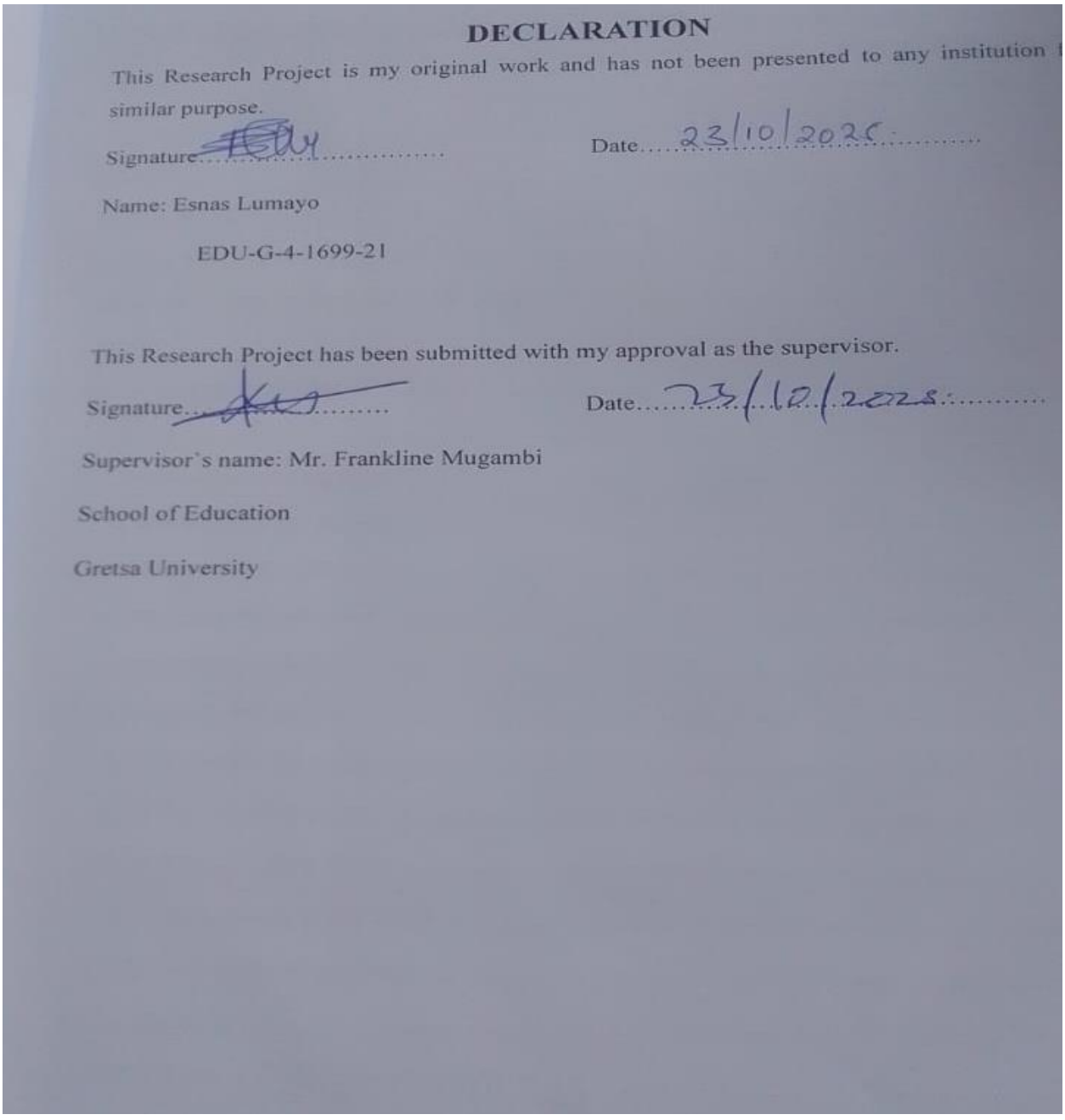
EFFECTS OF FLOODS ON ACADEMIC PERFORMANCE OF STUDENTS IN PUBLIC SECONDARY SCHOOLS IN MATHARE SUB-COUNTY, NAIROBI, KENYA

ESNAS LUMAYO

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF EDUCATION, HUMANITIES AND SOCIAL SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF BACHELOR OF EDUCATION (ARTS) OF GRETSA UNIVERSITY

OCTOBER, 2025

DECLARATION



DECLARATION

This Research Project is my original work and has not been presented to any institution f similar purpose.

Signature..... Date.....23/10/2025.....

Name: Esnas Lumayo

EDU-G-4-1699-21

This Research Project has been submitted with my approval as the supervisor.

Signature..... Date.....23/12/2025.....

Supervisor's name: Mr. Frankline Mugambi

School of Education

Gretsa University

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DEDICATION

I dedicate my work to my amazing mother who has always stood by my side, prayed for me, believed in me, supported me financially and for always encouraging me ensuring that I have achieved this milestone.

ACKNOWLEDGEMENT

First, I would like to express my sincere gratitude's to my supervisor Dr. Frankline Mugambi, for his guidance and insightful feedback that were pivotal to the completion of this study.

I am also grateful to Principals, teachers, students, quality insurance officers and the educational officers in Mathare Sub- County for their willingness to participate in this study.

I'd like to extend my gratitude's to my partner, family and friends for their words of encouragement and money support required for the study.

Lastly, I would like to extend my heartfelt thanks to the local government of Mathare Sub-County, the Red Cross, the Government of Kenya and Other Community and Church Organizations for their continuous efforts in flood management and relief aid to the victims of floods and allowing me access to key resources for the research.

ABBREVIATION AND ACRONYM

SCT-Social Construction Theory

GFDRR-The Global Facility of Disaster Reduction and Recovery

CBO's-Community Based Organizations

DRR-Disaster Risk Reduction

PTSD-Post-Traumatic Stress Disorder

UNESCO-United Nations Educational, Scientific and Cultural Organization

OPERATIONAL DEFINITION OF TERMS

Flood-A flood is a large amount of water that covers an area that is normally dry land. There are two main ways to think about floods

Academic performance-Academic performance refers to how well a student achieves in their studies. It's a measure of their learning outcomes across various subjects.

Absenteeism-is the frequent absence or missing of a student from school or classes.

Poor concentration-This is the difficulty focusing or being attentive in class.

Stress-this is a state of being worried or having mental tension caused by a difficult situation.

ABSTRACT

The main aim of this study is to find out the effects of flood on academic performance of students in public secondary school in Mathare sub-county, Nairobi County Kenya. The study was guided by the following objectives ,to investigate the correlation between the frequency and duration of school closures due to flooding and changes in standardized test scores among secondary school students , to determine the extent to which self-reported stress and anxiety levels in secondary school students following a flood event predict their performance on classroom assignments and participation and to understand how the level of disruption to students' home environments caused by floods (e.g., displacement, loss of belongings) relates to changes in their ability to concentrate and finish classwork effectively. The Social Construction theory was used in carrying out the research study. The total target population was 360 respondents. One data collection tools were used, a semi-structured questionnaire. Quantitative data was analyzed using descriptive statistics such as percentages, graphs and frequently distribution tables. The findings indicate a clear relationship between floods and academic performance in public secondary schools in Mathare Sub-County. The frequent school closures disrupt the educational process, affecting teaching as well as students' ability to learn and perform academically. The stress experienced by students following flood events further exacerbates these challenges, showing the importance of psycho-social support in the aftermath of such disasters. The research recommends that Schools should develop and implement disaster preparedness plans that outline specific protocols for responding to flooding events, including communication strategies and evacuation procedure

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter based its foundation on the background of the study, statement of the research problem, purpose of carrying out the study, conceptual framework, research questions, objectives of the study, hypothesis of the study, significance of the study, delimitation of the study, limitations that may be experienced during the study and lastly the assumption of carrying out the study.

1.1 Background of the Study

A flood is a natural disaster caused by an overflow of water that submerges land that's normally dry. This can happen due to heavy rain, rapid snow-melt, or coastal storms. Floods, characterized by the inundation of dry land with water, are frustrating natural calamities that wreak havoc not just on infrastructure and livelihoods, but also on the education system. Their impact on learning in schools can be severe and multifaceted, creating challenges that linger long after the floodwaters recede.

Shaw and Das (2016), advocates for integrating Disaster Risk Reduction (DRR) into school curriculum to enhance students' preparedness for floods. Educating students on emergency response and resilience can mitigate the adverse effects of floods on education. Their research only suggests that one of the most immediate consequences of flooding is the disruption of school access. Schools themselves can be damaged or destroyed by floodwaters, rendering them unusable for weeks or even months. This not only eliminates a safe and familiar learning environment but also disrupts the established routines and schedules that are crucial for student success. Additionally, flooded roads and bridges can become impassable, preventing students

and teachers from reaching the school even if it remains structurally sound. This forced absence from school translates to lost instructional time, which can be difficult to recover, especially for students facing crucial exams or nearing graduation. The devastating effects of floods extend beyond the physical disruption of schools. Educational materials like textbooks, workbooks, computers, and other crucial learning resources can be destroyed or severely damaged by floodwaters. This loss of vital tools creates a setback for both students and teachers. Students lose their learning references and potentially completed work, while teachers are left scrambling to find alternative resources to continue their lesson plans. In settings where the educational materials are limited, floods can exacerbate existing inequalities and widen the achievement gap between students from flood-prone areas and their counterparts in safer locations.

The Global Facility for Disaster Reduction and Recovery, GFDRP (2015) suggests infrastructure improvements and drainage systems to protect schools in flood prone areas, the stress and uncertainty of displacement take a toll on families, forcing them to prioritize basic needs like shelter and food security over schooling. Children may be forced to move to unfamiliar locations, disrupting their established social networks and routines. This can lead to emotional and psychological distress, making it difficult for them to concentrate on schoolwork or attend classes regularly. Furthermore, floods can pose a significant threat to public health. Contaminated water supplies and outbreaks of waterborne diseases are common after floods. This can lead to increased student absenteeism due to illness, further hindering academic progress. The additional strain on healthcare systems during flood recovery may also limit access to mental health services, which can be crucial for students struggling with the trauma of the disaster. The impact of floods on teachers should not be overlooked either. Educators themselves may be displaced by floods, experiencing the same challenges as their students.

Schools facing teacher shortages due to displacement or the need for teachers to support their own families struggle to maintain a normal learning environment. The emotional toll of the flood can also affect teachers' well-being, potentially impacting their ability to effectively support their students.

UNESCO (2015); UNESCO emphasizes the role of community-based organizations in supporting educational continuity during disasters. Local initiatives that provide temporary learning spaces and educational materials can help to maintain learning during flood recovery periods. In times of a calamity communities often demonstrate remarkable resilience, and local organizations play a vital role in supporting educational continuity during these challenging times. These organizations, deeply embedded within the community fabric, understand the specific needs and contexts of the affected population. They can act swiftly and effectively to lessen the disparity between the disruptions caused by floods and the ongoing need for education. Local initiatives spearheaded by community-based organizations (CBOs) can provide crucial support in establishing temporary learning spaces. These spaces don't need to be elaborate; even community centers, tents, or even partially damaged buildings can be repurposed with some creativity. CBOs can mobilize volunteers within the area to help set up these locations, guaranteeing they are safe, clean, and conducive to learning. The involvement of community members fosters a feeling of possession and joint and responsibility for ensuring education continues despite the devastation. Furthermore, CBOs can capitalize their surrounding knowledge to determine ideal locations for temporal spaces, considering factors like accessibility, safety from the elements, and proximity to displaced families.

Government of Kenya (2017), The national strategies for disaster management outlined by the Kenyan Government include investigating in resilient infrastructure and providing emergency relief to flood affected schools, aiming to ensure minimal disruption to education. The provision of educational materials is another critical area where CBOs can make a significant difference. Floods often destroy or damage textbooks, notebooks, and other essential learning resources. CBOs can organize donation drives, soliciting resources from within the community, neighboring areas, or even international organizations. They can also collaborate with educational institutions or publishers to acquire electronic learning materials capable of being accessed on mobile devices, even in areas with limited internet connectivity. By focusing on both traditional and digital resources, CBOs can ensure a wider range of students have access to the tools they need to continue their education. In some cases, CBOs may even be able to develop localized learning materials that address the specific experiences and needs of students affected by the floods.

1.2 Statement of the Problem

Flooding poses a significant threat to the academic performance of students in Mathare Sub-County's public secondary schools. School closures due to damaged buildings or use as shelters disrupt learning schedules. Floods can also cause students to miss classes entirely due to impassable roads or displaced families. Beyond attendance, floods destroy learning materials and create emotional distress that hinders focus and motivation. The economic strain on families from flood damage may even force students to prioritize work over school. This study would examine the cumulative impact of these factors on student achievement.

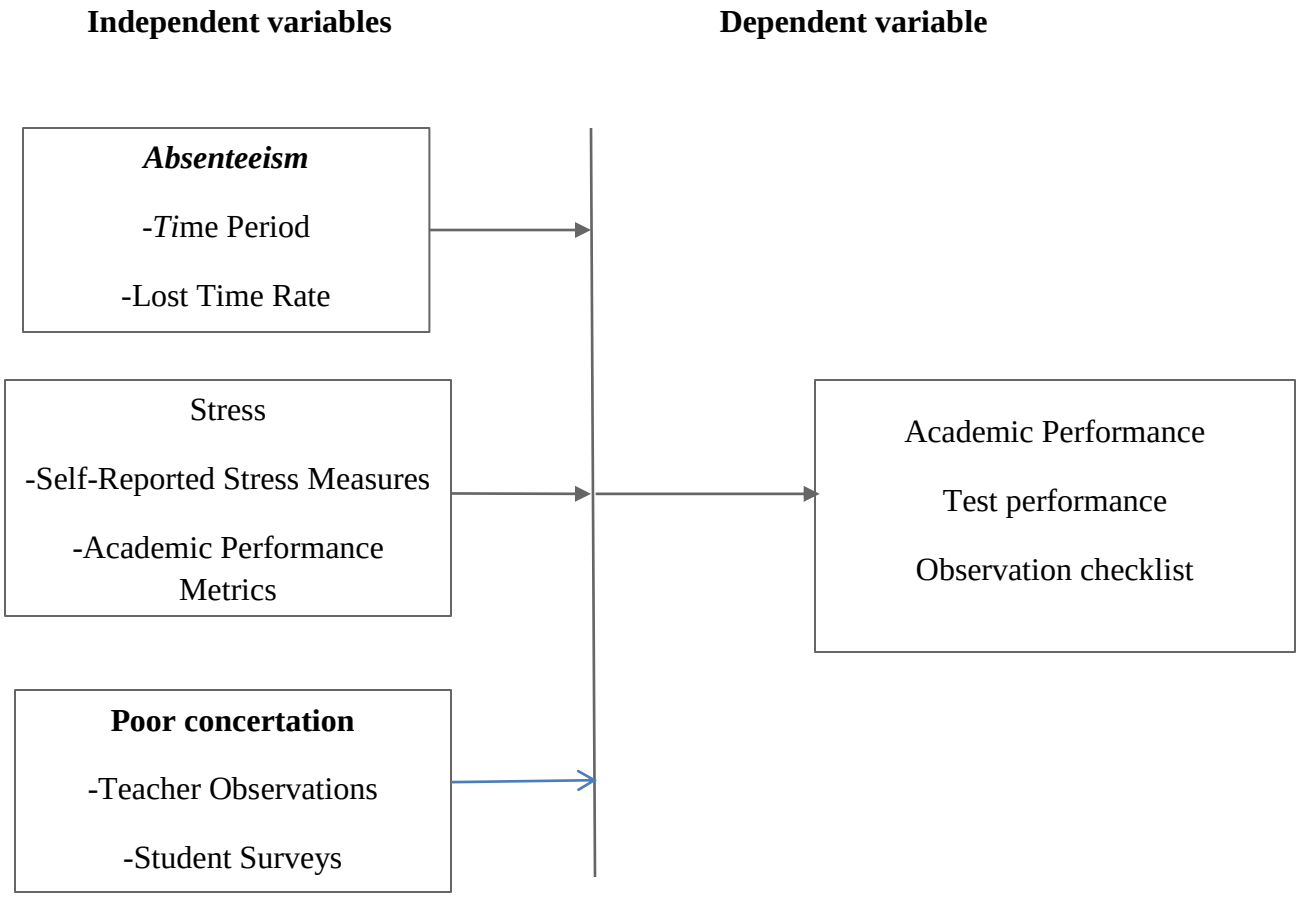
1.3 Purpose of the Study

This research intends to find out the repercussions of floods on academic achievement of students in public secondary school in Mathare north sub county, Nairobi County Kenya.

1.4 Conceptual Framework

Figure 1

According to Orodho (2004), conceptual framework is a model that represents the researcher's conceptualized relationship between variables in the study and represents the continuing relationship either in a graphical or diagrammatical way.



1.5 Research Questions

1. Does the frequency and duration of school absenteeism cases due to flooding correlate with poor academic performance among secondary school students?

2. To what extent does self-reported stress and anxiety levels in secondary school students following a flood event predict their performance on classroom assignments and participation

3. How does the level of disruption to students' home environments caused by floods (e.g., displacement, loss of belongings) relate to changes in their ability to concentrate and complete schoolwork effectively?

1.6 Research Objectives

1.6.1 General Objectives

To access the impacts of floods on form four learners' academic performance in public secondary schools in Mathare-sub county, Nairobi, Kenya.

1.6.2 Specific Objectives

1. To investigate the correlation between the frequency and duration of absenteeism due to flooding and changes in the academic performance among secondary school students.

2. To determine the extent to which self-reported stress and anxiety levels in secondary school students following a flood event predict their performance on classroom assignments and participation.

3. To determine the level of disruption to students' home environments caused by floods (e.g., displacement, loss of belongings) relates to changes in their ability to concentrate and complete schoolwork effectively.

1.8 Significance of the Study

Studying the effects of floods on academic performance in Mathare Sub-County's public secondary schools holds significant value. It illuminated the educational challenges caused by floods in flood-prone areas, informing interventions to improve student learning during and after floods. This knowledge can benefit policymakers in creating flood preparedness plans that consider educational continuity, as well as assistant programs for students affected by flood-related disruptions. Furthermore, the findings can guide educators in adapting their teaching methods to address the learning gaps caused by floods and empower schools to become more resilient to future floods. Ultimately, the study can assist in ensuring equal opportunities for education even in flood-prone areas.

1.8.1 Delimitation of the Study

This research work was focused on the effects of floods on students in form four academic performance in Public secondary schools in Mathare-sub county, Nairobi, Kenya.

1.8.2 Limitations of the Study

The study was focused only on self-reported data (surveys) which might not capture the full impact on students. Additionally, the study accounted for other factors affecting performance, or was limited by the specific sample of schools and students chosen. Finally, generalization of findings could be restricted as the study focuses on a single sub-county. The research focuses on

a specific region or community, limiting the generalization of results to other areas with different flood characteristics or educational systems.

1.9 Assumptions

The research assumed that the impact of floods on academic performance was observable within a specific time-frame and may vary depending on the duration and the severity of the flood event. Assuming that the impact of floods on form four students' academic performance was equally uniform across different demographic groups and academic levels.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The chapter kicks off with a theoretical framework which l employed the relevant theories that based the foundation of the study This chapter also discussed the concept of academic performance in relation to absenteeism, poor concentration and stress as caused by flood. It also identified the summary of the review.

2.1 Theoretical Framework

2.1.1 The Social Construction Theory

Floods, while often perceived as purely natural phenomena, have a profound social dimension, particularly when it comes to their impact on education. Social construction theory, introduced in the 1966 book "The Social Construction of Reality" by sociologists Peter L. Berger and Thomas Luckmann, sheds light on how social factors intertwine with the physical event to create a complex web of consequences for students in public secondary schools. Berger and Luckmann's ideas were inspired by a number of thinkers, including Karl Marx, Emile Durkheim, and George Herbert Mead, all of whom emphasized the role of social interaction and historical context in shaping our understanding of the world. One major effect of floods is the disruption they cause to the educational process. School closures become inevitable due to damaged buildings, transportation issues, or the need to use schools as temporary shelters. This disrupts the learning flow, creating gaps in the curriculum and hindering students' ability to progress. Furthermore, floods can destroy learning materials like textbooks and notes, making it even harder for students to catch up on missed work. Teachers may also be displaced by the floods, leading to a shortage

of qualified substitutes and further hindering academic continuity. Beyond the immediate disruptions, social constructionism highlights the role of social inequalities in exacerbating the long-term consequences of floods on student performance. Low-income families often live in areas most susceptible to flooding due to limited housing options. When floods hit, these families do not tend to lose their homes and belongings, also their children are more likely to experience displacement, making it difficult to return to school or concentrate on their studies amidst the chaos. The psychological impact of floods also plays a significant role. Students may experience anxiety, depression, or even post-traumatic stress disorder due to the trauma of witnessing their homes and communities devastated. These emotional burdens can affect their ability to focus, retain information, and participate actively in school. However, social construction theory is not all doom and gloom. By recognizing the social factors that create vulnerability, we can develop more sustainable solutions. Investing in improved urban planning that prioritizes floodplains and resilient infrastructure can help limit the damage caused by the future floods on schools and communities. Empowering local communities through disaster preparedness training and incorporating their traditional knowledge into response plans can also foster a sense of ownership and build resilience from the ground up. In conclusion, floods are not simply natural disasters, but rather complex events with cascading social effects. By understanding the social construction of vulnerability, the psychological impact on students, and the role of media narratives, we can work towards mitigating the negative consequences of floods on education.

2.3 The Concept of Academic Performance

Academic performance is a cornerstone concept in education, serving as a yardstick for measuring student achievement. But what exactly does it encompass? It's more than just grades and test scores – it's a multifaceted indicator of how well a student is grasping and applying the understanding and skills given in their courses. A more detailed understanding of academic performance emerges when we consider factors beyond grades and tests. Active participation in class discussions, presentations, and projects demonstrates a student's engagement with the material and their ability to think critically and communicate effectively. Completing assignments consistently showcases a student's commitment to learning and their ability to apply concepts in practical ways. These indicators paint a richer portrait of a student's progress and potential.

Mappadang. S.A. (2022) indicate that academic performance isn't solely determined by a student's individual efforts. Factors like motivation and study habits certainly play a crucial role. Effective teachers who utilize engaging methods can elevate the quality of students learning and achievement. Regularly completing homework, projects, and in-class assignments demonstrates a student's commitment to learning and skill applying concepts. The quality and relevance of the school also matter, a well-designed curriculum that caters to different learning styles can foster deeper understanding and better performance. Socioeconomic background is another significant factor. Poverty, limited access to resources, and a challenging family environment can create obstacles to academic success. This highlights the importance of creating equitable educational opportunities that level the playing field and allow all students to reach their full potential.

Martin Sanz.N.S(2017) while exploring Academic performance shows that academic performance holds undeniable importance. Strong performance can open doors to colleges, scholarships, and competitive career paths. It can also foster a sense of accomplishment, self-confidence, and a lifelong love of learning. For students from disadvantaged backgrounds, academic achievement can be a strong indicator for social mobility and a gateway to a brighter future. While academic performance remains a valuable metric, it's crucial to recognize its limitations. Focusing solely on grades can overlook other valuable skills like creativity, problem-solving, and critical thinking. Additionally, standardized tests can be biased and provide an incomplete picture of a student's abilities. Therefore, a holistic approach that considers academic performance alongside other factors is essential for understanding and nurturing the potential within each student.

2.4 Absenteeism

Floods go beyond natural disasters; they create a cascade of disruptions that significantly impact student performance in public secondary schools. While the initial focus may be on getting students back into the classroom, the long-term effects of floods can hinder learning and achievement in several ways. One of the most immediate impacts is the disruption to the learning process itself. School closures due to damaged buildings, transportation issues, or the need to use schools as shelters lead to missed classes. These gaps in the curriculum create a learning backlog, particularly challenging in subjects that build upon prior knowledge. Furthermore, floods can destroy textbooks, notebooks, and other essential learning materials, making it even harder for students to catch up on missed work and participate effectively in class.

Munsaka.E.(2020) shows that beyond the disruption of the academic environment; floods take a toll on students' psychological well-being. Witnessing the devastation caused by floods can lead to anxiety, depression, and even post-traumatic stress disorder (PTSD). These emotional burdens significantly hinder students' ability to focus, retain information, and engage actively in school activities. Disrupted sleep patterns and routines caused by floods can further exacerbate these difficulties as students struggle to concentrate and perform well in school.

RIAGA.G.O.(2021) on floods and its effects on class attendance in day secondary indicates that the negative impact of floods is often amplified by existing social inequalities. Students from low-income families are often disproportionately affected. The negative impact of floods is often amplified by existing social inequalities. Students from low-income families are often disproportionately affected. They may live in flood-prone areas due to limited housing options and lack the resources needed to recover quickly. This displacement from their homes and communities creates further disruptions to their education. Furthermore, floods can strain resources within schools and communities, limiting access to crucial support services like counseling and academic tutoring that can help students cope with the emotional and academic challenges they face.

Akello.S.(2014) Shows that the digital divide can also be exacerbated by floods. Damaged infrastructure can lead to a lack of internet access, hindering students' ability to access online resources for learning and completing schoolwork. In an increasingly digital learning environment, this lack of access can create a significant barrier to educational progress. The impact of floods on student performance is not inevitable. By understanding these multifaceted challenges, schools and communities can develop strategies to mitigate the negative effects. This

may involve investing in improved infrastructure that is more resilient to floods, providing additional support services for students dealing with emotional trauma, and ensuring equitable access to learning materials and technology even in the aftermath of a disaster. By acknowledging the social and emotional dimensions of these events, we can work towards building a future where floods disrupt classrooms less and empower students to learn and thrive even in the face of adversity.

2.5 Poor concentration

Flood courses, those intensive learning marathons designed to cram a semester's worth of material into a condensed time-frame, wreak havoc on student concentration. These compressed learning experiences create a perfect storm of information overload, diminished comprehension, heightened stress, and ultimately, a decline in student motivation. Let's delve deeper into how these factors chip away at a student's ability to focus and retain information. Imagine being swept away by a raging current of facts, figures, and complex concepts. That's precisely the feeling students contend with in a flood course.

MCDERMOT T.K.J(2022). The sheer volume of information bombarding them from all sides becomes overwhelming. With limited time to process each piece thoroughly, students struggle to differentiate between crucial concepts and the less important details. This information overload creates a sense of cognitive strain, making it difficult to conce9ntrate on anything for an extended period. Imagine being swept away by a raging current of facts, figures, and complex concepts. That's precisely the feeling students contend with in a flood course. The sheer volume of information bombarding them from all sides becomes overwhelming. With limited time to process each piece thoroughly, students struggle to differentiate between crucial concepts and the

less important details. This information overload creates a sense of cognitive strain, making it difficult to concentrate on anything for an extended period. The relentless pressure to keep pace with the rapid current of a flood course can be immense. Students feel perpetually behind, desperately trying to learn and memorize vast amounts of information in a compressed timeframe. This constant pressure creates a churning undertow of stress and anxiety, both of which are detrimental to concentration. The more stressed students become, the harder it is for them to focus on the material, leading to a vicious cycle that further fuels their anxieties and diminishes their ability to learn effectively.

FU Hassan (2018) on children reaction to floods states that in time of overwhelming tide of information characteristic of a flood course, students often experience a significant decline in motivation. Struggling to keep their heads above water, the sense of accomplishment that typically accompanies learning is replaced by a suffocating sense of frustration. They lose interest in the subject matter, making it even harder to concentrate on the endless torrent of facts and figures. This diminishing motivation creates a self-defeating cycle, where students become less likely to invest the mental effort required to focus on a subject, they feel increasingly distant from. Flood courses prioritize quantity over quality. Students are encouraged to cram facts and figures just to pass the next exam, with little emphasis on long-term retention. This rote memorization resembles a leaky vessel attempting to hold water. The memorized information quickly seeps out, leaving students with a superficial understanding that offers little practical application. This lack of retention further demotivates students, as they witness the futility of their efforts, and hinders their ability to concentrate on new information knowing it will likely fade away just as quickly. There is a better way to navigate the learning journey. Instead of

rushing students through a flood course, educators can adopt a calmer, more strategic approach. Spaced repetition techniques, where key concepts are revisited and reinforced over time, allow for deeper understanding and improved retention. Additionally, implementing active learning strategies, such as hands-on activities and group discussions, fosters a more engaging learning environment that promotes concentration and fosters a genuine interest in the subject matter. By prioritizing quality over quantity, educators can empower students to become more focused and effective learners.

2.6 Stress

Flood courses condense a semester's worth of material into a much shorter time-frame. This creates an immense workload for students, encouraging them to learn and memorize vast amounts of information in a short period. The constant pressure to keep in track with the speeding pace can be overwhelming, leading to feelings of being constantly behind and scrambling to catch up. Imagine having a huge project due tomorrow, only you have to complete a semester's worth of work! That's the kind of stress flood courses can induce. The condensed nature of flood courses often means higher stakes for assessments. Students might feel immense pressure to perform well on exams or assignments that carry a greater weight due to the compressed format. This fear of failure can be a significant stress, causing anxiety and hindering concentration. It's like studying for a final exam every week!

Foudi.S.(2017) The rapid pace of flood courses can leave students feeling uncertain about their understanding and unprepared for assessments. With less time for in-depth learning and practice, students might struggle to gauge their progress and feel a limited autonomy in their learning experience. This uncertainty could act as a major source of stress, making it difficult to focus and

feel confident in their abilities. This overload can be mentally taxing, leading to cognitive strain. Students struggle to process and retain all the information, making it difficult to focus on specific concepts and feel overwhelmed by the sheer volume of material. It's like trying to drink from a fire hose you can't keep up, and the pressure is immense! The competitive nature of some flood courses can further exacerbate stress. Students might compare themselves to their peers, feeling pressure to perform at the same level or higher. This competition can create anxiety and make students feel inadequate, hindering their capacity to concentrate own learning journey. It's like feeling constantly pressured to outrun everyone else in a sprint, even though it's a marathon.

2.7 Summary of the Literature Review

The chapter has reviewed the literature relevant to the study and began by citing of the theories that used earlier in the study which lay the basic foundation of understanding. The study indicates that the theory of Social Construction will be used in carrying out the research. The chapter then analyses the concept of impacts of flood on academic performance by beginning by looking at the concept of academic performance, stress, absenteeism and poor concentration.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

In this research quantitative research methodology will be employed. A research methodology is framework that checks the relationship between stress, absenteeism and poor concentration to academic performance. This also chapter entails research design, study area, target population, sampling technique, sample size, measurement of variables, research instruments, validity of measurements, reliability of measurement, data collection technique, data analysis techniques, Logistical and Ethical consideration, references and appendix.

3.1 Research Design

The study adopted descriptive research design which aimed to describe the traits of a population or phenomenon. It involves collecting and analyzing data to identify patterns and trends.

3.2 Study Area

Mathare North in Nairobi County, Kenya emerges as a compelling choice for your research on the effects of floods on academic performance due to its confluence of factors. The area's well-documented vulnerability to flooding creates a natural laboratory to study the direct impact on schools and students. The presence of various educational institutions provides a ready population for your study, and the socioeconomic disparity of Mathare North can magnify the negative effects of floods on both students and schools struggling to resume normalcy after disruptions.

3.3 Target Population

Based on Kathari (2013), a target population is the entire group of people that the researcher chose for their research. The study population targeted study population comprised the principals from public secondary schools, teachers, educational officers, quality assurance officers and students. The total number of the targeted population is ten thousand people.

3.4 Sampling Technique

Simple random technique has been employed. The study opted for simple random method of sampling as I wanted to give every member of my population an equal chance of being selected. This non-biased strategy ensures that my sample is a fair representation of the larger group, minimizing the risk of skewing my results. By randomly selecting participants, I can confidently generalize my findings to the entire population, making my research more robust and credible.

3.5 Sample Size

A sample size is the total count of individuals or things and units selected from the larger population for the primary aim of conducting a research study. The sample size is dictated by the population size and the expected variability in the population. The total sample size was 360 individuals. These number was arrived at by finding 30 percent of 10000,considering that the number was still too big to sample out a random number was selected to be used to arrive at 360 individuals.

3.6Measurement of Variables

Table 1

Variables	Indicators	Measurement scale
Absenteeism	Time period Time rate	Ordinal Scale
Stress	Self-reported measures Academic performance metrics	Ordinal Scale
Poor Concentration	Student survey Teacher observation	Ordinal Scale
Academic Performance	Test Performance Observation checklist	Ordinal Scale

3.7 Research Instruments

The research employed research instruments that is the structured questionnaires to carry out the Study in sought to get the accurate information. The research administered questionnaire to the principals, and the quality assurance officers to ensure that there is provision of accurate data. Therefore, questionnaires were used to acquire accurate data from the teachers.

3.8 Validity of Measurement

Before the study, the research tool (questionnaire) was tested through content validity by the supervisor to make sure the responses ware reliable and consistent. For the content validity, I had to enlist the assistance of the academic advisor, who verified that errors are identified, corrected,

and proper language is utilized to avoid unclear terminology. The research tool was reliable and valid.

3.9 Reliability of Measurements

Reliability is its potential to perform consistently and precisely over time. Reliability denotes the assumption that any meaningful results need to be more than a single finding and be naturally reproducible. It must be possible for other researchers to carry out the exact same study under the identical circumstances and produce the exact findings. (2014) Moskal et al The reliability of my research was achieved through several key strategies. Descriptive research design which ensured clarity and consistency in data collection and analysis. Also, reliable and valid measurement instruments, such as well-established questionnaires and standardized tests. Finally, I conducted a thorough analysis of the data, using appropriate statistical techniques to identify patterns and trends. By combining these approaches, I aimed to maximize the reliability and trustworthiness of my research findings.

3.10 Data Collection Technique

The study obtained data by administering the questionnaires where by the respondents were required to give out the accurate information. This is to obtain accurate data.

3.11 Data Analysis

The data that was collected was analyzed quantitatively through content analysis and organized into various themes. The data was examined again using stratified package for social sciences. The outcome was then presented inform of tables and graphs.

3.12 Logistical and Ethical Consideration

I asked the sub-county principals and educational officers for authorization before going to the institutions and seek for permission and gave out instruments to the teachers and principals. I concentrated on ethical problems throughout the curriculum. I was committed to maintaining the privacy and confidentiality of the data gathered from respondents. I provided an introduction letter to the respondents informing them of the aim of the research. The research was undertaken in a way that respects the respondents' values and traditions along with those of the society.

CHAPTER FOUR: FINDINGS AND DISCUSSION

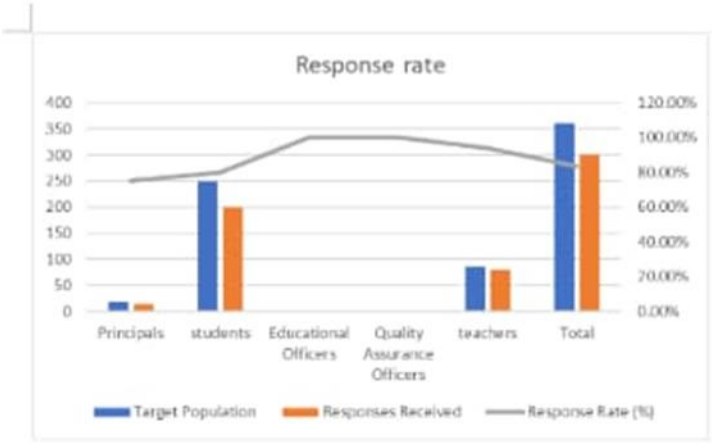
4.0 introduction

In this chapter, insights from the study into the effects of floods on academic performance in public secondary schools in Mathare Sub-County, Nairobi, are presented and analyzed. The chapter is structured to provide a comprehensive overview of the demographic information of respondents, followed by descriptive statistics related to the impact of floods on school operations, students' academic performance, and adaptive strategies implemented by schools.

The response rate table shows that out of a total sample population of 360, **300 responses** were received, resulting in an overall response rate of **83.3%**. Students formed the largest group, with 200 responses out of 250 targeted, giving a response rate of **80.0%**. Students provided 80 responses from a target of 85, achieving a high response rate of **94.1%**. Principals had a **75.0%** response rate, while both quality insurance officers and educational officers achieved **100%** participation. This balanced distribution ensures that the perspectives of all key stakeholders are well-represented, enhancing the validity and comprehensiveness of the study findings.

4.1 Demographic Information

Figure 2



4.2 Demographic Information

4.2.1 **Role in School**

Table 2

The data shows that out of 300 respondents, the majority (66.7%) are students, followed by teachers at 17.0%. Principals represent 3.3% of the participants, while Educational Officers and Quality Assurance Officers each contribute 6.3% and 6.7%, respectively. This distribution ensures that the survey results capture a broad range of perspectives, with a stronger focus on students, who make up the main study group affected by floods.

What are your duties in the school?

Table 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student	200	66.7	66.7	66.7
	teacher	51	17.0	17.0	83.7
	principal	10	3.3	3.3	87.0
	Educational Officer	19	6.3	6.3	93.3
	Quality Assurance Officer	20	6.7	6.7	100.0
	Total	300	100.0	100.0	

4.2.2 **Years in Current Role**

Most respondents (64.0%) have served in their current roles for 1–3 years, indicating they have sufficient experience to provide relevant insights. About 22.3% are relatively new, having held the role for under a year, while 13.3% have 4–6 years of experience. Only 0.3% of respondents have above six years in their role, suggesting that long-term experience in the current positions is limited across the sample.

How many years have you been in your current role?

Table 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	67	22.3	22.3	22.3
	1–3 years	192	64.0	64.0	86.3
	4–6 years	40	13.3	13.3	99.7
	More than 6 years	1	.3	.3	100.0
	Total	300	100.0	100.0	

4.3 Descriptive Statistics

4.3.1 **Impact of Floods on School Operation**

The mean score (2.85) for the frequency of school closures due to flooding suggests that flooding is a moderate-to-frequent occurrence. The average duration of closures (mean = 1.73) indicates that most of the floods last for a relatively short period, likely less than two weeks. Activities most affected (mean = 1.64) include teaching and learning sessions, showing that floods disrupt essential educational activities.

Descriptive Statistics
Table 5

	N	Minimum	Maximum	Mean	Std. Deviation
How frequently does your school face closures due to flooding?	300	1	4	2.85	1.183o
How long do these closures typically last?	300	1	3	1.73	.769
What activities are most affected by these closures?	300	1	4	1.64	.906
Valid N (listwise)	300				

4.3.2 **Impact of Floods on Students' Academic Performance and Participation**

The mean value of **2.53** suggests that respondents perceive floods as having a significant negative impact on students' academic performance. Behavioral changes, such as absenteeism

and reduced participation (mean = 1.79), are commonly observed after floods. Most respondents reported that students often experience stress (mean = 1.02), which is perceived to have a moderately negative impact on their performance (mean = 2.54).

	N	Minimum	Maximum	Mean	Std. Deviation
In your opinion, how do flood-related disruptions affect students' academic performance?	300	1	3	2.53	.691
What changes have you observed in students' behavior after flood events?	300	1	4	1.79	.889
Do students often experience stress or anxiety after flood-related disruptions	300	1	2	1.02	.140
If yes, how do you think the stress affects their academic performance?	300	1	3	2.54	.645
Valid N (listwise)	300				

Table 6

4.3.3 Flood Displacement and Access to Learning Materials

The data shows that student displacement due to floods is frequent (mean = 1.07), and displaced students face significant challenges (mean = 2.00), such as lack of materials and difficulty concentrating. Teachers and staff also report difficulties in supporting affected students (mean = 1.17), reflecting the broader challenges floods create for school operations.

Descriptive Statistics

Table 7

	N	Minimum	Maximum	Mean	Std. Deviation
Have students in your school experienced displacement due to floods?	300	1	2	1.07	.256
If yes, what challenges do displaced students face when returning to school?	300	1	4	2.00	.997
Have teachers or staff reported difficulties in supporting students affected by floods?	300	1	2	1.17	.376
Valid N (listwise)	300				

4.3.4 Coping Mechanisms and Recommendations

The mean score for school support mechanisms (1.98) indicates that some interventions, such as counseling or makeup lessons, are in place but could be improved. Regarding government or local authority support, the mean score of **1.56** suggests moderate dissatisfaction, indicating a need for enhanced external support for flood-affected schools.

Descriptive Statistics

Table 8

	N	Minimum	Maximum	Mean	Std. Deviation
What support mechanisms has the school implemented to help students after flood disruptions?	300	1	4	1.98	1.046
Do you think the government or local administration provide sufficient support to schools affected by floods	300	1	2	1.56	.498
Valid N (listwise)	300				

4.4 Correlation Analysis

The **Pearson correlation** analysis reveals strong positive relationships among the three main variables. The impact of floods on the correlation analysis showed a significant positive association between the impact of floods displacement and access to learning materials (**r = 0.967, p < 0.01**) and also with the impact on students' academic performance and participation (**r = 0.881, p < 0.01**). Similarly, flood displacement is significantly correlated with academic performance issues (**r = 0.839, p < 0.01**). These correlations suggest that disruptions in school operations and student displacement due to floods directly affect academic performance, highlighting the interconnectedness of these factors.

Correlations

Table 9

		Impact of Floods on School Operations	Flood Displacement and Access to Learning Materials	Impact of Floods on Students' Academic Performance and Participation
Impact of Floods on School Operations	Pearson Correlation	1	.967**	.881**
	Sig. (2-tailed)		.000	.000
	N	300	300	300
Flood Displacement and Access to Learning Materials	Pearson Correlation	.967**	1	.839**
	Sig. (2-tailed)	.000		.000
	N	300	300	300
Impact of Floods on Students' Academic Performance and Participation	Pearson Correlation	.881**	.839**	1
	Sig. (2-tailed)	.000	.000	
	N	300	300	300

CHAPTER 5: SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This section provides a summary of the key findings from the research on the effects of floods on academic performance in public secondary schools in Mathare Sub-County, Nairobi. It discusses the implications of these findings, draws conclusions based on the research objectives, and offers recommendations for stakeholders involved in education and disaster management.

5.1 Summary of Findings

The study aimed to explore the impact of floods on the academic performance of students in public secondary schools within Mathare Sub-County. The main findings can be summarized as follows:

1. **Demographic Information:** A response rate of 83.3% was achieved, with students comprising the majority of respondents (66.7%). Most respondents had been in their roles for 1–3 years, indicating sufficient experience to provide relevant insights.
2. **Impact of Floods on School Operations:** Floods were reported to cause moderate-to-frequent school closures, with significant disruptions to teaching and learning sessions. The average duration of school closures was typically less than two weeks.
3. **Effects on Academic Performance:** Respondents perceived that floods negatively impacted students' academic performance. Issues such as absenteeism and behavioral changes were prevalent, with stress and anxiety levels reported to be high among affected students.

4. **Flood Displacement and Learning Materials:** Displacement of students due to floods was common, with respondents highlighting challenges in accessing learning materials and difficulty concentrating after returning to school. Teachers reported facing obstacles in supporting affected students.
5. **Coping Mechanisms:** While some support mechanisms were in place to assist students post-disruption, respondents expressed moderate dissatisfaction with the level of support provided by government and local authorities.

5.2 Discussion

The findings indicate a clear relationship between floods and academic performance in public schools at the secondary level in Mathare Sub-County. The frequent school closures disrupt the educational process, affecting beyond teaching, also students' ability to learn and perform academically. The stress experienced by students following flood events further exacerbates these challenges, highlighting the need for psycho-social support in the aftermath of such disasters.

The displacement of students adds another layer of complexity to the issue, as it limits access to essential learning resources and affects overall student morale. Teachers' reports of difficulties in providing adequate support to displaced students point to the critical need for directed interventions, including counseling services and tailored academic support programs.

The correlation analysis showed a significant positive association between the impact of floods on school operations, student displacement, and academic performance. This interconnection

suggests that improving school operations and providing robust support systems for displaced students that could enhance overall academic outcomes.

5.3 Conclusions

Based on the findings and discussions, the following conclusions can be drawn:

1. Floods significantly disrupt school operations, leading to frequent closures that hinder students' learning experiences and academic performance.
2. The adverse effects of floods extend beyond physical disruptions, impacting students' mental health and overall academic engagement.
3. Effective coping mechanisms are essential for mitigating the negative consequences of floods on education, yet current support systems are inadequate.
4. Enhanced collaboration linking educational organizations, government entities and local authorities is critical for developing comprehensive disaster response strategies to support affected schools and students.

5.4 Recommendations

To address the challenges posed by floods on academic performance in Mathare Sub-County, the following recommendations are proposed:

1. **Strengthening Disaster Preparedness:** Schools should develop and implement disaster preparedness plans through the National Disaster Management Unit that outline specific protocols for responding to flooding events, including communication strategies and evacuation procedures.

2. **Psychosocial Support Services:** Educational institutions together with the National Government should establish support systems, including counseling services, to aid students in navigating stress and anxiety resulting from flood-related disruptions.
3. **Enhanced Government Support:** Local authorities and NDMU within the ministry of Interior and Coordination of National Government should provide increased resources and assistance to schools affected by floods, including financial support for infrastructure repairs and the provision of learning materials.
4. **Community Engagement:** Schools should engage with community stakeholders to raise awareness about the impacts of flooding and channel resources towards disaster response and recovery hence educating the society on how to respond and carb the severity of floods
5. **Research and Monitoring:** Continued research is vital to monitor the long-term effects of flooding on academic performance and to analyze the success of implemented strategies in supporting affected students. This helps to predict and respond to floods in future with much ease.

5.5 Areas for Further Research

Future studies could explore the long-term academic impacts of repeated flood events on student performance over several years, alongside the effects of particular coping strategic techniques administered by schools. On top of that, research could investigate the contribution of community resilience in lessening the consequences of floods on education.

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QUESTIONNAIRE

Section A: Demographic Information

1. What is your role at the school?
   - ☐ Student
   - ☐ Teacher
   - ☐ Principal
   - ☐ Educational Officer
   - ☐ Quality Assurance Officer
2. How many years have you been in your existing position?
   - ☐ Less than 1 year
   - ☐ 1–3 years
   - ☐ 4–6 years
   - ☐ More than 6 years

Section B: Impact of Floods on School Operations

3. How frequently does your school face closures due to flooding?
   - ☐ Never
   - ☐ Once a year
   - ☐ 2–3 times a year
   - ☐ More than 3 times a year
4. How long do these closures typically last?
   - ☐ Less than a week
   - ☐ 1–2 weeks
   - ☐ More than 2 weeks
5. What activities are most affected by these closures? (You can select more than one.)
   - ☐ Teaching and learning sessions
   - ☐ Exam preparation and administration

☐ Student attendance

☐ School infrastructure and materials

Section C: Impact of Floods on Students' Academic Performance and Participation

6. In your opinion, how do flood-related disruptions affect students' academic performance?

   ☐ No impact

   ☐ Slight impact

   ☐ Significant negative impact

7. What shifts have you identified in students' behavior after flood events?

   ☐ Increased absenteeism

   ☐ Reduced participation in class

   ☐ Decline in test scores

   ☐ Increased stress and anxiety

8. Do students often experience stress or anxiety after flood-related disruptions?

   ☐ Yes

   ☐ No

9. If yes, how do you think the stress affects their academic performance?

   ☐ No impact

   ☐ Mild impact

   ☐ Severe impact

Section D: Flood Displacement and Access to Learning Materials

10. Have students in your school experienced displacement due to floods?

    ☐ Yes

    ☐ No

11. If yes, what challenges do displaced students face when returning to school? (Select all that apply.)

    ☐ Lack of learning materials

☐ Difficulty concentrating

☐ Irregular attendance

☐ Emotional distress

12. Have teachers or staff reported difficulties in supporting students affected by floods?

☐ Yes

☐ No

Section E: Coping Mechanisms and Recommendations

13. What support mechanisms has the school implemented to help students after flood disruptions?

☐ Counseling services

☐ Makeup lessons

☐ Provision of learning materials

☐ Others (please specify): _____

14. In your view, what other additional strategies could improve students' academic performance during or after flood disruptions?

15. Would you agree that the government or support from local authorities to schools is deemed sufficient?

☐ Yes

☐ No

16. What further actions should be taken by the education sector to mitigate the impact of floods on learning?