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Students Related Factors Influencing Their Performance in Ordinary Level Biology at the Cameroon General Certificate of Education (CGCE) Examination in Selected Secondary Schools in Fako Division-South West Region

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ABSTRACT

Poor performance in O/L Biology at the CGCE examination can be attributed to reasons from varied sources. However, this study sought to investigate how students-related factors influence their performance in Ordinary Level (O/L) Biology at the Cameroon General Certificate of Education (CGCE) Examination. The instruments used to collect data were a questionnaire for teachers and students and the analysis of Biology GCE O/L subject reports. The instruments were made up of few close and more open-ended questions (Triangulated study).

The data obtained from student questionnaires were analyzed separately from that of teachers using frequencies and percentages. Thematic analysis was also employed to open-ended items of the questionnaires. The results showed that Students were blamed for their poor performance in Biology O/L at the CGCE examination for the following cluster of reasons; Laziness, poor time management, misinterpretation of questions, do not follow instructions on question papers, speculation, phobia in drawing, poor communication skills, peer pressure, drug addiction, etc.

KEYWORDS: *Students, factors influence, Performance, Ordinary Level, Biology, Cameroon General Certificate of Education (CGCE) Examination, Secondary Schools*

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INTRODUCTION

Biology is a science subject that study living things which includes both plants and animals in their natural environment. It is made up of many branches and as numerous are the branches, so are the importance of Biology to individuals in particular and the family, community, and nation as a whole. For example, it offers career opportunities such as medicine, teaching, nursing, horticulture, etc to individuals. It also helps individuals to cultivate the habit of cleanliness (personal hygiene). Studying how to produce products such as corn beer, yoghurt, biogas, and also how to be environmentally friendly is important not only to an individual but also to families, community, and a nation.

The Main objective of this discipline is for students to demonstrate their knowledge and understanding of biological facts, ideas, and to be able to apply the knowledge to other things, students should be able to develop scientific problems solving skills by handling and processing information, drawing, conclusions, and making predictions. They should be able to develop scientific practical skills. Furthermore, the syllabus is designed and presented in such a way as to encourage both teachers and students to develop initiative, interest and courage, to be open-minded and cooperate with others, be aware that they can take decisions which affect the wellbeing of themselves and others as well as the quality of their environment.

The syllabus of this discipline is structured such that the first two years in secondary schools is devoted on developing the scope and definition of Biology, letting students do accurate observation of living organisms, encouraging them to draw, label and make brief description of diagrams, inculcate in them respect for all living organisms, ensuring students develop social habit of bodily cleanliness, the social and economic implications of some habits such as cigarette smoking, alcoholism, drug addiction, etc. It is hoped that students who drop out of school at this stage should be able to help themselves from what they would have acquired in part on this entire course. The later part of the syllabus prepares students to acquire skills for life use. It equally prepares them for the Cameroon General Certificate Education (CGCE) examination as well as other professional and international examinations.

Though with these carefully designed objectives and numerous advantages offered by Biology, these objectives are not fully attained as reflected in the performance of candidates in Ordinary Level (O/L) Biology at the CGCE examinations. For example, information from the Service of Results and Archives (SRA) for the South West Region from 2007-2016 shows that it was only in 2010, 2012, and 2015 that the percentage passed of candidates in O/L Biology at the CGCE examination were 50.02%, 51.96%, and 52.26% respectively. The least percentage passed was 41.34% which was in 2008. This poor performance can be attributed to students, school, family/home background, and society related factors.

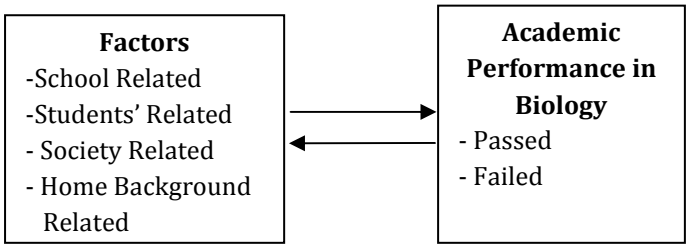

Figure 1.0: Attributes of Poor Performance
Source: Researcher.

The performance of candidates in O/L Biology at the CGCE examinations greatly depends on the above factors. The quality of performance of this discipline can be measured looking at the training of teachers, students, and the integration of the student into the job market. Poor performance has negative consequences on the candidates, school, teachers, sponsors, and the state. For instance, when candidates fail, they loss their self-esteem, the school population drops, teachers are not happy for it might be an indicator that they did not do their job, sponsors judge failure as wastage of time and resources. Poor performance is regarded as wastage of resources. One of the objectives of the state in education as stated in section VII 1.3 in the National Forum on Education (1995) is that "the school should ensure that the end product of the educational system is economically productive, enterprising, and endowed with initiatives likely to make him creative, self-reliant and capable of adapting to the evolution of science and technology at all times."Thus, if performance is measured at the end of a course program with candidates leaving school and are not self-sustaining (productive), the state sees this as wastage of resources. Though performance can be attributed to a host of factors, this study will narrow and focus on students-related factors.

Background

Demographic information projected by the United Nation predicted that the total annual population growth rate was to experience a drop from 2.3% in 2004 to less than 2% in 2010 as sited in the Draft Document of the Sector Wide Approach/Education. In spite of the demographic transition, the schooling population from 4-24 years of age is expected to increase from 805 million in 2004 to about 11 million by 2015. Specifically, an expected increase from 1,674,000 in 2004 to 2,234,400 by 2015 was envisaged for students of the first cycle secondary schools with age range of 12-17 years. The increase of students will obviously lead to an increase in school demands. For instance, increase demand of administrative, teaching, and support staff. There will also be increase in the demand of financial resources to build, equip, and run other aspects of the educational sector. The increase in school population has certainly led to an increase in class sizes and hence an increase in the student-teacher ratio. This and many more if not arrested can erupt poor academic performance that will have negative economic, psychological, and social consequences on the individuals, families, and a state.

It is probably on the background of this increasing student population, high expenses by the parents and state, high demand and competition for the job market, etc that has motivated researcher to be interested in the effectiveness of schools. Glickman (2010) identified the following as characteristics of effective schools; site management, leadership, curriculum and instructional articulation and organization, staff development, maximized learning time, widespread recognition of academic success, parental involvement and support, collaborative planning and collegial relationships, sense of community, clear goals and expectations commonly shared, and order and discipline. The effectiveness of an individual or system can be judged based on his/her performance be it in a formal and/or non-formal setting.

Biology is one of the science subjects. There is worldwide recognition of the importance of science and thereby science education in national development and this has found a central place in the curricula of schools at all levels (Ogbonna, 2007). According to Olasehinde and Olatoye (2014), science education is designed to guide the world towards a scientifically literate society and this is important for an understanding of science as it offers personal fulfillments and excitements. Ofoegbu (2003) asserts that Biology has a large student enrolment than any other science subject especially at the upper basic l level of the Nigerian education. Same is the case in Cameroon were Biology pulls the largest candidates' enrolment among the pure science subjects as indicated on the table below.

Over the ten (10) year period (2008-2016), statistics obtained from the service of results and archive at the South West Regional delegation showed that the number of students examined at the CGCE examination O/L in Biology (356951) almost doubled those who were examined in Chemistry (189902) and Physics (123351). This may be because Biology is a subject that offers numerous career advantages. Though with the large enrolment and career-oriented advantages attached to those offering Biology as a discipline, the level of academic performance is poor despite the amount of effort put in by those involved in the educational pursuit. Table 1 below presents performance in O/L Biology for ten (10) years (2007-2016) in terms of number of students examined, number of successful candidates, and related percentages of successful ones.

Table 1: Candidates' Performance in Ordinary Level Biology at the CGCE Examination from 2007-2016

Year	No. Registered	No. Sat	No. Passed	Percentage (%) Passed
2007	21218	20592	11338	49.67
2008	23231	22854	9448	41.34
2009	26524	25920	11319	43.67
2010	27738	27327	13668	50.02
2011	29619	29108	12785	43.92
2012	40444	39848	20706	51.96
2013	42790	42194	21148	49.87
2014	42278	41608	16977	40.80
2015	45968	45391	23721	52.26
2016	47141	46622	23231	49.83
Total	**356951**	**341464**	**153022**	**47.33**

Source: Service of Results and Archives (SRA). South West Regional Delegationof Secondary Education.

In the ten (10) years from 2007-2016, out of a total of 341464 candidates examined, 153022 were successful, giving a percentage passed of 44.81. The 47.33 % recorded as total is the average of the percentages for the ten (10) years. The number of candidates who were successful ranged from 16977 (40.80%) to 23721 (52.26%). Only in three years (2010, 2012, and 2015) out of ten years did performance reach fifty (50%) percent or slightly above. Out of a total of 341464 candidates examined, 188442 failed the CGCE examination.

Many researchers in science education had been concerned about the downward trend and have made efforts to identify some major factors responsible. Tom, Coetzee, and Heyns (2014) identify the following as factors to be responsible for the downward trends in Biology; biological science contents, characteristics of educators, educational strategies, resources, and biological science assessment. Also, according to Jackson (2009) poor performance of Cambridge Overseas school Certificate (COSC) learners in Lesotho can be interalia, attributed to the following; lack of parental involvement, an inappropriate curriculum, poor school management, a non-welcoming school climate and shortage of educational facilities and resources, second language as a medium of instruction, fear of external examinations, inadequate qualified educators, lack of discipline and poor school attendance by both the educators and learners.

At the CGCE Ordinary Level, Biology is divided into two papers since the creation of the CGCE examination board in 1993. That is the paper 1-the multiple-choice type questions (MCQs) which replaced the structural paper from the year 2010. And the paper 2-Essay type question. The paper 1 is made up of 50 question testing Bloom's four cognitive levels; knowledge (15 questions), comprehension (20 questions) application (10 questions) and analysis (5 questions).

The paper two of Ordinary Level Biology is the essay type paper. The objective of this paper is to test for candidates' knowledge and understanding of the topics in the syllabus. Candidates need to select relevant information and write the information in an orderly manner when answering questions in this paper. They are also expected to use diagrams and/or graphs where necessary. By so doing, this paper is also out to test candidates drawing skills, plotting of graphs, and problem-solving skills. This paper has not experienced any change in its format of setting and number of questions to be answered since the inception of the CGCE board until during the 2018 CGCE examination session. Currently, five questions are given for candidates to answer all within two hours and on a score of a hundred percent (100%). However, since this study does not stretch up to the 2018 session this innovation does not affect this scientific work.

Before now, this paper was made up of eight (8) questions. That is, four in section A and four in section B. Candidates were expected to answer four (4) questions choosing two questions from each of the sections. Each question carried a total score of twenty-five. These questions are equally set taking into consideration the four levels of Bloom's objectives mentioned above. The paper two was allocated two hours and with a total score of a hundred percent (100%) but is weighted on sixty percent (60%). It is therefore the weighted percentages of both the MCQ and the essay that gives the final score of candidates in this discipline. The general nature of both papers one and two Ordinary Level Biology is summarized below as follows;

Table 2: General Nature of the Ordinary Level Biology Examination

Paper No.	Type of Questions	Duration	Section	No. of Questions	No. of questions to be answered	Weighting
1	MCQs	1h 30mins	-	50	50	40%
2	Essay	2 hours	A	4	2	
			B	4	2	60%

Source: Regulations and syllabus for the CGCE examination (2013).

Table 2 summarizes the general nature of the Ordinary Level Biology examination in both papers one (MCQs) and two (essay). It shows type of questions, duration for each question type, sections that make up the question type, number of questions to be answered and the weighting in each paper.

Statistics obtained from the CGCE board by this researcher and randomly using scores of fifty (50) candidates in paper one (P1) and Paper two (P2) with numerical odd code numbers for three (3) successive CGCE examination sessions (2014-2016) revealed that many candidates perform better in P1 than in P2 as show by the table 3 below.

Table 3: Scores of Randomly Selected Candidates in Papers one and two Biology O/L from 2014-2016

Code	P1	P2	T	Code	P1	P2	T	Code	P1	P2	T
10001	46	38	84	11003	46	54	100	2001	32	38	70
10003	66	35	101	11005	64	31	95	2013	52	55	107
1001	38	14	52	11011	68	57	125	2015	28	17	45
10017	58	32	90	11015	76	78	154	2019	54	48	102
10019	56	57	113	11017	50	52	102	2031	42	33	75
10027	42	48	90	11021	52	45	97	2053	60	56	116
1003	48	37	85	11025	60	50	110	2055	52	55	107
10033	40	28	68	11027	44	25	69	2059	28	19	47
10037	60	51	111	11029	48	51	99	2063	28	11	39
10045	58	58	116	11031	68	72	140	2065	32	4	36
10053	48	29	77	11035	62	61	123	2067	56	68	124
10055	24	26	50	11037	46	40	86	2081	90	84	174
10059	70	33	103	11043	58	22	70	2099	24	19	43
10061	36	38	74	11045	48	60	108	2037	68	76	144
10063	24	32	56	11047	22	18	40	12061	42	27	69
10065	54	38	92	11049	30	63	93	12067	66	56	122
10067	48	37	85	11063	60	55	115	12083	44	31	75
10071	26	27	53	11065	64	86	150	22011	80	77	157
10073	48	36	84	11067	46	28	74	22019	46	35	81
10075	42	18	60	11069	54	61	115	22025	38	22	60
10087	38	19	57	11075	80	73	153	22033	56	12	68
10097	30	32	62	11087	48	31	79	22037	40	21	61
10099	54	17	71	11089	30	10	40	22039	42	56	98
10101	40	24	64	11091	44	60	104	22053	48	40	88
10103	44	55	99	11095	32	9	41	22057	38	48	86
10107	64	67	131	11099	66	66	132	22061	24	11	35
10117	46	21	67	11101	48	61	109	22075	32	12	34
10147	54	45	99	11105	68	60	128	22081	26	38	64
10149	36	1	37	11111	28	10	38	22097	30	34	64
10153	36	13	49	11121	62	39	101	32001	74	75	149
10157	54	49	103	11139	62	56	118	32007	72	80	152
10163	22	39	61	11141	54	36	90	32011	42	18	60
1017	50	27	77	11143	68	67	135	32019	22	44	66
10175	74	42	116	11145	39	14	53	32035	32	8	40
10177	64	21	85	11149	68	31	99	32055	30	44	74
10179	30	0	30	11151	40	31	71	32067	50	71	121
10181	46	34	80	11161	30	14	44	32069	32	33	65
10183	40	29	69	11163	40	35	75	32073	40	40	80
10187	36	24	60	11167	62	67	129	32075	44	44	88
1019	38	63	101	11169	34	12	46	32093	26	17	43
10195	32	22	54	11177	42	27	69	42025	46	51	97
10197	26	8	34	11183	52	31	83	42037	32	27	59
10201	54	28	82	11193	56	27	83	42043	40	29	69
10205	48	58	106	11195	54	44	98	42055	24	14	38
1021	42	23	65	11201	48	29	77	42089	64	59	123
10215	38	50	88	11207	40	53	93	42093	38	26	64
10217	34	9	43	11211	32	67	99	52011	50	41	91
10225	42	26	68	11213	48	44	92	52029	46	28	74
10227	46	53	99	11217	50	46	96	52063	82	71	153
1023	50	39	89	11223	26	7	33	52065	38	36	74
Total	**16**	**9**	**10**	**Total p**	**25**	**23**	**20**	**Total**	**16**	**15**	**14**

Source: Technical service CGCE board 2016.

From the table 3 above, during the 2014 GCE examination session, out of fifty (50) scores randomly selected, only sixteen (16) candidates passed Biology paper one (P1) with the highest score being seventy-four (74) earned by candidate with code 10175 and the least score in P1 was twenty-two (22) scored by 10163. In paper two (P2)of the same examination session, only nine (09) out of fifty (50) candidates passed. The highest score of sixty-three (63) was earned by candidate 1019 and the least score of zero (0) was earned by10179. Bringing the scores of P1 and P2 together left candidate 10107 with the highest score of one hundred and thirty-one (131) and candidate 10179 with the least score of thirty (30). When the scores of both papers were brought together ten (10) candidates passed giving a percentage passed of 20% and a percentage failed of 80%.

During the 2015 GCE examination session, out of fifty (50) scores randomly selected, twenty-five (25) candidates passed Biology P1 with the highest score being eighty (80) earned by candidate with code 11075 and the least score in P1 was twenty-two (22) scored by 11047. In P2of the same examination session, twenty-three (23) out of fifty (50) candidates passed. The highest score of eighty-six (86) was earned by candidate 11065 and the least score of seven (07) was earned by11223. Bringing the scores of P1 and P2 together left candidate 11015 with the highest score of one hundred and fifty-four (154) and candidate 11223 with the least score of thirty-three (33). When the scores of both papers were brought together twenty (20) candidates passed giving a percentage passed of 40% and a percentage failed of 60%.

Furthermore, during the 2016 GCE examination session, out of fifty (50) scores randomly selected, only sixteen (16) candidates passed Biology P1 with the highest score being ninety (90) earned by candidate with code 2081 and the least score in P1 was twenty-two (22) scored by 32019. In P2of the same examination session, only fifteen (15) out of fifty (50) candidates passed. The highest score of eighty-four (84) was earned by candidate 2081 and the least score of four (04) was earned by 2065. Bringing the scores of P1 and P2 together left candidate 2081 with the highest score of one hundred and seventy-four (174) and candidate 2065 with the least score of thirty-six (36). When the scores of both papers were brought together fourteen (14) candidates passed giving a percentage passed of 28% and a percentage failed of 72%.

Table 4: Quantitative Summary for the Randomly Selected Fifty Candidates on Table 3

	2014 Session			2015 Session			2016 Session		
	P1	P2	T	P1	P2	T	P1	P2	T
Total No. of candidates passed.	16	09	/	25	26	/	16	15	/
Total no. of candidates who passed in both papers.			04			15			13
Total No. of candidates with at least average scores(≥ 50 %).			10			20			14
Total percentage (%) passed	**20%**			**40%**			**28%**		

Source: Technical Service of the CGCE board.

During the 2014 session sixteen (16) candidates out of the fifty (50) randomly sampled passed in P1 and not in P2, twenty-five (25) in P1 against twenty-three (23) in P2 during the 2015 session of the CGCE examination and sixteen (16) in P1 against fifteen (15) in P2 in the 2016 CGCE examination session. In a comparative study of the scores of each candidate in P1 and P2 in each of the examination session, a total (T) of four (4), fifteen (15) and thirteen (13) candidates respectively passed in both papers during the three successive years (2014-2016) sampled. Summing up the scores of each sampled candidates and using Turney(2001) who considered the grade "C" to be for candidates with average performance (50%), a total (T) of ten (10), twenty (20) and fourteen (14) out of fifty (50) respectively passed during the 2014, 2015, and 2016 CGCE examination in Biology Ordinary Level with a respective percentage (%) passed of 20%, 40%, and 28%.

From the final scores of both papers, the CGCE board is able to grade. The degree or extend of performance at the CGCE is determined by the grade. The award of grades is a deliberative process which requires the exercise of professional judgment to avoid the probability of random and systematic errors. The CGCE board uses about 95% criterion reference and about 5% norm reference. This is done to ensure that the performance of one candidate should not influence that of another. Before grading is done, a scientific procedure is followed where by chief examiners of each panel are given instruments to answer and report about the general conduct of the examination for that year. Some of the rubrics found on the questionnaire include; general observation on performance of candidates, defects on questions and instructions, marking schemes, trial marked scripts, syllabus coverage, etc. Grading is subject specific. For instance, the score range for an 'A' grade say in Biology might not be the same for Chemistry, Physics, History, etc. In an interview with one of the key workers of the CGCE board, he said; "the cardinal principles that the board upholds are that grades are not awarded in sympathy to candidates. Secondly that grade boundaries are confidential to the board since there is no stated fixed score for a particular grade. Lastly, that there should be no 'grade lip'. That is they try as much as possible to narrow the grade boundaries".

Statement of Problem

Biology is one of the science subjects at the Ordinary Level in secondary schools in Cameroon and is among the high-profile subjects. It offers many career opportunities such as medicine, teaching, nursing, agriculture, laboratory technicians, and horticulture. Apart from offering job opportunities, it helps learners on personal and environmental hygiene as well enabling them to understand changes in their environment and the factors affecting these changes. This discipline goes to the extent of ensuring that learners know how to use natural resources such as maize, organic wastes, etc to produce products that are helpful to them as individuals and to the community. With these numerous opportunities offered by Biology as a discipline, unstable and low achievement in the subjects has elicited great concern among science educators within Cameroon.

Statistics from the Service of Results and Archives (SRA), Regional delegation for the South West from the year 2007-2016 gives a total average percentage passed of 47.33%. This poor percentage passed constitutes a problem because education entails the use of huge sums of money by the state and sponsors. Not only money is wasted but time is also wasted. Poor performance also brings about psychological trauma to the candidates who will consider themselves not fit to socialize with those who performed well. Likewise, to the sponsors who will not be happy when the sponsors of other candidates are jubilating because of the success of their children. In the same vein, the teachers and school authorities will be traumatized since the poor performance might be an indication that they are not meeting the expectations of the community and also that the poor performance will affect the school economically. Finally, the state also suffers the trauma when performance is not poor. That is, poor performance might give a bad picture of her educational system to other countries and this might lead to loss of job opportunities by her citizens.

Poor performance also constitutes a problem because this researcher does not know what students think are the causes of poor performance since the CGCE board has suggested some possible causes of poor performance through the views of O/L GCE examiners. Thus, there is need to hear the voice of Biology teachers who are not examiners and those of the students in order to get enough data to inform policy and practices.

Objective

To investigate how student-related factors influence their performance in Ordinary Level (O/L) Biology at the Cameroon General Certificate of Education (CGCE) examination in some selected general secondary schools in Fako division of the South West Region (SWR).

Research Question

How do students-related factors influence their performance in Ordinary Level (O/L) Biology at the Cameroon General Certificate of Education (CGCE) examination?

METHODOLOGY

Both qualitative and quantitative designs were adopted for this work though with more emphasis on the qualitative design using open-ended items to enable respondents give their views. The quantitative approach was used on reported data based on the provided demographic information of respondents and items that had stated answers (close-ended questions).

This research was carried out in Fako Division of the South West Region of Cameroon. In this division are over a hundred secondary grammar schools that this researcher could have exploited but due to limited time needed for this work to be completed this researcher limited himself only to few selected public, religious (confessional) and lay private schools. Proportionate stratified random sampling technique was used to select the secondary grammar schools in Fako to administer instruments. Each institution type was sampled without the interference of the other. This was done to ensure equal representation across each school type and across each Sub-division in Fako. Fako Division is made up of four Sub-divisions; Muyuka, Buea, Tiko, and Limbe Sub-divisions. The division covers a surface area of 2,093Km^2 and with a population of 466412 as of 2005.

Population of the Study

Two groups of individuals were targeted by this researcher. That is, teachers and students in secondary grammar schools (SGS) in Fako Division of the South West Region (SWR). For the teachers however, the population that this researcher gained access to was science teachers in Fako Division.

Table 5: Population of the Study for Teachers

S/N	Type of Institutions	Target Population	Accessible Population
1	Public Schools	1887	274
2	Lay Private Schools	469	291
3	Confessional Schools	469	127
	Total	**2825**	**692**

Source: Regional office for school maps/Teacher's resource center-SWR. (2018/2019)

From the table 5, there are many teachers in public schools (1887) in Fako Division than in the lay private and confessional schools whose total number is about 469 each. However, the population of teachers in Fako Division stood at about 2825 as per the time of this study. The lay private schools had many science teachers (291) that the public schools (274). The least with the number of science teachers was the confessional schools with only 127 science teachers. However, there were a total of about 692 science teachers in Fako Division as per the time of this research.

In the case of students, the targeted population was secondary grammar school students while the accessible population was lower sixth students.

Table 6: Population of the Study for Students

S/N	Type of Institutions	Target Population	Accessible Population
1	Public Schools	5646	4110
2	Lay Private Schools	522	292
3	Confessional Schools	826	227
	Total	**6994**	**4629**

Source: Regional office for school maps/Teacher's resource center-SWR. (2018/2019).

Out of 5646 number of students in second cycle of public schools in Fako Division as revealed by the regional office for school maps and the teacher's resource center for the South West Region (2018/19 school year), 4110 offered Biology giving a percentage of 72.8%. This means that just 27.2% of students in second cycle in Fako offered other subjects excluding Biology. In the lay private institutions, 55.9% of students offer Biology while 44.1% choose to offer other subjects but not Biology. 27.5% of students in the confessional schools offer Biology while 72.5% of students do not offer Biology. Summarily, out of a total of 6994 second cycle students in Fako Division in the year 2018/19, 4629 of them offer Biology giving a total percentage of 66.2%. Thus, only 33.8% of students do not offer Biology.

Sample and Sampling Technique

A sample is a representative of the parent or accessible population. The samples of this study are Biology teachers in Secondary Grammar Schools (SGS) in Fako Division and students of lower sixth science and arts who offered and wrote the CGCE O/L Biology examination. For the selection of participants, this researcher employed purposive or purposeful sampling to get Biology teachers only among the science teachers to answer the questionnaires. Some of them were Biology O/L CGCE examination examiners since they were considered experts who could give information that should best answer the research questions. Purposive sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which much can be learned (Merriam, 2009). A disproportionate stratified random sampling technique was equally employed when instruments were given to teachers during a seminar/workshop to answer. This was done to save time and other resources and by so doing, some strata were over represented and others under-represented in the sample. For instance, not equal number of teachers in various schools answered the questionnaire.

For the selection of the students participants, two types of sampling techniques were used; simple random sampling and purposive sampling techniques. The simple random sampling technique was used in the lower sixth science classes where all the students had offered Biology in the first cycle. Students were thus randomly selected. However, for the lower sixth arts classes, the purposive sampling technique was used since not all the arts students had offered Biology at the first cycle. Thus, those who didn't do Biology could probably not give any useful information.

Table 7: Distribution of Biology Teachers in Fako Division

S/N	Type of Institutions	No. of schools in Fako	Pop. of Biology teachers in Fako
1	Public Schools	30	116
2	Lay Private Schools	50	150
3	Confessional Schools	19	61
	Total	**99**	**327**

Source: Regional office for school maps/Teacher's resource center-SWR. (2018/19)

From table 7, there were more lay private schools (50) in Fako Division than public (30) and confessional (19) schools during the 2018/19 school year. This probably might be the reason why lay private schools in Fako Division had more Biology teachers (150) than any other institution. The public schools closely followed the lay private schools in terms of number of schools (30) and teachers (116). It was tailed by the confessional schools with 61teachers. The public schools have a school to teacher ratio of 1:4 while the lay private and confessional schools are having a ratio of 1:3.

Data Collection

This researcher employed the use of questionnaires and document analysis so as to collect data for this study. These methods were used simultaneously due to the fact that a multi-method strategy enhances the credibility of a research study. Data for this research was pen and paper data (questionnaires). Data collected using the questionnaire was done partly by this researcher in collaboration with teachers and HODs of some schools. This researcher had the opportunity and collected data from a group of Biology teachers during a seminar/workshop organized by South West Life Science Teachers Association (LISTA) on the 28/11/2019 at GHS Limbe. It was also done by the Head of Departments (HODs) of some schools since some other teachers could not sacrifice their teaching periods for the exercise to be done in the presence of this researcher. The analysis of documents (Subject reports) was duly the responsibility of this researcher.

A total of five hundred and thirty-three (533) questionnaires were distributed within the fifteen (15) sampled public, religious and lay private schools used for the study. Out of this number distributed, four hundred and fifty (450) were returned. Those not returned were declared missing. Ethically, they were not to be forced to answer or returned it after pleading for them to do so. When CRR was calculated it gave 84.4% return rate.

$$\text{Corresponding Return Rate (CRR)} = \frac{\text{No. Returned}}{\text{No. Distributed}} \times 100 = \frac{450}{533} \times 100 = 84.4\%$$

Data Analysis

Data-analysis is a way that the researcher makes meaning of the data collected (Zar, 1984).For this research, the data were collected both quantitatively and qualitatively. The quantitative data were collected by means of close-ended items in the teacher and student questionnaires and analyzed separately. The data belonging to each category were then recorded and summarized using descriptive statistics. Descriptive statistics summarize data and makes clear of any trends and patterns from the data (Jaggi, 2003). The type of descriptive statistic used in this research was simple frequency distribution and percentages. Frequency distribution is defined as an organized visual representation of the number of individuals per category or scale of measurement (Manikandan, 2011). This researcher used frequency distribution because it gave a clear picture of how individual responses from each category of the questionnaire were distributed. It further simplified the information in the forms of percentages which made it easier to see the patterns and trends derived from a lot of respondents. The tables from the descriptive statistics were then interpreted using existing knowledge and expertise about the topic.

The qualitative data were collected from the open-ended items in the teacher and student questionnaires and document analysis. Thematic analysis was employed to the open-ended items. This researcher read fifteen (15) responses in each item of the instrument for teachers and important categories/themes were identified and written down. This was done to separate the

data into workable units (McMillan &Schumacher, 2010; Thomas, 2003). Responses from the rest of the questionnaires were then read and findings placed under the identified themes. New themes were equally added in the list of previously identified themes. After going through all the questionnaires and grouping similar themes, a frequency distribution table per item was produced and the percentages of each theme were calculated. This same procedure was done with the questionnaire for students. The degree or weighting of each of the themes said to what level it affects performance or the extent to which it can improve performance. The findings were then reported. Since this was a method of triangulation, both the qualitative and quantitative analyses were reported on simultaneously.

Another qualitative form of data for this study was the use of official documents. According to McMillan and Schumacher (2009) documents are records of past events. They comprise both written and printed materials and may be official or unofficial, public or private, published or unpublished, prepared intentionally to preserve a historical record or prepared to serve an immediate practical purpose. As such documents may be letters, diaries, wills, receipts, maps, autobiographies, journals, newspapers, court records, official minutes, regulations, proclamations, and statistical records such as enrolment records. The documents which this researcher went through were; CGCE examination O/L Biology examiners subject reports, past CGCE examination question papers, past CGCE examination booklets, a copy of chief examiners questionnaire used for grading candidates, and scores of some randomly selected candidates in Biology papers one and two.

This researcher went through subject reports of five successive years and identified some reasons attributed to poor performance in O/L Biology at the CGCE examination. Using thematic data analysis, this researcher identified and grouped similar themes. From the themes, a frequency distribution table was produced and percentages calculated. Recommendations made in these reports served as majors to improve performance were clustery grouped. Past CGCE examination question papers collected and studied shed more light on the type of questions asked during the CGCE examinations and if it covered the learning outcomes stated in the regulation and syllabus of the GCE examination. It was also to confirm or reject the blames attributed by respondents to the GCE board. The use of the CGCE examination booklets was to analyze performance trends in Biology and to judge which subject among the sciences is heavily offered by students. The study of the chief examiners' questionnaire form used for grading was to find out the various criteria taken into consideration before and during grading. Finally, the use of randomly selected scores of candidates was to compare the Biology paper in which candidates perform best.

Findings Revealed by Students in their Questionnaire

Findings are presented here according to the items set out to investigate students-related factors on the performance in the GCE examination and how performance can be improved.

Table 8: Opinion(s) if Students who write the CGCE Ordinary Level Examination are Partly to be Blamed for their Poor Performance in Biology

Response Options	Definitely, Yes	Yes	No	Definitely, No	Missing Values	Total
Frequency (f)	71	287	66	20	06	**450**
Percentage	15.8%	63.8%	14.7%	04.4%	01.3%	**100%**
	358 (79.6%)		86 (19.1%)		01.3%	**100%**

In reaction to whether students who write the CGCE Ordinary Level examination should partly be blamed for their poor performance in Biology, about four-fifths (79.6%) of the responding students agreed (63.8% Yes and 15.8% definite, Yes) while less than one-fifth (19.1%) disagree (14.7 said No and 04.4 said definitely, No). A few respondents (01.3%) did not respond to this item (missing values).

This implies that about 80% of the blames for poor performances should be shouldered by the students themselves.

Table 9: Reasons why Students should partly be Blamed for their Poor Performance in the CGCE O/L Biology Examination

Theme		Public		Religious		Lay Private		Total	
		Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass
Absenteeism and lack of concentration	No.	33	124	04	32	05	47	**42**	**203**
	%	78.6	61.1	09.5	15.8	11.9	23.1	**17.1**	**82.9**
Laziness, non copying of notes, non doing of assignments, and poor time management	No.	32	145	15	58	05	48	**52**	**251**
	%	61.5	57.7	28.8	23.1	09.6	19.1	**17.2**	**82.8**
Social media and peer pressure	No.	03	21	02	04	01	07	**06**	**32**
	%	50.0	65.6	33.3	12.5	16.7	21.9	**15.8**	**84.2**
Misinterpretation of questions, being scared of diagrams, and absence of past questions	No.	09	35	09	22	-	-	**18**	**57**
	%	50.0	61.4	50.0	38.6	-	-	**24.0**	**76.0**
Truancy, lack of motivation and orientation and the use of drugs.	No.	06	19	03	14	01	16	**10**	**49**
	%	60.0	38.8	30.0	28.6	10.0	32.6	**16.9**	**83.1**
Other reasons e.g. non following of question instructions, speculation of questions, don't ask questions, come late to class, don't have text books, home background factors, etc	No.	41	258	40	80	15	77	**96**	**415**
	%	42.7	62.2	41.6	19.3	15.6	18.6	**18.8**	**81.2**

Missing values (MVs)	No.	09	15	11	09	01	08	**21**	**32**
	%	42.9	46.9	52.4	28.1	04.7	02.5	**39.6**	**60.4**
Totals	**No.**	**133**	**617**	**84**	**219**	**28**	**203**	**245**	**1039**
	%	**54.3**	**59.4**	**34.3**	**02.0**	**11.4**	**19.5**	**19.0**	**81.0**

The students (especially those who passed O/L Biology) agreed to be partly responsible for their poor performances. About two-fifth (511 out of 1284 responses or 39.8%) cited a variety of reasons such as the non-following of question instructions, speculation of questions, don't ask questions, come late to class, don't have textbooks, home background factors, etc. Besides this group, the following reasons were also advanced for the part the students play in their poor performances:

1. Laziness, non-copying of notes, non-doing of assignments, and poor time management (303 out of 1284 responses or 23.5%).
2. Absenteeism and lack of concentration (245 out of 1284 responses or 19.1%)
3. Social media and peer pressures; misinterpretation of questions, being scared of diagrams and absence of past questions, truancy, lack of motivation and orientation, and the use of drugs (172 out of 1284 responses or 13.4%).

A small but significant number of responses (53out of 1284 responses or 04.1%) did not indicate any reasons for students' poor performance (missing values). The above-mentioned reasons were comparatively more pronounced in public schools (about two-third), about one-quarter in religious schools and least in lay private schools(one-sixth). On the whole, the highest responses (1039 out of 1284 or 80.9%) in support of the fact that students are partly responsible for their poor performance came from those who passed the CGCE O/L Biology examination.

Examples of responses in students' words included:
A 16yrs old male student from a public school who wrote the CGCE examination in 2019 and had a 'B' grade said;
"When the teacher gives them notes, they don't read them, they don't ask questions on what they have not understood because they are shy, and they are not focused when the teacher is teaching".

Table 10: Reasons why Students should not be Blamed for their PoorPerformance in the CGCEO/L Biology Examination

Theme		Public		Religious		Lay Private		Total	
		Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass
Teachers rushing over content, dating of their students as well as their being rude, strict, unfriendly and abusive to students	No.	24	66	24	21	09	41	**57**	**128**
	%	42.1	51.6	42.1	16.4	15.8	32.0	**30.8**	**69.2**
Lack of textbooks, broad syllabus and incompletion of syllabus, questions out of syllabus, and late payment of fees.	No.	05	14	05	06	01	10	**11**	**30**
	%	45.5	46.7	45.5	20.0	09.0	33.3	**26.8**	**73.2**
Teacher absenteeism and compulsory status accorded to Biology, etc.	No.	-	03	-	-	01	03	**01**	**06**
	%	-	50.0	-	-	100	50.0	**14.3**	**85.7**
Other reasons e.g. late payment of fee, teachers ask students to copy notes, family problems, poorly drawn school time table and procurement of other school needs	No.	32	71	29	26	07	16	**68**	**113**
	%	47.0	62.8	42.6	23.0	10.3	14.2	**37.6**	**62.4**
Missing values (MVs)	No.	16	123	15	50	04	37	**35**	**210**
	%	45.7	58.6	42.9	23.8	11.4	17.6	**14.3**	**85.7**
Totals	**No.**	**77**	**277**	**73**	**103**	**22**	**107**	**172**	**487**
	%	**44.8**	**56.9**	**42.4**	**21.1**	**12.7**	**22.0**	**26.1**	**73.9**

In reaction to whether the students think they should not be blamed for their poor performances, a good number of them (especially those who passed) did not advance any reason (245missing values out of 659 responses or 37.2%). The popular reasons advanced for the students not blaming themselves include:

1. Teachers rushing over content, dating of their students, being rude, strict, unfriendly and abusive to students (185 out of 659 or 28.1%); and
2. A cluster of differentiated responses such as the late payment of fees, teachers ask students to copy notes, family problems, poorly drawn school time table, and procurement of other school needs (181 out of 659 or 27.5%).

The above reasons were comparatively more pronounced in public schools (354 out of 659 responses or 53.7%), seconded by religious schools (173 or 26.7%), and least in lay private schools (129 or 19.6%). The overall percentage (73.9%) holding the allegation that students should not be blamed for their poor performance came from those who passed the CGCE O/L Biology examination.

Examples of responses in students' words included:
Furthermore, an 18yrs old female student from a religious school who wrote the CGCE examination in 2019 and had a 'C' grade said;

> "Some students who do arts and wish to write Biology at the ordinary level may have poor performance in a case where it is believed that an Art student should not do Biology and the period for Biology is moving along side that of another important arts subject. Thus, such students who want to write both subjects have to forgo one in order to attend the other".

Table 11: Suggested Strategies for Students so as to improve their Performance in the CGCE Ordinary Level Biology Examination

Theme		Public		Religious		Lay Private		Total	
		Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass
Be creative, learn to draw diagrams and do experiments	No.	12	43	19	31	04	24	**35**	**98**
	%	34.3	43.8	54.3	31.6	11.4	24.5	**26.3**	**73.7**
Learn to apply biological concepts and be motivated to study Biology	No.	05	02	-	-	01	03	**06**	**05**
	%	83.3	40.0	-	-	16.7	60.0	**54.5**	**45.5**
Do revision and with the use of past GCE questions.	No.	10	52	07	23	04	16	**21**	**91**
	%	47.6	37.1	33.3	25.3	19.0	17.6	**18.8**	**81.2**
Regular class attendance, copying of notes and proper time management	No.	25	95	13	33	07	43	**45**	**171**
	%	55.6	55.6	28.9	19.3	15.6	25.1	**20.8**	**79.2**
Students should be studious by working in study groups, working (reading) ahead of the teacher, studying without distractions, etc.	No.	51	192	40	62	08	57	**99**	**311**
	%	51.5	61.7	40.4	19.9	08.1	18.3	**24.1**	**75.9**
Avoid speculations, own and read textbooks, follow instructions on question papers, etc	No.	05	14	-	-	-	-	**05**	**14**
	%	100	100	-	-	-	-	**26.3**	**73.7**
Other factors. e.g. proper use of social media, cordial student/teacher relationship, do assignments, be discipline, form study groups, etc	No.	28	245	36	80	26	88	**90**	**413**
	%	31.1	59.3	40.0	19.4	28	21.3	**17.9**	**82.1**
Missing values (MVs)	No.	03	03	02	04	-	-	**05**	**07**
	%	60.0	42.9	40.0	57.1	-	-	**41.7**	**58.3**
Totals	***No.***	***139***	***646***	***117***	***233***	***50***	***231***	***306***	***1110***
	%	***45.4***	***58.2***	***38.2***	***21.0***	***16.4***	***20.8***	***21.6***	***78.4***

Amongst the things the students believe should be done by them to improve on their performances were the following:

1. The need for students to be studious by working in study groups, working (reading) ahead of the teacher, studying without distractions, etc. (410 out of 1416 responses or 29.0%).
2. Regular class attendance, copying of notes and proper time management (216 out of 1416 responses or 15.3%).
3. Be creative, learn to draw diagrams and do experiments (133 out of 1416 responses or 09.4%).

Interestingly, a significant proportion of the students cited a variety of reasons such as students to avoid being distracted in and out of class by phones (social media), the need for cordial student-teacher relationships, do assignments, be discipline, form study groups, etc (503 out of 1416 responses or 35.5%).

Comparatively, respondents from public schools advanced more strategies (55.4%) students can use to improve performance than those of religious (24.7%) and lay private (19.8) schools. An alarming percentage of responses (78.4%) proposing measures that students can take to improve their performance came from respondents who wrote and passed the CGCE O/L Biology examination.

Examples of responses in students' words included:
A 15yrs old female student from a lay private school who wrote the CGCE examination in 2019 and had an 'A' grade said; "Be more serious and attentive during lectures, study hard before examination, learn to be discipline both morally and spiritually, avoid studying away from classes, and meeting teachers with difficulties."

Table 12: Opinion(s) if there are Other Reasons (aside those Related to Students and Teachers) why many Students Fail the CGCE Ordinary Level Biology Examination

Response options	Definitely, Yes	Yes	No	Definitely, No	Missing Values	Total
Frequency (f)	123	261	24	03	39	**450**
Percentage	27.3	58.0	05.3	0.67	08.7	**100**
	384 (85.3%)		27 (06.0%)		8.7%	**100%**

In responses to whether there are other reasons responsible for students' failure in Ordinary Level Biology different from those of students and teachers, a large majority (85.3%) agreed (58.0% Yes and 27.3% definite, yes) that there are other reasons. Also, small but significant proportions either disagreed (6.0%) or did not register their opinions (8.7%). This shows that there are other reasons apart from those of students and teachers.

Table 13: Other Reasons (aside those Related to Students and Teachers) why many Students Fail the CGCE Ordinary Level Biology Examination

Theme		Public		Religious		Lay Private		Total	
		Fail	Pass	Fail	Pass	Fail	Pass	Fail	Pass
Late payment of fees, lack of textbooks, absence of libraries, no proper guidance and counseling of students, etc	No.	06	43	04	11	03	11	**13**	**65**
	%	46.2	66.2	30.8	16.9	23.0	16.9	**16.7**	**83.3**

No or unequipped laboratories, little or no practical, the compulsory status of Biology in some schools	No.	10	99	08	17	08	18	**26**	**134**
	%	38.5	73.9	30.8	12.7	11.5	13.4	**16.2**	**83.8**
Lack of parental motivation, orientation, peer pressure, etc.	No.	18	85	10	10	07	22	**35**	**117**
	%	51.4	72.6	28.6	08.5	20.0	18.8	**23.0**	**77.0**
Others e.g. too many house chores, difficult biological concepts, ghost town phenomena, family problems, social media influence, noisy environment, etc.	No.	43	200	47	51	18	78	**108**	**329**
	%	39.8	60.8	43.5	15.5	16.7	23.7	**24.7**	**75.3**
Missing values (MVs)	No.	07	24	17	73	01	14	**25**	**111**
	%	28	21.6	68.0	65.8	04.0	12.6	**18.4**	**81.6**
Totals	**No.**	**84**	**451**	**86**	**162**	**37**	**143**	**207**	**756**
	%	**40.6**	**06.0**	**41.5**	**21.4**	**17.9**	**18.9**	**21.5**	**78.5**

In reaction to reasons why students fail GCE Ordinary Level Biology other than the students and teachers related reasons, the most popular reason cited was grouped as other reasons such as too many house chores, difficult biological concepts, ghost town phenomena, family problems, social media influence, noisy environment, etc (437 out of 963 responses or45.4%) .

In addition to the reasons above, the following were also cited:

1. No or unequipped laboratories, little or no practical, and the compulsory status of Biology in some schools (160 out of 963 responses or 16.6%).
2. Lack of parental motivation, orientation, and peer influence (152 out of 963 responses or 15.8%).
3. Late payment of fees, lack of textbooks, absence libraries, no proper guidance, and counseling of students, etc. (78 out of 963 responses or 08.1%).
4. Missing values (136 out of 963 responses or 14.1%).

Comparing the reasons advanced by the three school types, 535 out of 963 or 5505% responses came from the public schools, 248 or 25.8% came from religious schools and 108 or 18.7% of the responses came from lay private schools. Students who passed the CGCE O/L Biology examination (78.5%) were able to come up with a cluster of other reasons aside those related to students and teachers why many students fail the CGCE O/L Biology examination.

Examples of responses in students' words included:
A 17yrs old male student from a public school who wrote the CGCE examination in 2019 and had a 'C' grade said;
"They fail due to bad friends in school, some are disturbed by family matters, witchcraft also disturb student's education, some are financially not stable and have no means of coming to school and by so doing have to trek from home to school and back".

Findings Revealed by Teachers in their Questionnaires

Table 14: Opinion(s) if Students who write the CGCE Ordinary Level Examination are Partly to be Blamed for their Poor Performance in Biology

Response options	Definitely, Yes	Yes	No	Definitely, No	Missing Values	Total
Frequency (f)	18	62	02	-	01	**83**
Percentage	21.7%	74.7%	02.4%	-	01.2%	**100%**
Cum. %	21.7%	96.4%	98.8%	98.8%	100.0%	**-**

The teachers registered a near unanimous agreement (96.4%). About three-quarters of them simply agreeing (74.7%) and with more than one-fifth (21.7%) agreeing definitely to the fact that students who write the CGCE Ordinary Level examination should partly be blamed for their poor performance in Biology.

Table 15: Reasons why Students should partly be Blamed for their Poor Performance in the CGCE O/L Biology Examination

Key to the tables below: TTs = Trained Teachers, UntTs = Untrained Teachers; ExTs = Experienced Teachers, InexTs = Inexperienced Teachers, and No.= Number

Status		T Ts	Unt Ts	Ex Ts	Inex Ts	Total
Theme						
Absenteeism/Irregularity, some students are impatient generally and rush in answering examination questions.	No.	16	18	19	15	**68**
	%	23.5	26.5	27.9	22.1	**100**
Some students don't copy notes, don't read, don't do assignments, do not manage their time well, etc.	No.	37	42	38	42	**159**
	%	23.3	26.4	23.9	26.4	**100**
Some students are lazy, do not study, distracted by friends, indiscipline, etc	No.	04	06	03	08	**21**
	%	19.1	28.6	14.3	38.1	**100**
Misinterpretation of questions, phobia for diagrams, poor drawing skills, etc.	No.	06	07	07	06	**26**
	%	23.1	26.9	26.9	23.1	**100**
Use of drugs and other substances.	No.	12	13	10	14	**49**
	%	24.5	26.5	20.4	28.6	**100**

Other reasons such as the lack of textbooks and other resources, wrong spelling of biological concepts, non mastery of biological concepts, students fail to follow instructions on question papers, indiscipline, poor presentation of material, lack communication skills, and can't report experiments.	No.	56	29	35	28	**148**
	%	37.8	19.6	23.6	18.9	**100**
Missing Values (MVs)	No.	01	01	08	08	**18**
	%	05.6	05.6	44.4	44.4	**100**
Total	**No.**	**132**	**116**	**120**	**121**	**489**
	%	**27.0**	**23.7**	**24.5**	**24.7**	**100**

The teachers almost unanimously agreed that students share part of the blame for their poor performances in Biology. Amongst the reason they gave for the part the students play in their poor performances were the following:

1. Some students do not copy notes, do not read, do not do assignments, do not manage their time well, etc. (159 out of 489 responses or 32.5%).
2. A cluster of isolated or other reasons such as lack of textbooks and other resources, wrong spelling of biological concepts, non/poor mastery of biological concepts, non-following of instructions on question papers, indiscipline, poor presentation of material, lack of communication skills, inability to report experiments, etc (148 out of 489 responses or 30.3%).
3. Absenteeism/ irregularity in classes, some students are impatient generally and rush into answering examination questions without reading the questions to the end (68 out of 489 responses or 13.9%).
4. Some students are lazy, they do not study, are distracted by friend, and are indiscipline (21 out of 489 responses or04.3%).

A small but significant number of respondents (18 out of 489 responses or 03.7%) did not indicate any reasons for students' poor performance (missing values). The above mentioned reasons were comparatively more pronounced in the responses of the trained teachers (132 out of 489 or 27%), least pronounced in those of the untrained teachers (116 out of 489 or 23.7%) and about the same for the experienced (120 out of 489 or 24.5%) and inexperienced (121 out of 489 or 24.7%) teachers.

Examples of responses in teacher's words:
Listen to what a trained experienced non-examiner from public school said;
"They don't study due to distractions from their electronic gadgets, they are inattentive in class and noisy, they don't do assignments, they do a lot of cramming instead of trying to understand, and they don't ask questions in class to understand better".

A trained experienced examiner from public school said;
"Students lack textbooks, students do not participate in class, they don't read alongside past question, and lack concentration during examination".

Also hear what an untrained teachers from religious schools said;
"They are lazy, they have poor study skills, poor in question interpretation, lack concentration, they are easily distracted, they don't attend classes regularly, and most of them are weak academically".

Table 16: Reasons why Students should not be Blamed for their Poor Performance in the CGCE O/L Biology Examination

Status		T Ts	Unt Ts	Ex Ts	Inex Ts	Total
Theme						
Some teachers mystify the subject with their teaching methods.	No.	06	05	07	05	**23**
	%	26.1	21.7	20.4	21.7	**100**
The syllabus is broad, teachers don't cover the syllabus and lack of textbooks.	No.	07	05	06	05	**23**
	%	20.4	21.7	26.1	21.1	**100**
Poor question wording and setting, compulsory nature of the questions, and absenteeism of teachers.	No.	02	03	02	03	**10**
	%	20.0	30.0	20.0	30.0	**100**
Other reasons. e.g. home chores, large class size, school and home location, socio-political crisis, absence of video aids, lack of orientation, less time allocated to teach, notion that students shouldn't be punished for doing wrong, some teachers teach out of the syllabus, etc.	No.	12	15	10	13	**50**
	%	24.0	30.0	20.0	26.0	**100**
Missing Value (MVs)	No.	01	01	08	08	**18**
	%	05.6	05.6	44.4	44.4	**100**
Total	**No.**	**28**	**29**	**33**	**34**	**124**
	%	**22.6**	**23.4**	**26.6**	**27.4**	**100**

In reaction to whether the teachers think students should not be blamed for their poor performances, the teachers advanced the following reasons for the non-blame of the students:

1. A cluster of varied reasons such as home chores, large class sizes, school and home locations, socio-political crisis, absence of video-aids, lack of orientation, less time allocated to teach, notion that students should not be punished for doing wrong, some teachers teach out of the syllabus, etc. (50 out of 124 or 40.3%); and

2. The mystification of the subject by some teachers with their teaching methods (23 out of 124 or 18.5%).
3. The broadness of the syllabus, teachers' inabilities to cover the syllabus and lack of textbooks (23 out of 124 or 18.5%).
4. A significant proportion did not suggest or offer any reasons (18 out of 124 or 14.5%).

The above mentioned reasons were closely pronounced in the responses of inexperienced (34 out of 124 or 27.4%) and experienced (33 out of 124 or 26.6%) teachers and least pronounced in the responses of the untrained teachers (29 out of 124 or 23.4%) and the trained teachers (28 out of 124 or 22.6%).

Examples of responses in teacher's words included:
A Trained experienced non-examiner from a public school said;
"Schools don't create enough arenas and programs to orientate, motivate and guide students especially on the examination requirements. Most of this is pushed to the last weeks before the examination".

Also, a trained experienced examiner from public school added that;
"Large class sizes, socio-political crisis have kept most students home for long, and lack of a conducive environment to study".

Lastly, an untrained teacher from a lay private school said;
"Some students live in very uncomfortable family situations and there is lack of follow up at home. Finally, most of them lack the appropriate textbooks and study material".

Table 17: Suggested Strategies for Students to do so as to improve their Performance in the CGCE Ordinary Level Biology Examination

Status		T Ts	Unt Ts	Ex Ts	Inex Ts	Total
Theme						
Develop drawing skills, carry out practical exercises and learn how to report biological experiments.	No.	08	04	07	05	**24**
	%	33.3	16.7	29.2	20.8	**100**
Master concepts and examination structure, value the subject first and not only for the purpose of passing an examination.	No.	05	02	02	04	**13**
	%	38.5	15.1	15.1	30.8	**100**
Revise using past GCE questions, answering more paper two questions, they should learn to ask questions.	No.	12	18	14	15	**59**
	%	20.3	30.5	23.7	25.4	**100**
Regular class attendance, set study goals and work to achieve them, own and respect personal reading time tables, proper time management.	No.	18	22	24	15	**79**
	%	22.7	27.8	30.4	19.0	**100**
Concentrate in class and copy notes, form small study groups, read ahead of the teacher, etc.	No.	21	30	25	23	**99**
	%	21.2	30.3	25.3	23.2	**100**
Possess and read relevant textbooks, feed on a balanced diet, non imposture of the subject on students, avoid peer pressure and drug abuse.	No.	20	17	17	17	**71**
	%	28.2	23.9	23.9	23.9	**100**
Other measures such as do assignment/research, be discipline and have self-control, avoid speculation, improve on their communication skills, respect instructions on question papers, and proper use of social media.	No.	24	25	24	29	**102**
	%	23.5	24.5	23.5	28.4	**100**
Missing Values (MVs)	No.	01	01	08	08	**18**
	%	05.6	05.6	44.4	44.4	**100**
Total	**No.**	**109**	**119**	**121**	**116**	**465**
	%	**23.4**	**25.6**	**26.0**	**25.0**	**100**

Amongst the things the teachers believe the students should do to improve on their performances are the following:
1. A cluster of varied reasons such as the doing of assignment/research, being disciplined and having self-control, avoiding speculation of questions, improving on their communication skills, respect of instructions on question papers and proper use of social media (102 out of 465 responses or 21.9%).
2. The need to concentrate in class and copy notes, form small study groups, read ahead of the teacher, etc. (99 out of 465 responses or 21.3%).
3. Regular class attendance, set study goals and work to achieve them, own and respect personal reading time tables, proper time management. (79 out of 465 responses or 17.0%).
4. Possess and read relevant textbooks, feed on a balanced diet, non imposture of the subject on students, avoid peer pressure and drug abuse (71 out of 465 responses or 15.3%).
5. Revise using past GCE questions, answering more paper two questions, learn to ask questions (59 out of 465 responses or 12.7%).
6. Develop drawing skills, carry out practical exercises and learn how to report biological experiments (24 out of 465 responses or 05.2%).

Interestingly, a small proportion of the teachers did not cite any reasons (18 out of 465 responses or 03.9%). The above mentioned strategies that students can adopt to improve performance of Biology at the CGCE examination came mostly from

experience teachers (121 out of 465 or 26%) and untrained teachers (119 out of 465 or 23.4%). The least number of strategies came from the inexperienced (116 out of 465 or 24.9%) and trained (109 out of 465 or 23.4%) teachers.

Examples of responses in teacher's words included:
A trained experienced non-examiner from public school erred that students should;
"Attend all classes and do assignments, use past questions in preparation for the examination, make reading time table and follow it up strictly, and draw diagrams many times as possible to get used to them".

Another trained experienced examiner from a public school said students should;
"Obtain the subject syllabus and past examination question papers, be regular in Biology lessons, have biology notes and appropriate textbooks".

An untrained teacher from lay private school opines that students should;
"Develop good study skills, concentrate in their studies, set achievable goals, draw up a study time table, regularly attend all classes and copy notes, organize study groups, master course content very well and participate in class exercises".

Table 18: Opinion(s) if there are Other Reasons (aside those Related to Students and Teachers) why many Students Fail the CGCE Ordinary Level Biology Examination

Response options	Definitely, Yes	Yes	No	Definitely, No	Missing Values	Total
Frequency (f)	24	52	02	-	05	**83**
Percentage	28.9%	62.7%	02.4%	-	06.0%	**100%**
Cum. %	28.9%	91.6%	94.0%	94.0%	100.0%	**-**

In responses to whether there are other reasons responsible for students' failure in Ordinary Level Biology different from those of students and teachers, more than nine-tenth (91.6%) agreed. That is, more than three-fifth (62.7%) simply agreed while nearly three-tenths (28.9%) definitely agreed. Meanwhile, small but significant proportions either disagreed (02.4%) or did not register their opinions (6.0%). This shows that there are other reasons other than those of student and teacher for which students fail O/L Biology.

Table 19: Other Reasons (aside those Related to Students and Teachers) why many Students Fail the CGCE Ordinary Level Biology Examination

Status		T Ts	Unt Ts	Ex Ts	Inex Ts	Total
Theme						
Non provision of textbooks and other resources, poor follow up of students by sponsors and negligence by the administration and proprietors.	No.	21	15	19	14	**69**
	%	30.4	21.7	27.5	20.3	**100**
Writing of both papers one and two in one seating, making all questions compulsory, and poor question setting/wording.	No.	04	06	06	03	**19**
	%	21.1	31.6	31.6	15.8	**100**
Distraction from social media, peers, etc.	No.	07	14	10	11	**42**
	%	16.7	33.3	23.8	26.2	**100**
Other factors are; broad syllabus, constant power outage, socio-political instability, socio-economic background of parents, poor feeding and other family issues, psychological trauma, large class size, home location of student.	No.	33	35	31	33	**132**
	%	25.0	26.5	23.5	25.0	**100**
Missing Values (MVs)	No.	01	01	08	08	**18**
	%	05.6	05.6	44.4	44.4	**100**
Total	**No.**	**66**	**71**	**74**	**69**	**280**
	%	**23.6**	**25.4**	**26.4**	**24.6**	**100**

In reaction to reasons why students fail the CGCE Ordinary Level Biology examination other than the students and teachers related reasons, the most popular reason teachers cited was a cluster of varied reasons such as the broadness of the syllabus, constant power shortage, socio-political instability, socio-economic background of parents, poor feeding and other family issues, psychological trauma, large class sizes, home location of student (132 out of 280 responses or 47.1%).

In addition to the reason above, the following were also cited:
1. The non provision of textbooks and other resources, poor follow up of students by sponsors and negligence by the administration and proprietors (69 out of 280 responses or 24.6%).
2. Distraction from social media, peers, etc. (42 out of 280 responses or 15.0%).
3. Writing of both papers one and two in one seating, making all questions compulsory, and poor question setting/wording (19 out of 280 responses or 06.8%).
4. No reasons or missing values (18 out of 280 responses or 06.4%).

Comparatively, most responses came from experienced (74 out of 280 or 26.4%) and untrained (71 out of 280 or 25.4%) teachers revealing many reason aside those of students and teachers why many students fail the CGCE O/L Biology

examination. The least number of responses came from the inexperienced (69 out of 280 or 24.6%) and trained teachers (66 out of 280 or 23.6%).

Examples of responses in teacher's words include:
According to one trained experienced non-examiner from a public school;
"Extremely large class sizes make teaching and learning ineffective, parents don't follow up their children at home, too much work load at home, distractions around school and home vicinities, the decision to make GCE O/L Biology have five compulsory questions, etc are other important factors".

A trained experienced examiner from a public school said;
"Parents are also responsible for the poor performance of students. For example, they don't buy textbooks for their children, they don't pay fee on time, they don't monitor them while at home, they stress up the children with hard labor at home".

An untrained teacher from a lay private school revealed that;
"Nutritional requirement, state of health, family status, psychological problems, emotional distress, matrimonial problems can affect students performance especially those separated home, conflict zones or crisis like what is happening in the North west and South West regions of Cameroon".

Findings Revealed by GCE Examiners in Subject Reports
Subject reports written by GCE examiners after each examination marking session have revealed some suspected reasons of poor performance of candidates in Biology Ordinary Level at the CGEC examination as indicated on the table below.

Table 20: Frequency Distribution Table for the Causes of Poor Performance in O/L Biology

S/N	Theme	Frequency (f)	Percentage (%)
1	Poor mastery of English Language	5	11.4%
2	Poor biological diagrams	5	11.4%
3	Inability to answer essay type questions	5	11.4%
4	Wrong spelling and use of biological terms	4	09.1%
5	Inability to interpret GCE questions, class assessment questions are under standard, etc	7	15.9%
6	Inability to plot biological graphs, explain biological experiments, etc.	1	02.3%
7	Non respect of rubrics on question papers	2	04.6%
8	Absence of textbooks, note books, workbooks, etc.	4	09.1%
9	Teachers give notes to students to dictate for others to copy, non coverage of syllabus, teachers absent subject association meetings, etc.	11	25%
	Total	**44**	**100%**

Source: Subject Reports (2012-2016).

From the reports, one-quarter (25%) of the possible reasons were that teachers give notes to students to dictate for others to copy, non coverage of syllabus, teachers absent subject association meetings, etc. About one-sixth (15.9%) of the reasons were suggested to be from the fact that candidates are unable to interpret GCE question may be due to the fact that class assessments are not up to the standards of the GCE examination. About one-ninth (11.4%) of the causes of poor performance were attributed to poor mastery of English Language, poor drawing, and inability of candidates to answer essay type questions. The least possible reasons for poor performance could be the candidates' inability to spell and use biological terms (09.1%), absence of study material such as text, note and workbooks (09.1), Non respect of rubrics on question papers (04.6%), and their inability to plot graphs, explain biological experiments (02.3%), etc.

Findings from subject reports of 2012-2016 has addressed not only the possible reasons of poor performance in Biology O/L at the CGCE examination as highlighted above but also some measures that can be taken to improve performance. Some of the measures include; teachers should lay emphasis on good biological diagrams, assessment should include spelling test for biological words, plotting of graphs and drawing of diagrams in classroom with the students so as to develop in them these skills, all term assessments should follow the GCE standard, teachers should try to finish the syllabus before the GCE, teachers should do serious revision of the previous work with the students, teachers should avoid students dictating notes for their mates to copy, teachers should use the chalk board to spell biological terms, biological experiments should be carried out with students, teachers should test students often on essay typed questions (paper two) teachers should be encouraged to attend seminar/workshops for personal enrichment, candidates should develop mastery of English Language for proper expression of biological facts, candidates should follow rubrics in their choice of questions, question setting should follow Bloom's taxonomy of learning objectives (Knowledge, comprehension, analysis, and application at O/L), parents should buy school needs for their children, experienced teachers should be assigned to teach lower classes for a firm foundation to be laid.

Discussion of Finding
Generally, findings from both teachers and students revealed that some students fail Biology O/L because they have the believe that the subject is difficult, it has many diagrams, concepts to master, etc. All of these believe kills the morale of students. Also as revealed by findings some of this is caused by some parents and teachers who mystifies the subject (Biology) by what they say or how they teach. These lead to lack of motivation by the students.

Some students offer Biology not because they have the internal (intrinsic) drive and know the importance attached to studying the subject. Rather, some of them do so because they see their friends offering the subject or they have been forced by the school, parents etc. This alongside the attitude of some teachers doesn't give them the motivation needed to perform well in Biology O/L at the CGCE examination. Most students who offer Biology do not have intrinsic motivation. Their source of motivation is from without being the grades they are working for at the CGCE examination. However, these external factors are supposed to add to the innate ones which are considered to be more important. According to Chasteuneuf (2006) intrinsically or mastery-oriented students engage with the content, their peers, and faculty, netting a longer retention span and a greater ability to use what they learn. Such students are independent lifelong learners. This therefore means that intrinsic motivation outweighs extrinsic motivation. Students with innate motivation seek for new skills and knowledge that can be transferred to new and challenging tasks.

One of the factors as revealed by Biology O/L subject reports and teacher respondents was the language of instruction (LOI). The LOI used in Cameroon schools to teach Biology is English language. Most students are not competent to express themselves properly in correct English simply because pidgin is the language often used by them when they are together with their peers and classmates. According to Malekela (2003) when learners are handicapped in the LOI, learning may not take place as the instructor and learners will not be communicating effectively. Findings showed that most learners do not ask questions in class. This is probably due to the fact they lack means of expressing themselves in English. Failure to sort what is not understood will lead to them not understanding and poor performance is bound to occur. The lack of power of communication is not only observed during oral questions and answering sessions in class but is noticed on scripts when an examination is given. Biology O/L subject reports highlighted the fact that candidate's poor performance in Biology could be attributed to them being unable to spell biological words, wrong English expression in sentences that makes no sense, etc. it also revealed that most candidates do not answer all the questions as requested by instructions. This is probably because of the compounded reasons of being unable to express what they know in good English and also being unable to spell biological words which slow down their speed. With these two probable reasons, such candidates will always see time not to be on their side to answer all the questions as requested by instruction. Thus, they will always say the time allocated to write the examination is not enough.

One of the survival methods which students lacking in LOI use at times as cited by Puja (2003) is the cramming of material and reproducing exactly what they had memorized to write a test, take home assignments, and examinations in other to pass. This according to this researcher often does not often work. This is because it can lead to loss of what was memorized. Such students often do not present their work in an orderly and sequential manner as revealed by Biology subject reports (i e, they don't follow instructions). Students who hold the view that Biology is broad and that it is difficult are probably those who lack the LOI and turn to use this survival method. Above all, students with the command of the LOI have the command over other school disciplines and not only Biology since English is the language used to express knowledge in all or most field of study.

Findings revealed that most students do not read, don't do assignments, etc. That is to say they have not developed the habit of study. For those who have developed the habit to study, they don't do it well probably because they lack orientation. A science subject like Biology can never be studied successfully without the student setting his/her own achievable goals before starting to read. It can also never be successful if s(he) reads and fails to make summary notes, practicing how to draw biological diagrams or plot graphs on chalk boards or pieces of papers. It was also realized that majority of the students study in preparation for the GCE examination without knowing the nature and structure of Biology questions. This implies therefore that, they study without the use of past GCE question papers.

Kelli (2009) posits that for students to succeed in their study, they must be able to appropriately assimilate course content, digest it, reflect on it, and be able to articulate the information in written and/or oral form. Some students study in very noisy school (as observed by this researcher that some schools in his study area were located next to business places) and home environments and are being distracted. By so doing, they probably find it difficult to digest and assimilate the Biology content in a way that can be applied to questions when asked or in real life situations when and where ever need be.

Successful learners adopt positive attitude towards study. This attitude is gained through experience. Developing a positive attitude towards study early in life is very important. Later in life, some learners find it difficult to develop this habit. Student who have positive attitudes do not waste time and energy on things that are not important. So time management in the life of teachers and students should not be under minded. Majority of students do not have personal reading time tables. Some have and do not follow it strictly due to extracurricular activities, family problems, too much house chores as revealed by finding from teachers and students, etc. When students fail to manage their time properly, they tend to accumulate work and keep procrastinating. Akomolafe (2005) opines that time really cannot be managed because it cannot be slowed down, speed up or manufactured. That is to say that what a particular student was suppose to do at a given time and failed can only do it at a different time programmed for some other thing. Therefore, he cannot reverse the time he lost so as to do what s(he) was supposed to do. When students fail to manage their time properly, academic work keeps pilling and closer to examination month or week, they get confuse and tend to speculate and memorize what they could have created enough time to read and understand. Such students are doom to fail. Thus, poor time management is related to poor academic performance (Adebayo, 2015).

Time management is also associated to social media influence. Owusu-Acheaw & Larson (2015) have the view that the use of social media has affected the academic performance of students negatively and at the same time there is a strong positive relationship between the use of social media and academic performance. This view was noticed in the responses of teachers when they said some

students use their internet services on their phones to do assignment and research on what they doubt. This is therefore a positive way of using social media. On the other hand, majority of the respondents said students abuse the use of social media as they become slaves to their phones. Students are highly distracting by phones through chatting with friends, calls, messaging, etc. Other sources of social mediate highlighted that distract students and certainly affect their academic performances in Biology are; watching movies, series, listening to music from musical sets, etc. This researcher considers this as wrong use of social media only if the time spent on these is much and when it becomes a routine. Hence social media is viewed as a useful servant but a dangerous master (Kolan and Dzadza, 2018) in academic performance of students.

Findings from teachers, students, and official documents (subject reports) revealed that lack of Biology textbooks by students affects academic performance negatively. More than three-quarter of the student population who offer Biology were not in possession of textbooks. This probably might be because of negligence on the part of the parents, or parents are unable to afford for the cost of Biology textbooks, or the textbooks were bought and the students were careless and misplaced them. Altbach (1983) posits that; 'Nothing has ever replaced the printed words as the key element in the educational process and as a result, textbooks are central to schooling at all levels. Since most of the schools within the study are were lacking in libraries to partly help solve the problem of lack of Biology textbooks by students, this researcher is tempted to say that Biology teachers have replaced the printed word within and without the school environment. The word without is used simply because findings had revealed that most students don't do assignments and this can be one of the possible reasons why they don't do assignments. Thus, students only depend on the notes of teachers to read and write examinations. No further research is done by them. This finding is in line with that of Nyandwi (2014) who found a relationship between availability of material such as textbooks and academic performance. The link was that academic performance is negatively affected by inadequate textbooks available.

Truancy is often associated with absenteeism from classes or from school. Only a few cases of truant who manage to attain classes copy notes. They are always indiscipline. Finding revealed that some contribute to their performance in Biology O/L at the GCE examination because they absent from classes, discipline, do not copy notes, etc. It is sound to know that not all students who absent school/classes are truants. However, some students stay out of Biology classes for various reasons such as; ill-heath, family imperatives, dislike of Biology as a subject or the Biology teacher for various reasons, students sent away from school because of non-payment of school fee by sponsors, etc. Thus, not all of such students can be considered truants. When many students stay out of classes, they are always with their peers doing one thing or the other. Some of them gamble, smoke cigarette, drink alcohol, broke into people's home, etc.

Yahaya et al. (2010) indicated activities done during truancy such as helping the family, joining the negative groups and crimes are at the low level and working part-time together with loafing are at the medium level. According to Henry and Huizinga (2007) as in Mamalanga (2014), there is a strong relationship between truancy and the start of substance use which maybe largely due to the amount of unsupervised time that truants spend with peers. Truants usually drop out of school and crime wave is at its maximum. For those who do not drop out of school, they usually repeat classes and their performance is always low because they have the assumption that they know, they do not concentrate in class, lack the interest to study, etc.

Truancy affects not only the truants but affects others indirectly. For example; it affects the school when performance is poor, it affects the state when resources are wasted and crime wave is at its maximum, it affects the teacher when he/she is unable to finish the syllabus because he/she has to create time to teach or explain what s(he) had taught when other students were absent, it affects other students when the syllabus is not covered because of truants, etc. These and a lot more, negatively affect educational performance of students in Biology O/L at GCE examination.

Conclusion

The school is an example of an open system where all the components have to work in synergy to ensure the proper functioning of the system. Failure on the part of one of the components to operate properly will lead to the mal-functioning of the system. Thus, there is supposed to be social interaction in the system. The results obtained from this study shows that students share part of the blames for their poor performance in Biology O/L at the CGCE examination. Teachers, parents, and other educational stakeholders were equally blamed for the poor performance recorded in this discipline. That is to say that some components or all of the components involved in the educational pursue failed in one way or the other doing their work.

Therefore, if students were to attend classes, copy notes, avoid peer pressure and drug addiction, set achievable goals, properly manage their time, etc. while teachers on their part become assiduous, cover syllabus, orientate and teach students on question interpretation and answering techniques, avoid over-crowded notes, provide sufficient practical exercises, etc. these could be steps to improve the poor performance registered at the Ordinary Level Biology at the CGCE examination. In addition, if parents, the government, and other educational stakeholders also play their role of properly managing resources and providing the necessary tools needed by students and teachers, academic performance will be improved. Failure on their parts to provide these tools will be one of the means to encourage poor performance.

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