ACADEMIC PERFORMANCE OF STUDENTS IN SCIENCE SUBJECTS OF MUTONGUNI SECONDARY SCHOOL IN KITUI DISTRICT, KENYA

A Research Paper
Presented to the
Institute of Continuing and Distance Studies
Kampala International University

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science in Education

by

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APRIL 2007

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ACKNOWLEDGEMENT

The researcher would like to first register his sincere gratitude to the following:

Miss Cybelle A. Gonzales, researcher's adviser, for her very kind guidance, advice and support in writing this research project.

Mr. and Mrs. Nzung'a, researcher's parents, for their continuous support and financial assistance during the process of research work.

This is also extended to all who are not mentioned here but without them this research could not have been compiled.

DEDICATION

The researcher would like to dedicate this work to his dear mum and dad for their support and encouragement during the research work and studies.

DECLARATION

This research project is my original work and it has not been presented to any examining body for the award of any degree or certificate.

SILA ONESMUS NZUNG'A

Reg. No. : BED/7038/51/DF

Date : August 2007

This research project is presented for the examination with the approval of Kampala International University research supervisor.

CYBELLE A. GONZALES, BSED, MATS

Date : August 2007

ABSTRACT

Objectives: This study determined the academic performance of students in science subjects of Mutonguni Secondary School in Kitui District, Kenya. Specifically, this study determined the profile of the students as to age, gender and class. It determined the level of academic performance and determined if there is a significant difference in the level of academic performance between male and female students.

Design: This study employed the descriptive survey method of investigation.

Respondents: This study involved 80 students wherein forty (40) were in form four north (4N) and forty (40) in four south (4S).

Findings: This study revealed the following: the mean age of the students was 17.30; the level of academic performance was good (mean= 40.86); It was evident that there is a significant difference in the level of academic performance between male and female students.

Conclusion: Based on the findings, it was concluded that the academic performance of students in science subject are rated as good. However, it needs to be improved.

Recommendations: Based on the findings of the study, the administrations must investigate on the causes of low performance of students in sciences in secondary school.

THE PROBLEM AND ITS SCOPE

INTRODUCTION

Rationale of the Study

There is a general misconception that sciences which include physics, chemistry and biology are very difficulty subjects. The poor secondary certificate of secondary education (KCSE) results is worrying the stake holders in education.

These are incisive analysis of why Kenya educator's efforts to achieve excellence in schooling have frequently failed. Today some interesting proposals have been as to how we might improve the academic achievement in sciences. The current debate reflects parents' concern for more choices in how they school their children.

Many authors of recent essays and reports belief that excellence can be achieved best by creating new models of schooling that give both parent and students more control over types of school environment available to them. Many believe that more money is not a guarantee of quality in schooling.

If the major causes of poor performance can be identified then the state can be improved tremendously in secondary schools. the research there aims at identifying the factors and challenges faced by students, teachers and other stake holders in education during teaching and learning, their magnitude and possible approaches or strategies in dealing with problems due to the fact that the objectives of science teaching have largely not been achieved as indicated by poor performance in national examination. This aspect has led the

researcher to launch the study. The learner's performance in science subjects is of great concern considering the fact that those subjects are key to the attainment of the national goal of industrialization by the year 2020. This situation also has aroused the interest of the researcher to conduct this research

According to 2003 K.C.S.E results for Kitui district for instant , in Chemistry out of 2984 candidates only 141(4.7%) candidates got B+ and above while 2278(76.3%) got D+ and below. In physics out of 906 candidates only 86(9.5%) candidates got B+ and above while 461(50.8%) candidates got D+ and below. In biology out of 3013 candidates only 166(5.5%) candidates got B+ and above while 1529(50.7%) candidates got D+ and below. The results clearly indicates that the majority of the candidates obtained low grade i.e. D+ and below. There is clearly a problem as it relates to both quality and quantity of the grade, an indication of low academic performance.

These empirical observations has transformed researcher to explore the problem in order to come up with the major cause of these problem. According to earlier research conducted by SMASSE some of these causes are poor attitudes towards sciences lack of motivation to teachers, parental status and parents' level of education, inappropriate methods and approaches in teaching, inadequate content mastery by teachers , poor utilization and distribution of school resources and inadequate supervision /guidance from the ministry of education science and technology.

The researcher being a biology/chemistry teacher for the last six years has extensive experience in teaching sciences and therefore has a first hand information on some of the major causes of poor performance, bearing in mind that he has been interacting with both boys and girls in all classes in secondary school.

Theory

This study is based on the self-esteem fraud theory of Shokraii (1998), which states that teaching children to feel good about them will help them performs better as students. Self-esteem simply means satisfaction with one-self. It begins to develop early in life and has been studied in children as young as seven years.

As children learn to describe aspect of themselves such as their physical attributes, activities and preferences, they also begin to evaluate them. Central to institution, individual has not but several views of their selves, encompassing many domain of life such as scholastic ability, physical appearance and romantic appeal, job competence and adequacy as a provider.

Self-esteem theory is two, earned and global. Self-esteem theory is attained by individual through their own accomplishment-satisfaction from having soared well on an exam for instance; it is based on a success in meeting the test of reality-measuring up to standard at home and in school. It possesses the entire positive character trait that ought to be encouraged and applauded, because it is ultimately based on working habits. Global self-esteem refers to a general sense of pride in oneself. It is not ground in a particular skill or achievement. This

means that an understanding student can bask in warmth of global self-esteem, even if the door to earned self-esteem is shut. Feeling of self worth will inspire academic success, the reality is different. William Damon, an educational psychologist at Brown university warns that heighten global self esteem can lead children to have an exaggerated, though empty and ultimately fragile sense of their own powers (or) a distrust of adults communication and self adult.

The fundamental difference between earned and global self-esteem rests on their relationships to academic achievement .the idea of earned self-esteem says that achievement comes fast and that self esteem follows.

Global self esteem theory which is more popular in school maintains that self-esteem leads the way and achievement trails behind. Earned self-esteem needs no nurturing. It will develop almost naturally when youngsters have accomplished something worthwhile. Global self-esteem though is artificial; it requires active intervention on the part of teachers, parent and other authority figures. It is more than mere encouragement-something all children requires. Instead it involves students into thinking that that anything and everything they do is praise worthy.

Review of the Related Literature

According to Leder, it was noted that in science classroom, boys interacted more frequently than girls did with their teachers both seeking and receiving more attention. The girls' lower frequency of interaction might be connected to their loss of interest and confidence

and subsequent falling of their department in sciences, though the casual direction is difficult to establish.

Parent education level is strongly associated with student achievement. In general student of parent with higher level of education, perform better on average. In 1994, 13 year and 17 year Oldie's whose parent had at least some college education had higher mathematics and science proficiency than those whose parent did not finish high school.

High school graduates from high income families are more likely than those of low income status (SES) are more likely to experience school failure than those from higher (SES) FAMILIES.

Children in single-parent families are more likely to experience early school problems and less likely to participate in early literacy activities that children into two parent families in 1995, 3-5 year old living into two biological or adoptive parent were more likely to have read three or more times a week, to have been told a story once a week or to have visited library in the previous month than 3 to 5 year old living in one biological or adoptive parent (Education Digest, 1998).

Poverty is negatively associated with enrolment rates in early child hood education programs. For example, in 1995, 3 and 4 year old from families classified as poor was less likely to be enrolled in a pre-primary education than three and four year olds from non poor families (US Department of Education, 1995).

The difficult in speaking English is associated by dropping out of school since information transfer and processing is heavily dependent

upon language. For example 1995, 16 year old to 24 year olds spoke a language other than English at home the dropout rate of those who had difficulty speaking English 44% was substantially more than that of those without such difficulty (12%) (Choat, 1981).

Tutoring at home in schools, in shopping mall centers etc helps in improving academic performance since student get extra coaching I areas where they had missed in their academic journeys. Students from poor families are disadvantaged since they can not afford the cost of tutoring and they cannot all be above average academically (Adler, 1998).

Higher education highly motivated student who have high potential should not be penalized for factors in the school for or community environment and beyond their control to be effective, assessment must consider the adequacy of resources while identifying what a student knows and can do (Mc Grow Hill, 1997).

The age eleven the achievement of girls and boys was comparable, while at age fifteen boys scores higher than girls . the assessment of achievement program (Scottish office, 1996) survey suggests little general difference in the performance of girls and boys on most tasks carried out in their survey, however it was reported that girls outperform boys in a minority of tasks at standard four while boys did better than girls at standard seven again yielding some evidence of a relative gender decline over the years. This echoed some earlier research from USA which suggested that girls' interest and confident in sciences duo. This led to the proposal that if their interest and

confidence could be maintained so their performance (Askew and William, 1995).

There are several constrains on teaching faced in school that affect the academic performance. These constrains include the schedule which determine how a school day function, the perception that teachers have of student, the attitude of teachers, the resources that are available to teachers and students, the atmosphere at which the learning is taking place and finally the manner in which performance is assessed (Sparapani, 1998).

In UK recognized and emphasized the important of parental influence and the early age at which attitude to science is fixed. It defined the aims of science technology as the developing power of logical thought and equipping student with numeral and experimental skills (Cockcroft Report, 1982).

Sciences were an emotive topic for parents-even in middle class areas and school with good home school relations. Employment of these and self concept were closely linked. Very few parent who saw themselves as good in these subjects disliked doing them while most of parents who saw themselves as bad as science hated it the later parents had strong memories of school experience often available (Ruines, 1988).

Race and social-economic difference have greater impact on academic performance in sciences (Kohr et.al., 1989).

There has been particular interest in material expectance of their daughters' achievement in sciences but a significant effect was only

found in more highly educated mothers whose daughters achieve high grade in sciences (Jarathe et.al., 1987).

Significance of the Study

This study will benefit to the following disciplines:

The education stakeholders will be able to reform the curriculum and revive it to date.

The MOEST will be able to adequately set quality exams that will be instrumental to the student and frequent revisions of exam setting mode.

The parents will be able to make an estimation of the cost of taking their children through a science course and with the benefits associated; they are able to encourage them to pursue the course.

The sponsors will be enlightened and convinced about the expensive nature of science subjects but well assured of bright future of students taking sciences.

The teachers will be able to know the loop holes for the purpose of remedy, and where the strong areas existed be capitalized on.

The students will be able to be fed with the necessary information to harden them of to meet the current standards of the world.

The future researchers will be helped in writing the literature review to know what to research on and where to improve on.

Objectives

General: This study determined the academic performance of students in science subjects of Mutonguni Secondary School in Kitui District, Kenya.

Specific: this study sought to

1. Determine the profile of the respondents as to:

    1.1 socio demographic data

        1.1.1 Age

        1.1.2 Gender

        1.1.3 Class

2. Determine the level of academic performance in science Subjects

3. Determine if there is a significant difference in the level of Academic performance between male and female students

Statement of the Null Hypothesis (H_o)

There is no significant difference in the level of academic performance between male and female students.

RESEARCH METHODOLOGY

Design

This study was employed a descriptive survey to determine the academic performance of students in science subjects of Mutonguni Secondary School in Kitui District, Kenya.

Environment

This study was carried out in Mutonguni Secondary School in Kitui district, Kenya. The school caters both sexes and is located in Kitui District, Mutonguni Division, Kenya.

Respondents

This study were involved the 80 students wherein forty (40) were in form four north (4N) and forty (40) in four south (4S).

Instrument

This study utilized a researcher devised instrument which was a record sheet that contained the profile of the students as to age, gender, class and level of academic performance in science subjects.

Data Collection Procedures

The researcher used a transmittal letter provided by the university when interviewing the respondent in order to gain their confidence and trust.

After collated the data, the researcher went ahead to calculate the frequency and percentage to determine the profile of the students as to age, gender, class, and level of academic performance in science subjects. The paired or related t-test was used to test for significant

difference in the level of academic performance between male and female students.

Statistical Treatment of Data

The frequencies and percentages were used to describe the profile of the students as to age, gender, class and level of academic performance in science subjects.

Formula:

$F/n \times 100$

Where: f = frequency

n = total number

100 = constant

The paired or related t-test was used to test for significant difference in the level of academic performance between male and female students.

Formula:

$$t = \frac{\bar{d} - d_o}{sd / \sqrt{n}}$$

Where: t = computed value of the t – test statistic

$\bar{d}$ = mean difference

d_o = assumed difference

sd = standard deviation of the differences

n = total number of students

DEFINITION OF TERMS

For the purpose of the study, the following terms are defined operationally:

Level of Academic Performance refers to the general average of students in science subject whether it is excellent, very good, good and bad.

Science Subjects refers to biology, chemistry and physics which are offers in the fourth year level in Mutongi Secondary School.

Profile is a description of the important information of students as to age, gender, class.

RESULTS AND DISCUSSION

This study presents and discusses the profile of the students as to age, gender, class; level of academic performance; and significant difference in the level of academic performance between male and female students.

Profile of Students

A total of eighty students were included in this study where forty eight were male and thirty two were female. The ages were categorized into four: twenty one years old and above, nineteen years old to twenty years old, seventeen years old to eighteen years old and sixteen years old and below.

One or one percent were twenty one years old and above, six or eight percent were nineteen years old to twenty years old, sixty nine or eighty six percent were seventeen years old to eighteen years old, and four or five percent were sixteen years old and below. It gives the implication that the majority of the students were at the exact age of being fourth year because the mean of their ages was 17.30.

The classes were categorized into two: four north (4N) were forty students or fifty percent and four south (4S) were forty or fifty percent. It implies that the same number of students in each class.

Table 1

Profile of Students

Category	Frequency	Percentage (%)
Age		
21 – above	1	1
19 – 20	6	8
17 – 18	69	86
16 - below	4	5
Total	80	100
Gender		
Male	48	60
Female	32	40
Total	80	100
Class		
4N	40	50
4S	40	50
Total	80	100

Level of Academic Performance

Table 3 shows the level of academic performance of student's fourth term stage exam, the students had failing marks while forty two or fifty three percent belonged to good or pass category. This implies that the majority of the students had good or pass in science subject.

Table 2

Level of Academic Performance

Category		Interpretation	Frequency	Percentage (%)
80 – 100	excellent	distinction	-	-
60 – 79	very good	credit	5	6
40 – 59	good	pass	42	53
39 – below	bad	fail	33	41
Total		-	80	100

Significant Difference in the Level of Academic Performance Between Male and Female Students

Table 5 shows that there is a significant difference in the level of academic performance between male and female students, as shown by the computed t-value which was greater than the critical t-value.

Table 3

Significant Difference in the Level of Academic Performance Between Male and Female Students

Area	Critical t - value	Computed t - value	Decision on H_o	Interpretation
Male and Female	1.991	3.349	Reject H_o	Significant

CONCLUSION

Based on the findings, it can be concluded that the academic performance of students in science subjects are rated as good. However, it needs to be improved.

RECOMMENDATIONS

Based on the findings of the study, the following are recommended:

1. The administration must investigate on the causes of poor performance in sciences in secondary schools. Gender parity needs to be investigated in order to seek ways of reducing it.

2. Mutonguni Secondary School will have a further comparison in performance between sciences and other subjects to establish how true it is, that sciences are the most poorly performed subjects.

3. The Ministry of Education should revise the science subject's syllabus to see whether it can remedy the situation.

4. Lecturers should be up-to-date on the technological advances in science and be encouraged to take a greater interest in their students' welfare.

5. The government should provide funds for the Mutonguni secondary school to purchase equipment necessary for students to acquire skills.

BIBLIOGRAPHY

Books

Caine R.N and G. Caine, Making Connection, Teaching and Human Brain. 1997 Menlo Park, California in USA

Edwards P and E F Sparagran, The Thinking Learning System a Teaching Strategy for the Management of Diverse of Leaning Styles and Abilities. 1996 Washington DC

James A banks and cherry A McGee, Banks Handbook of Research a Multicultural Education. Macmillan 1995 New Yolk

Halt L. Human Brain and Human Learning. 1983 village of Oak Greek, Arizona USA

Journals

Armstrong T., Multiple Intelligence in Classroom.1994 Alexandria

Michael W. Aple, The Dangers of National Curriculum in These Times 1993. The educations digest February 1998 by the US department of education. US news and world report October 13 1997 by US and world report.

APPENDIX A

TRANSMITTAL LETTER TO THE HEAD TEACHER OF MUTONGUNI SECONDARY SCHOOL

February 25, 2007

MR. MUATINE K.

Head Teacher

Mutonguni Secondary School

Kitui District, Kenya

Dear Sir,

I am an education student 2nd year taking bachelors of education with science and am seeking for your consent to carry out my research in your school.

Your hospitality will be highly appreciated.

Respectfully yours,

SILA ONESMUS NZUNG'A

Noted by:

CYBELLE A GONZALES, BSED, MATS
Adviser

GEOFFREY KASOZI, BCOM, ACCA
Assistant Director, Academics, ICDS

APPENDIX B

RECORD SHEET

Student's #	Age	Gender	Class	General Average	Interpretation

APPENDIX C

PLAN FOR DATA PRESENTATION

Table 1

Profile of Students

Category	Frequency	Percentage (%)
Age 21 – above 19 – 20 17 – 18 16 - below		
Total		
Gender Male Female		
Total		
Class 4N 4S		
Total		

Table 2

Level of Academic Performance

Category		Interpretation	Frequency	Percentage (%)
80 – 100	excellent	distinction		
60 – 79	very good	credit		
40 – 59	good	pass		
39 – below	bad	fail		
Total				

Table 3

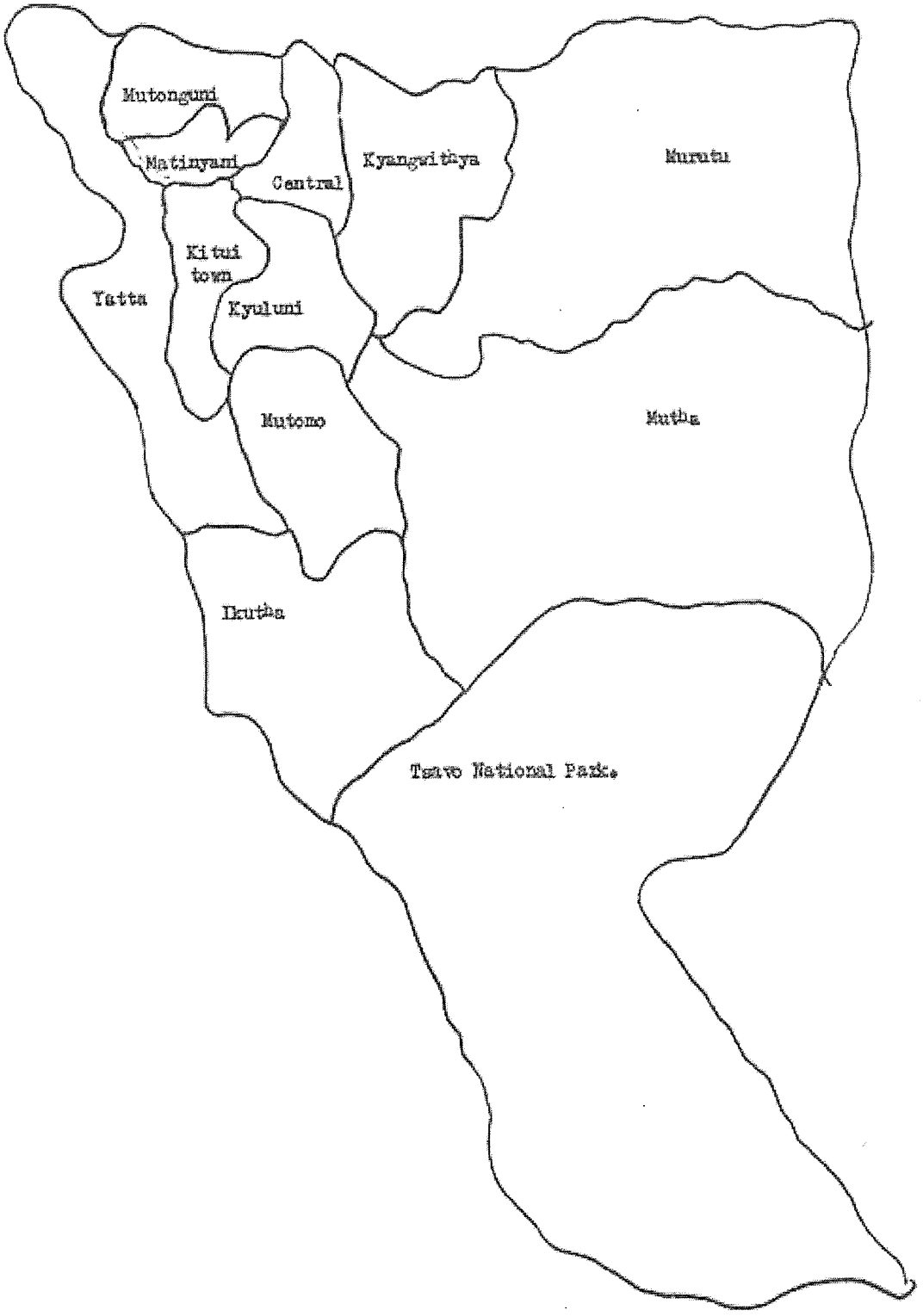
Significant Difference in the Level of Academic Performance

Between Male and Female Students

Area	Critical t - value	Computed t - value	Decision on H_o	Interpretation
Male and Female				

APPENDIX D

MAP OF RESEARCH ENVIRONMENT



CURRICULUM VITAE

Personal Background

NAME	:	Sila Onesmus Nzung'a
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Educational Background

TERTIARY	:	Kampala International University
		Bachelor of Science in Education
		2005 – 2007
	:	Kenya Teachers' Science College
		Diploma in Science Education
		1996 - 1998
SECONDARY	:	Kitui High School
		Kenya Certificate of Secondary Education
		C+ aggregate
		1990 - 1993
ELEMENTARY	:	Kataa Primary School
		Kenya Certificate of Primary Education
		1982 - 1989

Research Experience

Bachelor of Science in Education

"ACADEMIC PERFORMANCE OF STUDENTS IN SCIENCE SUBJECT OF MUTONGUNI SECONDARY SCHOOL IN KITUI DISTRICT, KENYA"