



Examining Factors Responsible for Students Poor Performance in Mathematics, from the Perspective of Teachers and Students at Asesewa Senior High School in the Upper Manyakrobo District

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Authors' contributions

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

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Abstract

The purpose of this study was to determine the factors that contributed to pupils' poor mathematics performance at Asesewa Senior High School in Ghana. The researchers therefore seek to investigate the extent to which learning resources availability and learning activities inhibit the performance of students of that district in mathematics. Because the purpose of the study was to acquire information from respondents on their experiences, perceptions, and opinions about students' low performance in mathematics at Asesewa Senior High School, the researchers utilized a descriptive survey approach. The researchers used a descriptive survey approach because the goal of the study was to gather information from respondents on their experiences, views, and opinions about pupils' low math performance at Asesewa Senior High School. As the only school in the Manyakrobo District, it was prudent for the researchers to use it for study. The total number of participants in the study was 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 discovered that resources were accessible and that they could not be blamed for the drop in student mathematical performance. The survey also found that there was no significant variation in perceptions of resource availability and learning activities between males and females in terms of gender among teachers and students.

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Keywords: Perception; mathematics teachers; resources availability; learning activities; factors; performance; students.

1 Introduction

1.1 Background to the study

Education as a tool/medium for the integration of the individual into the community/society cannot be underestimated. To achieve self-realization, develop national consciousness, promote unity and strive for social, economic, cultural, and technological progress depends on educational level of a particular nation. Every country's scientific, technological, and economic advancement is built on the foundation of science and mathematics education. It enables countries to use technology to the extraction of natural resources. The foundation for government, political, scientific, technical advancement, economic development, socio-cultural, and environmental harmony is heavily reliant on mathematics.

Mathematics has always been a pivot to which the development of any nation moves on. It is against this backdrop that all countries, including Ghana, have developed a strong interest in the issue. With the goal of preparing its citizens to teach and learn mathematics in preparation for its technological breakthrough. To be successful citizens in our information age, people of all ages must be able to reach, understand, and apply mathematics knowledge effectively and efficiently. 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 a means of refining one's thinking, shaping one's reasoning ability, and developing one's personality, resulting in its enormous contribution to the world's general and basic education [1].

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 district's only Senior High School, and it has produced a number of notable citizens in the district and throughout the country. In recent years, the school has seen a drop in pupils' mathematical achievement. After the 2007 educational reform (from 2011 to 2014), the results of the West African Senior Secondary Exams (WASSCE) in Asesewa Senior High School revealed a dramatic drop in mathematics.

1.2 Statement of the problem

Inability of students to applications of laws of logarithm, inability to choose appropriate scales in plotting graphs, simplify surds and indices, poor knowledge and understanding of construction rubrics, and confusion in the understanding on plane and solid shapes were among the areas of students' weaknesses highlighted in the reports of the chief Examiners handout on mathematics (WAEC, 2007, 2008, 2009, 2010 & 2011). In the study of geometry by secondary school students; plane and solid shapes identifications, measurement and constructions are the areas posing challenges. (WAEC, 2007; 2008; 2009; 2010; and 2011). Many studies [2] and [3] refer to the abstract nature of mathematics in classroom teaching as one of the causes of low math performance.

The issue that immediately springs to mind is: What are the elements that contribute to Asesewa Senior High School students' poor (mathematics)arithmetic performance? In light of this, the researcher wants to know how much the lack of learning materials and activities at Asesewa Senior High School hinders pupils' capacity to learn mathematics.

1.3 Purpose of study

The goal of the study was to see how much the lack of learning resources hinders pupils at Asesewa Senior High School in the Upper ManyaKrobo District from learning mathematics.

1.4 Research questions

The study was guided by the following research questions:

1. Are there disparities in students' and teachers' perceptions of resource availability and learning activities as barriers to Asesewa Senior High School students' mathematics performance in the Upper ManyaKrobo District?
2. Are there gender variations in students' and teachers' perceptions of resource availability and learning activities as barriers to Asesewa Senior High School students' mathematical performance in the upper Manya District?

1.5 Significance of the study

The study's purpose was to determine how students' academic performance in mathematics was affected by the availability of teaching and learning resources, as well as learning activities. The findings are meant to be useful to various institutions and educational authorities involved in policy development, implementation, and evaluation, notably those in the Ghana Education Service.

It is also hoped that the study will contribute to the body of knowledge on the availability of teaching and learning resources, assisting education evaluators in the establishment of ongoing education quality monitoring networks and improvement processes, guiding teachers in the better use of teaching and learning materials through the use of instructional strategies for appropriate curriculum delivery, and thus informing teacher education policies. 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 examines the study's empirical as well as theoretical foundations. The following areas are considered: learning resources, learning environment and students, academic achievement, factors affecting teaching and learning of mathematics.

2.1 Learning resources/materials and students' academic performance

A review of the literature on school resources and student academic achievement finds substantial disagreement or disagreement [4]. Asserts that there are well-established relationships between the availability of learning materials and achievement in developing countries. There is also a link between Science Teachers' qualifications and experience and high levels of academic accomplishment in Science. [5] conducted educational research on the relationship between school resources and student academic achievement. According to [6] school variation can only explain for a small percentage of the diversity in student accomplishment when compared to other factors such as family history. According to [6], the school may be modest, but it makes a tremendous effect. One possible explanation for the lack of a link between school funding levels and student achievement found by [5] is that schools are inefficient and so do not make better use of resources.

In Nigeria, for example, [7] blamed a lack of appropriate teaching materials, equipment, facilities, qualified teachers, and laboratories for weak or low mathematics performance in school [4]. As a result of financial constraints, several countries' schools lack necessary resources [4]. Asserts that in underdeveloped countries, there are well-established links between the availability of learning resources and achievement. There is also a

correlation between the qualifications and experience of Science Teachers and high levels of academic achievement in Science. According to a study conducted by [8], there can be no efficient mathematics instruction program without teaching tools. Science educators feel that the laboratory is a crucial aspect of science education, according to [8]. One of the advantages of laboratories is that they stimulate the learner's interests as they do and/or engage in relevant scientific activities and experiments. This equips students with critical skills for dealing with scientific problem-solving techniques. These laboratory activities, according to [8], result in long-term memory.

According to [9], a successful school must have enough facilities and teaching tools, as well as a well-defined aim, a positive learning atmosphere, and high expectations for student performance. Poor investigations of school and teacher effects have produced far more problems than they have addressed in [10]. After evaluating 35 years of production function research, [11] discovered that resources can and do make a difference in students' educational outcomes. [12] discovered a link between resources and academic achievement among students. [13] also discusses large-scale research involving low-income nations that looked at issues including school facilities, class size, teacher qualifications and experience, and the availability of instructional resources. Human and material resources are also important in achieving higher educational outcomes, according to the study.

In [11], most material resources that aid in higher educational outcomes are textbooks, charts, and maps, as well as audiovisual and electronic teaching materials such as radio, tape recorder, television, and video tape recorder. Notwithstanding, paper supplies and writing equipment, such as pens, erasers, exercise books, crayons, chalk, drawing books, notebooks, pencils, rulers, slates, and workbooks, are included in the other category of material resources [11]. According to [14], schools with higher level of performance are those with good and greater number resources at their disposal. Hence, there is a very strong positive significant relationship between instructional resources and academic performance. This backed with the findings of [8], which revealed that due to the availability and quality of teaching and learning materials, private schools outperformed public schools. [15] goes on to say that the quality and amount of teaching and learning resources have an effect on student achievement. According to the author, institutions with proper facilities, such as textbooks, have a better chance of performing well on tests than those without. Therefore, when there is insufficient learning and teaching resource materials the students perform poorly.

2.2 Learning environment and students' academic achievement

Clean, peaceful, safe, comfortable, and healthy environments, according to [10], are an essential component of good teaching and learning. According to data, students in filthy school buildings with inadequate ventilation and those lacking scientific labs had worse academic achievement. There is a plethora of evidence to back up the link between structure and achievement. According to [14], the Victoria Institute of Teaching emphasizes the importance of a healthy physical environment, which has a significant impact on student achievement. However, other quantitative research have revealed minimal link between student achievement and school environment and organizational characteristics.

[16] Reports that there is enough evidence to say categorically that the facility in which pupils spend a significant amount of their time learning has an impact on how well they learn. According to [10], the layout of space has immediate and far-reaching effects for teachers' ability to successfully and efficiently execute day-to-day activities, build social and professional relationships, and share information and expertise. As a result, the value of a classroom or laboratory in the teaching and learning process cannot be emphasized. According to [9], building safety and decent conditions have been linked to student progress.

Building condition and student performance are linked, implying that building quality is a predictor of student achievement. [17] has also emphasized the positive association between architecture and student accomplishment, adding that "research continues to indicate the positive relationship between architecture and student achievement." Scholars from around the world have joined US experts in confirming the link between construction and achievement. Furthermore, [17] claim that bad building conditions affect student attendance. If children do not attend school, there will be no effective learning.

2.3 Factors affecting mathematical teaching and learning

Students' poor math achievement has been blamed on a variety of issues. The amount of work completed, students' task orientation and skill acquisition, students' personality and self-concept [18], feelings of inadequacy, motivation, and self-confidence [6], a shortage of qualified mathematics teachers, inadequate facilities, equipment, and instructional materials for effective teaching [18], the use of traditional chalk and talk methods, large pupil-to-teacher ratios, and students' attitude toward the subjects [15]. According to [19], when students' interest in class activities grows, they are better able to create goals for that activity and devote time and effort to achieving them. Learning and instruction are influenced by individual characteristics such as IQ, cognitive styles, and personality, as well as the learning environment. Other study has found that individual student traits such as motivational orientations, self-esteem, and learning methodologies have a significant impact on academic accomplishment.

In order to increase children' math and/or school learning cognition and affective outcomes. Educational psychologists and math teachers have continued to look for characteristics (both personal and environmental) that could be changed to aid academic progress. Motivation looks to be increasing popularity, and it appears to be outpacing other personal and psychological traits that have drawn academics to this field of study [20]. All of the aforementioned factors contribute to students' low arithmetic performance. This has resulted in a cycle of occurrences that can be depicted. [21] noted that when students demonstrate a lack of interest in the issue, it affects how they react or listen to the teacher when discussing the above image. When a big percentage of pupils believe they will fail, it affects the teacher as well. Aside from the negative reaction of the students, the teacher is already dealing with a slew of other issues (e.g., low income, low status in society, large teacher-pupils ratio). These variables may cause him or her to choose the most basic form of knowledge distribution, namely "chalk and talk" without the use of instructional materials. He might not strive to adapt his teaching methods to suit various students, perpetuating the cycle [21]. One unpleasant consequence of this is that bad attitudes against the subject are passed down from one generation of students to the next, resulting in an ever-growing negative attitude toward the subject. What can be done, then, to interrupt the cycle of failure? Many math educators and researchers have asked this question, including [22] and [23].

To improve performance in the topic, many new and modified old approaches have been developed. To enhance mathematics teaching and learning, instructional resources have also been produced and developed [24]. All of this is intended to encourage students to learn mathematics and break the cycle of low performance. Motivating students is seen as a crucial part of good learning. Motivation, according to psychologists, is a fundamental factor for learning [25]. They feel that without sufficient incentive to learn, successful school learning is unlikely to occur. Is it possible to motivate students to learn mathematics, as far as mathematics education is concerned? And how would you go about doing it? As a result, one must consider the impact of motivation on learning.

According to [26], the learning process of mathematics is crucial taking into consideration the attitude of the learner. It effects students' achievement in mathematics. As a result of the widespread failure of students, many students have developed a negative attitude toward mathematics studies. Attitudes toward mathematics are influenced by the school's structure, teaching technique, family, and pupils' attitude toward school. 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.

Students' perceptions, attitudes, and expectations about mathematics and mathematics teaching have been identified as major determinants of their school experience and achievement [27]. [17] emphasizes the importance of teachers assisting students in developing positive attitudes toward the subject. Teachers of mathematics must help pupils gain confidence by persuading them to believe that everyone can "do" mathematics. Modeling excitement for teaching and studying Mathematics by emphasizing effort rather than intrinsic aptitude. Furthermore, students' learning styles are addressed by providing a range of strategies for pupils to conquer and comprehend challenging subjects. Finally, supporting children in comprehending the value of mathematics in their lives; and selecting tasks that are both challenging and successful for students.

2.4 Mathematics learning activity types

The principal aim of introducing an activity that is mathematical activity type taxonomy for teachers when planning their lesson is to acquaint and make them familiar with the students learning activities. This help the teacher to be efficient in content, pedagogy and the technological integration in the lesson planning. So [28] attempted to scaffold teachers' thinking on how to best arrange their learning activities, how to best support those activities with educational technologies, and how to spark creativity during instructional planning. Essentially, these many types of math activities are meant to inspire teachers to be deliberate and creative in their instruction. [28] has proposed seven sorts of mathematics activity genres to encourage active participation by all pupils. 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 [28], students are frequently asked to analyze new concepts or facts carefully when studying mathematics. This is a request that both the mathematics student and the teacher are familiar with. Despite the fact that such learning activities can be critical contributors to student comprehension, "Consider" activity types generally reflect some of the lowest levels of student engagement, and are typically characterized by a relatively direct presentation of key knowledge. Attending to demonstrations, text reading, and debate are examples of activity kinds. Students can get knowledge from a presentation, video clip, animation, interactive whiteboard, or other display material. Students also take information from printed or digital textbooks or other textual materials.

2.4.2 The "Practice" activity types

It is sometimes necessary for a student to be able to apply computational approaches or other algorithm-based procedures when learning mathematics in order to automate these skills for later and higher-level mathematical application. Some instructional technology can be quite useful in assisting students in practicing and internalizing crucial skills and practices. Computation, drill and practice, and problem solving are examples of activity kinds. Students use numeric or symbolic processing to carry out computation-based tactics. Students may also practice a mathematical strategy or technique with the use of computer-assisted repetition and feedback. The puzzle allows students to apply a mathematical method or technique while solving an engaging puzzle that may be facilitated or posed by technology [28].

2.4.3 The "Interpret" activity types

Individual mathematical concepts and relationships can be somewhat esoteric, and students may find them a little puzzling at times. To absorb these links, students frequently need to spend time deducing and explaining them. Educational technologies can be utilized to assist students in more actively investigating topics and relationships, as well as comprehending what they see. Conjecture, debate, and categorization are examples of activity kinds that can help with this critical interpretation process. The student makes an assumption, sometimes utilizing dynamic software to show the relationship. Dynamic geometry software (geometer's sketchpad) and widgets are two examples of such technologies (explore learning). The interpretive activity requires the student to develop a mathematical argument for why they believe something is true. Technology may aid in the formation and presentation of that argument. Concept mapping tools, presentation software, blogs, and specialist word processing software are examples of such technology.

2.4.4 The "Produce" activity types

Students who are actively engaged in mathematics have the potential to become motivated producers of mathematical works rather than passive consumers of ready-made resources. In this process, educational technology can be useful "collaborators," assisting in the refinement and formalization of a student product and allowing students to share the fruits of their mathematical labors. The many activity types all refer to technology-assisted efforts in which students act as "producers" of math-related products. The student gives a demonstration on a particular topic to show that they understand a mathematical concept or procedure. Technology could help with product creation or presentation. Examples of technologies for

demonstration are interactive whiteboard, video (YouTube), document camera, presentation software, podcasts.

2.4.5 The "Apply" activity types

Students that are engaged in advanced mathematics learning activities usually engage in very creative and original cognitive processes. According to [28], Albert Einstein famously stated that creativity is more important than knowledge. This sentence is thought to express his deep belief that mathematics is a creative, inspired, and imaginative endeavor. Educational technologies can help students become more creative in their mathematical work, as well as help other students learn arithmetic that they already know. The activity types below depict these creative components and processes in students' mathematics learning and involvement.

2.4.6 The "Evaluate" activity types

Students use a relatively advanced understanding of mathematical concepts and processes while evaluating the mathematical work of others or self-evaluating their own mathematical work. Educational technology can be useful allies in this endeavour by assisting students in the evaluation process by allowing them to compare concepts, test answers or hypotheses, and/or incorporate input from others into revisions of their work. These are some of the evaluation-related activities:

1. The learner analyzes and contrasts various mathematical procedures or concepts in order to determine which is best for a given situation.
2. Based on systematic feedback, the student tests a solution and determines whether it makes sense, which may be aided by technology.
3. The learner makes a specific hypothesis and then analyses any interactive findings' feedback.
4. The student uses peer or technology-assisted feedback to assess a body of mathematical work.

2.4.7 The "Create" activity types

Students who are engaged in some of the most advanced mathematics learning activities are frequently engaged in very creative and inventive thought processes. Albert Einstein famously said that imagination is more vital than knowledge, according to [28]. This phrase is considered to illustrate his firm opinion that mathematics is a creative, inspired, and imaginative undertaking. Educational technologies can be utilized to assist students in becoming more creative in their mathematical work, as well as to assist other students in learning arithmetic that they already know. These creative components and processes in students' mathematics learning and interaction are represented by the activity kinds below.

1. The student plans and teaches a lesson on a certain arithmetic idea, method, or issue.
2. The learner devises a methodical approach to solving a mathematical problem or activity.
3. The student develops a student project, invention, or item, such as a new fractal, tessellation, or other creative output, using their imagination.
4. The student invents a mathematical technique that others can use, test, or duplicate, demonstrating mathematical innovation.

3 Methodology

This chapter discusses the techniques and methods utilized in the data collection process. The research design, demographic, sample, and sampling process are all taken into account.

3.1 Research design

The investigation was conducted using a descriptive survey design. The approach chosen for this study is appropriate and efficient because it is an accurate counter and indicator for measuring students' academic achievement in mathematics [29]. The researcher adopted this research method because the study's goal was to

gather information from respondents on their experiences, attitudes, and opinions in regard to Asesewa Senior High School students' poor arithmetic performance.

The school was chosen for the study because it is the only Senior High School in the district where bad mathematics performance is on the rise, allowing researchers to draw more and more significant conclusions from the data.

3.2 Population

The study's target group included mathematics teachers and students from Asesewa Senior High School in the Upper Manya District. The total number of participants in the study was 250. (250). There were fifteen (15) mathematics teachers and two hundred and thirty-five (235) students among the two hundred and fifty.

3.3 Sample size and sampling procedure

One hundred and sixty-five (165) pupils and mathematics teachers from Asesewa Senior High School made up the study sample. The researcher employed 66 percent of the entire population to create the sample for the study. The pupils were chosen via stratified random sampling.

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 focuses on the statistical analysis of the collected data. The study focused at the math performance of students at Asesewa Senior High School in the Upper ManyaKrobo District. The data was examined using simple descriptive statistics including percentages, means, standard deviation, variance, and frequencies, as well as other statistical tests, to answer the two main study questions. The data is presented in the form of tables and graphs.

4.1 Demographic characteristics of respondents

The demographic features of the respondents are discussed in this section, particularly those that have a significant impact on the analysis and interpretation of data collected on the study's numerous topics. As a result, the gender and age range of both the Mathematics teacher and the students, as well as the students' course of study, are the key demographic variables of the respondents presented in this section.

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 while the females with a total of number 2 had (13.3%). Table 3 also shows that the age group (25–35) years had the biggest number of respondents (66.7%), followed by (36–55) years with 4 respondents (26.7%), and 6.6 percent 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 while 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%. While 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

According to the statistics in Fig. 1, 57 (38%) of the students are business students, 25 (16.7%) are general arts students, 33 (22%) are science and agricultural students, and the rest 35 (23.3%) are home economics students.

Research Question 1

Are there disparities in perceptions of resource availability, learning activities, and motivation to study among students and teachers at Asewewa Senior High Schools in the Upper ManyaKrobo District?

The findings of an independent samples T-test were used to see if there are significant differences in how teachers and students perceive the aforementioned elements as contributing factors impeding senior high school students' performance in mathematics.

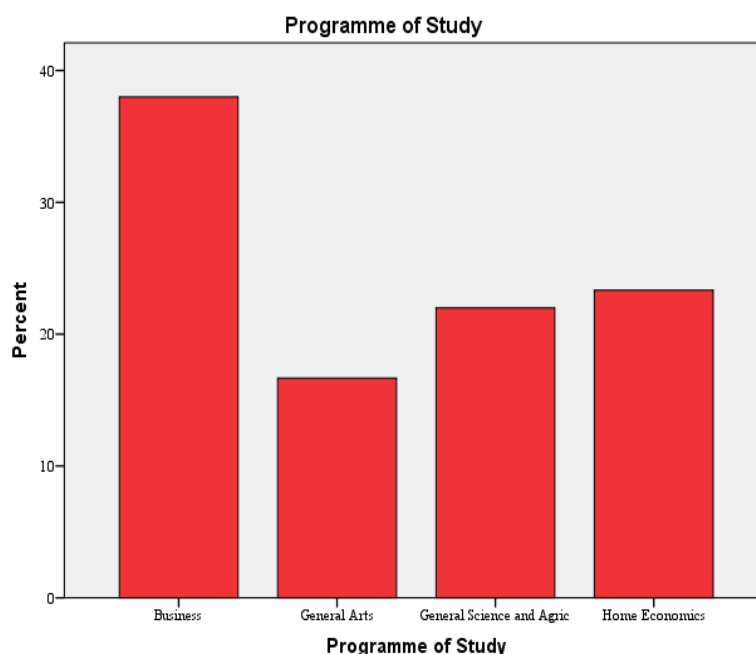


Fig. 1. Distribution of students by course of study

4.4 Resource availability

To compare how teachers and students evaluate resource availability as a contributing factor to student success in mathematics, independent samples t-Tests were undertaken. 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-Test was used to see if there were any variations in teachers' and students' perceptions of learning activities as a factor in students' mathematics performance. 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, $t(18) = 1.38, p = 0.893$. 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 disparities in the perceptions of resource availability, learning activities, and motivation to study among students and teachers at Asewewa Senior High Schools 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 distinct samples were taken. T-tests were used to see if there were any gender disparities in the teachers' perceptions of the factors. 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 disparities in perceptions of resource availability, learning activities, and motivation to learn among students and teachers as factors restricting senior high school students' success in mathematics?), an independent samples t-test was used to see if teachers and students had different perspectives on the issues. On the availability 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 suggests that both teachers and pupils, on average, share the same view of resource availability. In terms of differences in how both parties perceive learning activities, the independent samples t-test revealed no significant statistical difference between teachers' ($M=2.099$, $SD=0.4599$) and students' ($M=2.074$, $SD=0.34805$) perceptions of learning activities, $t(18) = 1.38$, $p = 0.893$. They are both looking at learning activities from the same perspective. On motivation to learn, results indicated that there was no significant statistical difference in teachers' perception ($M=3.416$, $SD=0.5941$).

The first research objective was to see if there were any gender differences in instructors' and students' perceptions of the factors that contribute to kids' declining arithmetic proficiency. The teachers' tests revealed

that there are no statistical variations in perceptions of resource availability between males and females based on gender. Both genders consider resource availability to be an important factor in kids' math achievement. This supports [8], who argues that providing proper facilities and educational materials constitute high expectations for student achievement. When it comes to learning activities, there was no significant difference in perception between males and girls. 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

The following conclusions were reached as a result of the investigation:

1. It was discovered that resources were accessible and that they could not be blamed for the drop in student mathematical performance.
2. It was discovered that pupils' mathematics learning activities were just half of the normal contact hours.
3. According to the findings, there was no statistically significant difference in how teachers and students viewed resource availability.
4. There was no statistically significant difference in teachers' and students' perceptions of learning activities, according to the findings.
5. The findings revealed that there is no statistical difference between boys and girls' perceptions of the factors that contribute to low mathematics performance.

The following conclusions are taken from the study findings:

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 demonstrates that students were not engaged in demanding maths tasks. According to the findings, there was no significant difference in perceptions of resource availability and learning activities between males and females in terms of gender among teachers and students.

7 Recommendations

Based on the findings of the study, the following recommendations have been made:

1. School counseling centers should be established to assist kids in developing a good self-concept, which has a strong link to academic performance.
2. Regular in-service courses for mathematics teachers should reorient them on their teaching techniques. This will also familiarize them with the use of modern equipment and technology, allowing them to maintain the interest of all students, particularly girls, in mathematics topics.

Competing Interests

Authors have declared that no competing interests exist.

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