

Relationship between Entry and Exit Grades: Case Study of St. Monica’s College of Education, Mampong-Ashanti, Ghana

Samuel Amoh Gyampoh

Department of Mathematics and ICT, St. Monica’s College of Education, P. O. Box MA 250, Mampong-Ashanti, Ghana

Abstract - This paper is an action research article which involves a sample of 162 students of St. Monica’s College of Education for the 2018/2019 academic year graduates. The purpose of the study is to examine the relationship between the entry and exit grades of the 2018/2019 academic year graduates of the Diploma in Basic Education (DBE) programme. The study answered the following research questions;

1. Is there a correlation between final grade point average (exit grade) and entry grades of students?
2. What are some of the factors that significantly affect students’ academic performance?

Convenience sampling was used for the study. Convenience sampling because these results were found to be most appropriate and available for the study. Statistical analyses were done using Statistical Package for Social Sciences (SPSS) version 23. Pearson Correlation Reliability Coefficient Test was the main statistical tool used for the study.

The study revealed that students’ exit performance has little to do with their previous academic performance at the senior high secondary school. Students with good senior high secondary school grades can perform badly and the other way round.

The study recommends that student’s performance at the College of Education should not solely be based on entry grades but several factors may account for this negative and weak correlation between student’s entry and exit grades. Some of these factors are; Effective use of instructional period, Depth of knowledge of facilitators, Students’ motivation, Adequate coverage of content matter, just to mention a few.

Keywords - Entry grade, Exit grade, Diploma in Basic Education (DBE), Correlation, Academic Performance.

I. INTRODUCTION

A. Background to the Study

Education is the process of facilitating learning or the acquisition of knowledge, skills, values, beliefs and habits. Education frequently takes place under the guidance of educators; however learners may also educate themselves [1].

Education can be in formal (classroom-based, provided by trained teachers) or informal (happens outside the classroom, in after-school programs, community-based organizations, museums, libraries, or at home) settings and any experience that has a formative effect on the way one thinks, feels or acts

may be considered educational. The methodology of teaching is called pedagogy.

A right to education has been acknowledged by many governments and the United Nations [2]. Ghana being part of United Nations also see the need to provide quality education to all its citizens. Every country designs an educational system that will be suitable for its citizens so as to achieve the goals of the country as a whole. Since Ghana attained independence in 1957, education has been a major priority for both military and democratic governments. Ghana’s educational system has been subjected to series of changes, constantly in search of the model which would fit the needs of the country and the expectations of the citizen [3].

Ghana practices basically three(3) educational levels. They are Basic Education, High School and Tertiary. Formally, the educational programme consisted of nine(9) years of basic education, three(3) years of senior secondary education and three(3) or four(4) years tertiary education. Currently due to curriculum reforms, Ghana’s educational programme consist of nine(9) years basic education, four(4) years of senior secondary education and three(3) or four(4) years tertiary education.

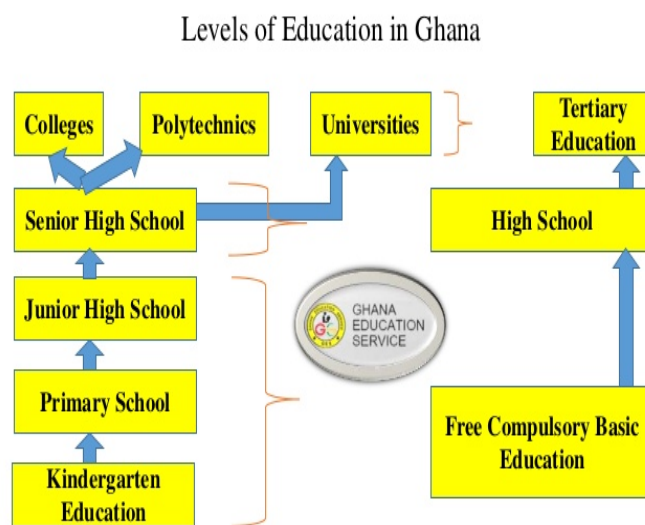


Figure 1: Levels of Education in Ghana (Source: Ghana Education Service [4]).

This research looks at the entry results of a three(3) year senior secondary graduates into a three(3) year diploma in Basic Education and their exit results after the period.

Students from the senior high schools complete their course of studying with a final exam known as the West African Senior School Certificate Examination (WASSCE) formally called Senior Secondary School Certificate Examination (SSSCE) before 2007. The table shows the grading system for the West Africa Examination Council (WAEC).

TABLE I
WAEC GRADING SYSTEM [5]

Grades	Numeric value	Definition	Interpretation
A1	1	Excellent	75% - 100%
B2	2	Very good	70% - 74%
B3	3	Good	65% - 69%
C4	4	Credit	60% - 64%
C5	5	Credit	55% - 59%
C6	6	Credit	50% - 54%
Pass Grades: not acceptable for tertiary admission			
D7	7	Pass	45% - 49%
E8	8	Pass	40% - 44%
Failing Grade			
F9	9	Fail	0% - 39%

Source: WAEC (2016)

After successful completion of senior high school education, qualified students can now apply to the tertiary institutions available. At the tertiary level, students can choose from universities, polytechnics, colleges of education. Hitherto, all colleges were under the supervision and guidance of the University of Cape Coast, so the grading system there was used for all colleges of education. The performance of students is assessed by their grading point average (GPA) which is calculated by using the grades obtained by students after their course of study. The grade point average is then used to classify students. The table below gives the classification of students' grade point average in the University of Cape Coast which is applied in all colleges of education.

TABLE II

CLASSIFICATION OF STUDENTS GRADE POINT AVERAGE IN THE UNIVERSITY OF CAPE COAST, (SOURCE: UNIVERSITY CAPE COAST [6].)

Grade Point Average (GPA)	Class
3.6 – 4.0	First
3.0 – 3.5	Second Class (Upper Division)
2.5 – 2.9	Second Class (Lower Division)
2.0 – 2.4	Third
1.0 – 1.9	Pass
Below 1.0	Fail

B. Purpose of the Study

The main purpose of the study was to investigate whether there exist a correlation between entry grades of students into colleges of education and their exit grades after their training at the college of education. The following objectives helped in achieving the main goal of the study:

1. To assess the entry grade and final grade point average (GPA) of the students.
2. To identify if there exist a correlation between the final grade point and entry grades of students.
3. To find out the factors that may affect students' academic performance.

C. Research Questions

With reference to the above purposes, the following research questions were used for the study;

1. Is there a correlation between final grade point average (exit grade) and entry grades of students?
2. What are some of the factors that significantly affect students' academic performance?

II. METHODOLOGY

The data for the study were obtained from students records at St. Monica's College of Education. Records of 162 students of the 2018/2019 academic year graduating class were collected. All students used for the study entered St. Monica's College of Education with West Africa Senior Secondary School Certificates.

Convenience sampling was used for the study. Convenience sampling because these results were found to be most appropriate and available for the study.

A. Pearson Correlation Reliability Coefficient Test

The Pearson correlation reliability coefficient test was developed by Pearson (1896) and was based on the work of others including Galton (1888), who first introduced the concept of correlation [7][8].

A correlation describes a relationship between two variables. There are different types of correlations that correspond to different levels of measurement. In fact,

correlation charts, also known as scatter diagram is one of the basic tools of statistical quality control [9].

The Pearson correlation reliability coefficient describes the strength and direction of a linear relationship between two variables. To identify the relationship, the scatter chart will describe the pattern of the data. The Pearson correlation reliability coefficient vary from - 1 to + 1. This range helps to determine both the magnitude and direction of pairwise variable relationships. The sign of the coefficient tells us whether the relationship is positive or negative, whereas the numerical part of the coefficient indicates the magnitude of the correlation. The close the correlation coefficient is to + 1 or - 1, the greater the relationship between the variables [10]. A positive correlation coefficient indicates a direct relationship, as X increases do does Y and as X decreases so does Y. A negative correlation coefficient indicates an indirect relationship, as X increases, Y decreases and as X decreases, Y increases. The table below shows the strengths assigned to the correlation coefficients when the plus or minus sign is ignored.

TABLE III
STRENGTHS ASSIGNED TO THE CORRELATION COEFFICIENTS

Correlation Coefficient	Strength
0 - 0.19	Very weak
0.2 - 0.39	Weak
0.4 - 0.59	Moderate
0.6 - 0.79	Strong
0.8 - 1.0	Very strong

The Pearson correlation coefficient is given by the following equation;

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

Where \bar{x} is the mean of variable x values and \bar{y} is the mean of variable y values [11].

The Statistical Package for Social Sciences (SPSS) version..... was used in analyzing the data.

III. RESULT

TABLE IV
SUMMARY OF THE DATA

Variable	N	Max.	Min.	Mean	Median	Mode	Standard deviation
Exit grade	162	3.87	1.01	2.5845	2.625	2.38	0.65918
Entry grade	162	36.00	14.00	25.0309	25.00	25.00	4.48520

From table IV, it shows clearly that most of the students were admitted with aggregate 25 and again, most of them had exit grade (grade point average) of 2.38. An exit grade (grade point average) of 2.38 shows that most of the students had a third class. The worst performing students had an exit grade (grade point average) of 1.01 which is a pass. The table also depicts that entry grade is widely spread than the exit grade. This does not mean that the performance of students at the College of Education is better than that of senior high secondary school. What it means is that, comparing the range of exit grade (grade point average) to that of the entry grade, the range of entry grade is widely spread than that of exit grade. Hence, that margin in the standard deviation.

TABLE V
STATISTICS OF STUDENTS ENTRY GRADE AND RESPECTIVE EXIT GRADE

Entry Grade	Number of Students	Percentage	EXIT GRADE		
			Minimum	Maximum	Mean
14	2	1.2	1.72	3.31	2.5150
16	3	1.9	2.38	3.01	2.6933
17	4	2.5	1.13	3.48	2.7375
18	5	3.1	1.04	3.48	2.7880
19	5	3.1	1.36	3.38	2.8720
20	8	4.9	1.73	3.48	2.7088
21	7	4.3	1.70	3.79	2.9443
22	13	8.0	1.82	3.49	2.5800
23	8	4.9	2.36	3.42	2.8325
24	15	9.3	1.62	3.46	2.7413
25	19	11.7	1.10	3.48	2.5016
26	12	7.4	1.73	3.83	2.6192
27	14	8.6	1.48	3.38	2.4043
28	12	7.4	1.01	2.86	2.1592
29	9	5.6	1.45	3.87	2.7922
30	7	4.3	1.09	3.36	2.4500
31	6	3.7	1.12	3.40	2.2617
32	6	3.7	1.75	2.74	2.3800
33	2	1.2	1.72	2.76	2.2400
34	3	1.9	2.23	3.34	2.6067
35	1	0.6	2.01	2.01	2.0100
36	1	0.6	2.81	2.81	2.8100

Table V above depicts the various entry grades, grade fourteen (14) to grade thirty six (36). A look at the table shows that the mean grade point average falls in the range (2.0100 - 2.9443). The maximum exit grade (3.87) was obtained by a student with grade 29 and the minimum (1.01) was obtained by a student with grade 28. The table again shows that majority of the students used for the study entered St. Monica’s College of Education with grade 25. The student who entered with the College with the best grade had grade 14 and the student with the least grade had grade 36.

The scatter plot for the data is shown below;

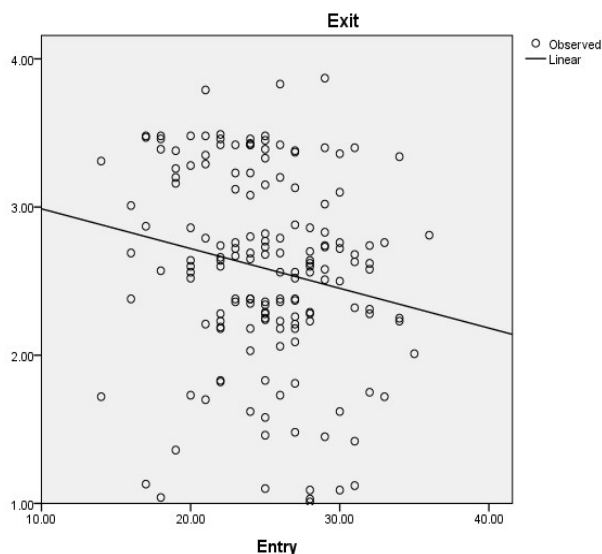


Figure 2: Scatter plot of the variables

The Pearson Correlation matrix is also shown below;

TABLE 6

PEARSON CORRELATION MATRIX OF THE VARIABLES

CORRELATIONS			
		Entry	Exit
Entry	Pearson Correlation	1	-.183*
	Sig. (2-tailed)		.020
	N	162	162
Exit	Pearson Correlation	-.183*	1
	Sig. (2-tailed)	.020	
	N	162	162

*. Correlation is significant at the 0.05 level (2-tailed).

From the scatter diagram above, it clearly shows that there is a very weak correlation between student’s entry and exit grades. The shape of the linear curve shows that there is a negative relationship between the variables. The value of the Pearson’s coefficient is – 0.183.

IV. DISCUSSION

From the results, the following issues are discussed.

1. The analysis of the data reveals that students’ entry grade has not positive influence on their exit grades. The best student in this study with an exit grade of 3.87 which is a first class entered the College of Education with aggregate twenty nine (29) and a student who entered with the best grade of fourteen (14) came out with exit grade (grade point average) of 1.72 which is pass. Also the student who entered with the least grade which is aggregate 36 completed

with grade point average of 2.81 which is a second class lower division.

2. To determine whether the correlation between variables is significant, compare the p-value to your significance level. Usually, a significance level of 0.05 works well. Significant level of 0.05 indicates that the risk of concluding that a correlation exists—when, actually, no correlation exists—is 5%. If the p-value is less than or equal to the significance level, then you can conclude that the correlation is statistically significant. From the Pearson Correlation Matrix (table 6), the p – value is 0.020 which is less than the significant level of 0.05. This shows that the correlation is statistically significant and the result was not obtained by chance.
3. The Pearson correlation coefficient of – 0.183 and the scatter plot shows that there is a very weak and negative correlation between student’s entry and exit grades. From the two variables discussed, entry grade and exit grade, it is not surprising that the correlations between the variables are very weak. The weak and negative correlation depicts that the link between these two variables is very weak.

V. CONCLUSION

It was realized at the end of the study that, students’ exit performance has little to do with their previous academic performance at the senior high secondary school. It is realized that students with good senior high secondary school grades can performed badly and the other way round.

Finally, the study reveals that there is a weak and negative relationship between the entry and exit grades of students’ who graduated from St. Monica’s College of Education in the 2018/2019 academic year.

The results of this study can be related to the research conduct by Joseph Kwabina Arhinful Johnson and Frederick Narkwa Anderson (2015)[12] on the topic, “Statistical Exploration of Academic Performance of Students in some Selected Programmes of the University of Cape Coast”. They concluded that, that students’ grade point average at the end of their four year study has little to do with their previous academic performance at the senior secondary school, it is observed that students with good senior secondary school aggregate can performed badly and vise versa.

The researcher therefore recommends that student’s performance at the College of Education should not solely be based on entry grades but several factors may account for this negative and weak correlation between student’s entry and exit grades. Some of these factors are; Effective use of instructional period, Depth of knowledge of facilitators, Students’ motivation, Adequate coverage of content matter, just to mention a few.

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