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Risky Learning Spaces: The Impact of Environmental Hazards on Teaching and Learning in Rural Eastern Cape Secondary Schools, South Africa

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Abstract

The South African Constitution enshrines the right of every individual to an environment that is not harmful to their health or well-being. This right ensures learners and educators operate within safe, secure, and health-promoting school environments. Despite this legal guarantee, many rural secondary schools in the Eastern Cape, South Africa, continue to face significant environmental hazards and safety-related challenges. Hence, this paper explores how these risks impact the quality of teaching and learning in such settings. Adopting a qualitative research design grounded in an interpretivist paradigm, data were gathered from four principals, four teachers, and eight learners selected through purposive sampling across four rural schools. Semi-structured interviews were conducted, and data were thematically analysed using NVivo version 10. The findings highlight widespread issues such as violence, deteriorating infrastructure, and the absence of adequate safety measures, factors that vary in severity but collectively undermine educational effectiveness. These hazards not only disrupt pedagogical processes but also violate the fundamental rights of learners and educators. The study advocates for the adoption of a zero-tolerance policy toward school-based risks and calls for strengthened collaboration between schools and local communities to cultivate safer, more supportive learning environments.

Keywords

Environmental hazards, Rural education, School safety, Eastern Cape, Zero-tolerance policy

INTRODUCTION

In South Africa (SA), the Bill of Rights (South African Constitution, 1996) is a cornerstone of democracy, it enshrines the rights that all people have in the country. These rights include and are not limited to freedom from all forms of violence, environmental safety, and social security of every person. However, teachers and learners, more especially in the rural schools, are exposed to risks that negatively affect teaching and learning. The exposure to risky learning spaces, ultimately, impacts negatively on the longer-term developmental routes of learners. To ensure that learners learn in a safe environment, the Department of Basic Education (DBE, 2019), SA, published the National Safe Schools Framework (NSSF) to assist schools understand safety and security risks, and how these affect the lives of everyone within the schooling environment. Violence in and around school environments has become a pressing concern, impacting the safety, well-being, and academic development of learners worldwide.

Research highlights that these risks often manifest in specific high-risk zones such as school toilets and during commutes to and from school (Burton & Leoschut, 2018). These environments expose learners to physical harm, psychological trauma, and an atmosphere of fear that impairs their ability to engage effectively in education.

Internationally, research has shown that inadequate physical school infrastructure affects academic achievement. According to Bhunia, Shit and Duary (2012), the development of education depends on many factors, including the safety to a school. Safety is the process of being free from any form of threat and danger which could be injurious to human body. Security is the process of ensuring that safety is gained and maintained. This implies that without security, safety is not guaranteed. As noted by Ilodigwe and Nwakoby (2021); Iloka (2021); Nwakoby (2023), safety is assured when there are adequate security measures put in place to guide insecurity.

School safety is widely assumed to influence academic achievement (Cuesta, 2016; Etefa, 2019; Mokhtarmanesh & Ghomeishi, 2019; Murillo & Román, 2011). Cuesta (2016) found evidence that adequate school facilities such as toilets, laboratories and water drinking points increase learner enrolment and learning. Safety is the act of staying free from hazardous environment for healthful living. This must be achieved using various security measures. In the school environment with various physical school facilities there is need to ensure safety of the school for teachers, learners and staff.

In the United States, the implementation of physical features such as metal detectors, locked doors, fences, and security cameras in and around the school is regarded as a mechanism used to increase physical infrastructure security. Perumean Chaney and Sutton (2018), in their study conducted in the United States of America (USA), discovered that the number of visible security measures employed in school were associated with a decrease in student reports of feeling safe. In addition, Ronoh (2018), who conducted a study in Kenya, reported that fencing and surveillance of the school environment are of paramount importance to enhance schools' safety needs and standards. It is assumed that such security measures may, in turn, improve learners' academic achievement when both teachers and learners feel safe and secure at school (White, Gina & Coetzee, 2015). On the other hand, Perumean-Chaney and Sutton (2013) found that metal detectors and the use of at least two physical security measures may have a serious unintended consequence on learners' perceptions of safety, i.e., learners feeling less safe. Ismail, Hamzah, Makhtar, Daud, Khidzir, Hassan and Mansor (2017) report a high-level risk exposure among Malaysian learners and teachers in schools, contributing to increased accidents on school grounds. Surprisingly, Malaysia is ranked among the top-performing countries in mathematics and science globally (Mullis, Martin, Foy & Hooper, 2016).

In South Africa, Rodríguez, Rebar, & Fowler-Finn, (2013) report unintentional and intentional injuries due to school infrastructure hazards and the level of risk to which learners are exposed. They discovered that learners are subjected to risks and this is contrary to the Constitution which emphasizes that every learner has the right to receive education in an environment that is safe, secure, and conducive to learning. Complementing this is Section 24, which guarantees everyone the right to an environment that is not harmful to their health or well-being. However, despite these constitutional provisions, many learners, and educators in rural South African schools, particularly in the Eastern Cape Province, are exposed to unsafe, under-resourced, and hazardous learning environments.

Rural schools in South Africa face disproportionate infrastructural and environmental challenges compared to their urban counterparts. These include dilapidated classrooms, lack of water and sanitation, poor security, and vulnerability to both natural and human-made hazards (Spaull & Kotze, 2022). In many cases, schools in these areas are located far from basic public services and are poorly maintained, making them unsafe spaces for teaching and learning. According to the Department of Basic Education (DBE, 2022), more than 60% of rural schools in provinces like the Eastern Cape continue to operate with inadequate infrastructure and a lack of basic safety protocols. Furthermore, the prevalence of violence, both within and surrounding school premises, further compromises the psychological and physical well-being of learners and teachers (Nxumalo, 2021). Bullying, gang activity, and vandalism are common, contributing to absenteeism, low academic performance, and a decline in teacher morale (Maringe & Moletsane, 2023). In this context, environmental hazards encompass both physical threats (such as unsafe buildings or poor sanitation) and social risks (including violence and lack of supervision), all of which interact to erode the quality of education.

In the Eastern Cape, particularly within the OR Tambo District Municipality, the compounded effects of poverty, underfunding, and administrative inefficiencies exacerbate the vulnerability of rural schools. Several reports and academic studies have pointed to the alarming state of school infrastructure in this region, identifying it as one of the most educationally disadvantaged areas in the country (Amnesty International, 2020; Reddy, Mohohlwane, & Isdale, 2022). These conditions present significant barriers to achieving equitable educational outcomes and directly undermine South Africa's commitments under the Sustainable Development Goals (SDGs), particularly Goal 4, which advocates for inclusive and quality education for all.

This paper therefore seeks to explore the impact of environmental hazards on teaching and learning in rural secondary schools within the OR Tambo District, Eastern Cape, South Africa. Through the voices of principals, teachers, and learners, the article interrogates the lived realities of those who navigate these unsafe spaces daily and proposes strategic responses for building safer and more enabling learning environments. These environmental challenges create adverse conditions that hinder learners' academic performance and educators' teaching efficacy. The OR Tambo District, a predominantly rural region, epitomises these challenges.

Despite policy efforts like the Norms and Standards for School Infrastructure (DBE, 2013), implementation remains inconsistent, further exacerbating inequalities in education delivery. In spite of the constitutional guarantee of the right to a safe and healthy learning environment, many rural secondary schools in South Africa, particularly in the Eastern Cape, continue to operate under hazardous and insecure conditions. These schools face chronic infrastructural deficits such as collapsing classrooms, unsafe sanitation, and inadequate fencing as well as pervasive safety threats including violence, theft, and bullying. The environmental hazards not only compromise the health and psychological well-being of

learners and teachers but also disrupt teaching and learning processes, thereby hindering academic achievement and school retention.

Reports by the Department of Basic Education (DBE, 2022) and various human rights organisations (Amnesty International, 2020) have consistently highlighted the dire state of rural schools in the OR Tambo District, yet there remains a lack of in-depth, context-specific research that captures the lived experiences of those most affected. Without such evidence, policy interventions risk being generic, poorly targeted, or ineffectively implemented. This paper, therefore, seeks to address this gap by examining how environmental hazards impact teaching and learning in rural secondary schools, and by exploring how schools and communities respond to these challenges.

The paper is guided by the following key research questions:

1. What are the environmental hazards in rural secondary schools within the OR Tambo District?
2. How do these hazards impact the teaching and learning experiences of educators and learners?
3. What coping strategies or support mechanisms are employed by schools and communities to mitigate these risks?

LITERATURE REVIEW

The quality of the learning environment plays a critical role in shaping educational outcomes. Environmental hazards, both physical and psychosocial, are increasingly recognized as significant barriers to effective teaching and learning in under-resourced school contexts, particularly in rural areas. Numerous studies have highlighted that when school environments are unsafe, under-maintained, or violent, they severely compromise learners' academic performance and educators' professional efficacy (Spaull & Kotze, 2022; Nxumalo, 2021). Previous studies confirm that environmental conditions in schools such as infrastructure quality, safety, and sanitation significantly impact learning outcomes (Spaull, 2019; Maringe & Moletsane, 2023).

In South Africa, rural schools often face underinvestment, leading to unsafe buildings, broken toilets, and lack of fencing (Amnesty International, 2020). Learners in such contexts often report lower attendance, reduced concentration, and a diminished sense of motivation (Bantwini, 2017). Furthermore, educators in the rural schools often experience high stress due to poor working conditions and safety concerns, which affects the consistency and quality of instruction (Maringe & Moletsane, 2023). Environmental conditions in schools are globally recognised as crucial determinants of educational quality and learner outcomes. The World Health Organization (WHO, 2018) emphasises that poor infrastructure, exposure to violence, and environmental hazards in schools contribute to physical injuries, psychological distress, and reduced academic achievement. In developed nations, such as the United States and the United Kingdom, studies have linked inadequate ventilation, poor lighting, overcrowded classrooms, and safety risks to lower student engagement and teacher effectiveness (Earthman, 2004; Barrett et al., 2015). Barrett et al., (2015) found that environmental factors account for up to 16% of variations in student academic progress in primary schools.

In sub-Saharan Africa, the challenges are often more acute due to underfunded public education systems, rural underdevelopment, and poor implementation of policies. Research by the Global Education Monitoring Report (UNESCO, 2020) shows that schools in rural Africa frequently lack electricity, clean water, safe toilets, and perimeter security. These factors not only disrupt teaching and learning but also discourage school attendance, particularly for female students who often face additional vulnerabilities.

In Kenya, a study by Abagi and Odipo (1997) showed that learners in rural schools with broken desks, leaky roofs, and limited classroom space had significantly lower achievement levels than their urban peers. Similarly, in Nigeria, Owoeye and Yara (2011) found a direct relationship between poor school infrastructure and reduced academic performance in public secondary schools. The study stressed that environmental degradation such as poor sanitation, overcrowding, and dilapidated buildings hinders concentration and results in high dropout rates.

Within the South African context, Amnesty International (2020) described the situation in many rural schools as a national emergency, citing structural collapse risks, lack of basic sanitation, and absence of fencing as key threats. According to Spaull (2019), these environmental hazards exacerbate inequality by disproportionately affecting learners from low-income and rural households. Moreover, rural educators face frequent safety threats such as burglary, vandalism, and learner aggression, leading to teacher absenteeism and burnout (Maringe & Moletsane, 2023).

Furthermore, studies have shown that these environmental conditions have psychosocial effects on learners. Blaustein and Kinniburgh (2010) argue that chronic exposure to unsafe school environments increases the risk of trauma-related disorders and affects emotional regulation, concentration, and resilience in learners. Teachers working under such stressful conditions often experience "professional fatigue", reducing the quality and quantity of instruction (Naong, 2011).

Despite the pressing nature of these issues, effective interventions are rare and inconsistent. While South Africa has introduced the Norms and Standards for School Infrastructure (DBE, 2013), implementation is slow, and rural provinces like the Eastern Cape remain significantly under-resourced. Community involvement and localised safety partnerships have emerged as stop-gap solutions, but these often lack sustainability due to poor coordination and funding (Sayed & Novelli, 2016).

Environmental Hazards in Education

Environmental hazards in school settings refer to physical, infrastructural, or social conditions that endanger the health, safety, and psychological well-being of learners and teachers. These may include unsafe buildings, lack of water and

sanitation, exposure to extreme weather conditions, and threats of violence or crime (Amnesty International, 2020). In South African rural schools, such hazards are not exceptional but systemic. For example, over 3,000 schools still use pit latrines as their only form of sanitation, and many have crumbling classrooms with leaking roofs or broken windows (DBE, 2022).

Beyond infrastructure, schools in rural Eastern Cape also contend with external environmental threats such as flooding, inaccessibility due to poor roads, and seasonal weather patterns that disrupt schooling. These risks are exacerbated by socio-economic disadvantages and administrative neglect (Reddy et al., 2022). According to research by Mabaso and Themane (2021), these environmental hazards have been linked to increased learner absenteeism, drop-out rates, and teacher burnout.

In rural South African schools, environmental hazards are often a product of inadequate infrastructure, poor maintenance, and insufficient government oversight. Schools in the Eastern Cape, for example, frequently operate with dilapidated classrooms, crumbling walls, leaking roofs, and pit latrines that pose health risks (Amnesty International, 2020; DBE, 2022). These conditions create both physical and psychological barriers to learning. Research by Reddy et al. (2022) indicates that learners in poorly maintained environments demonstrate lower academic achievement and engagement compared to those in better-resourced settings.

Moreover, the lack of basic amenities such as running water, electricity, and safe sanitation facilities undermines the dignity and health of learners, particularly girls (Nxumalo, 2021). These infrastructural deficits not only reflect broader socioeconomic inequalities but also perpetuate them by limiting rural learners' opportunities to succeed academically and professionally (Spaull, 2019).

Violence in and around schools is another prominent risk factor affecting teaching and learning. Incidents of bullying, corporal punishment, sexual harassment, and gangsterism are reported frequently in rural areas, where limited security measures and social support systems make schools particularly vulnerable (Burton & Leoschut, 2019; Mncube & Harber, 2013). Such environments generate fear and anxiety among both learners and educators, reducing concentration and instructional time (Maringe & Moletsane, 2023). Studies also suggest that educators working in high-risk environments report lower job satisfaction and are more likely to experience burnout (Phakathi, 2020).

Safety and Security Challenges

The safety and security of learners and educators are essential for the provision of quality education. However, rural schools in South Africa often lack fencing, security personnel, and functional gates, leaving them vulnerable to external criminal elements, vandalism, and gang activity (Maringe & Moletsane, 2023). Inside the school, bullying and peer violence are prevalent, creating a culture of fear and anxiety that affects learners' ability to concentrate and participate in class (Nxumalo, 2021).

The presence of violence both direct (physical attacks, theft) and indirect (threats, intimidation) undermines the social fabric of the school and leads to what is termed a toxic learning environment (Khumalo & Muthukrishna, 2020). In such environments, learners often disengage from the schooling process, while teachers may feel disempowered and unsupported. As a result, both academic performance and learner well-being suffer.

Impact on Teaching and Learning

The compounded effects of poor infrastructure and insecurity directly impact teaching and learning processes. Teachers working under stressful, unsafe, and resource-poor conditions often report reduced job satisfaction, low morale, and increased absenteeism (Spaull & Kotze, 2022). Learners, on the other hand, face concentration difficulties, emotional distress, and in some cases, trauma, all of which hinder cognitive development and academic achievement (Nxumalo, 2021). Maringe and Moletsane (2023) emphasize that a conducive learning environment is not merely about physical structures but includes emotional and psychological safety, teacher support, and community involvement. When these are absent, the school becomes a site of risk rather than development.

Policy and Community Response

While South Africa has policies such as the National School Safety Framework and Minimum Norms and Standards for School Infrastructure (DBE, 2013), implementation remains inconsistent, particularly in rural and remote areas. Research by Reddy et al. (2022) found that rural schools are often sidelined in infrastructure upgrades due to logistical and political constraints. However, there is growing evidence that community involvement can mitigate some of these challenges. Strong school-community partnerships have been shown to enhance accountability, improve school safety, and increase local investment in education (Mabaso & Themane, 2021). This aligns with calls for a whole-school approach to safety that integrates learners, parents, teachers, and local stakeholders. The learning environment is a crucial determinant of academic success, teacher performance, and learner well-being.

A significant body of research highlights the relationship between safe, well-resourced school environments and positive educational outcomes (Motala & Dieltiens, 2020; UNESCO, 2021). In contrast, unsafe or hazardous school conditions are consistently associated with poor learner performance, teacher absenteeism, and high dropout rates, particularly in rural and under-resourced contexts (Spaull & Kotze, 2022; Maringe & Moletsane, 2023). While South Africa has established a range of policies aimed at improving school safety and infrastructure such as the Minimum Norms and Standards for School Infrastructure (2013), implementation remains uneven, particularly in rural provinces (DBE, 2022).

In many cases, these policies are undermined by budgetary constraints, poor planning, and limited community involvement (Modisaotsile, 2012). Research by Chikoko and Khanare (2012) emphasizes the importance of inclusive school governance and the role of community partnerships in fostering safer school environments. Schools that actively engage parents, traditional leaders, and local government structures tend to report fewer safety incidents and higher learner retention.

The intersection of rurality and poverty compounds educational challenges in the Eastern Cape. Learners often walk long distances to school, which expose them to additional safety risks and contribute to lateness and fatigue (Hlalele, 2014). Rural schools also struggle to attract and retain qualified educators, which further diminishes educational quality (Maringe, 2017). As noted by Spaull and Kotze (2022), addressing rural educational inequality requires more than infrastructural improvements, it demands systemic transformation, including stronger accountability frameworks, teacher support, and community-based safety interventions.

The reviewed literature underscores the multifaceted nature of environmental hazards in rural schooling contexts, linking poor infrastructure, violence, and policy failures to diminished teaching and learning outcomes. While efforts have been made to improve school conditions, rural schools in provinces like the Eastern Cape continue to face acute challenges that demand urgent and coordinated responses. This paper contributes to the discourse by focusing on the lived experiences of stakeholders in rural schools, offering grounded insights into the impact of these hazards and proposing context-specific solutions.

This paper is anchored in Walberg's Theory of Educational Productivity, which posits that student learning is influenced by a combination of psychological, instructional, and environmental factors (Walberg, 1981). The model integrates insights from both behavioural and ecological psychology to emphasize how multiple variables interact to affect educational outcomes. It highlights the importance of the learning environment including physical infrastructure, safety, and school climate as a key determinant of learner performance and teacher effectiveness.

Walberg identified nine factors critical to student learning: student ability, motivation, age, quality of instruction, quantity of instruction, home environment, peer group, classroom climate, and the physical environment. Of these, classroom climate and the physical environment are directly relevant to this paper, as they represent the environmental conditions that influence both cognitive and affective dimensions of learning (Fraser, 2012).

Applying Walberg's framework to the rural Eastern Cape context allows for an analysis of how environmental hazards such as unsafe buildings, lack of sanitation, and exposure to violence negatively affect both the quantity (e.g., time-on-task) and quality (e.g., concentration, engagement) of instructional delivery. In environments where learners feel unsafe or uncomfortable, their cognitive engagement diminishes, and learning productivity declines (Moos, 2003). Similarly, teachers working under unsafe or demoralizing conditions may struggle to maintain consistent instructional quality, further impeding learner achievement (Spaull & Kotze, 2022).

By using this theory, the paper provides a structured lens through which to interpret how environmental risks translate into measurable educational outcomes. It also offers a framework for evaluating the extent to which school and community level interventions can mitigate these environmental threats and enhance learning productivity.

MATERIALS AND METHODS

Research Design

This study adopted a qualitative research design, grounded in an interpretivist paradigm, to explore the lived experiences and perceptions of teachers, learners, and school leaders regarding environmental hazards in rural secondary schools. The qualitative approach enabled an in-depth understanding of the subjective realities and contextual factors shaping teaching and learning in unsafe school environments (Creswell & Poth, 2018). The interpretivist stance was particularly relevant, as it recognizes the importance of meaning-making in specific social and cultural settings (Lincoln, Lynham & Guba, 2018).

Research Setting

The study was conducted in the OR Tambo District Municipality of the Eastern Cape Province, South Africa. This district was purposively selected due to its predominantly rural character, historical underdevelopment, and continued reports of infrastructural backlogs and safety concerns in public schools (DBE, 2022; Amnesty International, 2020). Schools in this region are often affected by poverty, insufficient service delivery, and limited access to educational resources, making it an appropriate setting for examining the study's core issues.

Sampling Strategy

Purposive sampling was employed to select participants who could provide rich, relevant, and diverse perspectives on the impact of environmental hazards in rural schooling contexts (Patton, 2015). The sample comprised 16 participants from four rural secondary schools:

- 4 School Principals (1 per school)
- 4 Teachers (1 per school)
- 8 Learners (2 per school; balanced by gender and grade level)

These participants were selected based on their direct experiences within the school environment and their ability to articulate challenges related to safety, infrastructure, and learning conditions.

Data Collection

Semi-structured interviews were the primary data collection tool, allowing for flexibility while ensuring that all key research themes were covered. Interview guides were developed for each participant group (principals, teachers, and learners), focusing on issues such as school infrastructure, safety incidents, psychological impacts, and academic performance.

All interviews were conducted in either English or isiXhosa, depending on participant preference, and lasted approximately 45–60 minutes. With consent, interviews were audio-recorded and later transcribed verbatim for analysis.

Data Analysis

Thematic analysis was used to identify and interpret patterns within the data. Following Braun and Clarke's (2019) six-phase framework, the transcripts were read multiple times for familiarization, initial codes were generated, and themes were developed iteratively. NVivo version 10 software was used to assist in organizing and coding the data, ensuring systematic analysis and traceability of themes.

Ethical Considerations

Ethical clearance was obtained from the relevant university ethics committee. Permissions were also secured from the Eastern Cape Department of Education and the respective school principals. Participants were fully briefed about the study's purpose, their voluntary participation, and their right to withdraw at any time. Informed consent (and assent for learners under 18) was obtained prior to participation. Confidentiality was maintained by anonymizing participant identities and school names in all publications and data handling processes.

RESULTS AND DISCUSSIONS

The study identified four key themes illustrating how environmental hazards and safety-related risks shape teaching and learning experiences in rural Eastern Cape secondary schools. These themes reflect interlinked structural, social, academic, and psychological dimensions of school environments.

Infrastructural Hazards

Participants consistently highlighted the deteriorating state of school infrastructure, including leaking roofs, broken windows, unstable classroom walls, and unsafe or non-functional toilets. In some cases, learners reported attending classes in overcrowded or temporary structures. Such infrastructural deficiencies created unsafe learning spaces and disrupted the ability of teachers to manage lessons effectively.

One teacher stated: When it rains, we must stop the lesson because water comes in. Learners move to one corner, and sometimes they go home early.

These findings align with international studies demonstrating that physical learning environments significantly influence learner outcomes and teacher performance. Barrett et al. (2015) argue that environmental factors such as lighting, ventilation, and building stability directly contribute to cognitive engagement and academic progress. In the African context, Owoeye and Yara (2011) reported that inadequate school facilities in Nigerian rural schools led to lower academic achievement because learners struggled to focus under physically uncomfortable or unsafe conditions. Similarly, Amnesty International (2020) noted that many schools in South Africa still operate without basic infrastructure, describing these conditions as a violation of children's rights.

One principal noted, we lose time moving learners out of dangerous blocks when it rains. We don't feel safe.

Therefore, the infrastructural hazards identified in this study not only pose immediate physical risks but also perpetuate systemic educational inequality, particularly disadvantaging learners in rural and under-resourced areas.

Social Risks and In-School Violence

Participants also reported exposure to social risks such as bullying, fights among learners, vandalism, and, in some instances, community intrusion onto school premises due to lack of fencing. Teachers expressed frustration and fear, noting that persistent violence undermined their authority and created a climate of insecurity.

Blaustein and Kinniburgh (2010) assert that unsafe social environments activate anxiety and threat responses, reducing learners' capacity for concentration and memory retention. In South Africa, Naong (2011) found that continued exposure to school violence erodes both learner confidence and teacher morale, leading to absenteeism and burnout. Maringe and Moletsane (2023) further argue that violence in schools is intertwined with structural poverty and community social instability, challenges that are prevalent in the Eastern Cape.

The social risks observed in this study therefore indicate that school safety is not merely a disciplinary matter, but a broader socio-community issue requiring integrated interventions.

Disruptions to Teaching and Learning

Teachers reported frequent interruptions to learning schedules due to infrastructural damage, security breaches, and learner behavioural incidents. Lessons were sometimes shortened or relocated, while teachers struggled to maintain instructional continuity in overcrowded or unsafe spaces.

Research consistently demonstrates that disrupted learning environments hinder academic performance. Earthman (2004) emphasizes that where learning conditions are unstable or unpredictable, instructional quality decreases and learner outcomes decline. UNESCO (2020) similarly notes that stability and safety are core prerequisites for meaningful learning, particularly in disadvantaged contexts.

The disruptions documented in this study thus reinforce how hazardous school environments undermine curriculum delivery, contributing to persistent learning gaps in rural education systems.

Psychological Effects on Learners and Staff

Participants described emotional distress linked to schooling conditions, including fear, stress, embarrassment (particularly due to unsafe toilets), and a reduced sense of belonging. Teachers reported anxiety and emotional exhaustion from working under stressful and unsafe conditions.

These findings align with trauma-informed education research, which highlights how unsafe environments impair emotional regulation and cognitive functioning (Blaustein & Kinniburgh, 2010). Spaul (2019) also notes that emotional well-being is a critical but neglected dimension of educational quality in South Africa. When learners do not feel safe, their readiness to learn declines; similarly, when teachers feel overwhelmed or threatened, their instructional capacities weaken.

Thus, psychological well-being must be recognized as a central component of educational development and not merely an auxiliary concern.

Overall, themes reveal that environmental hazards in rural schools create cumulative negative effects: unsafe buildings and social instability reduce teaching time, undermine emotional well-being, and ultimately weaken academic performance. These findings strongly support Walberg's Theory of Educational Productivity, which identifies the learning environment as a core determinant of educational outcomes.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed to mitigate environmental hazards and improve teaching and learning conditions in rural secondary schools within the Eastern Cape:

Strengthen Infrastructure Development in Rural Schools

The Department of Basic Education, in collaboration with provincial and municipal authorities, must prioritise the upgrading of school infrastructure in rural areas. This includes:

- Renovating classrooms and school buildings to meet safety standards.
- Providing adequate sanitation facilities, especially for female learners.
- Ensuring access to clean water, electricity, and secure fencing.

Targeted infrastructure funding must be ring-fenced to prevent delays and mismanagement, with community oversight mechanisms in place.

Implement Zero-Tolerance Policy on School-Based Violence and Insecurity

All schools should adopt and enforce a zero-tolerance policy on bullying, sexual harassment, vandalism, and drug-related activities. This should include:

- Strengthened disciplinary codes.
- Visible security personnel during school hours.
- Installation of basic security systems (e.g., gates, alarms, CCTV where feasible).

Furthermore, educators and learners should receive training on reporting procedures and awareness campaigns to promote a culture of safety.

School Community Partnerships for Safety and Monitoring

Local community structures including traditional leaders, parents, community policing forums, and NGO must be mobilised to support school safety initiatives. Recommendations include:

- Establishing School Safety Committees involving community members.
- Hosting regular safety audits and community forums.
- Encouraging community-led initiatives such as school watch programmes and neighbourhood patrols.

Such partnerships can improve accountability and responsiveness to school-based risks.

Enhance Psychosocial Support Services

The Department of Education should deploy qualified school-based support teams or itinerant psychologists to provide counselling and mental health support to learners and teachers affected by trauma and stress. Specific measures include:

- Providing training to teachers on trauma-informed pedagogy.
- Incorporating psychosocial education into the Life Orientation curriculum.
- Creating safe spaces within schools for learners to access emotional support.

This is critical to addressing the long-term psychological impact of unsafe learning environments.

Evidence-Based Policy and Monitoring

Ongoing research and monitoring should be institutionalised to inform policy on rural school environments. A centralised data system should track:

- Incidences of violence or infrastructure failure.
- Learner and teacher absenteeism linked to environmental conditions.
- Progress in infrastructure delivery and school safety compliance.

Such data will support evidence-based planning and ensure that resource allocation is equitable and impact-driven.

These recommendations, if implemented in a coordinated and well-resourced manner, can transform risky learning environments into productive, secure, and equitable educational spaces fulfilling both constitutional obligations and educational development goals.

CONCLUSIONS

The findings reveal a deeply interconnected relationship between environmental hazards and educational outcomes in rural Eastern Cape secondary schools. Dilapidated infrastructure, safety concerns, and their psychological impact significantly impede the effective delivery and reception of education. While localized efforts to mitigate these issues are evident, they are not a substitute for systemic intervention.

The findings of this paper not only confirm the adverse impact of environmental hazards on teaching and learning in rural schools, but also mirror broader trends identified in both international and African research. Consistent with Walberg's Theory of Educational Productivity, the hazardous environments in the schools studied undermine both the quantity and quality of instructional time, learner motivation, and academic success.

When interpreted through Walberg's theory, it becomes clear that both physical conditions and school climate are not peripheral concerns but central determinants of learning productivity. The current state of many rural schools actively infringes on learners' constitutional rights and undermines broader educational equity goals. This paper set out to examine how environmental hazards and safety-related risks affect teaching and learning in rural secondary schools within the OR Tambo District of the Eastern Cape. Drawing from interviews with principals, teachers, and learners, the findings reveal that inadequate infrastructure, pervasive insecurity, and psychological distress are significant barriers to effective education. These conditions not only violate learners' and educators' constitutional rights to a safe environment but also directly undermine the core elements of learning productivity as outlined in Walberg's theoretical framework.

Despite the efforts made by some schools and communities to create safer spaces through informal partnerships and internal initiatives, these responses remain insufficient without systemic, government-led support. Unsafe learning environments contribute to absenteeism, poor academic performance, and disengagement—perpetuating cycles of poverty and educational inequality in rural areas.

To address these challenges, the paper recommends urgent policy attention to infrastructure development, the enforcement of zero-tolerance policies on violence, the strengthening of school–community partnerships, and the expansion of psychosocial support services. If South Africa is to meet its goals of equity and quality in education, particularly for historically marginalised rural learners, then addressing the environmental risks in schools must become a national priority. Ultimately, the transformation of these risky learning spaces into safe, nurturing environments is not only a matter of educational reform, but also a matter of human rights and social justice.

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