REVISED PAPER VERSION

EXAMINING FACTORS RESPONSIBLE FOR STUDENTS POOR PERFORMANCE IN MATHEMATICS FROM THE POINT OF VIEW OF TEACHERS AND STUDENTS IN ASESEWA SENIOR HIGH SCHOOL IN THE UPPER MANYAKROBO DISTRICT

Abstract

This study aimed at finding out the factors responsible for students' poor performance in mathematics in Asesewa Senior High School, Ghana. The researchers therefore seeks to investigate the extent to which learning resources availability and learning activities inhibit the performance of students of that district in mathematics. A descriptive survey design was employed for the study, because the study objective was to collect information from respondents on their experience, perception and opinion in relation to the poor performance of students in mathematics Asesewa Senior High School. As the only school in the Manyakrobo District, it was prudent for the researchers to use it for study. The overall population for the study was two hundred and fifty (250) and the study sample was made up of one hundred and sixty-five (165) students and mathematics teachers of Asesewa Senior High School. Data was obtained through questionnaire distribution and was then analyzed with the help of SPSS. It was found out that resources were available and cannot be considered as contributing factor to the decline of student performance in mathematics. The study also revealed that with respect to gender on the part of teachers and students there were no significant difference in the perception of males and females on resource availability and learning activities.

Keywords: perception, mathematics teachers, resources availability, learning activities, factors, performance, students

1. INTRODUCTION

1.1 Background to the Study

Education is considered as a tool used for the integration of the individual into the society to achieve self-realization, develop national consciousness, promote unity and strive for social, economic, cultural and technological progress. Education in science and mathematics are the bedrock and indispensable tools for scientific, technological, and economic advancement for every country. It affords countries the capability to apply technology for exploitation of natural resources. Such exploitation depends greatly on mathematics for laying foundation for government, political, scientific, technological advancement, economic development, socio-cultural, and environmental peace.

Mathematics has always been a pivot to which the development of any nation moves on. It is upon this background that all countries of which Ghana is no exception of has taken a keen interest in the subject. With the aim of training its nationals in the teaching and learning of mathematics for its technological breakthrough. It has become necessary for people of all ages to reach, analyze and apply the mathematics knowledge effectively and efficiently to be successful citizens in our information age. In order to showcase the significance of the subject, mathematics curriculum is structured so that children develop mathematical literacy right from the kindergarten through Senior High School, Technical or Vocational institutions. This will aid students to develop understanding of the relevance of mathematics so as to be capable of understanding the mathematics being used in their field of interest. Mathematics is the means of sharpening the individuals mind, shaping his reasoning ability and developing his personality, hence, its immense contribution to the general and basic education of the people of the world [5].

For students to perform well, they need to develop a good attitude towards mathematics. In other to produce a good result, examinations are conducted to ascertain how well students are progressing or retrogressing. Mathematics learning as seen by many can be stressful due to social demand and its expectation in Ghana. This source of stress will worsen for many students who find mathematics difficult. A critical look of students' performance in previous years, from 2011-2014, witnessed a drastic decline in mathematics. The researcher therefore seeks to investigate the extent to which learning resources availability and learning activities inhibit the performance of students of Asesewa Senior High School in the Upper

ManyaKrobo District in mathematics. This is the only Senior High School in the district which has produced a lot of prominent people in the district and country at large. In recent times, the school has witnessed a decline in the students' performance in mathematics. Results produced in the West African Senior Secondary Exams (WASSCE) in Asesewa Senior High School after the 2007 educational reform (from 2011-2014) showed a drastic fall in mathematics.

1.2 Statement of the Problem

The West African Examinations Council (WAEC, 2007, 2008, 2009, 2010 & 2011) Chief Examiners reports on mathematics highlighted areas of students' weaknesses to include: inability to carry out simplifications of surds and indices, applications of laws of logarithm, inability in choosing appropriate scales in plotting graphs, poor knowledge on the rubrics of construction, and confusion on plane and solid shapes. The problems and difficulties experienced by secondary school students in geometry have been traced to inadequate knowledge of the rubrics of construction, measurement and identification of plane shapes from the solid shapes (WAEC, 2007; 2008; 2009; 2010; and 2011). Many researches point to the abstract nature of mathematics in classroom teaching as one of the causes of poor performance in mathematics [22] and [28].

The question that readily comes to mind is: What are the factors responsible for students' poor performance in mathematics in Asesewa Senior High School? It is against this background that the researcher wants to find out the extent to which unavailability of learning resources and learning activities inhibit learning of mathematics by students in Asesewa Senior High School.

1.3 Purpose of Study

The study sought to find out the extent to which unavailability of learning resources inhibit the learning of mathematics by students in Asesewa Senior High School in the Upper ManyaKrobo District.

1.4 Research Questions

The following research questions were formulated to guide the study

1. Are there differences among students' and teachers' perception of resources availability and learning activities, as factors inhibiting Asesewa Senior High Schools students' performance in mathematics in the Upper ManyaKrobo District?

2. Are there gender differences in students' and teachers' perception of resources availability and learning activities, as factors inhibiting Asesewa Senior High Schools students' performance in mathematics in the upper Manya District?

1.5 Significance of the Study

The research aimed at assessing the availability of teaching and learning resources as well as learning activities on the academic performance of students in mathematics. It is hoped that the results may be useful to various institutions and educational authorities involved in policy formulation, development, implementation and more so personnel in Ghana Education Service in formulating policies to improve adequacy of teaching and learning resources in schools especially mathematics resources.

It is also hoped that the study will consequently increase literature on availability of teaching and learning resources to assist education evaluators establish ongoing education quality monitoring networks and improvement processes, to guide teachers to improve use of teaching and learning materials by using instructional strategies for appropriate delivery of curriculum; hence inform policies in teacher education. Findings and suggestions outlined will also assist teachers of Asesewa Senior High School to put in appropriate intervention to improve on students' performance. Teachers are going to be exposed to strategies and procedures of teaching to be able to bring about conceptual changes in pupils performance.

2. REVIEW OF RELATED LITERATURE

This chapter deals with theoretical and empirical review underpinning the study. The areas considered include: learning resources, learning environment and students, academic achievement, factors affecting teaching. and learning of mathematics.

2.1 Learning Resources/Materials and Students' Academic Performance

Review of literature on school resources and students' academic attainment reveals widespread inconsistence or lack of consensus. For instance [12] observe that there is a significant disagreement on the existence and the strength of a relationship between school input and student achievement. Educational research on the link between school resources and students' academic achievement dates back to the work of [32]. As cited in [3] it is claimed then that only a small portion of variance in student achievement can be accounted

for by variation in schools compared with other factors such as family background. A study by [3] conclude that the school may be small but make highly significant difference. One possible explanation for finding a weak relationship between school resourcing levels and pupils' attainment as identified by [32] is that schools are inefficient and therefore do not use the resources more efficiently.

However, [1] attributes poor or low performance in mathematics in school in Nigeria, for instance, to inadequate good instructional materials, equipment, facilities, lack of qualified teachers and laboratories. [21] attributes lack of adequate resources in schools in some countries to financial constraints. [21] asserts that there are well established connections between the availability of learning materials and achievement in developing countries. There is also a positive connection between the qualification and experience of Science Teachers, and high levels of academic achievement in Science. A study done by [26] show that there can be no existence of effective mathematics education program without equipment for teaching. As cited in [26] there is a general consensus among science educators that the laboratory occupies a central position in science instruction. Some of the benefits of laboratories include stimulation of the learner's interests as they perform and/or engage in useful scientific activities and experimentations. This give the learners important skills in dealing with scientific method of problem solving. This laboratory activities results in long term memory as cited in [26].

According to [27], adequate facilities and instructional materials among other factors such as a well-defined goal, a positive learning environment and high expectations for student performance constitute characteristics of a successful school. In [29] poor investigations of school and teacher effects have raised so many questions as compare to what they have answered. The outcome of a review of 35 years of production function research in [35] reveals that resource can and do make a difference in students' education outcomes. Positive links between resources and students' academic achievement have been reported by [30]. Also, [14] reports on large scale studies involving low income countries which focused on such factors as school infrastructure, class size, teacher qualification and experience, and the availability of instructional materials. The studies stressed the importance of human and material resources in achieving better schooling outcomes.

Material resources include textbooks, charts and maps, audiovisual and electronic instructional materials such as radio, tape recorder, television and video tape recorder. Other category of material resources consists of paper supplies and writing materials such as pens, eraser, exercise books, crayon, chalk, drawing books, notebooks, pencil, ruler, slate, workbooks and so on [35]. [34] discovered a very strong positive significant relationship between instructional resources and academic performance. According to [34], schools endowed with more materials performed better than schools that are less endowed. This corroborated the study by [26] that private schools performed better than public schools because of the availability and adequacy of teaching and learning materials. [16] also supports that students' performance is affected by the quality and quantity of teaching and learning materials. The author noted that institutions with adequate facilities such as textbooks stand a better chance of performing well in examination than poorly equipped ones. Therefore, poor performance could be attributed to inadequate teaching and learning materials and equipment.

2.2 Learning Environment and Students' Academic Achievement

According to [29], clean, quiet, safe, comfortable and healthy environment constitute an important component of successful teaching and learning process. Evidences show that students with poor academic achievements are those in shabby school buildings with poor ventilation and those without science labs. There is a plethora of evidences confirming the link between the building and achievement. According to [34], Victoria Institute of Teaching highlights the importance of the quality physical environment which significantly affects student achievement. But, some quantitative studies have found little association between school environment and organizational variables and student achievement.

[13] reports that there is sufficient research to state without equivocation that the building in which students spends a good deal of their time learning does in fact influence how well they learn. As opined by [29], the arrangement of space has immediate and far reaching consequences for teachers' ability to effectively and efficiently accomplish day activities, the formation of social and professional relationship and the sharing of information and knowledge. Therefore, classroom and/or laboratory space is very important in the teaching and learning process. According to [27] the safe and good conditions of buildings have been linked to student success.

The link between building condition and student performance show that building condition is a predictor of student performance. The positive link between building and student achievement has also been highlighted by [10] that research continues to support the positive relationship between building and student achievement. Researchers within the United States have been joined by international researchers in confirming the link between the building and achievement. Also, [10] report that poor building condition has a negative impact on student attendance. Without school attendance, no effective learning would take place.

2.3 Factors Affecting Teaching and Learning of Mathematics

Various factors have been adduced for poor performance of students in mathematics. The interest of students in mathematics have been related to the volume of work completed, students task orientation and skill acquisition, students personality and self-concept [25], feeling of inadequacy, motivation and self-confidence [3], shortage of qualified mathematics teachers, poor facilities, equipment and instructional materials for effective teaching [25], use of traditional chalk and talk methods, large pupils to teacher ratio and students attitude to the subjects [16]. As stated by [36] that as the interest in class activities tends to increase, the individuals are able to formulate goals relating to that activity and invest time and effort to achieve them. Moreover, individual characteristics such as intelligence, cognitive styles and personality play an important role in learning and instruction as does the context of learning. Other research findings have shown that individual students' characteristics variables such as motivational orientations, self-esteem and learning approaches are important factors influencing academic achievements.

In the effort to improve students cognition and affective outcomes in mathematics and/or school learning. Educational psychologists and mathematics educators have continued to search for variables (personal and environmental) that could be manipulated to help academic gains. Of all the personal and psychological variables that have attracted researchers in this area of educational achievement, motivation seems to be gaining more popularity and leading other variables [33]. All the above stated reasons contribute to the poor performance of pupils in mathematics. This has led to a cycle of events that could be illustrated. When explaining the illustration above [4] explained that when pupils express lack of interest in the subject, it affects the way they react or listen to the teacher. Also, when many of the pupils believe that they cannot pass the teacher is also affected. Again, aside this negative response from the pupils, the teacher is already confronted with a lot of other factors (e.g., low income, low

status in society, large teacher-pupils ratio). These may cause him or her to resorts to the easiest way of disseminating knowledge that is 'chalk and talk' without the use of instructional materials. He may not also bother to vary his teaching styles to suit individuals; therefore, the cycle goes on [4]. One unfortunate outcome of this is that, the negative attitude towards the subject is passed down from one generation of pupils to another and therefore keeps enlarging. What then could be done to break such a cycle of failure? This has been the question by many mathematics educators and researchers such as [2] and [6].

A lot of new and modified old methodologies have been proposed to improve performance in the subject. Instructional materials have also been designed and developed to aid mathematics teaching and learning [31]. All these are to help break this cycle of poor performance by motivating pupils to learn mathematics. This issued of motivating learners is seen as an important aspect of effective learning. In fact, psychologists believe that motivation is a necessary ingredient for learning [7]. They believe that satisfactory school learning is unlikely to take place in the absence of sufficient motivation to learn. The issue as relating to mathematics education would then be; is it possible to motivate pupils to learn mathematics? And how could it be done? One needs to therefore look at the effect of motivation on learning.

According to [8], the learning process of mathematics is crucial taking into consideration the attitude of the learner. It effects students' achievement in mathematics. It has been realized that many students have developed negative attitude towards the study of Mathematics as a result of mass failure of students. The support of the structure of the school, the teaching method, the family and students' attitude towards school affect the attitudes towards mathematics. Many students are alienated from the study of mathematics even when teachers in their mode of delivery believe they are presenting lessons in authentic and in context.

The conceptions, attitudes, and expectations of students regarding mathematics and mathematics teaching have been considered to be very significant factors underlying their school experience and achievement [19]. [10] stresses on the need for teachers to assist students to develop positive attitudes in the subject. Mathematics teachers must help to build confidence in the students by encouraging the belief that everyone can "do" Mathematics. Emphasizing effort, not innate ability, modelling enthusiasm for teaching and learning Mathematics. Moreover, addressing the learning styles of students by providing a variety of

ways for students to overcome and get the understanding of difficult concepts. Finally, helping students to appreciate the value of Mathematics in their lives; and choosing activities carefully (not too easy, not too hard), so that students can be both challenged and successful.

2.4 Mathematics Learning Activity Types

The purpose of presenting an activity types taxonomy for mathematics is to introduce the full range of student learning activities for teachers to consider when building lessons that strive to effectively integrate technology, pedagogy, and content. In doing so, [11] attempted to scaffold teachers' thinking about how to best structure their learning activities, best support those activities with educational technologies, and to spark their creativity during instructional planning. Essentially, these mathematics activity types are designed to be catalysts to thoughtful and creative instruction by teachers. [11] has conceptualized seven genres of activity types for mathematics that are to encourage active engagement by all students. Each of the seven genres briefly provides some example technologies that might be selected by a teacher while undertaking each activity.

2.4.1 The "Consider" Activity Types

According to [11], when learning mathematics, students are often asked to thoughtfully consider new concepts or information. This request is a familiar one for the mathematics student, and is just as familiar to the teacher. Yet, although such learning activities can be very important contributors to student understanding, the "Consider" activity types also often represent some of the lower levels of student engagement, and typically are manifested using a relatively direct presentation of foundational knowledge. Activity types include attending to demonstration, text reading and discussion. Students gain information from a presentation, video clip, animation, interactive whiteboard or other display media. Students also extract information from textbooks or other written materials, in either print or digital.

2.4.2 The "Practice" Activity Types

In the learning of mathematics, it is often very important for a student to be able to practice computational techniques or other algorithm-based strategies, in order to automate these skills for later and higher-level mathematical application. Some educational technologies can provide valuable assistance in helping students to practice and internalize important skills and techniques. The activity types include computation, drill and practice and solving a puzzle. Students undertake computation-based strategies using numeric or symbolic processing.

Students also rehearse a mathematical strategy or technique and perhaps use computer-aided repetition and feedback in the practice process. With the puzzle, students carry out a mathematical strategy or technique within the context of solving an engaging puzzle which may be facilitated or posed by the technology [11].

2.4.3 The "Interpret" Activity Types

In the discipline of mathematics, individual concepts and relationships can be quite abstract, and at times can even represent a bit of a mystery to students. Often, students need to spend some time deducing and explaining these relationships to internalize them. Educational technologies can be used to help students investigate concepts and relationships more actively, and assist them in interpreting what they observe. This activity types that can support this thoughtful interpretation process include conjecture, argument and categorization. The student poses a conjecture, perhaps using dynamic software to display relationship. Examples of such technologies are dynamic geometry software (geometer's sketchpad) and widgets (explore learning). With the interpretive activity, the student develops a mathematical argument related to why they think that something is true. Technology may help to form and to display that argument. Examples of such technologies are concept mapping software, presentation software, blogs, and specialized word processing software.

2.4.4 The "Produce" Activity Types

When students are actively engaged in the study of mathematics, they can become motivated producers of mathematical works, rather than just passive consumers of prepared materials. Educational technologies can serve as excellent "partners" in this production process, aiding in the refinement and formalization of a student product, as well as helping the student to share the fruits of their mathematical labors. The activity types suggest technology-assisted efforts in which students become "producers" of mathematics-related products. The student makes a demonstration on some topic to show their understanding of a mathematical idea or process. Technology may assist in the development or presentation of the product. Examples of technologies for demonstration are interactive whiteboard, video (YouTube), document camera, presentation software, podcasts.

2.4.5 The "Apply" Activity Types

The utility of mathematics in the world can be found in its authentic application. Educational technologies can be used to help students to apply their mathematics in the real world, and to

link mathematical concepts to real world phenomena. The technologies essentially become students' assistants in their mathematical work, helping them to link mathematical concepts to the reality in which they live.

2.4.6 The "Evaluate" Activity Types

When students evaluate the mathematical work of others, or self-evaluate their own mathematical work, they utilize a relatively sophisticated understanding of mathematical concepts and processes. Educational technologies can become valuable allies in this effort, assisting students in the evaluation process by helping them to undertake concept comparisons, test solutions or conjectures, and/or integrate feedback from other individuals into revisions of their work. Some of these evaluation-related activities include:

1. The student compares and contrasts different mathematical strategies or concepts, to see which is more appropriate for a particular situation.
2. The student systematically tests a solution and examines whether it makes sense based upon systematic feedback, which might be assisted by technology.
3. The student poses a specific conjecture and then examines the feedback of any interactive results.
4. The student evaluates a body of mathematical work through the use of peer or technology- aided feedback.

2.4.7 The "Create" Activity Types

When students are involved in some of the highest levels of mathematics learning activities, they are often engaged in very creative and imaginative thinking processes. According to [11], Albert Einstein once suggested that imagination is more important than knowledge. It is said that this quote represents his strong belief that mathematics is a very inventive, inspired, and imaginative endeavor. Educational technologies can be used to help students to be creative in their mathematical work, and even to help other students to learn the mathematics that they already know. The activity types below represent these creative elements and processes in students' mathematical learning and interaction.

1. The student develops and delivers a lesson on a particular mathematics concept, strategy, or problem.
2. The student develops a systematic plan to address some mathematical problem or task.

3. The student imaginatively engages in the development of a student project, invention, or artifact, such as a new fractal, tessellation, or other creative product.
4. The student creates a mathematical process that others might use, test or replicate, essentially engaging in mathematical creativity.

3. METHODOLOGY

This chapter deals with the technique and procedures used in the process of data gathering. The areas considered include the research design, population, sample and sampling procedure.

3.1 Research Design

A descriptive survey design was employed for the study. The design adopted is appropriate and efficient to use in such a study as it is an accurate counter and indicator to measure students' academic performance in mathematics [9]. The researcher used this research design because the study objective was to collect information from respondents on their experiences, perceptions and opinions in relation to the poor performance of students in mathematics in Asesewa Senior High School.

The school was selected for the study because it is the only Senior High School in the District where poor performance of students in mathematics is on ascendency and where the researchers can draw a more and better meaningful conclusion from the data obtained.

3.2 Population

The target population for the study was made up of mathematics teachers and forms three students of Asesewa Senior High School in the Upper Manya District. The overall population for the study was two hundred and fifty (250). Out of the two hundred and fifty, fifteen (15) were mathematics teachers and two hundred and thirty-five (235) were students.

3.3 Sample Size and Sampling Procedure

The study sample was made up of one hundred and sixty-five (165) students and mathematics teachers of Asesewa Senior High School. In arriving at the sample for the study, the researcher used 66% of the entire population for the study. Stratified random sampling was used in selecting the students.

Table 1: **Sample Distribution of Students**

Category	Population	Sample
A	50	36
B	55	40
C	40	30
D	90	59
Total	235	165

Source: field work

4. DATA ANALYSIS AND RESULTS

This chapter deals with the statistical analysis of the collected data. The study focused on the decline in students' performance in the mathematics in Asesewa Senior High School in the Upper ManyaKrobo District. The data was analyzed using simple descriptive statistics: percentages, means, standard deviation, variance and frequencies and other statistical tests to answer the two main research questions. The data is presented with the aid of tables and graphs.

4.1 Demographic Characteristics of Respondents

This section presents the demographic aspects of the respondents, especially those that have a great bearing on the analysis and interpretation of data collected on the various subjects of the study. Accordingly, the main demographic features of the respondents featured in this section include: gender and age range of both the Mathematics teacher and the students, and the course of study of the students.

4.2 Mathematics Teachers Demographics

Fifteen mathematics teachers were involved in the study and their ages and gender are displayed in tables 2 and 3 below.

Table 2: **Sex of Teacher Respondents**

Gender	Frequency	Percent
Female	2	13.3
Male	13	86.7
Total	15	100.0

Source: field work

Table 3: **Ages of Teacher Respondents**

Age	Frequency	Percent
25-35	10	66.7
36-55	4	26.7
over 55	1	6.6
Total	15	100.0

Source: field work

From table 2, it is seen that the number of males were 13 representing (86.7%) of the respondents whiles the females with a total of number 2 had (13.3%). From Table 3 it is also seen that the age range of (25 – 35) years had the highest number representing 66.7, followed by (36 – 55) years with 4 respondents representing 26.7% and 6.6% were over 55 years.

4.3 Students Demographics

Table 4 below reports on the gender of students involved in the study. Out of the 150 students, 88 (58.7%) were boys whiles the remaining 62 (41.3%) were girls.

Table 4: **Gender of Students**

Gender	Frequency	Percent	Valid Percent
Girl	88	58.7	58.7
Boy	62	41.3	41.3
Total	150	100.0	100.0

Source: field work

From Table 5 below, 60 of the respondents were within 15-17 years representing 40.0%, 85 of the respondents were in the 18-20 age range representing 56.7%. whiles only 5 were 21

years and over showing 3.3%. This shows that the majority of the students 145 representing 96.7% were within the normal age range of sixteen (16) to nineteen (19) years for senior high school.

Table 5: **Age of Students**

Age	Frequency	Percent	Cumulative Percent
15-17	60	40.0	40.0
18-20	85	56.7	96.7
21-23	5	3.3	100.0
Total	150	100.0	

Source: field work

The results in Fig1 below indicate that 57 (38%) were business students, 25 (16.7%) offer general arts, 33 (22%) offer science and agriculture whiles the remaining 35 representing (23.3%) are also home economics students.

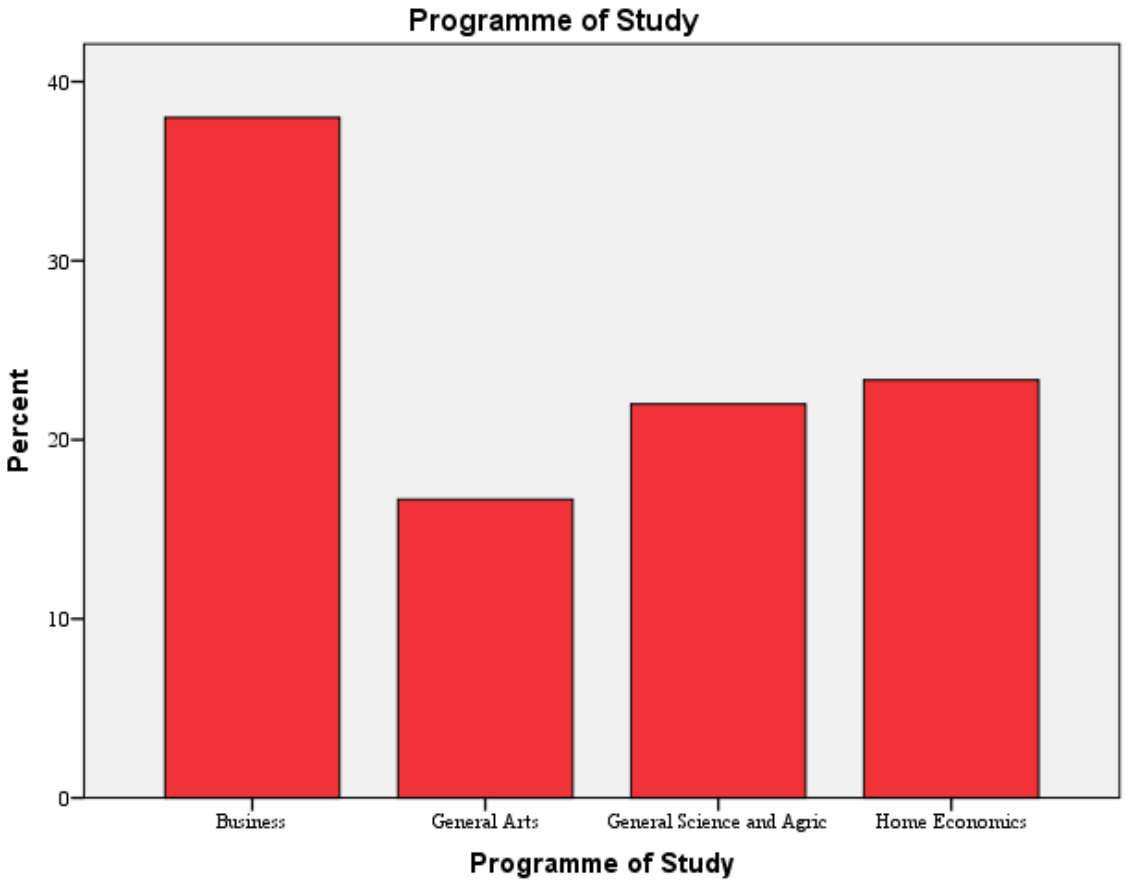

Fig 1: Distribution of Students by Course of Study

Research Question 1

Are there differences among students' and teachers' perception of resources availability, learning activities and motivation to learn, as factors inhibiting Asesewa Senior High Schools students' performance in mathematics in the Upper ManyaKrobo District?

In order to test if there are significant differences in how teachers and students perceive the aforementioned factors as contributing factors inhibiting senior high school students' performance in mathematics, independent samples T-test were carried out and the results are presented below;

4.4 Resource Availability

An independent samples t-Tests was conducted to compare how teachers and students perceive resource availability as a contributing factor to performance of students in mathematics. There was no significant difference in teachers' perception (M=2.6956, SD=0.6499) and Students perception (M=2.5989, SD=0.5145) of resource availability; t (16) = 0.350, p = 0.731. The results (see Table 6) suggest that both teachers and students perceive resource availability in the same way. Both parties believe resources are enough.

4.5 Learning Activities

An independent samples t-Tests was conducted to test if there are differences in teachers and students' perception of learning activities as a contributing factor to performance of students in mathematics. There was no significant difference in teachers' perception (M=2.099, SD=0.4599) and Students perception (M=2.074, SD=0.34805) of learning activities; in fact, t (18) = 1.38, and p = 0.893. showing no differences in how teachers and students perceive the mathematics learning activities of students as a contributing factor to the decline in performance of students in WASSCE (See Table 6).

Table 6: **Independent samples t-test results for difference in perceptions**

	Category	Mean	Std. Deviation	T	Df	Sig (2-tailed)
Resource Availability	Teachers	2.6956	.64993	0.350	16	0.731
	Students	2.5989	.51455			
Learning Activity	Teachers	2.099	0.4599	1.38	18	0.893
	Students	2.074	0.34805			

Source: field work

Research Question 2

Are there gender differences in students' and teachers' perception of resources availability, learning activities and motivation to learn, as factors inhibiting Asesewa Senior High Schools students' performance in mathematics in the upper Manya District?

To answer research question four independent samples t-Test was run and the result are presented below;

4.6 Teachers

Three separate independent samples t-tests were conducted to check if there are differences in teachers' perception of the factors with respect to their gender. On resource availability, there was no significant difference in the perception of males (M=2.76, SD=0.61) and females (M=2.28, SD=1.00); t (16) = 1.236, p = 0.234.On the learning activities of students, there was no significant difference in the perception of males (M=2.08, SD=0.44) and females (M=2.00, SD=0.85); t (18) = 0.258, p = 0.799. The result is shown in Table 7.

Table 7: **Independent samples t-test results for difference in perceptions with respect to gender**

	Category	Mean	Std. Deviation	T	Df	Sig (2-tailed)
Resource Availability	Male	2.76	0.61	1.236	16	0.234
	Females	2.28	1.00			
Learning Activity	Male	2.08	0.44	0.258	18	0.799
	Females	2.00	0.85			

Source: field work

4.7 Students

Three separate independent samples t-tests were conducted to check if there are differences in students' perception of the factors with respect to their gender. With respect to resource availability, there was no significant difference in the perception of boys (M=2.26, SD=0.47) and girls (M=2.512, SD=1.55); t (16) = 0.850, p = 0.408. On the learning activities of students, there was no significant difference in the perception of boys (M=2.05, SD=0.33) and girls (M=2.09, SD=0.37); t (16) = -2.06, p = 0.839. The result is presented in the table below.

Table 8: **Independent samples t-tests on students' perception with respect to gender**

	Category	Mean	Std. Deviation	T	Df	Sig (2-tailed)
Resource Availability	Boys	2.72	0.47	0.850	16	0.408
	Girls	2.512	0.55			
Learning Activity	Boys	2.05	0.33	- 2.06	16	0.839
	Girls	2.09	0.37			

Source: field work

5. DISCUSSIONS

This chapter highlights the major findings of the research in relation to the objectives and the research questions formulated to guide the study. Inferences are also made from findings of related previous studies which underpins the current study.

In response to research question one (Are there differences among students' and teachers' perception of resources availability, learning activities and motivation to learn, as factors inhibiting senior high schools students' performance in mathematics?), independent samples t-test were run to test if differences exist in the perception of teachers and students on the factors. On the availabilty of resources, results indicated that there was no statistical significant difference in how teachers (M=2.6956, SD=0.6499) and Students (M=2.5989, SD=0.5145) perceive resource availability; t (16) = 0.350, p = 0.731. This means that on the average, both teachers and students have the same perception on resource availability. With respect to differences in how both parties perceive learning activities, the result of the independent samples t- test revealed that there was no significant statistical difference in teachers' perception (M=2.099, SD=0.4599) and Students perception (M=2.074, SD=0.34805) of learning activities, t (18) = 1.38, p = 0.893. meaning they both view learning activities from the same angle. On motivation to learn, results indicated that there was no significant statistical difference in teachers' perception (M=3.416, SD=0.5941).

Research question one sought to find out if there is any gender difference in the perception of teachers and students on the factors contributing to the decline in performance of students in mathematics. On the side of the teachers, the tests run showed that there are no statistical differences between males and females' perception of resource availability in respect to gender. Both genders view resources availability as a major component of students' performance in mathematics. This is in support of [26] who argued that adequate facilities and instructional materials are high expectations for students' performance. On the issue of learning activities, there was no significant difference in the perception of males and females. Learning activities of students were half of all overall mathematics activities. This shows that the number of contact hours for learning activities is not enough. The results again indicate that when it comes to students, there are no statistical differences between the perceptions of boys and girls on the factors contributing to poor performance in mathematics.

6. CONCLUSIONS

6.1 Summary of Major Findings

Based on the analysis undertaken, the following findings were made:

1. It was found out that resources were available and cannot be considered as contributing factor to the decline of student performance in mathematics.
2. It was revealed that mathematics learning activities of students was just half of the normal contact hours.
3. Results indicated that there was no statistical significant difference in how teachers and students perceive resource availability.
4. Results indicated that there was no significant statistical difference in teachers perception and students perception of learning activities.
5. The results indicated that there is no statistical difference between the perception of boys and girls on the factors contributing to poor performance in mathematics.

From the study findings, the following conclusions are drawn:

It is clear from the findings that availability of resources for teaching mathematics are enormous. These include: exercise books, students work sheet, mathematics textbooks and mathematics drawing instruments. However, it was further reveals that there are inadequate calculators for students, computers and information communication technology as well as charts for illustration.

The study reveals that learning activities of students in mathematics is only half of the overall mathematics lesson. This shows that students were not rigorously involve in mathematics activities. The study reveals that, with respect to gender on the part of teachers and students, there were no significant difference in the perception of males and females on resource availability and learning activities.

7. RECOMMENDATIONS

Based on the results of the study, the following recommendations have been outlined:

1. Counselling centres should be put in place in the school to help students build their positive self-concept since that aspect has a strong correlation with academic performance.
2. Mathematics teachers should have regular in-service courses to re-orient them on their teaching methodologies. This will also acquaint them with the use of new equipment and technology so that they sustain the interest of all students in mathematics subjects, particularly girls.

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