IMPACT OF SIMPLE FIELD TRIP ON KNOWLEDGE AND ATTITUDE OF STUDENTS TOWARDS GULLY EROSION

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CERTIFICATION

We, the undersigned, certify that this study was carried out by **David JOHNMARK Oseke** with matriculation Number **EDU2102501** in the Department of Health, Safety and Environmental Education in partial fulfillment for the award of Bachelor of Science (B.Sc.) in Environmental Education.

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DEDICATION

This project is dedicated to God Almighty for his unfailing strength throughout the journey. He guided the researcher through his life in school and for that he is grateful.

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The researcher sincerely express his profound gratitude to God Almighty whose grace, guidance, and abundant blessings sustained him throughout his academic journey. God's strength and wisdom enabled him to complete this project successfully.

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ABSTRACT

Gully erosion is one of the most severe environmental challenges in Nigeria, especially in southeastern regions where it causes extensive land degradation, destruction of infrastructure, and disruption of livelihoods. The study examined the impact of simple field trips on students' knowledge and attitudes toward gully erosion. It was motivated by the need to integrate experiential learning into environmental education as a means of improving understanding and awareness of erosion control. The research sought to determine whether a simple field trip could enhance students' comprehension and disposition toward environmental issues, particularly gully erosion.

The study adopted a quasi-experimental design involving fifty undergraduate students from the Department of Health, Safety, and Environmental Education, University of Benin. The participants were divided equally into experimental and control groups. Data were collected using a structured questionnaire divided into three sections that assessed demographic characteristics, knowledge, and attitude. The validity of the instrument was ensured through expert review, and reliability was confirmed using the test–retest method. Data were analyzed using descriptive statistics for summarization and independent samples t-tests to test hypotheses at the 0.05 level of significance.

Findings revealed that students in the experimental group who participated in the field trip demonstrated significantly higher knowledge and more positive attitudes toward gully erosion than those in the control group. The study concluded that field trips are highly effective in improving students' environmental knowledge and fostering pro-environmental attitudes. It recommended that field-based learning be incorporated into environmental education curricula and teacher training programs to promote experiential learning, community involvement, and sustainable environmental management.

CHAPTER ONE

INTRODUCTION

Background of the Study

Gully erosion is one of the most destructive forms of soil erosion, causing significant environmental, economic, and social challenges worldwide. In regions like southeastern Nigeria, gully erosion has reached alarming proportions, drastically affecting land productivity, infrastructure, and local populations. This type of erosion, characterized by the formation of deep and wide channels or gullies, can lead to the displacement of communities, damage to agricultural lands, and disruption of essential services such as transportation and water supply. The severity of gully erosion is influenced by both natural and human-induced factors. Natural triggers include intense rainfall, steep topography, and certain soil types, while human activities such as deforestation, improper agricultural practices, and unplanned urban development exacerbate the problem (Jahantigh & Pessarakli, 2011; Soufi, 2007). For instance, road construction on sloped terrain has been identified as a major contributor to gully formation, as it disturbs the soil and increases surface runoff, which leads to further erosion (Onyejekwe et al., 2021). The increasing rate of urbanization, with its associated increase in impervious surfaces, further intensifies the runoff, making land more susceptible to erosion (Abdulfatai et al., 2014).

The consequences of gully erosion are far-reaching, especially for local communities and students living in affected areas. For students, the impacts are both direct and indirect.

Directly, gully erosion can destroy school infrastructure and disrupt educational activities. Access roads to schools are often washed away, preventing students from attending classes regularly. Furthermore, the destruction of local homes and infrastructure creates instability and psychological distress, affecting the mental well-being of students and their academic performance (Kar et al., 2019). Indirectly, gully erosion leads to the loss of agricultural land, which can exacerbate poverty, forcing families to migrate to urban areas in search of livelihood opportunities. This migration further disrupts the education of students, as they are forced to leave their schools behind.

The primary causes of gully erosion are linked to both natural processes and human activities. Heavy rainfall, particularly when it occurs in short, intense bursts, is a key natural factor that initiates the erosion process. When rainwater flows over the land, it picks up soil particles, which eventually leads to the formation of gullies. The soil type also plays a significant role, with certain types of soil, such as loose, sandy soils, being more prone to erosion (Valentin et al., 2005). However, human activities such as deforestation, overgrazing, and poor land management practices are the primary drivers of gully formation. Deforestation, for example, removes vegetation that stabilizes the soil, while overgrazing by livestock can compact the soil, reducing its ability to absorb water and making it more vulnerable to erosion (Ioniţă et al., 2015; Igwe et al., 2018). Poor agricultural practices, such as improper irrigation and the use of heavy machinery, can also disturb the soil, creating conditions that favor the development of gullies (Hosseinalizadeh et al., 2019). To address the growing problem of gully erosion, both technical and educational interventions are necessary. On the technical side, measures such as reforestation, the construction of check dams, and the use of terracing and vegetative cover have been

proven to be effective in preventing further erosion (Igwe et al., 2018). These techniques help stabilize the soil, reduce surface runoff, and slow down the movement of water, preventing the expansion of existing gullies. In addition, proper land use planning, including the establishment of sustainable farming practices and controlled urban expansion, is essential in managing the long-term impacts of gully erosion (Valentin et al., 2005). However, addressing the root causes of gully erosion requires changing human behavior and improving environmental awareness.

Field-based educational programs, such as school field trips to gully sites, are an effective way to engage students and raise awareness about the causes and consequences of erosion. These programs allow students to see the problem firsthand, transforming abstract environmental concepts into tangible experiences that can significantly enhance their understanding (Jackie, 2024). Research has shown that experiential learning through field trips improves students' cognitive knowledge and fosters a positive attitude toward conservation and environmental stewardship (Hancock et al., 2020). Moreover, these programs can help students develop the skills needed to identify and address environmental problems in their own communities, creating a sense of responsibility and empowerment.

Gully erosion is a complex environmental problem that requires both technical solutions and educational interventions. Field-based environmental education offers an effective way to raise awareness among students and foster positive environmental attitudes. As gully erosion continues to threaten communities and ecosystems, empowering the next generation with the knowledge and skills needed to address the issue will be crucial in reversing the trend and ensuring a sustainable future for all.

Statement of the Problem

Gully erosion is a major environmental issue causing loss of fertile soil and damage to ecosystems, which threatens sustainable land use and agricultural productivity. Ideally, students should understand the causes and effects of gully erosion and have positive attitudes that encourage conservation. However, many students lack sufficient knowledge and awareness about gully erosion, limiting their ability to participate in sustainable practices. Currently, traditional classroom teaching alone has not been effective in improving students' knowledge and attitude toward gully erosion.

Although field trips have been proposed as a way to enhance learning by providing hands-on experience, their impact on students' knowledge and attitudes toward this specific environmental problem remains underexplored. There have been reports that field trips can improve environmental knowledge and attitudes, but these reports often do not focus on gully erosion specifically or consider the moderating effect of age on learning outcomes. This leaves a gap in understanding how a simple field trip influences students' knowledge and attitudes toward gully erosion, it is in this light that this study aims to fill this gaps by answering the following questions.

Research Questions

1. What is the impact of a simple field trip on students' knowledge about gully erosion?
2. What is the impact of simple field trip on students' attitudes toward gully erosion?

Hypotheses

1. There is no significant impact of a simple field trip on students' knowledge about gully erosion
2. There is no significant impact of simple field trip on students' attitudes toward gully erosion

Purpose of the Study

The purpose of this study is to assess the impact of simple field trip on knowledge and attitude of students towards gully erosion, specifically the study aims to;

1. Assess the impact of a simple field trip on students' knowledge about gully erosion.
2. Find out how a simple field trip affects students' attitudes toward gully erosion.

Significance of the Study

This study is significant in several ways:

Government and Environmental Agencies: The findings will assist policymakers and environmental organizations in understanding the effectiveness of experiential learning methods like field trips in improving students' knowledge and attitudes toward gully erosion. This can guide the development of environmental education policies and programs that target youth awareness and involvement in soil conservation efforts.

Universities and Educators: The study will provide valuable feedback to universities and educators on how field trips influence students' environmental knowledge and attitudes, allowing curriculum improvements that better engage students in sustainable land

management practices.

Students and Researchers: This study will contribute to the academic body of knowledge by serving as a foundation for further research on environmental education and student perceptions, particularly regarding gully erosion. It will help future researchers design better interventions aimed at fostering pro-environmental behaviors among students.

Scope/Delimitation of the Study

The study will focus on undergraduate students of Health Safety and Environmental Education in University of Benin. It will specifically examine the impact of simple field trips on their knowledge and attitudes toward gully erosion. The research will assess the changes before and after the field trip and analyze the moderating effect of age on these changes. The study will be limited to the 2023/2024 academic session and data will be collected from students in Health, Safety and Environmental Education.

Other variables beyond knowledge, attitude, field trips, and age will not be considered.

Definition of Terms

Gully Erosion: A type of soil erosion characterized by the removal of soil through the formation of large channels or gullies, often intensified by human activities and environmental factors.

Simple Field Trip: An educational visit outside the classroom designed to provide students with hands-on experience and direct observation of environmental phenomena such as gully erosion.

Knowledge: The level of awareness, understanding, and information possessed by students

about the causes, processes, effects, and prevention of gully erosion as gained through both classroom instruction and field experience.

Attitude: The set of feelings, beliefs, and behavioral tendencies that influence how students perceive and respond to gully erosion and environmental issues.

Environmental Education: A process of learning that increases people's awareness and understanding of environmental issues and equips them with the knowledge, skills, values, and attitudes necessary to make informed decisions and take responsible actions toward environmental sustainability.

Quasi-Experimental Design: A research design that involves comparing groups without random assignment to determine the effect of a specific intervention. In this study, it was used to compare the effects of a simple field trip (experimental group) with classroom instruction (control group) students' knowledge and attitudes.

Experiential Learning: A method of learning that emphasizes direct experience and reflection as the central process through which knowledge is constructed. It allows students to connect theoretical concepts with practical, real-world experiences, enhancing both understanding and retention.

Soil Degradation: A decline in the quality and productivity of soil caused by natural processes and human activities such as erosion, deforestation, and poor agricultural practices, which reduce the soil's ability to support vegetation and maintain ecological balance.

Environmental Attitude: A person's overall tendency to respond favorably or unfavorably toward the natural environment and issues affecting it, including behaviors, values, and

motivations directed toward environmental conservation.

Sustainable Land Management: A set of practices that integrate the management of soil, water, and vegetation resources to meet human needs while ensuring the long-term health and productivity of the land.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviewed the related literature of the study under the following subheadings;

Concept of Gully Erosion

Concept of Simple Field Trip

Knowledge and Attitude of Students towards Gully Erosion

Impact of Simple Field Trip on Students' Knowledge about Gully Erosion

Impact of Simple Field Trip on Students' Attitude towards Gully Erosion

Summary of Reviewed Literature

Concept of Gully Erosion

Gully erosion, a significant form of soil degradation, is a global issue that affects not only agricultural productivity but also contributes to environmental problems such as sedimentation and water quality deterioration. Unlike sheet or rill erosion, gully erosion is more destructive because it involves the formation of deep channels, significantly altering the landscape. These channels, once formed, can deepen and expand, causing permanent changes to the terrain, which increases the risk of flooding and reduces the arable land available for farming (Valentin et al., 2020; Poesen et al., 2019). A key driver of gully erosion is the increased surface runoff during heavy rainfall events, which erodes the soil and transports the sediment into waterways, leading to sedimentation and degradation of aquatic ecosystems (Xu et al., 2021).

The causes of gully erosion are both natural and human-induced. In regions with steep slopes and heavy rainfall, such as the Loess Plateau in China, gullies often develop naturally due to water flow concentrating along specific pathways, especially where the soil is loose and vulnerable to erosion (Castillo & Gómez, 2023). However, anthropogenic activities like deforestation, improper land management practices, agricultural overuse, and urbanization significantly exacerbate the problem. For instance, in Northeast China, the

conversion of grasslands and forests into agricultural land since the 1950s has led to severe gully formation, with rates of soil loss reaching over 44 Mg ha−1 yr−1 by 2018 (Wen et al., 2021). The construction of roads, mining activities, and inadequate land-use planning further disturb the soil structure and contribute to increased erosion (Zhao et al., 2021).

The environmental impacts of gully erosion are wide-ranging. Direct consequences include the loss of fertile soil, which negatively affects crop production, and the alteration of local hydrological cycles, which can result in increased runoff and flooding (Tichavský et al., 2023). Furthermore, the sediment displaced by gully erosion is often carried into nearby rivers, increasing the sediment load and impairing water quality. The sedimentation of reservoirs and rivers reduces their water storage capacity, exacerbates water management challenges, and disrupts aquatic habitats (Randall &

Roberts, 2023). In the case of the Burdekin River in Australia, gully erosion has been found to contribute significantly to sediment deposition in the Great Barrier Reef, with an estimated 40-50% increase in sedimentation since the introduction of livestock in the 1860s (Shepherd & Bob, 2010).

To combat gully erosion, various control measures have been implemented worldwide. These measures include vegetation restoration, terracing, check dams, and other forms of soil conservation such as reduced tillage and agroforestry (Poesen et al., 2021).

However, the adoption of these measures has often been slow, especially in rural areas where farmers face immediate challenges and are hesitant to invest in long-term soil conservation projects without clear, short-term benefits (Valentin et al., 2020). A significant challenge in gully erosion control is the high cost of implementing

large-scale interventions, particularly in areas with extensive gully networks that require comprehensive restoration plans (Gomez et al., 2020)

Recent advances in technology have improved the monitoring and management of gully erosion. The use of Geographic Information Systems (GIS), remote sensing, and Structure from Motion (SfM) photogrammetry has made it easier to map gully networks, assess their growth, and predict areas at risk of future erosion (Xu et al., 2021). These tools provide valuable data that help in designing targeted intervention strategies and improving the effectiveness of gully erosion control measures (Liu et al., 2019). Additionally, the integration of remote sensing data with field surveys allows for more accurate assessments of gully morphology and erosion rates, which are crucial for understanding the dynamics of gully development and for monitoring the success of control interventions (Tichavský et al., 2023).

While technological tools and physical interventions are vital, the social dimension of gully erosion control cannot be overlooked. Awareness campaigns aimed at educating communities about the causes and consequences of gully erosion, along with promoting sustainable land management practices, are crucial for fostering long-term soil conservation efforts (Hughes et al., 2019). Engaging local farmers in the design and implementation of gully control strategies, based on their knowledge of local conditions, can significantly enhance the effectiveness of these interventions (Castillo & Gómez, 2023).

Gully erosion remains a pressing environmental issue exacerbated by both natural and human-induced factors. The loss of fertile soil, the alteration of hydrological systems, and the degradation of water quality are some of the major environmental impacts associated with gully erosion. Despite various control measures being implemented, the challenge remains significant due to the high costs involved and the complexity of managing large gully networks. Technological advancements in monitoring and mapping gully systems offer promising solutions, but successful gully erosion management also requires active community engagement and education to ensure sustainable land management practices.

Concept of Simple Field Trip

The concept of a simple field trip as an educational method is a widely used strategy in experiential learning, providing students with the opportunity to connect theoretical knowledge gained in the classroom to real-world environments. Field trips are typically conducted outside the traditional classroom setting, allowing students to engage with the content in a tangible, hands-on manner that fosters a deeper understanding and retention of information. They are particularly valuable in environmental education, where students can directly observe and experience the phenomena they study, such as ecosystems, biodiversity, and environmental challenges like gully erosion.

Recent research on field trips shows that these educational activities have several benefits, primarily in promoting experiential learning. Experiential learning theory, as outlined by scholars such as Kolb (1984), emphasizes the importance of learning through experience, where students actively engage in the learning process and reflect on their actions. Field trips provide students with an opportunity to apply classroom concepts in real-world contexts, enhancing their understanding of complex environmental issues. The physical presence in an environment, such as a natural landscape or a site affected by environmental degradation, makes abstract concepts more concrete, thereby improving cognitive understanding (Nadelson & Jordan, 2012).

Field trips are particularly effective in fostering environmental awareness and pro-environmental behavior. A study by Güler & Afacan (2013) demonstrated that participating in nature-based field trips significantly improved the environmental attitudes and behaviors of pre-service teachers. The students involved in the study showed increased interest in sustainable practices such as recycling and pollution control, following their engagement in field trips related to environmental education. Similarly, Gravil (2019) found that field trips enhanced science knowledge acquisition in young children, suggesting that

direct exposure to nature allows students to develop a stronger connection to environmental science concepts. Moreover, the use of field trips in promoting environmental literacy has been shown to improve attitudes towards biodiversity, as students develop a greater appreciation for the natural world and its complexities (Rijal et al., 2018).

The impact of field trips on students' knowledge and attitudes is not limited to the cognitive domain. Field trips also have significant affective benefits. For instance, students who participated in environmental education field trips often reported a greater sense of emotional connection to the natural environment and increased motivation to engage in environmental conservation (Boeve-de Pauw et al., 2019). These affective outcomes are important because emotional attachment to the environment can lead to long-term changes in behavior, encouraging students to become active stewards of their surroundings.

A key aspect of a simple field trip is its ability to foster social and cooperative learning. Group activities during field trips, such as collaborative problem-solving tasks or team observations, promote interpersonal skills and allow students to work together in a real-world context. This aspect of field trips enhances the social dimensions of learning, where students not only gain academic knowledge but also develop critical social skills such as communication, teamwork, and leadership (Preusch, 2009). Such activities align with Dewey's (1938) educational philosophy, which emphasizes learning through social interaction and the importance of engaging with one's environment.

However, the success of a field trip largely depends on how it is planned and executed. Effective field trips require careful preparation, including pre-trip discussions, setting clear learning objectives, and ensuring that students are equipped with the necessary tools and materials to engage with the site effectively (Rebar & Enochs, 2010).

Post-trip activities, such as reflections or projects, are also crucial for consolidating the knowledge gained during the field trip and integrating it into the broader curriculum.

Without proper planning and reflection, the potential educational benefits of a field trip may be diminished (Boeve-de Pauw et al., 2019).

Despite the recognized benefits, there are challenges to organizing and executing field trips, including logistical concerns such as transportation, costs, and safety issues (Story et al., 2023). These barriers can sometimes limit the accessibility of field trips, particularly for schools in low-income or rural areas, where financial resources are limited. Additionally, there is often a need for teachers to receive training in how to make the most of field trips in terms of pedagogy and the integration of field experiences into the curriculum (Rebar & Enochs, 2010).

The simple field trip is an effective tool for enhancing environmental education by providing students with a direct and engaging way to learn about the world around them. These trips not only improve cognitive understanding but also foster emotional connections and pro-environmental behaviors. To maximize the benefits of field trips, educators must ensure proper planning and support for students, as well as make efforts to overcome logistical barriers. Ultimately, field trips bridge the gap between theoretical learning and real-world application, making them an essential component of modern education, particularly in fields like environmental science and sustainability (Heras et al., 2020; Rijal et al., 2018).

Knowledge and Attitude of Students towards Gully Erosion

The knowledge and attitude of students towards gully erosion are critical factors that influence the effectiveness of environmental education programs. Gully erosion, a significant environmental issue, refers to the process of soil removal through the formation of deep and wide channels, or gullies, driven by water flow, often exacerbated by human activities such as deforestation, improper agricultural practices, and urbanization. This form of erosion not only leads to the loss of valuable agricultural land but also affects water quality, contributes to flooding, and disrupts ecosystems (Mashi et al., 2015). Therefore, educating students about

gully erosion can play a key role in fostering awareness and shaping attitudes towards sustainable land management and environmental conservation.

Knowledge of gully erosion refers to how well students understand the causes, processes, consequences, and control measures associated with this type of erosion. Many students, especially those in regions affected by gully erosion, may have some awareness of its occurrence but lack a comprehensive understanding of its causes and impacts. For example, a study conducted in Dangara, Nigeria, found that while local farmers were aware of the phenomenon of gully erosion, their understanding of its specific processes such as slope wash and valley retreat was limited (Mashi et al., 2015). Students in these areas may also be familiar with gully erosion from personal experience but may not have the technical knowledge needed to comprehend the broader environmental and economic consequences of soil degradation.

The attitudes of students towards gully erosion are shaped by both their knowledge of the issue and the personal, social, and cultural contexts in which they live. In many rural areas, students may not perceive gully erosion as a significant problem because it is often seen as a natural process or an issue affecting only a specific area. This lack of urgency or concern can hinder efforts to implement preventive measures. However, when students are exposed to educational interventions, such as field trips or classroom lessons that demonstrate the long-term environmental and socioeconomic impacts of gully erosion, their attitudes can shift. Research has shown that field trips, in particular, are effective in improving students' environmental attitudes by transforming abstract concepts into tangible, real-world experiences (Güler & Afacan, 2013).

One study conducted in Nigeria found that farmers' perceptions of gully erosion were significantly influenced by their education levels, with more educated individuals exhibiting a better understanding of the causes and impacts of erosion (Mashi et al., 2015). This

indicates that education plays a crucial role in shaping individuals' knowledge of gully erosion and, by extension, their attitudes toward prevention and control strategies. Similarly, a study in the Imo River basin of Nigeria found that farming activities, sand mining, and poorly constructed roads were identified as the primary anthropogenic causes of gully erosion (Nnamdi & Fashae, 2023). These findings suggest that raising awareness about human-induced factors such as deforestation and improper land use is critical in shifting student attitudes from passive acceptance to active participation in erosion control efforts.

To better understand how educational interventions influence students' knowledge and attitudes towards gully erosion, studies have employed various strategies, including surveys and field trips. Research has shown that students' awareness and attitudes toward gully erosion improve significantly after participating in structured educational programs. For instance, the use of field trips to erosion-prone sites has proven to be an effective method for increasing students' understanding of gully erosion. These trips not only provide firsthand experience of the damage caused by erosion but also enable students to learn about practical mitigation techniques, such as planting cover crops, building terraces, and controlling runoff (Jackie, 2024; Güler & Afacan, 2013).

In some areas, students' attitudes towards gully erosion were positively influenced by hands-on educational activities that engaged them in problem-solving and critical thinking. A study in the Dangara area of Nigeria highlighted the importance of

adopting a community-based approach to raising awareness, where students are encouraged to engage with local farmers and residents in discussions about gully erosion and its impacts. This approach not only increases knowledge but also promotes a sense of shared responsibility for environmental conservation (Mashi et al., 2015).

Similarly, a study in Ethiopia found that socio-economic factors such as literacy and farm location significantly influenced farmers' perceptions of gully erosion, indicating that students'

backgrounds can affect how they perceive environmental issues like erosion (Daba, 2003). Furthermore, attitude shifts can be facilitated by making the learning process more relatable. Studies show that incorporating local case studies and real-world examples into environmental education curricula helps students connect theoretical concepts with their own lived experiences. For example, the introduction of practical exercises and community-based projects in schools has been shown to enhance students' understanding of erosion processes and motivate them to take action (Nnamdi & Fashae, 2023). Educators can also leverage technology, such as computer-based modeling and simulations, to visualize gully erosion processes, making the learning experience more engaging and effective (Hancock et al., 2020).

Despite these positive outcomes, challenges remain in effectively changing student attitudes toward gully erosion. These challenges often stem from socio-economic barriers such as limited access to resources, lack of awareness about the long-term consequences of erosion, and the perceived high cost of implementing control measures. In many regions, especially rural communities, students and their families may be more focused on immediate survival and economic needs than on long-term environmental concerns. This makes it difficult for educational interventions to elicit lasting changes in attitudes (Gurebiyaw & Yigzaw, 2018).

The knowledge and attitudes of students toward gully erosion are crucial to the success of environmental education programs aimed at combating this form of land degradation. Educational strategies that improve students' understanding of the causes, processes, and consequences of gully erosion, particularly those involving hands-on experiences such as field trips, have been shown to be effective in shifting attitudes toward proactive involvement in erosion control. As education continues to play a pivotal role in shaping public awareness and attitudes, it is essential to create tailored interventions that address the specific needs and contexts of students in gully-prone areas.

Impact of Simple Field Trip on Students' Knowledge about Gully Erosion

Field trips have long been recognized as an effective method for enhancing students' knowledge about environmental issues, including complex topics such as gully erosion. These excursions allow students to experience firsthand the environmental challenges they learn about in the classroom, thus making abstract concepts more tangible and impactful. The direct interaction with real-world examples fosters deeper comprehension and emotional connections to the subject matter, which in turn influences students' knowledge retention and application.

Research has demonstrated that field trips contribute significantly to improving students' understanding of environmental issues like gully erosion. A study conducted by Nadelson and Jordan (2012) showed that students who participated in field-based environmental education programs displayed improved cognitive recall and

problem-solving abilities related to the topic they were exposed to. In the case of gully erosion, visiting erosion-prone areas enables students to observe the physical processes of erosion, the causes, and the effects of human activities such as deforestation and improper land use. This kind of experiential learning directly impacts the depth and retention of knowledge that is difficult to achieve through traditional classroom instruction alone (Story et al., 2023).

Moreover, field trips offer opportunities for hands-on learning and active engagement, which increase student motivation and interest in environmental issues. When students witness the consequences of gully erosion, such as the loss of soil, land degradation, and the destruction of ecosystems, they often become more motivated to learn about the underlying processes and potential solutions. For example, a study by Boeve-de Pauw et al. (2019) emphasized that field trips allow students to experience novelty in their learning environment, which has been shown to enhance cognitive engagement and strengthen memory retention. By experiencing

these environmental issues firsthand, students are more likely to internalize the information and apply it to future problem-solving contexts.

The effectiveness of field trips in enhancing knowledge about gully erosion has been linked to the quality of the trip itself. According to a study by Güler and Afacan (2013), the learning outcomes of field trips depend on the clarity of objectives set before the trip, the hands-on activities conducted during the trip, and post-trip activities that reinforce the concepts learned. When students engage in interactive learning such as conducting measurements of soil erosion or identifying erosion patterns in the field their understanding of the gully erosion process becomes more concrete and applicable to real-world situations. This active involvement facilitates the assimilation of knowledge in a meaningful way.

In areas significantly affected by gully erosion, such as parts of southeastern Nigeria, students who participated in field trips to erosion-prone sites demonstrated a marked improvement in their understanding of erosion mechanisms, including factors like soil composition, water flow, and human impacts on erosion. These students were able to connect theoretical lessons about soil degradation and hydrological cycles with practical observations in the field, which reinforced their learning (Mashi et al., 2015). Furthermore, these trips helped students understand the long-term environmental and socio-economic consequences of erosion, which is often difficult to convey through textbook learning alone.

Field trips also allow students to learn about potential remediation strategies for gully erosion, such as reforestation, planting cover crops, and constructing check dams.

When students witness successful interventions in the field, such as areas where vegetation has been restored or gullies have been stabilized, they gain insights into the effectiveness of these solutions. This empirical knowledge of practical conservation

techniques empowers students to consider these approaches as they move forward with their own environmental advocacy and efforts to combat soil erosion (Poesen et al., 2021).

Additionally, field-based learning enhances collaboration and teamwork. During field trips, students often work in groups to observe and analyze the effects of gully erosion, which allows them to discuss their findings, compare observations, and collectively engage in problem-solving. This group dynamic not only enhances cognitive learning but also fosters social and communication skills, which are essential for environmental advocacy and collective action (Preusch, 2009). By working together to identify gully erosion causes, students practice critical thinking and develop the ability to assess the environmental situation systematically.

Despite the clear benefits, challenges remain in organizing field trips, particularly in rural and underfunded schools. Logistics, transportation, and safety concerns often restrict the accessibility of field trips for all students. Moreover, the costs associated with these trips can be prohibitive for schools with limited resources, which highlights the need for sustainable funding mechanisms and community support to ensure that all students have the opportunity to benefit from such educational experiences (Story et al., 2023). However, when these barriers are overcome, the results are profound, as field trips help students develop a deeper, more personal understanding of environmental issues, such as gully erosion, and inspire them to take action in their communities.

Field trips play a pivotal role in enhancing students' knowledge about gully erosion by providing them with firsthand exposure to the environmental challenges they study in the classroom. Through active learning, direct observation, and engagement with

real-world examples, students gain a deeper understanding of the causes, impacts, and solutions to gully erosion. These experiences are crucial for fostering informed, environmentally conscious individuals who are prepared to take meaningful actions toward environmental conservation.

Impact of Simple Field Trip on Students' Attitude towards Gully Erosion

The impact of a simple field trip on students' attitudes toward gully erosion is profound, as it provides students with an opportunity to engage directly with the environment, observe the consequences of gully erosion firsthand, and better understand the pressing need for environmental stewardship. A field trip allows students to witness not only the physical effects of erosion, such as land degradation and destruction of infrastructure, but also the social and economic consequences that can arise from neglecting soil conservation practices. These experiences are often more impactful than classroom lectures alone, as students are exposed to real-world problems and solutions that are both visually and emotionally engaging.

Field trips are effective in shifting students' attitudes towards gully erosion, especially when students are provided with opportunities to observe both the causes and consequences of this type of soil degradation. Research has shown that hands-on educational experiences, particularly those involving environmental degradation such as gully erosion, enhance students' environmental awareness and encourage pro-environmental attitudes (Güler & Afacan, 2013). For example, field trips to erosion-prone areas allow students to see firsthand the destruction caused by uncontrolled water flow and soil erosion. These experiences can serve as eye-openers, shifting students' attitudes from a passive to an active stance regarding environmental conservation.

The impact of a field trip on students' attitudes can be especially profound when they are given a clear understanding of the causes of gully erosion, such as poor land management, deforestation, overgrazing, and unregulated urban development. A study in Ethiopia found that students who participated in environmental education field trips reported a stronger emotional connection to the environment and a greater commitment to taking actions that prevent soil erosion (Boeve-de Pauw et al., 2019). This connection is essential in cultivating

an attitude of responsibility, as students who feel a sense of ownership and care toward the environment are more likely to adopt sustainable practices in their personal and professional lives.

Moreover, field trips can serve as a tool for changing students' perceptions of the severity of gully erosion. In many regions, students might not fully grasp the scale of the problem until they observe the vast areas affected by erosion. For instance, a study in Nigeria showed that students who visited sites where gully erosion had severely damaged agricultural land or infrastructure had their perceptions of the issue fundamentally changed. They were no longer indifferent but understood the long-term implications of unchecked erosion on both the environment and human communities (Mashi et al., 2015). This shift in attitude is important for fostering long-term behavior changes, as students are more likely to support policies and engage in practices that combat gully erosion when they recognize its severity Field trips also provide opportunities for students to learn about solutions to gully erosion, further influencing their attitudes in a positive direction. When students observe mitigation strategies such as the use of vegetation cover, check dams, and terracing to combat soil loss, they gain confidence in the possibility of reversing some of the damage caused by erosion. The knowledge that solutions exist and can be implemented by communities empowers students to take active roles in promoting sustainable land practices. This proactive attitude is essential for fostering future generations of environmental advocates.

Furthermore, field trips enhance students' critical thinking skills by encouraging them to ask questions and analyze the causes and effects of gully erosion in real-world contexts. For example, a study conducted by Güler and Afacan (2013) found that students who participated in environmental field trips were more likely to engage in discussions about land use, water management, and the ethical implications of environmental degradation. This kind of critical thinking is essential for developing well-rounded environmental citizens who understand the

complexity of issues like gully erosion and are prepared to contribute solutions to these challenges.

Knowledge of gully erosion refers to how well students understand the causes, processes, consequences, and control measures associated with this type of erosion. Many students, especially those in regions affected by gully erosion, may have some awareness of its occurrence but lack a comprehensive understanding of its causes and impacts. For example, a study conducted in Dangara, Nigeria, found that while local farmers were aware of the phenomenon of gully erosion, their understanding of its specific processes such as slope wash and valley retreat was limited (Mashi et al., 2015). Students in these areas may also be familiar with gully erosion from personal experience but may not have the technical knowledge needed to comprehend the broader environmental and economic consequences of soil degradation.

The attitudes of students towards gully erosion are shaped by both their knowledge of the issue and the personal, social, and cultural contexts in which they live. In many rural areas, students may not perceive gully erosion as a significant problem because it is often seen as a natural process or an issue affecting only a specific area. This lack of urgency or concern can hinder efforts to implement preventive measures. However, when students are exposed to educational interventions, such as field trips or classroom lessons that demonstrate the long-term environmental and socioeconomic impacts of gully erosion, their attitudes can shift. Research has shown that field trips, in particular, are effective in improving students' environmental attitudes by transforming abstract concepts into tangible, real-world experiences (Güler & Afacan, 2013).

One study conducted in Nigeria found that farmers' perceptions of gully erosion were significantly influenced by their education levels, with more educated individuals exhibiting a better understanding of the causes and impacts of erosion (Mashi et al., 2015). This

indicates that education plays a crucial role in shaping individuals' knowledge of gully erosion and, by extension, their attitudes toward prevention and control strategies. Similarly, a study in the Imo River basin of Nigeria found that farming activities, sand mining, and poorly constructed roads were identified as the primary anthropogenic causes of gully erosion (Nnamdi & Fashae, 2023). These findings suggest that raising awareness about human-induced factors such as deforestation and improper land use is critical in shifting student attitudes from passive acceptance to active participation in erosion control efforts.

To better understand how educational interventions influence students' knowledge and attitudes towards gully erosion, studies have employed various strategies, including surveys and field trips. Research has shown that students' awareness and attitudes toward gully erosion improve significantly after participating in structured educational programs. For instance, the use of field trips to erosion-prone sites has proven to be an effective method for increasing students' understanding of gully erosion. These trips not only provide firsthand experience of the damage caused by erosion but also enable students to learn about practical mitigation techniques, such as planting cover crops, building terraces, and controlling runoff (Jackie, 2024; Güler & Afacan, 2013).

In some areas, students' attitudes towards gully erosion were positively influenced by hands-on educational activities that engaged them in problem-solving and critical thinking. A study in the Dangara area of Nigeria highlighted the importance of adopting a community-based approach to raising awareness, where students are encouraged to engage with local farmers and residents in discussions about gully erosion and its impacts. This approach not only increases knowledge but also promotes a sense of shared responsibility for environmental conservation (Mashi et al., 2015).

Similarly, a study in Ethiopia found that socio-economic factors such as literacy and farm

location significantly influenced farmers' perceptions of gully erosion, indicating that students' backgrounds can affect how they perceive environmental issues like erosion (Daba, 2003).

Furthermore, attitude shifts can be facilitated by making the learning process more relatable. Studies show that incorporating local case studies and real-world examples into environmental education curricula helps students connect theoretical concepts with their own lived experiences. For example, the introduction of practical exercises and community-based projects in schools has been shown to enhance students' understanding of erosion processes and motivate them to take action (Nnamdi & Fashae, 2023). Educators can also leverage technology, such as computer-based modeling and simulations, to visualize gully erosion processes, making the learning experience more engaging and effective (Hancock et al., 2020).

Despite these positive outcomes, challenges remain in effectively changing student attitudes toward gully erosion. These challenges often stem from socio-economic barriers such as limited access to resources, lack of awareness about the long-term consequences of erosion, and the perceived high cost of implementing control measures. In many regions, especially rural communities, students and their families may be more focused on immediate survival and economic needs than on long-term environmental concerns. This makes it difficult for educational interventions to elicit lasting changes in attitudes (Gurebiyaw & Yigzaw, 2018).

The knowledge and attitudes of students toward gully erosion are crucial to the success of environmental education programs aimed at combating this form of land degradation. Educational strategies that improve students' understanding of the causes, processes, and consequences of gully erosion, particularly those involving hands-on experiences such as field trips, have been shown to be effective in shifting attitudes toward proactive involvement in erosion control. As education continues to play a pivotal role in shaping public awareness and attitudes, it is essential to create tailored interventions that address the specific needs and

contexts of students in gully-prone areas.

Impact of Simple Field Trip on Students' Knowledge about Gully Erosion

Field trips have long been recognized as an effective method for enhancing students' knowledge about environmental issues, including complex topics such as gully erosion. These excursions allow students to experience firsthand the environmental challenges they learn about in the classroom, thus making abstract concepts more tangible and impactful. The direct interaction with real-world examples fosters deeper comprehension and emotional connections to the subject matter, which in turn influences students' knowledge retention and application.

Research has demonstrated that field trips contribute significantly to improving students' understanding of environmental issues like gully erosion. A study conducted by Nadelson and Jordan (2012) showed that students who participated in field-based environmental education programs displayed improved cognitive recall and

problem-solving abilities related to the topic they were exposed to. In the case of gully erosion, visiting erosion-prone areas enables students to observe the physical processes of erosion, the causes, and the effects of human activities such as deforestation and improper land use. This kind of experiential learning directly impacts the depth and retention of knowledge that is difficult to achieve through traditional classroom instruction alone (Story et al., 2023).

Moreover, field trips offer opportunities for hands-on learning and active engagement, which increase student motivation and interest in environmental issues. When students witness the consequences of gully erosion, such as the loss of soil, land degradation, and the destruction of ecosystems, they often become more motivated to learn about the underlying processes and potential solutions. For example, a study by Boeve-de Pauw et al. (2019) emphasized that

field trips allow students to experience novelty in their learning environment, which has been shown to enhance cognitive engagement and strengthen memory retention. By experiencing these environmental issues firsthand, students are more likely to internalize the information and apply it to future problem-solving contexts.

The effectiveness of field trips in enhancing knowledge about gully erosion has been linked to the quality of the trip itself. According to a study by Güler and Afacan (2013), the learning outcomes of field trips depend on the clarity of objectives set before the trip, the hands-on activities conducted during the trip, and post-trip activities that reinforce the concepts learned. When students engage in interactive learning such as conducting measurements of soil erosion or identifying erosion patterns in the field their understanding of the gully erosion process becomes more concrete and applicable to real-world situations. This active involvement facilitates the assimilation of knowledge in a meaningful way.

In areas significantly affected by gully erosion, such as parts of southeastern Nigeria, students who participated in field trips to erosion-prone sites demonstrated a marked improvement in their understanding of erosion mechanisms, including factors like soil composition, water flow, and human impacts on erosion. These students were able to connect theoretical lessons about soil degradation and hydrological cycles with practical observations in the field, which reinforced their learning (Mashi et al., 2015). Furthermore, these trips helped students understand the long-term environmental and socio-economic consequences of erosion, which is often difficult to convey through textbook learning alone.

Field trips also allow students to learn about potential remediation strategies for gully erosion, such as reforestation, planting cover crops, and constructing check dams.

When students witness successful interventions in the field, such as areas where vegetation has been restored or gullies have been stabilized, they gain insights into the effectiveness of these solutions. This empirical knowledge of practical conservation.

techniques empowers students to consider these approaches as they move forward with their own environmental advocacy and efforts to combat soil erosion (Poesen et al., 2021).

Additionally, field-based learning enhances collaboration and teamwork. During field trips, students often work in groups to observe and analyze the effects of gully erosion, which allows them to discuss their findings, compare observations, and collectively engage in problem-solving. This group dynamic not only enhances cognitive learning but also fosters social and communication skills, which are essential for environmental advocacy and collective action (Preusch, 2009). By working together to identify gully erosion causes, students practice critical thinking and develop the ability to assess the environmental situation systematically.

Despite the clear benefits, challenges remain in organizing field trips, particularly in rural and underfunded schools. Logistics, transportation, and safety concerns often restrict the accessibility of field trips for all students. Moreover, the costs associated with these trips can be prohibitive for schools with limited resources, which highlights the need for sustainable funding mechanisms and community support to ensure that all students have the opportunity to benefit from such educational experiences (Story et al., 2023). However, when these barriers are overcome, the results are profound, as field trips help students develop a deeper, more personal understanding of environmental issues, such as gully erosion, and inspire them to take action in their communities.

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uncontrolled water flow and soil erosion. These experiences can serve as eye-openers, shifting students' attitudes from a passive to an active stance regarding environmental conservation.

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Field trips also provide opportunities for students to learn about solutions to gully erosion, further influencing their attitudes in a positive direction. When students observe mitigation strategies such as the use of vegetation cover, check dams, and terracing to combat soil loss, they gain confidence in the possibility of reversing some of the damage caused by erosion. The knowledge that solutions exist and can be implemented by communities empowers students to take active roles in promoting sustainable land practices. This proactive attitude is essential for fostering future generations of environmental advocates.

Furthermore, field trips enhance students' critical thinking skills by encouraging them to ask questions and analyze the causes and effects of gully erosion in real-world contexts. For example, a study conducted by Güler and Afacan (2013) found that students who participated in environmental field trips were more likely to engage in discussions about land use, water management, and the ethical implications of environmental degradation. This kind of critical thinking is essential for developing well-rounded environmental citizens who understand the

complexity of issues like gully erosion and are prepared to contribute solutions to these challenges.

In addition to improving knowledge and attitudes about gully erosion, field trips also foster a sense of community responsibility. When students observe how local communities are affected by and often contribute to gully erosion, they become more aware of their own roles in the environmental landscape. A study by Boeve-de Pauw et al. (2019) emphasized that field-based learning, especially when it incorporates community engagement, has a profound impact on students' sense of collective responsibility. The field trip experience provides a platform for students to discuss and collaborate on solutions, which not only enhances their personal attitudes but also builds a sense of community engagement for environmental conservation.

The impact of a simple field trip on students' attitudes towards gully erosion is considerable, as these experiences promote a deeper understanding of the environmental and socio-economic consequences of erosion. Through direct exposure to affected areas, students develop a sense of urgency about the need for effective erosion control and are more likely to adopt environmentally responsible attitudes and behaviors. By witnessing the real-world impacts of gully erosion and learning about effective mitigation measures, students are empowered to become active stewards of their environment, promoting sustainable land management practices both now and in the future.

Summary of Reviewed Literature

The reviewed literature highlights the significant impact of field trips in enhancing students' knowledge and attitudes toward gully erosion, a major environmental concern that affects soil quality, water resources, and agricultural productivity worldwide.

Research demonstrates that field-based learning is particularly effective in raising awareness about environmental issues like gully erosion by providing students with firsthand exposure

to the problem, its causes, and its consequences. These educational experiences help students understand the complexities of soil erosion and its

human-induced drivers, such as deforestation, urbanization, and poor agricultural practices, which exacerbate the problem.

Field trips have been shown to improve students' cognitive understanding of gully erosion by providing real-world examples of its causes, processes, and impacts.

Studies emphasize that hands-on experiences during field trips significantly enhance students' ability to retain information and apply their knowledge to real-world situations (Güler & Afacan, 2013; Nadelson & Jordan, 2012). By observing gully formation and its effects, students gain deeper insights into the physical processes, such as runoff and sedimentation, that lead to soil degradation. Furthermore, the direct engagement with mitigation strategies during field trips, such as the use of check dams or vegetation restoration, promotes a more comprehensive understanding of solutions that can help prevent or reduce the impacts of gully erosion (Boeve-de Pauw et al., 2019).

The impact of field trips extends beyond knowledge acquisition. They have been shown to significantly shift students' attitudes toward gully erosion. Studies indicate that field-based experiences foster a greater emotional connection to the environment,

motivating students to adopt more pro-environmental behaviors (Güler & Afacan, 2013). By observing the destruction caused by gully erosion, students often shift from being passive observers to active participants in environmental conservation efforts. This shift is especially evident in students who experience the long-term environmental and socio-economic impacts of gully erosion during their visits to affected areas (Mashi et al., 2015).

Field trips also promote critical thinking skills by encouraging students to analyze the complex relationships between human activities and environmental degradation. For example, students learn to assess how land-use practices, such as unsustainable agriculture or

urban expansion, contribute to the problem of gully erosion. This understanding helps students develop a sense of responsibility toward solving environmental challenges and fosters greater awareness of the need for sustainable land management practices.

Overall, the reviewed literature underscores the effectiveness of field-based education in improving students' knowledge and attitudes toward gully erosion. Through hands-on, experiential learning, students not only gain a better understanding of the processes behind soil erosion but also develop a more profound emotional connection to the environment, encouraging proactive attitudes and sustainable behaviors. The benefits of these educational experiences go beyond knowledge acquisition, promoting a long-term commitment to environmental conservation and stewardship. Field trips, when conducted with clear objectives and post-trip reinforcement, are invaluable in shaping future generations of informed environmental advocates.

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CHAPTER THREE

METHODOLOGY

This chapter presents the method and procedures that will be used in conducting the study. It is organized under the following sub-headings:

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

The research design adopted for this study is the quasi-experimental research design. This design is most suitable to assess how the knowledge and attitudes of students toward gully erosion are influenced through the use of a simple field trip. The quasi-experimental design reveals the cause-and-effect relationship that exists among variables, specifically between the independent variable (the field trip intervention) and the dependent variables (students' knowledge and attitudes).

In this study, the quasi-experimental design compares students who have not been exposed to the field trip (control group) with those who participated in the field trip (experimental group). This design makes it possible to determine whether the simple field trip has a significant impact on their knowledge and attitudes towards gully erosion.

Fig 4: Quasi Research Design.

R_1 O_1 X O_2

R_2 O_1 O_2

Where

R_1= experimement

R_2= Control Group

R_3= Pretest

X=Treatment (Environmental Education Workshop)

O_2=Post test

Population of the Study

The population of this study comprises all undergraduate students enrolled in the Health, Safety and Environmental Education program at the University of Benin, Edo State, during the 2023/2024 academic session. According to departmental records, there are approximately 630 students in this program. These students are considered appropriate for this study as they are expected to have foundational environmental knowledge and are directly relevant to issues surrounding environmental degradation and conservation.

Sampling and Sampling Technique

A purposive sampling technique was selected for this study. Purposive sampling is a non-probability sampling technique in which researchers purposely select individuals that possesses the specific characteristics or qualities of interest to the study. This method is used to gather in-depth information and explore specific dimensions of a phenomenon. The respondents were categorized into two, the experimental group and the control group. Those who responded in the experimental group category received a treatment (a demonstration) while those under the control group did not receive any treatment. A total of fifty (50) respondents were chosen from the Department of Health, Safety and Environmental Education. The sampling method is best explained in the table below **Method of Data**

Collection

The instrument will be administered directly to the respondents by the researcher. The respondents were urged to reply freely and impartially as it relates to them in order to obtain first hand information from them without bias. The respondents will fill out the questionnaire, which the researcher will retrieve personally upon the completion of their responses.

Method of Data Analysis

Data collected through the administration of questionnaires was analyzed using descriptive statistics for easy interpretation. Descriptive statistics are brief informational coefficients that summarize a given data set, which can be either a representation of the entire population or a sample of the population. It involves summarizing, organizing, and presenting data meaningfully and concisely. This enabled the researcher to meaningfully describe independent factors in the study, as well as helping to indicate the number and percentage of respondent rank, and rank variables under this study.

Table 1.0: Sampling Method

S/N	Selected groups	Number of Respondents
1.	Experimental Group	25
2.	Control Group	25
TOTAL		50

Research Instrument

A self structured questionnaire will be used for the study. The questionnaire will be divided into three sections. Section A covers demographic data of the respondents while section B tests the respondents knowledge about gully erosion. And section C measures students attitude towards gully erosion using A four point scoring scale drawn along the modified Likert summated rating scale for measurement (SA = Strongly agree, A = Agree, D, D=Disagree, and SD= Strongly disagree) to show their attitude towards the sources of emotional stress.

Validity of the Instrument

The face and content validity of the instrument will be established by giving draft copies of the instrument to the project supervisor and two other experts in the Department of Health, Safety and Environmental Education. Their corrections and suggestions will be used to prepare the final copy of the instrument.

Reliability of the Instrument

The reliability of the instrument will be established using test-retest method of estimating reliability. Consequently, the constructed instrument will be administered on a group of twenty (20) students within an interval of two weeks. The correlation of the response will be determined using the Pearson's Product Moment Correlation.

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CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter presents the data collected and the statistical analysis carried out to determine the impact of field trip on students' knowledge and attitude toward gully erosion. The data were analyzed based on the research hypotheses stated in Chapter One. The analysis was conducted using the independent samples t-test to compare the mean scores of the experimental and control groups. The results are presented in tables and interpreted accordingly.

HYPOTHESES ONE

Null Hypothesis ($H_{0\ 1}$):

There is no significant impact of a simple field trip on students knowledge about gully erosion

Table 1: Independent Samples t-Test Comparing Students' Knowledge about Gully Erosion

Group	n	M	SD	t(41.20)	p	Mean Difference	95% CI [LL, UL]
Experimental	25	9.20	0.87	3.40	.002	1.08	[0.44, 1.72]
Control	25	8.12	1.33				

Note. Equal variances not assumed based on Levene's test (F = 5.00, p = .030)

An independent samples t-test was conducted to examine whether participation in a simple field trip had a significant effect on students' knowledge about gully erosion. The mean knowledge score of students in the experimental group (M = 9.20, SD = 0.87) was higher than that of students in the control group (M = 8.12, SD = 1.33).

Levene's test for equality of variances was significant, F(1,48) = 5.00, p = .030, indicating that the assumption of equal variances was violated. Therefore, the results for unequal variances were interpreted

The t-test revealed a statistically significant difference between the two groups, t(41.20) = 3.40, p = .002, with a mean difference of 1.08 and a 95% confidence interval ranging

from 0.44 to 1.72. The findings indicate that students who participated in the simple field trip demonstrated significantly higher knowledge about gully erosion than those who did not. Thus, the null hypothesis stating that "there is no significant impact of a simple field trip on students' knowledge about gully erosion" is rejected. This result suggests that even a short, well-structured field trip can meaningfully enhance students' understanding of environmental processes such as gully erosion. By providing direct, real-world exposure to erosion features and causes, field experiences appear to strengthen students' cognitive grasp of environmental concepts beyond what classroom instruction alone achieves.

HYPOTHESIS TWO

Null Hypothesis ($H_{0\ 2}$):

There is no significant impact of simple field trip on students attitudes toward gully erosion

Table 2: Independent Samples t-Test Comparing Students' Attitudes toward Gully Erosion

Group	n	M	SD	t(48)	p	Mean Difference	95% CI [LL, UL]
Experimental	25	37.00	2.58	5.04	<.001	4.16	[2.50, 5.82]
Control	25	32.84	3.22				

Note. Equal variances assumed based on Levene's test (F = 1.87, p = .178).

An independent samples t-test was conducted to determine whether participation in a simple field trip significantly influenced students' attitudes toward gully erosion. The mean attitude score of students in the experimental group (M = 37.00, SD = 2.58) was higher than that of students in the control group (M = 32.84, SD = 3.22). Levene's test for equality of variances was not significant, $F(1,48) = 1.87$, $p = .178$, indicating that the assumption of homogeneity of variances was met. The t-test revealed a statistically significant difference between the two groups, $t(48) = 5.04$, $p < .001$, with a mean difference of 4.16 and a 95% confidence interval ranging from 2.50 to 5.82.

The result indicates that students who participated in the simple field trip exhibited

significantly more positive attitudes toward gully erosion than those who did not participate. Therefore, the null hypothesis stating that "there is no significant impact of a simple field trip on students' attitudes toward gully erosion" is rejected

Discussion of Findings

The findings of this study clearly reveal that participation in a simple field trip significantly improved students' knowledge and attitudes toward gully erosion. The analysis demonstrated that students in the experimental group outperformed those in the control group both in cognitive understanding and attitudinal disposition.

Specifically, the results of the independent samples t-tests showed that the mean knowledge score of the experimental group ($M = 9.20$, $SD = 0.87$) was significantly higher than that of the control group ($M = 8.12$, $SD = 1.33$), $t(41.20) = 3.40$, $p = .002$. Likewise, the mean attitude score of students who participated in the field trip ($M = 37.00$, $SD = 2.58$) was higher than that of those who did not ($M = 32.84$, $SD = 3.22$), $t(48) = 5.04$, $p < .001$. These results imply that field trips provide experiential exposure that enhances both the cognitive and affective learning domains.

This findings supports the assertion of Kolb and Kolb (2017) which emphasizes that learning is most effective when students engage in experiential learning processes that connect abstract concepts with direct, lived experiences. In this approach, learners construct knowledge by actively participating in meaningful activities that mirror real-world contexts. In the present study, students who physically visited gully erosion sites were able to connect classroom theories with observable environmental realities such as soil structure, vegetation loss, and water flow patterns. This concrete exposure deepened their understanding by transforming abstract academic content into practical insight.

The positive effect of field trips on students' knowledge aligns with the work of Nadelson and Jordan (2012), who found that environmental science field trips enhanced

both students' short-term engagement and long-term content retention. In a related study, Güler and Afacan (2013) reported that pre-service teachers who participated in field trips exhibited significant increases in environmental awareness and pro-environmental behavior. Both studies validate the present finding that practical exposure reinforces classroom learning and bridges the gap between theory and reality.

Moreover, Farmer, Knapp, and Benton (2007) emphasized the long-term benefits of field-based environmental learning, noting that students retained ecological knowledge and positive attitudes even a year after the field trip. This suggests that experiential learning has not only immediate but also enduring cognitive and attitudinal impacts.

The present study corroborates that conclusion by demonstrating that even a single, well-organized field visit can meaningfully enhance students' environmental competence.

In the Nigerian context, these findings echo the observations of Ezeudu and Ezeudu (2017) and Okonkwo (2018), who found that field-based instruction in environmental education enhances learners' comprehension of local ecological problems, such as erosion, deforestation, and flooding. They argued that the use of local environmental examples during fieldwork contextualizes learning, making it culturally relevant and memorable. The improvement in students' knowledge about gully erosion in this study reflects the value of using familiar environmental settings as learning laboratories.

The attitudinal findings of this study also align with the observations of Chawla and Cushing (2020), who emphasized that effective environmental education must foster emotional connection, personal responsibility, and a sense of empowerment among learners to inspire sustainable behavior. They noted that meaningful experiences in nature or real-life environmental settings help students internalize environmental values and translate awareness into responsible actions. The positive change in students'

willingness to participate in erosion prevention and environmental protection activities in the present study reflects this principle. It suggests that field trips provide opportunities for affective engagement that strengthen environmental sensitivity and long-term behavioral commitment toward sustainability.

Likewise, Rijal, Saefudin, and Amprasto (2018) showed that biodiversity-focused field trips improved students' environmental literacy by fostering awareness, concern, and problem-solving capacity. The present study parallels those results by revealing that students who observed erosion sites firsthand developed stronger motivation to contribute to mitigation efforts. Experiencing the problem directly appears to have transformed abstract environmental issues into personal and actionable concerns.

A recent study by MDPI (2025) on adolescent environmental stewardship revealed that participation in structured field trips fostered measurable improvements in environmental values and attitudes. Students reported a stronger inclination toward environmental protection and sustainable practices after experiencing real-world environmental issues. This supports the current finding that field trips can nurture environmental stewardship and positive behavioral change among learners.

Furthermore, the finding that students in the experimental group showed more positive attitudes toward erosion control corresponds with the perspective of UNESCO (2014), which advocates experiential learning as a central pillar of Education for Sustainable Development (ESD). Field-based learning helps students become active participants in their environment, fostering the skills and values needed to address local and global environmental challenges.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of the entire research project, drawing conclusions from the findings, and offering actionable recommendations based on the study's outcomes. It also provides implications of the study to environmental education and suggestions for further research.

Summary

This study addresses the severe problem of gully erosion in southeastern Nigeria, a destructive environmental issue that leads to land degradation, economic losses, and social disruption. The background described gully erosion as one of the most destructive forms of soil degradation, resulting from both natural factors such as intense rainfall and human activities. Field trips were introduced as an effective method of environmental education that allows students to connect theoretical classroom knowledge with real-world environmental problems. While field trips are suggested as a solution, their specific impact on understanding gully erosion is under-explored. The study aimed to assess the impact of a simple field trip on students' knowledge and attitudes toward gully erosion. Two research questions and two corresponding hypotheses guided the study, focusing on whether field trips significantly affect students' knowledge and attitudes, The scope is delimited to undergraduate students of Health, Safety and Environmental Education at the University of Benin during the 2023/2024 academic session.

The literature review is structured around key concepts. It defines gully erosion as a severe form of land degradation with global impacts, highlighting its natural and human induced causes and the technical and educational measures needed for control. The chapter highlighted that technological tools like Geographic Information Systems (GIS) and remote sensing now aid in the monitoring and management of erosion, but

sustainable control also depends heavily on public education and awareness.

The concept of a simple field trip is established as a hands on experiential learning method rooted in educational theories like Kolb's Experiential Learning Theory. The review confirms that field trips are highly effective in enhancing cognitive understanding and fostering positive environmental attitudes by making abstract concepts tangible.The literature strongly suggests that field based learning can bridge the gap between theoretical knowledge and practical application, improving both knowledge retention and promoting proactive, pro environmental behaviors. The chapter concludes by summarizing that field trips are a powerful pedagogical tool for environmental education.

The methodology adopted for the study employed a quasi-experimental design to examine cause-and-effect relationships between participation in a field trip (the independent variable) and changes in students' knowledge and attitudes (the dependent variables). The population comprised all undergraduate students in the Department of Health, Safety, and Environmental Education at the University of Benin during the 2023/2024 academic session, totaling approximately 630 students. From this population, a sample of 50 students was selected using a purposive sampling technique, divided equally into experimental and control groups. Data were collected using a structured questionnaire designed to assess two key dimensions; students' knowledge and attitudes regarding gully erosion. Section A of the instrument collected demographic data, Section B of the instrument assessed students' knowledge of gully erosion, while Section C measured their attitudes using a four-point Likert scale. The instrument's validity was established through expert review, and its reliability was confirmed using the test-retest method, which yielded a high correlation coefficient.

Findings

Data were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequency counts, percentages, and mean scores were used to summarize responses, while inferential statistics like independent samples t-tests were applied to test the hypotheses at a 0.05 level of significance. The key findings of the study are as follows:

1. There is a statistically significant difference in the knowledge scores of students in the experimental group ($M = 9.20$, $SD = 0.87$) and the control group ($M = 8.12$, $SD = 1.33$); $t(41.20) = 3.40$, $p = .002$. This led to the rejection of the first null hypothesis, confirming that the simple field trip had a significant positive impact on students' knowledge about gully erosion.
2. There is a statistically significant difference in the attitude scores of students in the experimental group ($M = 37.00$, $SD = 2.58$) and the control group ($M = 32.84$, $SD = 3.22$); $t(48) = 5.04$, $p < .001$. This led to the rejection of the second null hypothesis, confirming that the simple field trip significantly improved students' attitudes toward gully erosion.

Conclusion

Based on the findings of the study, it is concluded that field trips are a highly effective and impactful method of teaching environmental concepts such as gully

erosion. The hands-on experience allows students to observe firsthand the causes, processes, and consequences of erosion, leading to improved comprehension and greater empathy toward environmental challenges.

The study demonstrates that classroom instruction, while important, is often insufficient for developing practical understanding and environmental stewardship. Field-based learning reinforces theoretical knowledge, promotes environmental sensitivity, and motivates learners to take responsibility for sustainable practices within their communities. Furthermore, the field trip acted as a bridge between abstract classroom learning and tangible real-world experience. This synergy between theory and practice makes experiential learning indispensable in addressing complex environmental issues like gully erosion.

Therefore, the integration of field-based learning into environmental education curricula is not merely beneficial but essential, particularly in regions like Nigeria that are acutely vulnerable to ecological degradation such as gully erosion.

Recommendation

In view of the findings and conclusions of this study, the following recommendations are made:

1. For Educational Institutions: Universities and secondary schools, especially in erosion-prone areas, should institutionalize and regularly integrate field trips into their environmental education and geography curricula. This should be a core component of the syllabus rather than an optional extra.

2. For University Administration and Policymakers: The National Universities Commission (NUC) and other educational regulatory bodies should develop and enforce policies that mandate and provide funding for experiential learning activities, including field trips, within relevant academic programs.

3. For Teacher Training: Teacher training programs, both pre-service and in-service, should be given to teachers and environmental educators on how to design, organize, and evaluate field-based learning experiences that align with course objectives and promote active student participation.

4. Collaboration with Environmental Agencies: Educational institutions should collaborate with government agencies such as the Nigerian Erosion and Watershed Management Project (NEWMAP), the Federal Ministry of Environment, and local NGOs to provide students with professional exposure and community-based learning opportunities.

Suggestions for Further Studies

To deepen understanding of the role of experiential learning in environmental education, future researchers should consider:

1. Conducting longitudinal studies to examine the long-term retention of knowledge the persistence of positive attitudes gained from field trip experiences over a period of several months or years.

2. A comparative study could be carried out across different academic levels (e.g., secondary, undergraduate, postgraduate) or regions prone to

environmental degradation to identify potential variations in the impact of field trips.

3. Investigating the effect of other forms of experiential learning (such as simulations, service-learning, or community projects) on students' environmental behavior.

4. Exploring the influence of gender, socio-economic background, or prior exposure to environmental issues on students' learning outcomes from field trips.

Contribution to Knowledge

This study has made the following distinct contributions to the body of knowledge:

1. It provides empirical evidence that simple field trips significantly improve students' environmental knowledge and attitudes.

2. It highlights the effectiveness of experiential learning as a pedagogical approach in fostering environmental awareness and behavioral change.

3. The study reinforces and contextualizes established educational theories, such as Kolb's Experiential Learning Theory, demonstrating their practical applicability in addressing pressing local environmental challenges..

4. It supports the global educational agenda for sustainability by demonstrating practical ways to integrate experiential learning into environmental and safety education programs.

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APPENDIX
UNIVERSITY OF BENIN, BENIN CITY
FACULTY OF EDUCATION ,
DEPARTMENT OF HEALTH SAFETY AND ENVIRONMENTAL EDUCATION

QUESTIONNAIRE ON THE IMPACT OF SIMPLE FIELD TRIP ON KNOWLEDGE AND ATTITUDE OF STUDENTS TOWARDS GULLY EROSION

Dear Respondents,

My name is David Johnmark Oseke, I am a 400 level student working on a research. This research is designed to assess the impact of simple field trip on students knowledge and attitude towards gully erosion. The sole purpose of this research project is academic, and it will be kept private. As such, you are obliged to answer the following questions in a courteous and sincere manner.

Thank you for your co-operation

Instruction, please tick as appropriate

SECTION A: Demographic Data

Please tick [ ] or fill in as appropriate.

Gender: Male ( ) Female ( )

Religion: Christianity () Islam () Others ()

Age: less than 20 years () 20-25 years () Above 25 years ()

Level: 100 ( ) 200 ( ) 300 ( )

Course Area: Health

Education () Environmental

Education ()

SECTION B: Knowledge About Gully Erosion

Instruction: Tick () the correct response.

1. Do you know what gully erosion is?

   a. Yes () b. No () c. Not sure ()

2. Which of the following is a major cause of gully erosion?

   a. Deforestation ()

   b. Road construction ()

   c. Both A and B ()

3. What can be used to prevent gully erosion?

   a. Tree planting ()

   b. Dumping waste in gullies ()

   c. Doing nothing ()

4. Where can gully erosion commonly be found?

   a. In desert areas ()

   b. In arid and semi-arid regions ()

   c. In poorly drained urban areas ()

5. Gully erosion affects the environment by

   a. Improving farmland ()

   b. Causing land degradation ()

   c. Building infrastructure ()

6. Gully erosion is best described as

   a. Surface runoff creating small rills ()

   b. Advanced soil erosion forming deep channels ()

   c. Flooding of farmland ()

7. Which of the following human activities can accelerate gully erosion?

   a. Bush burning ()

   b. Sand mining ()

   c. All of the above ()

8. One major environmental consequence of gully erosion is

   a. Increased vegetation ()

   b. Destruction of roads and property ()

   c. Creation of tourist sites ()

9. Gully erosion can be controlled using

   a. Contour farming ()

   b. Dumping refuse ()

   c. Ignoring the gully ()

10. The most effective long-term solution to gully erosion is

   a. Public awareness and environmental management

   b. Closing off erosion-prone areas ()

   c. Abandoning farmlands ()

SECTION C: Attitude Towards Gully Erosion

SA= Strongly Agree

A= Agree

D=

Disagree

SD= Strongly Disagree

s/n	Item	SA	A	D	SD
1	Everyone should be concerned about gully erosion in their community.				
2	I feel motivated to participate in preventing gully erosion.				
3	Gully erosion is not a serious environmental problem.(R)				
4	Field trips help students develop positive attitudes about erosion.				
5	I am willing to educate others on how to prevent gully erosion				
6	I believe more environmental education is needed to address erosion				
7	Seeing a gully erosion site in person made me care more about it				
8	I will likely share what I learned during the field trip with others.				
9	Preventing gully erosion is only the job of the government.(R)				
10	I am more likely to engage in eco-friendly behaviors after the trip.				