



Teachers and Students Perception of the Low Academic Performance of Senior High School Students in Integrated Science in Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJESS/2021/v22i330535

Editor(s):

(1) Dr. Der-Jang Chi, Chinese Culture University, Taiwan.

Reviewers:

(1) Kakooza Victoria, Kyambogo University, Uganda.

(2) Burmansah, Stiab Jinarakkhita, Indonesia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/75111>

Original Research Article

Received 25 July 2021

Accepted 01 October 2021

Published 09 October 2021

ABSTRACT

The purpose of this study was to determine school and teacher-related factors affecting low academic performance of senior high school students in integrated science in some selected districts in western region of Ghana. The research design used in this study is descriptive cross-sectional survey. The population of the study was made up of students and science teachers in selected senior high schools in the study area which comprises three districts; Ellembele District, Jomoro District and Nzema-East Municipal. A Sample of 342 students and 18 teachers were used for this study. In carrying out the study, a questionnaire was used as the main instrument for the data collected which were analyzed using descriptive statistics. From the results, it was seen that school-related factors causing poor performance in Integrated Science among students include; the inadequacy of facilities, poor state of existing facilities, general disturbances in class and the ineffective supervision of teaching. Moreover, inadequate number of science teachers, inability to complete syllabi, poor teaching style and little time spent in teaching were among the teacher-related factors which caused low academic performance in Science.

Keywords: Academic performance; integrated science; senior high school.

1. INTRODUCTION

The social and economic development of every country has been constantly linked to the education in the country. Education is deemed effective when what is taught is reflected in the performance of students. The performance of students therefore affects the quality of graduates produced which ultimately affect the human resource of the country [1]. Excellent academic performance has therefore been the focus of all educational programmes or activities. Determinants of students' performance have thus received considerable attention in education literature, and continue to be a challenging theme [2].

Academic performance of students has been studied across different subjects in the literature. One such subject which has received global attention in the literature is Science. Science is recognized widely as of great importance internationally for economic well-being of nations and the need for scientifically literate citizens [3]. Consistently, however, students have struggled with science as a subject in schools [4]. Student performance is generally viewed as a product of socio-economic, psychological and environmental factors [5]. These factors can cover all important elements in education including the school, teachers, students and their home or family background. Identifying which specific factors are responsible for the poor performance in science is important.

Science is a major factor for change in the modern world. The need to understand and be able to use science in all spheres of life has placed greater demand for people to study science (Anwer, Iqbal & Harrison, 2012). This is because scientifically literate individuals understand the needs of the society to participate in the technologically oriented economy [6]. As a result, there is an increasing need for science at individual as well as the wider socio-economic and political level. In this sense, science education has gained prominence in most countries [7].

Excelling in science education remains a top priority for all stakeholders of education because it is both directly and indirectly connected to the wellbeing of society [8]. Duggal and Mehta [2] confirmed this view when they opined that the quality of students' performance remains a top

priority for educators as it is meant for making a difference locally, regionally, nationally and globally. Exploring the variables or factors contributing effectively to the quality of performance of students therefore remains a major interest for researchers (Farooq, Chaudhry, Shafiq & Behranu, 2011).

There is a range of factors that affect the quality of performance of students [9]. These factors have been categorized differently by different authors and researchers. For instance, King'aru [10] classified the factors that lead to poor performance into two; direct influences which include teaching strategies, content knowledge and understanding, motivation and interest, laboratory usage and syllabus non completion. The indirect influences include parental roles and language. Crosnoe, Johnson and Elder [11] however grouped the factors influencing academic performance into student factors, family factors, school factors and peer factors.

The literature on factors influencing academic performance of students have identified students' attitudes towards teachers, socio-economic status of students [12], educational background of parents [13] and types of school [14] as major determinants of academic performance. Some of the other factors identified to be responsible for academic performance in the literature include poor teaching methods, lack of instructional materials, lack of functional laboratories, poor students' teacher morale [15], lack of qualified teachers and gender [16]. Based on all these variables, this current study focuses on two categories of factors, the school-related and teacher-related factors.

The school-related factors that influence academic performance of students cover the variables within the school environment such as facilities, teaching and learning materials, school type and location, leadership and monitoring and supervision by school heads [17]. These factors can lead to either good or poor academic performance. Closely related to the school-related factors are the teacher-related factors. The teacher-related factors cover teacher qualification, teacher experience, teacher subject-matter knowledge, teaching methods, teacher personality and teacher classroom practices [18,19,20].

Chua and Mosha [21] have pointed out that academic performance is said to be contingent on some related and interrelated factors. Two of the factors that stand out according to Chua and Mosha are those relating to the curriculum of science and the teacher and teaching factors. The curriculum is known to directly influence the teaching, learning, and assessment practices that go on in schools, mainly, aspects such as the syllabus and textbooks influence educational attainment [22,23]. In addition, Anderman, Sinatra, and Gray (2012) pointed out that issues such as availability of appropriate science textbooks and classroom resources, preparation and training of pre-service and in-service science teachers, political and religious oppositions to the cutting-edge of science are some of the enormous issues confronted with science education. The rest are the need to meet standards and to effectively train science students for standardised examinations and the challenge of the web as a source of information.

Knowledge of these factors is very important since failure rates are high and deficient learning in science is common place at both the middle and the secondary school levels around the world [24,4]. These failures in science achievement are evident in spite of successive reforms in science education [25,26]. Identifying which specific factors are responsible for the obvious poor performance in science is important to be able to ensure that science education is improved.

1.1 Statement of the Problem

According to Al-Zoubi and Younes (2015), the problem of low academic achievement of students in examinations is one of the most challenging problems that face students and teachers. In Ghana, the performance of students in Science has not been encouraging. In 2015, West African Secondary School Certificate Examination (WASSCE) results released by the West African Examination Council (WAEC) showed that only 23.63% of students passed integrated science obtaining grades A1-C6 (WAEC, 2015). The 2016 WASSCE results showed an improvement in performance over the previous year where about 113,933 candidates obtained the pass mark (A1-C6), which represented 48.48 per cent (WAEC, 2016). The 2017 WASSCE results indicated that 125,204 representing 43.66% passed integrated science obtaining grades A1-C6, which was a decline in performance as compared to the previous year.

Even though in 2016 and 2017 the performance of students was relatively higher, it still indicates that more than half of the candidates who took part in the WASSCE could not have good passes in integrated science. These results from the past few years have confirmed the view that senior high school students have consistently performed below average in Integrated Science.

The poor performance of students in integrated science cuts across the nation. In the Western Region of Ghana, available statistics show that for three consecutive years, students' performance in integrated science in some schools in the region has continued a downward trend when compared to their respective national average performance percentages. Specifically, schools in the Nzema East District, Ellembelle District and the Jomoro District are among the schools which have experienced this downward trend.

The results show that schools within the three districts have had a low performance in WASSCE integrated science subject for over three years. For example, Bonzo Kaku Senior High School and Annor Adjaye Senior High School have had a low academic performance trend in integrated science from 2015 to 2017 as against the national average academic performances for the respective years. Nsein Senior High School, Nkroful Agric Senior High School and Half Assini Senior High School have had a swinging or inconsistent academic performance in integrated science. The results on Bonzo Kaku Senior High School reveal a low percentage performance of 09.47% in 2015, 12.15% in 2016 and 08.62% in 2017 less than the National Average Performance of 23.63%, 48.48% and 43.00% for the years respectively. Similar trend is shown by Annor Adjaye Senior High School with 03.26% in 2015, 12.79% in 2016 and 12.81% in 2017 all falling below the National Average Performance in integrated science for the respective years.

The poor academic performance of SHS students in Integrated Science in the Western Region of Ghana has been a concern for the Municipal and Districts over the past few years since a fail in integrated science can impede the academic progression of students. Thus, there is the need to identify the factors which are responsible for this low performance so that appropriate remediation can be offered. It is in this sense that this study was conducted.

1.2 Research Questions

1. What are the school-related factors impacting low academic performance trend of senior high school students in integrated science in some selected districts in Western Region of Ghana?
2. What are the teacher-related factors impacting low academic performance trend of senior high school students in integrated science in some selected districts in Western Region of Ghana?

2. LITERATURE REVIEW

This section of the study presents a review of literature on school and teacher-related factors affecting academic performance of students

2.1 School-Related Factors Affecting Academic Performance of Students

The school's physical and social structure has been investigated to identify how the school environment influences academic performance of students. Some of the school-related factors that affect the academic performance of students are expatiated in this section.

2.1.1 Type of school

According to Considine and Zappala [27] research has shown that the type of school an individual attends is influential in determining educational outcomes of the individual. Different school types tend to affect the strength of the relationship between other factors and educational outcomes [28,29]. This has been the situation in most places such as the United States, Britain and Australia. Reports have been made about students attending private schools being more likely to succeed than those attending state schools [14,30,31]. This is similar to observations in Ghana, where most of the students who excel at the junior high school level are from private schools. The factor of the school type affecting academic performance has been connected to the home-factor of socio-economic status. For instance, private schools are more likely to have a greater number of students from high SES families, with stronger academic abilities and with greater financial resources. In Ghana, students who perform well usually find themselves in the Grade A schools. In this instance, the type of school can be seen to be connected to the performance of the students.

2.1.2 School learning environment

According to Abdallah, Fuseini, Abudu, and Nuhu [32], school learning environment encompasses the factors within the school that may or may not provide suitable conditions for the promotion of effective teaching and learning. Conditions in the school learning environment do affect student academic achievement. Earthman [33] argued that conditions within the learning environment such as school building, temperature, lighting, acoustics and age of building. Specifically, Earthman observed that older buildings usually do not have the main attributes of a modern building that are associated with a positive physical environment conducive to student learning. In support of this view, researchers such as Andersen [34], Ayres [35] and O'Neill [36] have all indicated that many of the building factors that are necessary for proper learning environments are simply absent in older buildings, but are present and functioning in new buildings. This means that the older the building, the less the learning by students. Research has also shown that clean air, good light, and a small, quiet, comfortable and a safe learning environment are important for general positive academic achievement of learners [37,38,39,40].

2.1.3 Class size

Class size is an important determinant of academic performance [41]. Numerous studies have indicated that large classes are usually associated with challenges such as crowding of class, poor sitting arrangements, and students feeling isolated and less motivated [42,43,44]. Some researchers have examined the effects of class size and found that students in the smaller classes performed better academically than those from larger class sizes [45,46,47].

Since children have differences in drive, interests, and abilities and that they also differ in health, personal and social adjustment, and creativity, generally good teaching is best done in classes with smaller numbers that allow for personal attention. Smaller class sizes also allow for more access to resources which in turn enhances academic achievement [11,48].

2.1.4 Teaching and learning materials

Learning resources like physical facilities which include classrooms, equipped library, computer room and laboratories, and other learning resources such as textbooks and projectors are

all influential in the academic performance of students. In schools where these materials (i.e., textbooks, laboratory equipment, carpentry tools, etc.) are not available, it can cause low academic performance as teaching and learning becomes ineffective. This is because the availability and use of teaching and learning materials affect the effectiveness of a teacher's lessons [41]. The practical nature of integrated science makes teaching and learning materials an essential aspect of the instruction. The availability and use of teaching and learning materials can increase the chance that the students would learn more, keep better what they learn, and improve their performance on the skills that they are to develop.

2.1.5 Monitoring and supervision

Another important variable that influences learning is effective monitoring and supervision of teachers' activities. Accordingly, it is argued that effective supervision of instruction can improve teaching and learning quality in the classroom [32]. The implication is that if teaching is not supervised effectively, teachers may not do their duties diligently and this might lead to pupils performing poorly academically. In Ghana, it has been asserted that academic performance is better in private schools than in public schools because of more effective supervision of work [49]. This implies that inadequate supervision triggers poor academic performance of students since teachers may relax in the performance of their responsibilities. Monitoring and supervision is therefore important in the academic performance of students. Thus, in the context of the current study, it can be inferred that monitoring and supervision of teachers could be one of the factors responsible for the poor performance of students in integrated science.

2.2 Teacher-Related Factors Affecting Academic Performance of Students

Several teacher-related factors affect the academic performance of students. Some of these factors are discussed in this section.

2.2.1 Teacher qualification and competency

Teacher qualification has been consistently found to impact the academic performance of pupils [50]. A teacher who lacks the professional skill will be unable to deliver in class, which will lead to poor student's performance. A teacher who does not have both the academic and the

professional qualifications would undoubtedly have a negative influence on the teaching and learning of a given subject. According to Siachifuwe [51], poor academic performance is caused chiefly by substandard quality of education background. The lack of teacher competence thus contributes to poor performance in academic work.

Abdallah et al. [32] argued however that a teacher who is academically and professionally qualified, but works under unfavourable conditions of service, would be less dedicated to his work and thus be less productive than a teacher who is unqualified but works under favourable conditions of service.

2.2.2 Inadequate teacher preparation

In the view of Siachifuwe [51], some schools performed poorly because of teacher related factors such as inadequate teacher preparation. Secondary school teachers are expected to prepare before they teach in schools. These preparations could be in form of schemes of work, records of work, and lesson plans to guide the teaching process [52]. The preparation of teachers is therefore an important consideration in determining the factors that impact on low performance of students in integrated science in the Western Region of Ghana.

2.2.3 Teacher-student interaction

According to Mbozi [53], teacher-pupil interaction is a factor that affects academic performance of students. Mbozi argued that in situations where the teacher use abusive language, threatens students or shouts at them for various reasons, students are more likely to be inattentive in class due to fear or resentment for the teacher. Eventually such students may tend to stay away from school and perform poorly in the end. Teachers are the custodians of teaching and learning and as such they should take time to make their learners learn best and take keen interest in them, thereby achieving quality education [51]. In this study, the way and manner that the teacher interacts with students is likely to influence the performance of the students.

2.2.4 Motivation and attitude of teachers

Another teacher-related factor of consideration is motivation. A highly motivated person puts in the maximum effort in his or her job. Motivation of the teacher is a critical factor that influences a

teacher's work attitude and that a highly motivated person puts in the greatest effort into his or her job [41]. The effect of such efforts is that the students will benefit from effective teaching which has the likelihood of making them improve their academic performance.

Lockheed et al. [54] have indicated that lack of motivation and professional commitment produce poor attendance and unprofessional attitudes towards students which in turn affect the performance of students academically. This lack of motivation in teacher to perform their duties diligently could be manifested in teachers at the school in question. Poor academic performance among students have thus been attributed to factors such teachers' drive or motivation [55,32].

3. METHODS

The research design used in this study is descriptive cross-sectional survey. The population of the study was made up of students and science teachers in selected Senior High Schools in the study area which comprises three districts; Ellembele District, Jomoro District and Nzema-East Municipal. A sample of 342 students was used for this study. The total population of students in the selected schools was 3101 excluding third year students. The third years students were excluded from the study because they were busy preparing for their final examination as at time of collecting data for this study. All the science teachers in the study area where included in the study. In all a total of 18 teachers were involved in the study.

In carrying out the study, a questionnaire was used as the main instrument. The use of the questionnaire was deemed appropriate since it helps in collecting data from large number of people within a short period of time (Oso & Onen, 2005). The questionnaire had three main sections. The first section covered the demographic variables of the respondents. The second section dealt with the school-related factors impacting low academic performance while the last section covered the teacher-related factors impacting low academic performance. The questionnaire was on a five point Likert-type scale comprising 'Strongly Disagree (SD)', 'Disagree (D)', 'Neutral (N)', 'Agree (A)' and 'Strongly Agree (SA)'.

The reliability of the instrument was also established after carrying out a pre-test of the instrument. The instrument was pre-tested with

50 students and 3 teachers from the Ahanta West district. This district was chosen because of proximity with the districts in the study area and as such the respondents share similar characteristics with the main sample of the study. The reliability of the questionnaire was established using the internal consistency method. Cronbach co-efficient alpha was used to estimate the internal consistency. Specifically, a cronbach co-efficient of 0.79 was obtained for the questionnaire for the students while 0.77 was obtained for the questionnaire for the teachers.

The researchers administered the questionnaire themselves. The researchers ensured that the administered questionnaires were not taken home but completed and returned within the same period to ensure a high return rate of the questionnaires. Specifically, a 100% return rate was realized. Two working weeks were used in collecting the data.

4. RESULTS

This section presents the results school-related factors and teacher factors impacting the low academic performance in integrated science from both students and teachers perspectives.

4.1 School-Related Factors Impacting Low Academic Performance of Students

The results of school-related factors impacting the low academic performance of students in integrated science as perceived by students is shown in Table 1.

From Table 1, it can be seen that inadequacy of school facilities affect their academic performance negatively ($M=4.26$, $SD=1.26$). Also, it was shown that their school's poor state of facilities makes them perform poorly in Science ($M=4.12$, $SD=1.28$). The respondents also indicated that school and classroom atmosphere do not encourage participation and make them perform poorly ($M=3.85$, $SD=1.38$). There was also an indication by the respondents that their performance in Science is poor because there was no effective supervision of teaching ($M=3.25$, $SD=1.49$). From the results in Table 1, the students indicated that inadequacy of facilities, poor state of facilities, non-participatory classroom atmosphere and lack of supervision of teachers led to their poor performance in Science.

Table 1. School-related factors impacting low academic performance as perceived by students

Statement	Mean	Std. Dev.
Inadequacy of school facilities affect my academic performance negatively	4.26	1.26
My school's poor state of facilities makes me perform poorly in Science	4.12	1.28
My performance in Science is poor because there is no effective supervision of teaching	3.25	1.49
School and classroom atmosphere does not encourage participation and makes me perform poorly	3.85	1.38
Too many students in class affect my performance in Science negatively	2.87	1.55

Table 2. School-related factors impacting low academic performance as perceived by teachers

Statement	Mean	Std. Dev.
Inadequacy of school facilities affect academic performance of students in Science negatively	4.56	0.50
Poor state of facilities in my school makes students perform poorly in Science	4.23	0.47
Students' performance in Science is poor since there is no effective supervision of teaching	3.39	0.98
Students performance is poor since they are not given the chance to contribute and participate in class	2.60	1.30
Students perform poorly in Science because teachers are too strict students	2.17	1.40
Too many students in class is a cause of students' low performance in Science	3.08	1.38
Disturbances in the classroom affect performance of students in Science negatively	3.94	1.06

The views of the teachers about the school-related factors leading poor performance in Science among students are shown in Table 2.

It is shown in Table 2 by the teachers that inadequacy of school facilities affects academic performance of students in Science negatively (M=4.56, SD=0.50). Also, it was indicated by the respondents that poor state of facilities in my school makes students perform poorly in Science (M=4.23, SD=0.47). Disturbances in the classroom also affected performance of students in Science negatively (M=3.94, SD=1.06). The teachers also attributed poor performance of students in Science to the lack of effective supervision of teaching (M=3.39, SD=0.98).

From the results, it can be seen that the main factors identified by the teachers in the study to be responsible for the poor performance of students in Science include inadequacy of school facilities, poor state of facilities, disturbances in the classroom and lack of effective supervision. Generally, from the results, it can be seen that

school-related factors causing poor performance in Science among students include the inadequacy of facilities, poor state of existing facilities, general disturbances in class and the ineffective supervision of teaching.

4.2 Teacher-Related Factors Impacting Low Academic Performance of Students

The results of school-related factors impacting the low academic performance of students in integrated science as perceived by students is shown in Table 3. It can be seen in Table 3 that students believe their performance is affected because teachers did not give feedback on exercises (M=3.58, SD=1.38). The students also indicated that they perform poorly in Science because teachers are not able to complete the Science syllabus (M=3.49, SD=1.43). It was also indicated by the students that their performance in Science is low because they are taught by newly employed teachers instead of experienced teachers (M=3.37, SD=1.41).

Table 3. Teacher-related factors impacting low academic performance (Students)

Statement	Mean	Std. Dev.
Since there are not enough teachers for Science, my performance is affected negatively	3.29	1.59
I perform poorly due to science teachers' style of teaching	3.29	1.50
I perform poorly in Science because teachers are not able to complete the Science syllabi	3.49	1.43
I perform poorly in Science because teachers have too little time for teaching	2.87	1.49
I perform poorly in science subjects because teachers are not committed to teaching	2.65	1.32
Teacher absenteeism affect my performance in science negatively	3.26	1.57
I perform poorly in Science because teachers do not give enough exercises	3.32	1.51
My performance is affected because teachers do not give feedback on exercises	3.58	1.38
My performance in Science is low because I am taught by newly employed teachers instead of experienced teachers	3.37	1.41

Table 4. Teacher-related factors impacting low academic performance as perceived teachers

Statement	Mean	Std. Dev.
Students perform poorly in Science because there are not enough science teachers in the school	4.23	1.04
Poor style of teaching makes students perform poorly in Science	3.85	1.03
Students perform poorly in Science because we are unable to complete the Science syllabi	3.96	1.13
Students perform poorly in Science because I spend too little time in teaching	3.23	1.32
Performance of students in Science is low because I am not motivated enough to teach	2.79	1.25
Performance of students in Science is low because I am not committed enough to teaching	1.96	1.20
Students perform poorly in Science because of poor qualification of Science teachers	2.02	0.93

There was also the indication that students performed poorly in Science because teachers do not give enough exercises (M=3.32, SD=1.51). Teachers' styles of teaching (M=3.29, SD=1.50), inadequate number of teachers (M=3.29, SD=1.59) and teacher absenteeism (M=3.26, SD=1.57) were also revealed by the respondents to affect performance of students in Science negatively.

The results suggest that lack of feedback on exercises, inability to complete syllabus, inexperience among teachers, inadequate number of exercises, teaching style, inadequate number of teachers and teacher absenteeism were the teacher-related factors which led to poor performance in Science among students.

The teacher-related factors impacting low performance in Science as perceived by the teachers are presented in Table 4.

From Table 4, it was revealed by the indicated by teachers that students performed poorly in Science because there were not enough science teachers in their schools (M=4.23, SD=1.04). Also, it was indicated by the respondents that inability to complete syllabi contributed to the poor performance of students in Science (M=3.96, SD=1.13). Poor teaching style was also indicated by the respondents to be a cause of poor performance among students (M=3.85, SD=1.03). The teachers also acknowledged that students perform poorly in Science because they spend too little time in teaching (M=3.23, SD=1.32). The views of the teachers could be summarized as including inadequate number of science teachers, inability to complete syllabi, poor teaching style and little time spent in teaching. This is similar to what was expressed by the students because the students found lack of feedback on exercises, inability to complete

syllabi, inexperience among teachers, inadequate number of exercises, teaching style, inadequate number of teachers and teacher absenteeism as teacher-related factors impacting poor performance in Science.

From the results, some of the factors believe to lead to poor academic performance of students in Science in the study area include; inadequate number of science teachers; inability to complete syllabi, poor teaching style; little time spent in teaching; inadequate number of exercises; lack of feedback on exercises; inexperience among teachers and teacher absenteeism.

5. DISCUSSION

The results of the study revealed that school-related factors causing poor performance in Science among students include the inadequacy of facilities, poor state of existing facilities, general disturbances in class and the ineffective supervision of teaching. Science involves a lot of practical work which may not be possible when the needed facilities are not available. For instance, science laboratories are very essential to the teaching and learning of science. Thus, when schools do not have these laboratories, the students are likely to struggle in their study of science. There are situations where these laboratories may exist but may not be in a good state. Some of these required facilities may not even be well equipped and this can affect academic performance poorly.

Classroom disturbances can also affect concentration in class and this can negatively affect academic performance of students. This is more particular for Science classes which require a lot of concentration. Classroom disturbances can therefore lead to poor academic performance in Science. Also, ineffective supervision of teaching can make the teaching and learning process less effective and thus affect the academic performance of students negatively.

The findings of the current study are in line with the findings of King'aru [10] who investigated the factors that contribute to poor performance in science subjects among students in secondary schools in Tanzania and revealed that lack of resources such as text books and well equipped laboratories led to poor performance among students. Similarly, Ambogo (2010) investigated the relationship between availability of teaching/ learning resources and performance in

secondary school science subjects in Eldoret municipality, Kenya. It was revealed that availability of text books, laboratory chemicals and equipment was higher in the high performing schools than in the low performing schools. Specifically, the findings of Ambogo showed that all the low performing schools that had a science laboratory did not have a laboratory technician and only one was fully equipped.

Sikali (2010) also assessed the factors affecting performance in primary schools in Mvomero District Council in Tanzania and found that shortage of books, lack of teachers houses, and shortage of classrooms were among the factors leading to poor performance among students. In a similar vein, Mwesiga (2017) investigated the factors influencing students' poor performance in Morogoro Municipal community secondary schools in Tanzania and revealed that schools lacked teaching and learning resources and this affected performance negatively. Okolie, Elom and Inyiagu (2014) added that in Nigeria, students performed poorly because of poor administration and supervision of schools and the general academic climate in schools.

From the forgoing, it is clear that school-related factors affected academic performance of students in Science negatively. These are mostly connected to the lack of facilities, poor state of facilities, poor supervision and the inconducive nature of school climate.

The study revealed that inadequate number of science teachers, inability to complete syllabi, poor teaching style and little time spent in teaching were among the teacher-related factors which caused low academic performance in Science. In addition, inadequate number of exercises, lack of feedback on exercises, inexperience among teachers and teacher absenteeism led to poor academic performance of students in Science.

The integrated science syllabus in Senior High Schools comprises Biology, Chemistry and Physics and this makes the content a too much to cover. Thus, when the teachers are unable to complete the syllabus, then performance of students may be affected negatively. Also, poor teaching style of teachers can be detrimental for students since the style of teaching can affect students' understanding of science concepts. In addition, the practical nature of Science requires that there are regular exercises and feedback for students so that the students can easily grasp

the concepts been taught. The lack of these therefore would affect students negatively. Teacher-absenteeism is also a major factor which causes low academic performance in Science. When teachers absent themselves, it reduces the teacher-student contact time and this can affect students negatively.

The findings of the current study confirm the findings of several researchers. Siachifuwe [51] examined the influence of teacher related factor on pupils' academic performance in open learning classes at Twin palm secondary school in Lusaka district of Zambia. Siachifuwe found that unsatisfactory academic performance of students was due to some teacher-related factors such as, lack of punctuality by teachers, lack of teaching aids and non-marking of learners' exercises. Al-Zoubi and Younes (2015) also examined the causes and effects of low academic achievement and revealed that the factors responsible for students' low academic achievement include using traditional methods instead of modern teaching methods in teaching and poor relationships between teachers and students.

In addition, Baharin, Ismail, Ahmad and Majid (2015) revealed that in Malaysia (UKM) teachers' mastery of the subject, teachers' presentations and methods can affect academic performance of students negatively. In Portugal, Fonseca and Conboy [4] examined the perceptions of the factors of academic failure among grade-ten, science-tracked students and revealed that the major factors of failure science courses were quality of teaching and previous student preparation. Ngema's (2016) study on performance in science subjects at the Ingwavuma Circuit in South Africa showed that time allocated for each science topic, the teachers' teaching load, resources, teachers' lack of specialized content knowledge and the medium of instruction caused low performance in Science.

The findings of all these studies have shown clearly that several teacher-related factors could be responsible for poor academic performance in Science. In Ghana, Yeboah (2014) revealed that that insufficient teaching and learning materials, large class size, misuse of instructional time, incompleteness of the syllabus, teachers' limited proficiency and lack of supervision were among the factors which contributed to the low performance of students in the Sunyani municipality. Saviour, Edmond, and Izudeen

(2017) also examined the low academic performance of pupils in the Basic Education Certificate Examination (BECE) at the basic schools in the Sagnarigu District in Northern Region of Ghana. They revealed that the teacher factors that contributed to the low academic performance were incidences of habitual lateness and absenteeism to school, inability to complete the syllabi, inadequate exercises and homework assigned to pupils, and low/inadequate motivation from employers. Across different societies and contexts, performance of students in Science is likely to be affected by teacher factors. This has been confirmed in the several findings of the previous studies as well as the findings of the current study.

6. CONCLUSION

The study revealed that inadequate number of science teachers, inability to complete syllabi, poor teaching style and little time spent in teaching were among the teacher-related factors which caused low academic performance in Science. In addition, inadequate number of exercises, lack of feedback on exercises, inexperience among teachers and teacher absenteeism leads to poor academic performance of students in Science. It is concluded that school-based issues with facilities and nature of the teaching and learning atmosphere could lead to poor academic performance in Science among students. Secondly, it is concluded that teachers can contribute to poor academic performance in Science when teacher-student contact time is reduced and they fail to complete the entire syllabi or do not engage the students practically using appropriate teaching methods. Based on the results, it recommended that curriculum for integrated science need to be relooked at to reduce its broad content. Also teachers need to be provided with in-service training on best approaches to teaching integrated science. Teachers need to provide appropriate feedback on exercises for students.

7. LIMITATION OF THE STUDY

The study adopted survey approach in collecting data from some selected district in one region of Ghana. Therefore the results of the study cannot be generalized over the whole country. The study measured the perception of teachers and students which may differ from the real situations in the school.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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