that is studied and are not controlled by the researcher. Normally a positive correlation is regarded as a show of direct relationship where as the amount of one variable increases, the amount of the second variable increases too. A negative correlation indicates that as the amount of one variable increases, the levels of the other variable decreases In both positive and negative types of correlation, there is normally no evidence or proof that changes in one variable cause changes in the other variable. A correlation coefficient simply indicates that there is a relationship between the two variables. Since the main objective of the study was to investigate whether relationship existed between the studied variables and if it did its strength, this design was deemed as most appropriate for the study. It is however important to note that correlation does not necessarily equal causation.
3.2.1 Variables

The dependent variable was:

- Students’ academic performance. This was represented by students’ scores in the 2009 mock examination.

The independent variable was:

- Students’ insight. This was represented by students’ scores on the insight test.

3.3 Location Of The Study

The study was conducted in Kimilili Sub-County, situated in Bungoma County. The main economic activity in the Sub-County is farming. The sub-county boasts of twenty one public secondary schools. One of its best performing schools in national examinations is Friends School Kamusinga. Other major secondary schools include Moi Girls' High school Kamusinga, Kimilili Boys' High school, Maeni Girls' Secondary School, St. Theresa's Girls' Secondary school and others. The general academic performance of students in the is normally quite unsatisfactory.
3.4 Target Population

Population refers to the total number of respondents whose information was desired. Form four students from public secondary schools were targeted by the study. In the year 2009 one thousand eight hundred and eighty form four students in its public secondary schools were the target population.

3.5 Sample Size

The study sample comprised of one hundred and eighty students drawn from ten of twenty one public secondary schools found in the Sub-County. The schools were stratified into girls only (seven), boys only (three) and mixed (eleven). Random sampling was then used to select the various schools from whom students took part in the study. Ninety students were drawn from five mixed schools, seventy two from four girls only schools and eighteen from one boys only school. In stratified sampling, the parent population or sampling frame is usually made up of sub-sets of known size. These sub-sets make up different proportions of the total in this case, mixed schools 53%, girls only schools 33% and boys only schools 14%. Sampling was stratified to ensure that the sample was proportional to the whole population of schools. A systematic approach was then used to draw participants from each stratum. The number of students sampled from each stratum was in proportion to the known size in the parent population ending up with a sample of ninety girls and ninety boys.
3.6 Research Instruments

3.6.1 Mark Lists

2009 Joint Sub-County Examination mark lists were used to collect data on students’ academic performances. These are examinations normally given to form four students in various districts in preparation for the national examination [KCSE]. They are examinations which are normally taken seriously because they are perceived as likely predictors of how students are likely to perform in the national examination.

3.6.2 Insight Test

Students’ insightfulness was inferred from their scores on an administered insightfulness test. The test comprised of five questions. The items were deliberately designed to investigate students’ keenness, interpretive and analytical capability and depth of perception. Some items contained deliberate non-sense words to demonstrate that even with meaningless content, the insightful student may still figure out the right keys or desired responses.
3.6.3 Pilot Study

The test was administered on 26 students drawn from two schools which did not take part in the study and after two weeks the test was re-administered to the same students to ascertain its reliability.

3.6.3.1 Validity Of The Insight Test

Validity is the soundness and effectiveness of a research instrument. It is the ability of a research instrument to accurately measure what it is intended to measure (Mugenda & Mugenda, 2003). Validity of a measuring instrument is not a property of the instrument itself but rather of the interpretation of its specific purpose. Evidence of validity of an instrument can either be found in the content or in the relationship between the instrument and other accepted standard measuring instruments. Since there is no known standardized test for insight the researcher did a literature search on available tests then modelled items and adapted some along those used in similar insight studies for use with his subjects and with expertise and counsel from his supervisors. The test was piloted on 26 students prior to its use in the study. Visible ambiguities were done away with before the actual study. The instructions to the subjects were clear and non-sensible words were used in some items because the insightful student should still have been able to respond desirably to them.
3.6.3.2 Reliability Of The Insightfulness Test

Reliability is the consistency of a research instrument in measuring whatever it’s meant to measure. Measurements are deemed reliable to the extent that they are repeatable or reproducible. It is the consistency of producing similar results using the same instrument (Mugenda & Mugenda, 2003). The best way of quantifying reliability is by taking several measurements on the same subjects using the same test. The insight test was administered to 26 students from one of the schools which was not sampled to take part in the study. The test retest interval was two weeks. The scores of the two administrations were then correlated using Pearson Product Moment Correlation. A retest correlation coefficient of 0.7 was obtained. This was a relatively high coefficient and therefore the researcher deemed the test reliable since the higher the retest coefficient, the lower the error variance within the subjects’ scores.

3.7 Data Collection Procedure

The insight test was administered to the participating students with the help of directors of studies [DOS’s] of the various schools which took part in the study. The 2009 Joint examination mark lists were then obtained from them because they are the custodians of academic records in the schools. Participating Students scores in the insightfulness test
were then paired with cumulative scores in the Joint Sub-County examination. This data was tabled and analyzed using Pearson Product Moment Correlation.

3.8 Data Analysis Techniques

Pearson’s product moment coefficient of correlation was used to analyze data. Means (X and Y) for the two distributions were calculated. Deviations from these means were then computed (x, y). These deviations were squared and summed (\(\sum x^2\), \(\sum y^2\)). Paired deviations were also multiplied and summed (\(\sum xy\)). The coefficient was computed using the deviation method shown in figure 4.1. Linear regression was used to ascertain predictability as shown in figure 4.4.
CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis of data, its interpretation and discussion. The study focused on the association between students’ insight and their observable academic performances.

4.2 Testing The Existence Of Relationship Between Insight And Academic Performance.

4.2.1 Pearson’s Product Moment Coefficient Of Correlation ($R$).

Pearson’s product moment coefficient of correlation was computed using the deviation method based on collected data in table 4.1. Means ($X$ and $Y$) for the insightfulness and academic performance distributions were first calculated respectively. Deviations from these means were then computed ($x$, $y$). These deviations were then squared to remove negative signs wherever they exited then summed ($\sum x^2$, $\sum y^2$). The products of the paired deviations for each student ($xy$) were then computed and summed ($\sum xy$) before computing the standard deviations for each variable ($S_x$, $S_y$). The coefficient was computed using the formula in figure 4.1:

Figure 4.1: Pearson product moment correlation coefficient [Deviation method formula]

\[
\text{Correlation coefficient } [r] = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}
\]
Table 4.1: Summary Pearson’s Product moment correlation coefficient (r) table

<table>
<thead>
<tr>
<th>Variables</th>
<th>X: Insightfulness [Students scores on the Insight Test]</th>
<th>Y: Academic performance [Students Cumulative points on the 2009 Joint District Examination]</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=180</td>
<td>N=180</td>
<td></td>
</tr>
<tr>
<td>∑x² = 25560.68</td>
<td>∑y² = 21034.72</td>
<td>∑xy = 20335.46</td>
</tr>
</tbody>
</table>

\[ r = \frac{20335.46}{\sqrt{(25560.68)(21034.72)}} = 0.88 \]

4.2.2 Interpretation Of The Coefficient \([R]\).

An observed correlation coefficient may be as a result of chance or sampling error. Statistical significance of the obtained coefficient \((r = 0.88)\) was therefore computed using the formula in figure 4.2:

Figure 4.2: Test statistic \([t_r]\) for interpreting the correlation coefficient

\[ t_r = r \frac{\sqrt{N-2}}{\sqrt{1-r^2}} \]

\[ t_r = \frac{0.88 \sqrt{180-2}}{\sqrt{1-(0.88)^2}} = 24.72 \]

With 198 degrees of freedom, the correlation coefficient of \(r = 0.88\) was judged as being statistically significant, since the observed \(t_r\) value (24.72) exceeded the critical \(t_r\).
value (1.96) in the $t$ distribution table. That means, that using the two-tailed test at alpha level 0.05, with 198 degrees of freedom, the null hypothesis ($H_0: r = 0$) was rejected. The correlation coefficient ($r = 0.88$) was therefore found to be statistically significant.

### 4.2.3 Estimating Population Correlation Coefficient ($\rho$) From The Sample Correlation Coefficient ($R = 0.88$).

Using the obtained correlation coefficient of 0.88, the population correlation coefficient was estimated using the test statistic in shown in figure 4.3.

Figure 4.3:

\[
Z = \frac{Z_r - z_e}{S_{zr}} = \frac{1.376 - 0}{0.075} = 18.05
\]

The standard error of $Z_r, [S_{zr}]$ was obtained using the formula:

\[
S_{zr} = \sqrt{\frac{1}{N - 3}} = 0.075
\]

The null hypothesis $H_0: \rho = 0$ was tested against the alternative $H_a: \rho \neq 0$ at alpha level 0.05. Since the observed value 18.05 exceeded the critical value 0.195, the null hypothesis was rejected. This implied that there was correlation between insight and students academic performance among form four students in the various schools.

### 4.3 Predictive Significance Of Students’ Insightfulness Of Their Likely Future Academic Performances.

Coefficients of correlation are useful in trying to predict unknown values of variables from known values of others. The correlation coefficient $r = 0.88$ and the standard deviations ($S_y, 10.81$ and $S_x, 11.92$) were used to compute the regression using the formula in figure 4.4:
Figure 4.4: Formula for the regression line

\[ Y = a + bX \quad : \quad Y = 15.83 + 0.7981[X] \]

\( Y \) were the predicted academic performance scores. \( X \) were the predictor’s [Insight scores]. \( b \) was the gradient, obtained by the formula:

\[ b = (r) \frac{S_y}{S_x} = 0.7981 \]

\( Y \) intercept, obtained by:

\[ a = Y - bX \quad = 15.83 \]

4.3.1 Prediction Error (Standard Error Of Estimate).

The standard error of estimate was computed using the formula in figure 4.5:

Figure 4.5: Prediction error formula. \[ S_{est} = S_y \sqrt{1 - r^2} \]

Since \( r \) was 0.88, the standard error of estimate of \( Y \) was found to be 5.13. This meant that an actual academic performance score (\( Y \)) would fall within the band of \( \pm 5.13 \) from the predicted performance score in about 95 of 100 predictions. Students’ insight was therefore found to be valuable in trying to predict students’ future academic performances.
CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions drawn from those findings and recommendations.

5.2 Summary Of Findings

The study was majorly concerned with establishing existence of association between students’ insightfulness and their academic performances. Analyzed data revealed a high positive association of 0.88 existed between the variables. Participants who tended to score highly in the joint district examination tended to score highly too on the insightfulness test. Students who tended to score dismally in the insightfulness test, equally tended to score dismally in the joint district examination. This finding echoed previous studies that found relatively strong positive correlations between factors such as testwiseness, intelligence quotients [IQ] and motivational levels of students and academic achievement. The study also ascertained that students’ insightfulness could be a significant predictor of students’ likely future academic performances.
5.3 Conclusions

5.3.1 Relationship Between Students’ Insightfulness And Academic Performance
Though correlational research is important, limitations should be considered, when interpreting their findings. Correlational research does not provide support for causal linkages. Though students’ insight was therefore found to be strongly associated with students’ observable academic performance that does not imply a cause effect relationship. That means, the observed correlation does not necessarily imply causality. The correlation however point to the fact that students’ insightfulness has a significant impact on their likely observable academic performances. Students who are insightful are also likely to exhibit traits such as testwiseness, analytical prowess and mental decisiveness, devoid of mental sets when tackling examination items, conditions and situations.

5.3.2 Insight As A Predictor Of Academic Performances
Students’ insightfulness can also be a significant predictor of students’ likely future academic performances. Teachers and students should therefore not assume it. Students who tackle examinations insightfully, perform better than their counterparts.
5.4 **Recommendations**

(i) Students should use findings of this study to better their examination taking skills.

(ii) Teachers should instruct their students on how to take examinations insightfully in order for them to perform well academically.

(iii) Further research can be conducted to ascertain how insight influences students learning.
REFERENCES


References online

Bloom's Taxonomy Officeport. 12 June 2005

“High Stakes Testing “Teaching today online. Glencoe/McGraw Hill. 03 June 2005


I-TEST

INSTRUCTIONS
Answer all the questions
Write your answers in the spaces provided
DO NOT WRITE YOUR NAME ANYWHERE ON THIS PAPER
MAKE SURE YOU WRITE YOUR INDEX NUMBER

INDEX NO:

1. Of the following, an example of a tranic fruit is an
   (a) Banana
   (b) Pear
   (c) Apple
   (d) Mango

2. Thermoelectric emission refers to the process where
   (a) The copper plate attracts electrons
   (b) A cathode is heated
   (c) A material emits electrons as a result of being heated
   (d) A substance changes state

3. Who was Mzee Jomo Kenyatta?
   (a) He was the father of Uhuru Kenyatta and the rest
   (b) He is the beloved husband of Mama Ngina
   (c) He was the first president of Kenya
   (d) None of the above

STUDY THE DIAGRAM AND ANSWER THE QUESTION THAT FOLLOWS

![Diagram]

4. Ball 1 is bigger than ball 2 which is bigger than ball 3. Joseph wants to move the balls and arrange them at point C, as they appear at point A. NOTE: He can only move one ball at a time-to either point B or C. At all times, ball 3 can only be placed on ball 2, which can only be placed on ball 1.

Briefly describe ONE way by which Joseph can accomplish his task: For example, he can do so by moving ball 3 to C, 2 to B, 3 to B, 1 to C, 3 to A, 2 to C, then finally, 3 to C.
5 (a) Starting from the shaded dot, draw FOUR CONTINUOUS STRAIGHT lines to connect ALL the dots that make up the square, without lifting your pen from the paper. NOTE: Show direction using arrows.

(b) Apart from your answer in (a) above, show any other possible ways of connecting the dots, using the FOUR CONTINUOUS STRAIGHT lines.

(Adapted from: Weissberg and Alber, 1981)
Appendix B

I-TEST SCORING GUIDE: TOTAL SCORE: 100%

<table>
<thead>
<tr>
<th>MODEL ANSWERS</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GRAMMATICAL CUES: The use of the article an in question 1 suggests that the only possible choice is C. In question 2, the relationship between the word emit and emission in the question gives a clue to the right response. In question 3, though there are some grammatical clues the student needs to insightfully consider the answer most likely acceptable to the examiner.</td>
</tr>
<tr>
<td>1. C</td>
<td></td>
</tr>
<tr>
<td>2. C</td>
<td></td>
</tr>
<tr>
<td>3. C</td>
<td></td>
</tr>
<tr>
<td>4. 3 to B</td>
<td>Attentiveness, keenness, analytical, and organizational skills.</td>
</tr>
<tr>
<td></td>
<td>2 to C</td>
</tr>
<tr>
<td></td>
<td>3 to C</td>
</tr>
<tr>
<td></td>
<td>1 to B</td>
</tr>
<tr>
<td></td>
<td>3 to A</td>
</tr>
<tr>
<td></td>
<td>2 to B</td>
</tr>
<tr>
<td></td>
<td>3 to C</td>
</tr>
<tr>
<td></td>
<td>2 to A</td>
</tr>
<tr>
<td></td>
<td>3 to A</td>
</tr>
<tr>
<td></td>
<td>1 to C</td>
</tr>
<tr>
<td></td>
<td>3 to B</td>
</tr>
<tr>
<td></td>
<td>2 to C, then finally, 3 to C.</td>
</tr>
<tr>
<td>5. (a) and (b).</td>
<td>Students' awareness of mental sets. Weisberg and Alber discovered tendencies, to try and remain within the circle, though nothing in the quest suggests anything to that effect. Once that is overcome (by realizing that the straight lines could go beyond the square, the solutions become easy to work out).</td>
</tr>
</tbody>
</table>
Appendix C

MINISTRY OF EDUCATION

Telephone Bungoma:
DEO's House :
When replying please quote
Our REF:

DISTRICT EDUCATION OFFICE
BUNGOMA NORTH DISTRICT,
P.O. BOX 687,
KIMILILI.
DATE : 08/07/2009

TO WHOM IT MAY CONCERN,

RE: RESEARCH AUTHORIZATION FOR WAWIRE JOSEPH

The above named, a student at Kenyatta University is authorized to carry out research in
Bungoma North District on insightfulness and exam performance among form four students.

Any assistance given to him towards achieving his objectives will be highly appreciated.

SHIKANGA S. (MRS)
FOR: D.E.O
BUNGOMA NORTH DISTRICT
<table>
<thead>
<tr>
<th>MODEL ANSWERS</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. C</td>
<td>GRAMATICAL CUES: The use of the article an in question 1 suggests that the only possible choice is C. In question 2, the relationship between the word emit and emission in the question gives a clue to the right response. In question 3, though there are some grammatical clues the student needs to insightfully consider the answer most likely acceptable to the examiner.</td>
</tr>
<tr>
<td>2. C</td>
<td></td>
</tr>
<tr>
<td>3. C</td>
<td></td>
</tr>
<tr>
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<td>Attentiveness, keenness, analytical, and organizational skills.</td>
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<td>2 to C</td>
<td></td>
</tr>
<tr>
<td>3 to C</td>
<td></td>
</tr>
<tr>
<td>1 to B</td>
<td></td>
</tr>
<tr>
<td>3 to A</td>
<td></td>
</tr>
<tr>
<td>2 to A</td>
<td></td>
</tr>
<tr>
<td>3 to A</td>
<td></td>
</tr>
<tr>
<td>1 to C</td>
<td></td>
</tr>
<tr>
<td>3 to B</td>
<td></td>
</tr>
<tr>
<td>2 to C, then finally, 3 to C.</td>
<td></td>
</tr>
<tr>
<td>5. (a) and (b).</td>
<td>Students' awareness of mental sets. Weisberg and Alber discovered tendencies, to try and remain within the circle, though nothing in the question suggests anything to that effect. Once that is overcome (by realizing that the straight lines could go beyond the square, the solutions become easy to work out).</td>
</tr>
</tbody>
</table>

![Diagram](image-url)