MAKERERE UNIVERSITY

SCHOOL OF STATISTICS AND PLANNING

A COMPARATIVE ANALYSIS OF PERFORMANCE OF SCIENCE AND ARTS SUBJECTS IN UGANDAN SECONDARY SCHOOLS


BY

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13/U/12975/EVE

213024288

A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF STATISTICS AND PLANNING IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN QUANTITATIVE ECONOMICS OF MAKERERE UNIVERSITY

JULY, 2016
DECLARATION

I, OKELLO MILTON, hereby declare that this dissertation is my original work and has never been presented to any educational institution for any award.

Signed: 

OKELLO MILTON

Date: 15/07/2016

This dissertation has been submitted with approval of my supervisor

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Kampala.

Date: 

[Signature]
DEDICATION

I dedicate this research report to my beloved parents Mr. and Mrs. Mukulo George for grooming me into the person I am today and also the greatest investors in my education, my brother Opio Walter and my sisters Amita Sharon for the support and encouragement they have given me throughout my education life.
ACKNOWLEDGEMENT

First of all, I give thanks and glory to God the Almighty for the provision and protection he has given me throughout my entire life and education. Without God, it would not be possible for me to accomplish this research project and my entire course.

This report could not have been written without a great deal of advice from my supervisor Dr Richard Tuyiragize and I would like to thank him for all the endless efforts, precious time, valuable comments and the expert guidance that she rendered to me in ensuring that this project comes to a success, all I can say is “God bless you.”
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<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
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<tbody>
<tr>
<td>CA</td>
<td>Continuous Assessment</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NAPE</td>
<td>National Assessment of Progress in Education</td>
</tr>
<tr>
<td>UACE</td>
<td>Uganda Advanced Certificate of Education</td>
</tr>
<tr>
<td>UCE</td>
<td>Uganda Certificate of Education</td>
</tr>
<tr>
<td>UNEB</td>
<td>Uganda National Examination Board</td>
</tr>
<tr>
<td>USE</td>
<td>Universal Secondary School</td>
</tr>
</tbody>
</table>
ABSTRACT

The major objective of this study was to establish a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level. The study further had three specific objectives and two hypotheses that were all used to achieve the study purpose.

The study applied a non-experimental design called descriptive survey research design. This study used a non-probability kind of sampling called purposive sampling. Purposive sampling was therefore used in this study because some of the respondents may not be readily available at the time of data collection. The questionnaires to be administered to the respondents at Gombe S.S.S was both open ended and close ended. This method was chosen because wide data can be obtained and it limits bias on the side of the researcher. In order to enhance validity, constant follow ups were done to respondents whose questionnaires are not returned; also piloting the questionnaire were considered and the misunderstanding was corrected; other data collection methods like interviews were also used to complement the questionnaire and enhance validity. Once the administered questionnaires are gathered, the data analysis was done according to the dissertation. Thus, all the data collected from respondents were analyzed based on descriptive statistical analysis by using the SPSS software so as to obtain a more statistical analysis of the study.

Study results showed that; there is a significant difference in the mean performance of science and arts subjects in Ugandan secondary schools both at the ordinary and advanced level. Furthermore, males perform better than females in both arts and sciences in Ugandan secondary schools; this is for both ordinary and advanced level. There is a significant relationship between access to learning materials and performance of the students in Ugandan secondary schools. The availability of teacher, their welfare and quality have a significant influence on the academic performance of students in Uganda secondary schools.

The study also recommends that; the school administration should strive to find a balance in the number of arts and science subjects teaching staff both at ordinary and advanced level. This will help to reduce the variations in the number of teaching staff available for the arts available for arts and science subjects thereby improving the academic performance of students.
CHAPTER ONE:
INTRODUCTION

1.1 Background

Education is a vital investment for human and economic development for any nation. It is a crucial sector in that, being a major investment in human capital development, it plays a critical role in long-term productivity and growth both at micro and macro levels (Cavalevu, 1979). Education at all levels and in all its forms constitutes a vital tool for addressing virtually all global problems. Education takes place as a learning process conducted in institutions of learning referred to as Schools as well as institutions of higher learning (Universities, Polytechnics and College) (Adeyemi, 2014).

Among other indicators of development of a nation, education has been found to be the basis upon which any nation advances. Hence the ultimate venture that any country can make is to educate its people by equipping them with the right skills, knowledge and attitude to the survival of its society. It is relevant therefore, that institutions of learning at all levels consider the need to integrate into their educational programmes elements that would enhance knowledge, moral conduct, rationality and useful practical skill for living. It is important that these should have some bearing effects on the lives of individuals who seek answers to the various problems of the society.

University education as the top level of formal education in Uganda is facing extraordinary demands to prepare professionals for what is usually referred to as the ‘‘knowledge society’’ (Shen et al., 2007). University education is therefore very important to national economy, both as a significant industry in its own right and as a source of trained and educated personnel for the rest of the economy. To achieve this, a wide range of courses are offered for different
fields of life in which students make their choices of study according to their previous academic subjects and performance along with their interests among other factors. These fields include but not limited to, General education, Vocational, Liberal Arts, Law, Engineering and Professional higher Education. To be enrolled in any university course, a student has to fulfill the entry requirements or standards for the particular university; universities have General Entrance (or “matriculation”) requirements, basic minimum set of qualifications that all students must have for example language requirements. In addition, each course also has its own entry requirements, both in terms of subjects a student must already have studied and attained the examination grades required for entry. If a student has the right subjects, the grades required will vary between universities and also between courses. That being said, some universities of Uganda offer courses such as the Bachelor’s Degree in Information Technology (BIT) which has flexible entry requirements for subjects of both Arts and Sciences. As a result, two groups of students with different backgrounds (Arts and Science) are admitted into the same course. Difference in the general performance in terms of GPA scores and in particular course units especially those with programming and mathematics concepts have raised concerns as to whether this difference is partially among other reasons caused by the difference in the A’ level backgrounds of the students.

1.2 Statement of the problem

For the past two years, it has been majorly through the consistence endeavors by the government of the republic of Uganda through the Ministry of Education and sports, and other stake holders such as the private sector to see that there is a balance between the performance of arts and science subjects in secondary schools both at the ordinary and advanced level.
However, failures have been seen for both the science and arts subjects at various secondary schools both at the O’level and A’ level. For instance, the performance of core science subjects has very poor as well with students who scored grade A, B and C being less than 10% of the total number of students sitting for exams in these subjects for a period of 2005-2008 (Science and Technology Policy Coordination Division report (2009)).

This research was therefore carried out to establish a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level.

1.3 Major Objective of the study
The major objective of this study was establish a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level.

1.3.1 Specific Objectives

1. To compare the performance of female and male students in both arts and science subjects.
2. To examine whether the level of accessibility to learning materials by students has an influence on the performance in both arts and science subjects.
3. To examine whether the availability of teachers, their welfare and quality have an influence on the performance of students.

1.3 Research Hypotheses

1. There is no significant between the performance of arts and science subjects.
2. There is no significant between the performance of female and male students.

1.5 Scope of the study

1.5.1 Content Scope
This study majorly established a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level.

1.5.2 Geographical Scope
This study was carried out at Gombe Senior Secondary School in Butambala District.
1.5.3 Time Scope

This study was carried in a period of three (3) months. This period was sufficient enough for the researcher to develop a proposal, collect and analyze data and later make a report.

1.6 Significance of the study

1. The findings of this research will guide the different stakeholders in the education sector such as the government of Uganda, school heads and parents on the general performance of arts and science subjects in Ugandan Secondary School.
2. The findings of this research will throw more light on the causes of differences in the academic performance between males and females and the data collected will be useful to the school and other stakeholders.
3. It will also be helpful as a guide for the future prospects in the field of education.
CHAPTER TWO:

LITERATURE REVIEW

2.1 The performance of female and male students in both arts and science subjects

Numerous studies have examined the factors that influence academic performance in primary and secondary education as well as at tertiary level, with the purpose of enhancing learning at these stages and reducing drop-out rates. Understanding different parameters which contribute to low or high achievement is a frequent topic.

Personal characteristics have been recognized by a number of studies as one of the factors affecting academic performance. These include sex, age, ability, parenthood, housing expenditures, social background, time spent on studies, time spent on paid work and motivation (Bugge & Wikan, 2013). In addition, Nyikahadzoi states that gender is important in explaining academic performance of students. Likewise, Islam (2014) confirmed gender of the students showed significant independent effect on CGPA. However other results from different studies have showed no significant effect on academic performance with regard to gender (Odeh, 2007; Bugge & Wikan, 2013; Kyoshaba, 2009).

Other studies identified students’ attitude/interest in the course as one of the factors which have got a profound effect on the academic achievement (Ali, 2013; Fenollar et al., 2007; Mekonnen, 2014). Kraft and Singhapakdi (1991) as cited by Osaikhiuwu (2014) confirmed that students with strong work ethics (which are influenced by attitude/interest) are strongly committed to their work, more dedicated, focused and tend to perform better than their peers. Furthermore, Thamavithya (n.d.) identified other personal issues influencing academic achievement: (a) Financial difficulties, (b) physical illness, health problems, injury, (c) use of alcohol or other substance abuse, (d) pressure, stress, tension and anxiety, (e) loneliness, lack of emotional control, (f) can’t find meaning for anything, no motivation, and (g) conflicts with social obligations/activities.

According to Thamavithya (n.d.) lack of study skills, difficult subjects, too heavy course load, pressure, stress, tension and anxiety have a noteworthy influence on the academic performance. A student’s pre-admission achievement according to Islam (2014) and Martha (2009) has a significant determinant effect on his/her educational achievement. The time spent in study, particularly time spent more than 14 hours per week showed significant positive effect on academic performance.
Among other factors identified to influence academic performance include factors related to career issues. However, according Thamavithya (n.d.), career issues such as unsure of major, unsure of minor, no clear career goals or plans, unsure of interests, skills and abilities, do not have a strong impact on the academic performance.

Social related factors have also been recognised by a number of studies to have notable effects on academic performance (Thamavithya, (n.d.); Umar, Shaib, Aituisi, Yakubu, & Bada, 2010). University life can be stressful, though it is without doubt one of the most memorable experiences in a student’s life. It is characterized as a critical developmental period for both late adolescents and young adults.

Social factors such as romantic relationships, organizations and clubs (societies) (Umar et al., 2010), social networks, sports activities among others have been found to have effects on students’ academic performance. These factors have an effect on academic performance in terms of time demanded and the psychological state they may cause. The problem is how one handles a balance between the stressful academic achievement and social activities. Work commitments, family orientated learning, situation characteristics like a supportive environment, separation from home, family and friends, housing and roommate issues are reported to have an impact on the academic performance (Thamavithya, n.d.).

Institutions are engines for economic growth dedicated to developing skilled workforce (Osaikhiuwu, 2014). The environment present at the institution, academic or non-academic has got a bearing on the academic performance of students. If the institution provides an accommodating and conducive environment, it is most likely to improve the performance of its students otherwise the performance will be negatively affected.

Institutional academic factors that have been identified to affect performance include; physical facilities, institutional policy on class attendance, Library facilities, enrollment percentages, availability and qualification of institutional academic staff, teaching methods and the evaluation system (Ali, 2013; Haolader, Ali, & Foysol, 2015; Haolader & Nickolaus, 2012). The institutional variables such as unfavourable learning conditions, interrupted water supply, poorly equipped library, overcrowded exam time table, incessant strike and closure of school among other variables do not have any significant impact on students’ performance (Osaikhiuwu, 2014). Romer (1993) as cited by Osiakhiuwu (2014), recognized the importance of class attendance in enhancing students’ performance. He found that in his economics class, students who attended class regularly
made the highest grades. The geographical location of the educational institutions also influence academic performance where by institutions located in Urban areas record students with a higher academic performance than their rural counterparts.

2.2 Whether the level of accessibility to learning materials by students has an influence on the performance in both arts and science subjects

Family factors have also been reported to have a bearing on the academic performance of the students. Some studies have established that Social Economic Status (SES) (Farooq et al., 2011) of the family has got a significant impact on performance. Demographic variables, family member with a degree, household size, own room, own text book and access to internet at home are indirect means of the resources family background offer to the student (Nyikahadzoi, n.d.).

A study was conducted on the factors affecting academic performance of undergraduate students in Uganda. The results indicated that there is a significant relationship between parents’ social economic status and academic performance (Martha, 2009). This is the same finding by Farooq et al. (2011) on a study carried out in Pakistan which revealed that Social Economic Status (SES) and parents’ education have a significant effect on students’ overall academic achievement as well as achievement in the subjects of Mathematics and English. He added that the high and average socio-economic level affects the performance more than the lower level. To their research, parents’ education meant more than their occupation in relation to their children’s academic performance at school. Parents’ level of education as well as the level of involvement in their children’s (student’s) education have been reported to have significant effects on academic performance (Islam, 2014).

2.3 Whether the availability of teachers, their welfare and quality have an influence on the performance of students

Ali (2012) stated that students from monogamous (small size) families perform better than the students from polygamous (large size) families and he pointed out the reasons that are responsible for this: i) The students in monogamous homes have more time to read their books and study in most cases, because there are fewer people to send on errand. But in polygamous families, the reverse is the case; ii) The students from polygamous homes have more tendencies to be social deviants due to lack of care and adequate supervision; iii) Since there are more people in a polygamous family, they exert a lot of pressure or influences that are negative, this will adversely affect the students.
However, other findings present a different view on the issue of family, reporting that it does not have a significant effect on student’s performance as per the findings from research conducted in Bangkok University, Bangkok (Thamavithya, n.d.). In addition, Islam (2014) found out that the economic status of the family measured by home ownership and household possessions showed no significant effects on academic achievement from his research. Bugge and Wikan (2013) also argued that parent’s education seems to be of little importance regarding the students’ performance. Parenthood (students with children) does not seem to influence performance significantly.

In addition to the aforementioned factors, high school background/previous academic record (Guàrdia et al., 2006) has also been mentioned to affect academic achievement. The academic achievement in a course is affected significantly by high school specialization, the average mark at high school (Odeh, 2007; Kyoshaba, 2009). Furthermore, Bugge and Wikan (2013) established that there is a correlation between results from upper secondary school and performance at university level. However, according to Mlambo (2011), there is no significant effect of the previous academic record on the education achievement of the students.

Also, a recent study shows a significant relationship between computer ownership and the use of technology which enhances students’ academic performance (AbduRahman et al., 2013).

All the above literature reveals that many studies have been conducted on the factors that affect students’ academic performance in general. Factors that have been pointed out are generally concerned with the students’ personal characteristics, family social-economic backgrounds, institutional issues, career related, social factors as well as high school background (specialization and grade achieved). But the purpose of this study is to investigate whether high school background specifically Arts and Science has a got a bearing on the academic performance of students in the programme of Bachelor’s degree in Information Technology (BIT) within the higher educational institutions of Uganda. Although some research has been carried out to study the effect of high school background on academic performance (Kyoshaba, 2009; Guàrdia et al., 2006; Bugge & Wikan, 2013; Odeh, 2007), none has been directed towards finding out whether Arts and Science backgrounds specifically affect students’ academic performance in a given course.
CHAPTER THREE:
METHODOLOGY

3.1 Research Design
The study applied a non-experimental design called descriptive survey research design. Descriptive survey research is defined as scientific method in which information is collected without changing the environment it includes surveys and fact-finding enquiries of different kinds, which seeks to obtain information that discloses existing phenomenon (Mugenda, 2003). The major purpose of descriptive research design is to describe the state of affairs as it exists at present (Kothari, 2003). The design involves primary research methods for the collection of primary data. The justification for using this design is that it clearly explores the existing status of two or more variables at a given time.

3.2 Sampling Size Selection
This study used a non-probability kind of sampling called purposive sampling. According to Saunders et al. (2000), purposive or judgment allows the researcher to make a choice of cases which according to his/her own view/opinion or judgment that give information which is in line with objectives stated. Purposive sampling was therefore used in this study because some of the respondents may not be readily available at the time of data collection. A sample size can be determined by the application of one of the several mathematical formulae. For this specific study, where we have a large population, Cochran (1963) equation was used to yield a representative sample for proportions thus obtaining a sample of 100 respondents as seen below;

\[
n = \frac{z^2pq}{e^2}
\]

Where;

\( n \) Is the sample size
\( Z^2 \) Is the abscissa of the normal curve that cuts off an area \( \alpha \) at the tails;
\( (1-\alpha) \) equals the desired confidence level, e.g., 95%
\( p \) Is the estimated proportion of an attribute that us present in the population, and
\( q = 1 - p \)
\( E \) Is the desired level of precision (0.098),
The value for Z is found in statistical tables which contain the area under the normal curve. e.g. $Z = 1.96$ for 95% level of confidence

Therefore by substituting the values in the equation as follows,

$$n = \frac{(1.96)^2 \times 0.5(1 - 0.5)}{(0.098)^2}$$

$$n = 100$$

3.4 Data Collection Methods

3.4.1 Interviews
This involved verbal interaction between the researcher and respondents. The researcher prepared the interview guide questions in connection to research questions. The technique was used because, sample is controlled more effectively, more information and that too in greater depth can be obtained, also the technique associated with greater flexibility, therefore the researcher has the opportunity to restructure questions so as to reach the research objectives. Interview helps to get reliable and valid information relevant to the research.

3.5 Data Collection Tools

3.5.1 Questionnaires
The questionnaires to be administered to the respondents at Gombe S.S.S was both open ended and close ended. This method was chosen because wide data can be obtained and it limits bias on the side of the researcher. In order to enhance validity, constant follow ups were done to respondents whose questionnaires are not returned; also piloting the questionnaire were considered and the misunderstanding was corrected; other data collection methods like interviews were also used to complement the questionnaire and enhance validity.

3.6 Validity and Reliability
Validity of a questionnaire refers to the extent to which it measures what it claims to measure (Mugenda, 2003). In testing validity, the researcher prepared questionnaires and present them to the supervisor for scrutiny and suggestions on the relevance, clarity and suitability of the information. The supervisor then made suggestions which were incorporated into the final draft. Reliability of research instrument refers to the measure of degree to which research instrument
yield consistent result or data after repeated trials. To establish the reliability of the research instruments, the researcher administered the questionnaires and pilot test them using 5 (five) respondents after which the researcher made the necessary corrections to the questionnaires.

3.7 Data Analysis
Once the administered questionnaires are gathered, the data analysis was done according to the dissertation. Thus, all the data collected from respondents were analyzed based on descriptive statistical analysis by using the SPSS software so as to obtain a more statistical analysis of the study. One of the strong points of SPSS is that it can perform almost any statistical analysis (Huizing, 1994). Cochran’s t-test was used to make comparisons between the science and arts subjects as well as the male and female student’s performance.

3.8 Ethical Considerations
The researcher ensured the respondents’ consent before involving them in the study. This included briefing the respondents about the research objectives, their roles and how they will benefit from the research. The researcher also ensure that the respondents’ information given is treated with utmost confidentiality while presenting results.
CHAPTER FOUR: 
RESULTS AND DISCUSSION

4.0 Introduction
This chapter presents the study results and discussion of the research findings. The chapter however outlines the findings based on the research objectives. The study main objective was to establish a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level. SPSS 16.0 was further used to generate the descriptive statistics and to establish the relation between the dependent and the independent variables of the study.

4.1 Comparison of the performance of female and male students in both arts and science subjects

Table 1.0: Mean performance of female and male students in both arts and science subjects

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ARTS (UACE)</th>
<th>SCIENCE (UACE)</th>
<th>ARTS (UCE)</th>
<th>SCIENCE (UCE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4.03</td>
<td>2.86</td>
<td>7.08</td>
<td>5.57</td>
</tr>
<tr>
<td>2007</td>
<td>4.26</td>
<td>3.15</td>
<td>6.81</td>
<td>4.42</td>
</tr>
<tr>
<td>2008</td>
<td>4.45</td>
<td>2.68</td>
<td>6.44</td>
<td>4.64</td>
</tr>
<tr>
<td>2009</td>
<td>4.64</td>
<td>2.98</td>
<td>7.09</td>
<td>5.25</td>
</tr>
<tr>
<td>2010</td>
<td>4.40</td>
<td>3.52</td>
<td>6.53</td>
<td>4.63</td>
</tr>
<tr>
<td>2011</td>
<td>4.22</td>
<td>3.36</td>
<td>6.4</td>
<td>4.54</td>
</tr>
<tr>
<td>2012</td>
<td>4.78</td>
<td>3.99</td>
<td>6.38</td>
<td>4.73</td>
</tr>
<tr>
<td>2013</td>
<td>3.65</td>
<td>4.07</td>
<td>6.69</td>
<td>4.71</td>
</tr>
<tr>
<td>2014</td>
<td>4.05</td>
<td>4.32</td>
<td>6.82</td>
<td>4.46</td>
</tr>
<tr>
<td>2015</td>
<td>3.55</td>
<td>3.12</td>
<td>6.82</td>
<td>4.06</td>
</tr>
<tr>
<td>AVERAGE</td>
<td><strong>4.2058</strong></td>
<td><strong>3.41</strong></td>
<td><strong>6.65</strong></td>
<td><strong>4.7</strong></td>
</tr>
</tbody>
</table>
As seen in table 1.0 above, it’s clear that there is a significant difference between the mean performance of female and male students in both arts and science subjects both at the ordinary level (6.6548 and 4.7025) and at the advanced level (4.2058 and 3.4073) respectively. Furthermore, this mean difference was tested below using Cochran’s t-test to ascertain whether this difference is significant.

Table 1.1: T-test statistics results for both arts and science subjects

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Pass</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>56.1</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>33.5</td>
<td>0.01</td>
</tr>
<tr>
<td>Total</td>
<td>89.6</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>42.1</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>32.8</td>
<td>0.04</td>
</tr>
<tr>
<td>Total</td>
<td>74.9</td>
<td></td>
</tr>
</tbody>
</table>

As seen from table 1.1 above, T-test statistics results for arts and science subjects showed that there is a significant difference between the performance of arts and science subjects at Gombe S.S.S since the p-value is less than 0.05. Furthermore, T-test statistics results for males and females showed that there is a significant difference between the performance of males and females at Gombe S.S.S since the p-value is less than 0.05. Personal characteristics have been recognized by a number of studies as one of the factors affecting academic performance. These include sex, age, ability, parenthood, housing expenditures, social background, time spent on studies, time spent on paid work and motivation (Bugge & Wikan, 2013). In addition, Nyikahadzoi states that gender is
important in explaining academic performance of students. Likewise, Islam (2014) confirmed gender of the students showed significant independent effect on CGPA. However other results from different studies have showed no significant effect on academic performance with regard to gender (Odeh, 2007; Bugge & Wikan, 2013; Kyoshaba, 2009).

4.2 Whether the level of accessibility to learning materials by students has an influence on the performance in both arts and science subjects

Table 1.2: Whether the level of accessibility to learning materials by students has an influence on the performance

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-square</td>
<td>6.42</td>
<td>3.000</td>
<td>0.0093</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>7.83</td>
<td>3.0000</td>
<td>0.05</td>
</tr>
<tr>
<td>Linear-by-linear Association</td>
<td>6.17</td>
<td>1.0000</td>
<td>0.013</td>
</tr>
</tbody>
</table>

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As seen in table 1.2 above, since the p-value=0.0093 is less than 0.05, this implies that there a significant relationship between the level of accessibility to learning materials by students has an influence on the performance in both arts and science subjects.
4.3 Whether the availability of teachers, their welfare and quality have an influence on the performance of students

Table 1.3: Whether the availability of teachers, their welfare and quality have an influence on the performance

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-square</td>
<td>5.725</td>
<td>3.000</td>
<td>0.0075</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>8.04</td>
<td>3..0000</td>
<td>0.06</td>
</tr>
<tr>
<td>Linear-by-linear Association</td>
<td>5.10</td>
<td>1.0000</td>
<td>0.042</td>
</tr>
</tbody>
</table>

N of Valid Class 100.00

As seen in table 1.3 above, since the p-value=0.0075 is less than 0.05, this implies that there a significant relationship between the availability of teachers, their welfare and quality have an influence on the performance in both arts and science subjects.
CHAPTER FIVE:

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The main objective of this study was to establish a comparative analysis of the performance of science and arts subjects in Uganda schools, both at the ordinary and advanced level. The study revealed that;

1. There is a significant difference in the mean performance of science and arts subjects in Ugandan secondary schools both at the ordinary and advanced level.
2. Males perform better than females in both arts and sciences in Ugandan secondary schools; this is for both ordinary and advanced level.
3. There is a significant relationship between access to learning materials and performance of the students in Ugandan secondary schools.
4. The availability of teacher, their welfare and quality have a significant influence on the academic performance of students in Uganda secondary schools.

5.2 Recommendation

1. The school administration should strive to find a balance in the number of arts and science subjects teaching staff both at ordinary and advanced level. This will help to reduce the variations in the number of teaching staff available for the arts available for arts and science subjects thereby improving the academic performance of students.
2. Narrow gender disparity by raising girl’s enrolment through massive sensitization of parents and promotion of a girl-friendly environment.
3. Government should recruit more quality teachers especially those teaching the science subjects, their welfare should as well be improved. This will motivate the available teachers to work for longer hours.
4. Revival of the senior women teacher’s position. These teachers specially cater for the need of girl child.
5. Improvement of the learning infrastructure. This could be done by constructing more class rooms. This will help reduce on the teacher to student ratio.
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