



DATA ETHICS AND EXAMINATION INTEGRITY: LEVERAGING GOVERNMENT AND INSTITUTIONAL INTERVENTIONS TO CURB MALPRACTICE IN WASSCE IN SIERRA LEONE

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Abstract:

Examination malpractice remains one of the most significant threats to the credibility, fairness and reliability of educational assessment system in Sierra Leone, particularly within the West African Senior School Certificate Examination (WASSCE). This study examines the role of data ethics, as well as government and institutional interventions, in promoting examination integrity and reducing malpractice in the administration of WASSCE. A mixed-methods research design was employed, integrating quantitative survey data collected from students, supervisors, invigilators, officials of the West African Examinations Council (WAEC), representatives of the Ministry of Basic and Senior Secondary Education (MBSSE) and personnel from the Anti-Corruption Commission (ACC) with qualitative data obtained through interviews with key stakeholders. Multi-stage sampling techniques were used to select participants from the five administrative regions of Sierra Leone. Quantitative data were analyzed using descriptive and inferential statistical techniques while qualitative data were examined through thematic analysis. The findings revealed that the most common forms of examination malpractice include impersonation, collusion, leakage of examination materials, the use of mobile phones, other electronic devices and the introduction of unauthorized materials into examination halls. The study further found out that interventions such as biometric registration, stricter sanctions, public awareness, sensitization campaigns and strengthened collaboration among WAEC, MBSSE and the ACC have contributed to reducing examination malpractice. Nevertheless, persistent challenges including inadequate funding, corruption, weak enforcement mechanisms, overcrowded examination centers and insufficient training of examination personnel,

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continue to undermine these efforts. The study also established that the integration of key data ethics, principles, particularly transparency, accountability, fairness, confidentiality and responsible data governance can significantly enhance examination integrity and strengthen public confidence in WASSCE. The study concludes that sustainable examination integrity requires a comprehensive approach that combines ethical data governance, effective institutional coordination, technological innovation, and consistent policy implementation. It recommends strengthening data protection systems, improving examination security measures, enhancing stakeholder accountability, investing in continuous professional development for examination officials and promoting ethical awareness among all participants in the examination process. This study contributes to the growing body of knowledge on data ethics in educational assessment and provides practical policy recommendations for enhancing the credibility and integrity of public examinations in Sierra Leone.

Keywords: data ethics; examination integrity; examination malpractice; WASSCE; WAEC; government interventions; institutional interventions; educational assessment; accountability; transparency; Sierra Leone

1. Introduction

Examinations are the most widely recognized system of assessing learners' knowledge, skills, and competencies at all levels of education. They serve not only as a measure for individual achievement but also as a benchmark for national educational quality and a determinant of opportunities for higher learning and employment. In Sierra Leone, the West African Senior School Certificate Examination (WASSCE) organized by the West African Examinations Council (WAEC) is particularly important because it determines admission into universities, professional institutions and other avenues of advancement. Despite its significance, the credibility of WASSCE has been increasingly undermined by the widespread occurrence of examination malpractice.

Examination malpractice refers to all forms of irregularities committed before, during, or after examinations to obtain unfair advantage. These include collusion, impersonation, leakage of examination papers, copying, smuggling of foreign materials into examination halls, and most recently, the use of digital technologies such as mobile phones and social media platforms to circulate answers. The phenomenon is not unique to Sierra Leone, but its prevalence in the country has reached levels that compromise the integrity of the entire educational system. This has serious implications for national development, as students who succeed through dishonest practices may lack the competencies required in higher education and the labor market. The need to restore credibility to examinations has therefore prompted urgent discussions around examination integrity and data ethics. Examination integrity emphasizes honesty, fairness, accountability, and transparency in all assessment processes, while data ethics stresses the responsible use, storage, and dissemination of sensitive information such as

examination questions, candidate data, and performance outcomes. The integration of these two dimensions provide a powerful framework for addressing malpractice, particularly when supported by effective government and institutional interventions.

The world is on a digital path; there has been a paradigm shift from analogue to digital, and this has turned the world into a global village. The mechanism that is driving this development is research. The role of research is very apt in ensuring that society moves in an upward direction. There are many issues in research ethics. It is ethics that provides the norms that must be done well, no matter the challenges (Obowu-Adutchay and Ukwuije, 2018). A conventional look at ethics in research suggests that the prescribed ethics are far from being realized.

The value and effectiveness of any educational system depends largely on its ability to achieve its stated goals. Among the key instruments for achieving these goals is the examination process which remains central to teaching, learning and certification in educational institutions worldwide. Examinations serve as the most efficient means of impartially testing and evaluating the knowledge and skills students acquire during their schooling. Consequently, any action that undermines the credibility of examinations poses a serious threat to both the dependability of results and the validity of certification (Nwadiani, 2005).

Examination malpractice violates the principles of fairness and equal opportunity, thereby eroding the credibility of educational assessment. The West African Senior School Certificate Examination (WASSCE), a critical milestone for students in Sierra Leone and other member countries, has consistently faced challenges from malpractice. For example, in the 2019 WASSCE, records indicate 224,711 cases of malpractice, representing 11.26% of total candidates. This alarming figure underscores the urgent need to investigate the root cause of examination misconduct and its far-reaching implications.

The WASSCE is designed to provide a fair and comprehensive evaluation of students' knowledge and competencies, enabling progression to higher education and professional pathways. However, the prevalence of malpractice compromises this objective and undermines the credibility of the certification. Examining the nature, extent and drivers of malpractice is therefore critical to safeguarding examination integrity and ensuring that educational qualifications retain both national and international recognition.

This study explores the different forms of malpractice recorded during the 2019 WASSCE, categorizing them according to WAEC guidelines and regulations. It provides insights into the number of students involved, the specific forms of violations, and their relative prevalence. Beyond statistical analysis, the study considers the broader implications of malpractice for educational systems, student development and societal trust in qualifications.

2. Examination Malpractice

Examination malpractice refers to any fraudulent, dishonest, or deceptive practice intended to gain an unfair advantage in an examination. Olanipekun (2013) and Omemu (2015) define it as the use of dishonest methods to achieve success, while Ojonemi, Enejoh, and Olalunmbi (2013) extend the definition to include any misconduct occurring before, during, or after an examination with the intention of benefitting oneself or others unfairly. Malpractice thus transcends the physical examination hall, encompassing systemic, institutional, and societal dimensions.

The anomalies recorded in the 2019 WASSCE illustrate the widespread nature of such misconduct. WAEC categorizes these infractions into various forms, including impersonation, collusion, smuggling of unauthorized materials and the use of electronic devices among others. Each form of malpractice not only compromises the fairness of the examination but also diminishes public confidence in the integrity of educational credentials.

By systematically examining the prevalence, causes and consequences of malpractice, this study aims to provide policy makers, educational practitioners and WAEC with actionable insights. Ultimately, the findings will contribute to strengthening examination integrity, embedding data ethics principles such as accountability, transparency and fairness into assessment processes and ensuring that WASSCE results remain credible and trustworthy.

Education remains the foundation of national development with examinations serving as a vital tool for assessing the knowledge, skills and competencies of learners. In Sierra Leone, the West African Senior School Certificate Examination (WASSCE) is a high-stakes examination conducted by the West African Examinations Council (WAEC). However, incidences of examination malpractice have become increasingly rampant, threatening the credibility of the examination system and eroding public trust. This study focuses on the role of government and institutional interventions through the lens of data ethics in safeguarding examination integrity in Sierra Leone.

2.1 Background of the Study

Examination malpractice is a long-standing challenge across West Africa. In Sierra Leone, malpractice in WASSCE manifests in several forms, including impersonation, collusion, leakage of examination questions, and the use of electronic devices for cheating. Statistics from WAEC Sierra Leone (2017–2021) reveals that malpractice cases increased steadily, reaching 5.12% of candidates in 2021. Government agencies such as the Ministry of Basic and Senior Secondary Education (MBSSE) and the Anti-Corruption Commission (ACC), alongside WAEC, have introduced several interventions, such as biometric registration, secure transportation of papers, public sensitization campaigns, blacklisting of schools, and enforcement of penalties. Nevertheless, challenges remain with enforcement, inadequate funding and limited integration of ethical data principles.

2.2 Current Status and Structure

WAEC Sierra Leone currently operates examination management in collaboration with schools, government ministries and law enforcement bodies. Interventions include biometric verification, deployment of supervisors and invigilators, sensitization programs, punitive measures and improved logistical processes. However, challenges such as poor remuneration of exam officials, overcrowded examination halls and inconsistencies in the searching of candidates remain critical bottlenecks.

In the literature, several factors that fuel the occurrence of examination malpractice have been discussed. For instance, Dughah (2019) and Oko and Adie (2016) believed that the market value and reward placed on certificates promote tendencies for cheating. Ahmed (2018) also stated that low remuneration received by examination officials (teachers, invigilators, and supervisors) is a reason why they engage in examination malpractice. To these examination officials, examination malpractice is a quick way to make money to meet their growing needs. Ahmed further argued that the high parental expectation for good performance is a reason why students engage in examination malpractice. To Oyibe and Nnamani (2016), examination anxiety, lack of facilities, especially in schools, stiff competition among students and schools, poor preparation by candidates and poor invigilation of the examinations are the major causes of examination malpractices. Similarly, examination anxiety affects candidates' state of mind in ways such as poor recall, high apprehension of failure irrespective of the state of preparedness and serious psychological distress among other symptoms (Dai-Kosi & Boakye, 2010). Consequently, this stressful situation manifests strong feelings of hopelessness and failure in students, leading to various forms of examination malpractice.

Regarding forms of examination malpractice, Amadi and Opuiyo (2018) identified the following as common forms of malpractice committed by candidates: taking notes to the examination hall; writing on their palms and laps with tiny prints; smuggling pre-answered examination questions into examination halls and copying from other candidates, among others. They reiterated that examination stakeholders, including officials of examination bodies, school administrators, proprietors, teachers, non-teaching staff, students, parents, communities and security agents, also collaborate to perpetuate other forms of examination malpractice. Chinuka and Ndudzo (2018) revealed that some parents desperately buy question papers for their children while others even buy grades and certificates. Also, there is evidence that information and communication technology (ICT) is increasingly used to perpetrate examination malpractice in various forms, which is known as electronic cheating (Ahmed, 2018). WAEC (2019), in a comparison study on the trend of examination malpractice between WASSCE for School and Private Candidates examinations from 2007 to 2017, observed that examination malpractice was more prevalent in WASSCE (PC) than WASSCE (SC) up till 2015. The study also found that the use of phones and other private digital assistant were identified as the driving factors for the emerging examination malpractice, which is commonly tagged as e-cheating.

Electronic-cheating involves the use of cell phones, programmable calculators, pagers, personal digital assistants (PDAs), computers, and the internet, among others, to gain an unfair advantage in an examination. Notably, electronic cheating has escalated the issue of examination malpractice to a whole new level, as it possesses the capability of bypassing the attempts made by examination officials to curb this menace (King & Case, 2017).

WAEC (2023) Rules and Regulations for dealing with cases of irregularity in the Council's Examinations categorized the forms of examination malpractice as follows:

- 1) Bringing foreign materials into the examination hall. Examples are textbooks; prepared materials/cribs, blank pieces of paper or any other printed material.
- 2) Irregular activities inside or outside the examination hall. Examples are stealing, substituting worked scripts during or after the examination and sending information to candidates in the examination hall
- 3) Collusion. Examples are passing notes, receiving or giving assistance to other candidates
- 4) Impersonation, that is hiring another person to write an examination on your behalf.
- 5) Leakage of question papers traceable to the printing press or other persons associated with the custody of the papers.
- 6) Mass cheating, that is large-scale organised cheating involving school authorities, candidates and examination officials.
- 7) Insult/Assault on Supervisors/Invigilators/Inspectors by candidates. Examples are beating up examination officials, damaging/destruction of examination officials' property and having offensive weapons and chemicals at the examination venue.
- 8) Refusal to write names and/or index numbers on answer booklets/scripts and question papers, using a pencil to write as against expressed instructions not to do so.
- 9) Bringing electronic devices like mobile phones into the examination hall by both invigilators and candidates.
- 10) Candidates involve in multiple registrations for the same diet of examination and school authorities registering unqualified candidates for school candidates' examinations or fabricating their continuous assessment scores.
- 11) Candidates destroying the evidence of an offence he/she has committed.
- 12) Posting or receiving of live questions /answers on the internet via social media;
- 13) Refusal to grant timely access into the school premise/examination hall.
- 14) Examination officials found with any materials relevant to examination being conducted or school authority offering bribe to examination official.

The West African Senior School Certificate Examination (WASSCE) is an international examination conducted by WAEC for both school and private candidates. This examination has been bedevilled with incidences of examination malpractice over the years and thus, has been a great worry to WAEC, the government, schools, parents, and the public (Dughah, 2019). The statistics of examination malpractice cases recorded

in WASSCE from 2017 to 2021 for candidates who sat the examination in the five-member countries are presented in Table 1.

2.3 Problem Statement

Despite various government and institutional efforts aimed at curbing examination malpractice in Sierra Leone for the West African Senior School Certificate Examination, the problem remains alarmingly persistent. Measures such as policy reforms, teacher training, increased supervision, and punitive actions have been introduced over the years. However, these interventions have had limited and inconsistent impact, often because they lack a foundation in data ethics and responsible data governance.

Many interventions fail to address how data is collected, stored, analyzed, or used, especially in monitoring exam environments, tracking student behaviors, or identifying patterns of malpractice. In some cases, data about incidents of cheating or systemic weaknesses are either incomplete, manipulated, or not transparently handled. This undermines the integrity of interventions, allowing malpractice to evolve in more sophisticated ways.

Furthermore, institutions often neglect the ethical dimensions of surveillance technologies, student privacy and accountability, leading to unintended consequences such as discrimination, data misuse, or lack of trust in the system. Without a strong data ethics framework, these interventions may be perceived as oppressive or arbitrary, reducing cooperation from key stakeholders such as students, teachers and school administrators.

As a result, public confidence in the credibility of WASSCE results has declined. Employers and tertiary institutions increasingly question the authenticity of certificates, and students who succeed honestly are unfairly grouped with those who benefit from malpractice. This situation poses a serious threat to the integrity of Sierra Leone's education system, as it compromises meritocracy and weakens national development by producing graduates who may not possess the competencies their certifications suggest. In summary, the persistent problem of examination malpractice in WASSCE is not merely a failure of enforcement or policy design, but a reflection of deeper ethical and institutional gaps—especially in the use of data. Addressing this problem requires not just stricter rules or more surveillance, but the integration of ethical data practices into all government and institutional interventions.

2.4 Research Questions, Hypotheses, and Objectives

2.4.1 Research Questions

- 1) What are the common forms and trends of malpractice in WASSCE in Sierra Leone?
- 2) What government and institutional interventions exist to curb malpractice and how effective are they?
- 3) How can data ethics principles enhance examination integrity?
- 4) What challenges hinder the effective implementation of interventions?

5) What reforms are needed to strengthen examination integrity?

2.4.2 Objectives

- 1) To identify the forms and prevalence of malpractice in WASSCE.
- 2) To assess the effectiveness of interventions by WAEC, government, and institutions.
- 3) To explore how data ethics principles can be applied to strengthen examination credibility.
- 4) To identify challenges to effective implementation.
- 5) To recommend strategies for policy and institutional reforms.

2.5 Rationale/Significance of the Study

This study is significant as it will restore public confidence in the WASSCE, inform government policy reforms, strengthen WAEC's examination management systems, and contribute to scholarly discussions on data ethics and educational integrity in Sierra Leone.

2.6 Research Gap

While several studies have explored examination malpractice in Sierra Leone, limited attention has been given to the integration of data ethics principles in interventions. This study fills this gap by aligning government and institutional interventions with ethical principles of transparency, accountability and fairness.

2.7 Delimitation of the Study

The study is delimited to WASSCE in Sierra Leone between 2019 and 2024. Other national examinations such as BECE and NPSE are excluded. The focus will be on selected WAEC officials, supervisors, invigilators, school administrators, students, MBSSE and ACC representatives.

2.8 Operational Definitions and Abbreviations

WAEC – West African Examinations Council

WASSCE – West African Senior School Certificate Examination

ACC – Anti-Corruption Commission

MBSSE – Ministry of Basic and Senior Secondary Education

Examination Integrity – The degree to which examinations are conducted credibly, fairly, and reliably.

Data Ethics – Principles governing responsible use of data including transparency, fairness, accountability and confidentiality.

2.9 Summary and Introduction to Remaining Chapters

This chapter presented the background, problem statement, objectives and significance of the study. Chapter Two reviews literature on examination malpractice, government

interventions, and data ethics, while Chapter Three outlines the methodology. Chapter Four presents' findings and Chapter Five offers conclusions and recommendations.

3. Literature Review: Data Ethics and Examination Integrity in WASSCE in Sierra Leone

3.1 The Systemic and Behavioral Nature of Malpractice

Examination malpractice in Sierra Leone has increasingly become a focal point of scholarly research due to its persistent threat to the credibility of public assessments, particularly the West African Senior School Certificate Examination (WASSCE). Far from being isolated incidents of dishonesty, empirical studies consistently show that malpractice is a deeply embedded systemic challenge, woven into the country's broader socio-educational and institutional fabric. George and George (2023) conceptualize this issue as a pervasive crisis that erodes the foundations of the education system and actively stymies national development. Their research demonstrates that malpractice in Sierra Leone is fueled by a toxic mix of inadequate student preparation, intense societal pressure for academic credentials, entrenched institutional corruption and a breakdown of core ethical values within schools. These findings indicate that cheating is simultaneously a behavioral flaw and a structural failure, meaning any successful intervention must address both individual motives and institutional weaknesses.

Further insight comes from Tony Patrick George and Farma (2024), who conducted a large-scale descriptive survey of 297 teachers across Sierra Leone's Western Rural District. Their findings reveal that malpractice is not confined to a specific sector or demographic; it thrives in both public and private secondary schools and cuts across gender lines, signaling that the behavior has become normalized.

3.2 Introduction: The Purpose and Promise of Assessment

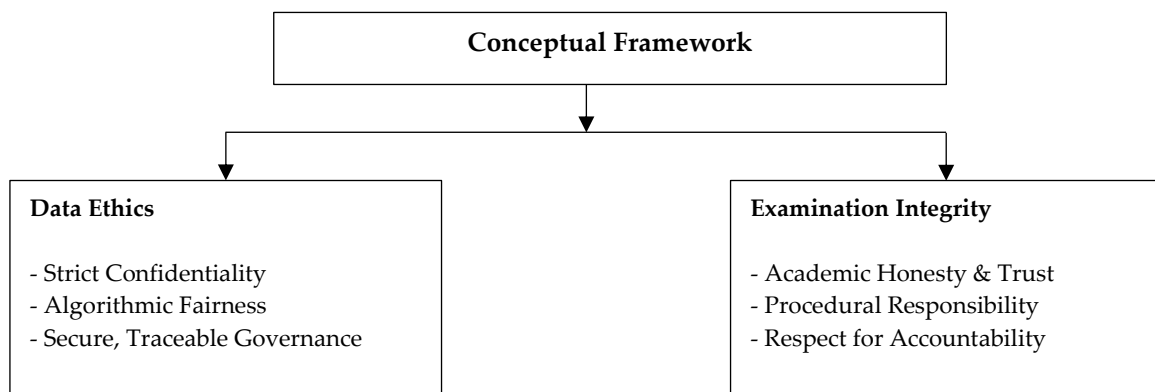
Education is the foundational engine through which young individuals discover their talents, acquire essential life skills, and learn to integrate productively into society (Akaranga & Ongong, 2013). A robust educational system acts as the primary catalyst for a nation's technological, social, and infrastructural advancement (Hilton & Pellegrino, 2013). However, while the reach of education is broad, its moral component remains its most critical attribute; within this architecture, examinations serve as the structural focal point across all academic tiers (Manoharam, as cited in Kolawole, 2019).

To be certified as educated, an individual must successfully navigate a standardized assessment administered by a competent, reputable agency. The primary objective of any evaluation framework is to provide reliable, untainted data regarding student competence to facilitate sound institutional decision-making. As Duze (2011) notes, examinations are diagnostic tools designed to measure skill acquisition, intellectual depth, and knowledge retention following an instructional period. The feedback generated from these assessments is vital, helping educators refine curricula and plan future pedagogy.

When the machinery of evaluation is compromised, the integrity of the feedback loop collapses. Educational assessment ceases to be an objective gauge of merit, leading to distorted institutional decisions that inflict deep harm on students, teachers, employers, and the broader socioeconomic landscape. As Zakka (2014) highlights, regardless of how innovative, noble, or well-funded a school curriculum might be, without accurate, uncompromised learning evaluations, all educational investments are ultimately rendered futile.

3.3 Conceptual Framework: The Dual Pillars of Integrity and Data Ethics

To diagnose and address these structural vulnerabilities, this study establishes a conceptual framework built upon two interlocking pillars: Data Ethics and Examination Integrity.



3.4 Data Ethics

Data ethics provides the regulatory and moral architecture necessary for handling sensitive educational information. In modern assessment systems, an examination is fundamentally a multi-stage data pipeline—encompassing the generation of test items, the digital or physical tracking of candidates scripts, the processing, storage, and publication of final scores. Data ethics mandates strict confidentiality, structural fairness, and responsible custody throughout this life cycle. It demands that candidates data remains secured, that grading algorithms or marking processes remain free from bias, and that any institutional handling of anomalies (such as results withheld) follows a transparent, auditable process.

3.5 Examination Integrity

While data ethics secures the information systems, examination integrity establishes the moral expectations for the human actors involved. Rooted in the fundamental values of honesty, trust, fairness, responsibility and mutual respect, examination integrity creates a culture where academic performance reflects genuine capability.

When these two pillars converge, they provide a powerful framework for evaluating counter-malpractice measures. Interventions are assessed not simply by their technical capacity for surveillance, but by their ethical soundness and practical equity.

3.6 Theoretical Foundations

To understand why individuals cheat and why institutions fail to stop them, this study anchors its analysis in three prominent academic traditions:

3.6.1 Social Contract Theory

Social Contract Theory suggests that an educational community functions on an implied moral agreement. Students, teachers, invigilators and administrators are bound by a reciprocal obligation to uphold honesty and fairness. When an individual engages in malpractice or when an institution tolerates systemic leakage, this contract is broken. The breakdown devalues the collective worth of the credentials earned by honest actors and fractures public trust in the meritocracy.

3.6.2 Institutional Theory

Institutional Theory shifts the focus from individual morality to systemic design. It posits that behavior within an environment is directly shaped by organizational rules, cultural norms and the perceived legitimacy of enforcement mechanisms. In the context of public examinations, if an institution's regulations are viewed as weak, arbitrary, or inconsistently enforced, a normalized culture of non-compliance takes root. Conversely, clear rules backed by reliable enforcement creates an environment where compliance becomes the default baseline behavior.

3.7 Normative Ethical Theories (Deontology and Utilitarianism)

This study applies a classic ethical dichotomy to evaluate the motives behind examination fraud:

- **Deontological Ethics:** This perspective argues that actions are inherently right or wrong, independent of their outcomes. From a deontological standpoint, examination malpractice is an absolute violation of moral duty. Actors have an uncompromising obligation to protect the security of assessment materials, regardless of external pressures.
- **Utilitarian Ethics:** This framework evaluates the morality of an action based on its net consequences. In a compromised educational ecosystem, actors often employ a corrupted utilitarian logic: a student cheats to secure a job, a parent buys a leaked paper to secure their child's future, or a teacher assists a class to preserve the school's reputation. However, a true utilitarian calculation reveals that the collective damage of malpractice—the erosion of public trust, the deflation of national standards and the graduation of unskilled professionals—massively outweighs any short-term individual gains.

While previous West African scholarship has tracked statistical trends in cheating, few studies have integrated data ethics into their structural analysis. This literature review bridges that gap by synthesizing policy, institutional governance and ethical data management.

3.8 Global and Regional Contexts of Malpractice

Examination malpractice is a well-documented global challenge, affecting educational systems across varying levels of socioeconomic development. Maheshwari (2011) conceptualizes examination malpractice in India as a structural manifestation of social corruption, wherein systemic vices are rewarded and academic virtues are marginalized. This systemic breakdown is illustrated by Gbenda (2008), who describes environments during Indian state examinations where invigilators and security personnel watch helplessly as external actors hurl answer sheets attached to rocks through school windows. Similarly, Khan *et al.* (2019) observed that the institutional credibility of the Pakistani educational system faces perpetual public scrutiny with domestic media regularly broadcasting footage of students openly cheating during high-stakes board examinations.

This challenge is not unique to developing nations. In a comprehensive 12-year longitudinal study (2002–2015) in the United States, McCabe and the International Center for Academic Integrity (ICAI) (2020) surveyed over 70,000 students. A striking 95% of respondents admitted to engaging in some form of academic dishonesty, ranging from illicit collaboration on assignments to direct cheating on examinations and plagiarism. In the United Kingdom, the Office of Qualifications and Examinations Regulation (Ofqual, 2019) documented persistent enforcement challenges, issuing 2,735 official penalties to students for academic misconduct in 2018, maintaining a high volume of infractions identical to the previous year.

In the African educational ecosystem, the rapid growth of examination malpractice has reached an alarming rate, demanding immediate, coordinated intervention (Onuka & Durowoju, 2010). Chileshe (2010) characterizes malpractice in Zambia as a systemic epidemic, noting that it has expanded so rapidly that virtually no public examination occurs without documented irregularities. In Kenya, Wasanga and Muiruri (2002) describe the national examination system as "fiercely competitive." This hyper-competitive, credential-driven environment pressures candidates, teachers and school administrators to adopt unethical shortcuts to artificially inflate institutional scores.

3.9 Empirical Cross-National Data (WAEC Sub-Region)

Data from across the West African sub-region confirms a widespread, systemic challenge. According to comparative institutional reports from national examination committees over the historical baseline period of 2011–2013, the trajectory of malpractice varies significantly by country:

Table 1: Data on the trajectory of Malpractice report from national examination committees At WAEC members countries from 2011-2013

Country	2011 Malpractice Rate	2012 Malpractice Rate	2013 Malpractice Rate	Regional Trajectory Trend
The Gambia	0.15%	0.20%	0.37%	Distinct upward trend in candidatures penalized
Liberia	—	—	0.26% (2014 baseline)	Highly concentrated around urban centers
Nigeria	11.40%	14.60%	16.43%	Severe, compounding escalation in Nov/Dec WASSCE
Ghana	1,286 cases	1,019 cases	790 cases	Apparent downward trend in raw case detection

Source: Compiled from the Gambia, Liberia, Nigeria, and Ghana Examination Committees, 2014.

While Ghana's raw metrics indicated a brief downward trend in detected cases during this period, recent empirical work by Adamu, Cobbinah, and Alhassan (2021) warns that student engagement in academic misconduct within Ghanaian Senior High Schools has evolved. The behavior has become more sophisticated, covert and hazardous to the long-term health of the national education system.

3.10 Sociocultural and Institutional Drivers of Malpractice

Scholars trace the root causes of examination malpractice to a combination of sociocultural pressures and institutional failures.

3.11 The Over-Emphasis on Credentials

A primary driver is the disproportionate value society places on paper qualifications over actual knowledge and practical skills (Onuka, Durowoju, and Ajibola, 2011). Modern societies have largely neglected the intrinsic value of learning, focusing instead on certificates as the sole currency for professional and academic advancement. This credential-obsessed culture fosters deep student apathy toward studying, turning examinations into high-stakes hurdles where passing by any means necessary overrides actual learning (Adegoke, 2016; Onuka *et al.*, 2011).

3.12 Domestic and Parental Factors

Parental pressure for high marks frequently drives academic dishonesty. Rather than supporting authentic learning, some parents actively finance misconduct. Ojo (2011) highlights that strong, supportive domestic relationships can be leveraged unethically, showing that mothers, in particular, can easily influence their children's actions. Parents frequently provide the capital to hire academic mercenaries, purchase leaked examination papers, or pay the premium registration fees required to enroll their children in notorious "special centers" where institutional cheating is pre-arranged.

3.13 Institutional Failures and Teacher Abetment

This external corruption is met by a failure of institutional accountability on the ground. Teachers and invigilators often abet cheating due to a mix of low wages, poor motivation and professional laziness (Alutu & Aluede, 2006). Furthermore, school administrations face intense pressure; teachers worry that poor student performance will be viewed as a failure of their pedagogy or a stain on the school's reputation (Aslam, Niazi, & Iqbal, 2021). To protect their jobs and institutional status, educators often step in to assist students during exams, actively generating answers or overlooking obvious cheating.

This problem is compounded by a systemic failure to enforce existing laws. As Muazu (2011) observes, the non-implementation of anti-malpractice decrees and legal frameworks remains a major barrier to deterring fraud. When regulatory bodies fail to consistently apply penalties—such as termination, suspension, demotion, or dismissal for compromised educators and officials—the deterrent effect disappears. Compounding this, inadequate student preparation, widespread social corruption, and exorbitant registration fees charged by exploitative principals create a permissive environment where malpractice thrives unchecked (Adeyemi, 2010; Adeniran, Bakare, & Akinpade, 2020).

3.14 The Sierra Leonean Context: A Regional and Historical Overview

In Sierra Leone, the crisis follows a deeply concerning trajectory. Historical data from the Sierra Leone Examination Committee (SLEC, 2014, 2015) illustrates a sharp increase in recorded infractions:

Local investigative journalism and civil society reports confirm that these trends have severely damaged public trust. Report from outlets like *Night Watch SL* (2019) states that rampant cheating has undermined the West African Examinations Council's (WAEC) institutional credibility. Local consensus indicates that malpractice in Sierra Leone has evolved into a highly coordinated syndicated industry with deep historical roots extending across the pre-civil war, civil war (1991–2002), and post-civil war eras.

This systemic corruption is further evident by reports from the *Awareness Times Newspaper* (2018), which documented a law enforcement raid that arrested 71 individuals at a private residence. The investigation revealed a highly organized scheme where candidates registered for the private WASSCE were camped in a residential home to systematically rewrite their examinations at night using leaked question papers and official answer booklets.

The geographic distribution of malpractice within Sierra Leone is equally uneven. According to WAEC institutional data, regional infraction rates show significant disparities across the country.

Sierra Leone Malpractice Rates by Region (WAEC):

- Eastern Region: 5.65% (Highest Concentration),
- Northern Region: 2.84%,
- Western Area: 1.99%,
- Southern Region: 0.93% (Lowest Concentration).

While the national aggregate percentage of candidates caught in malpractice has fluctuated over recent assessment periods (moving from 3.50%, down to 2.62%, and ticking back up to 2.82%), the nature of the offenses has grown increasingly sophisticated. The SLEC classifies modern examination irregularities into several distinct operational categories

To counter these infractions, examination committees have historically relied on post-facto punitive actions. These include the targeted cancellation of specific subject results, the complete invalidation of a candidate's entire multi-subject exam record and imposing multi-year testing bans on egregious offenders (Gambia Examination Committee *et al.*, 2014; SLEC, 2015).

3.15 Synthesis and Critical Research Gap

A review of global and regional literature establishes that examination malpractice is a complex problem driven by an entanglement of individual anxieties, systemic institutional weaknesses, and a culture that prioritizes credentials over actual competence. Regulatory responses in West Africa, specifically within Sierra Leone, remain heavily reactive, relying almost exclusively on physical surveillance, aggressive invigilation and retrospective penalties like result cancellations.

However, a major gap remains in contemporary research. While existing literature thoroughly documents the sociology and statistics of cheating, it rarely connects data ethics to examination integrity frameworks within Sierra Leone. Current strategies focus heavily on policing the physical examination hall, leaving the digital and administrative lifestyles of assessment data largely unexamined. There is an urgent need for research that evaluates how data security, algorithmic transparency in grading, and institutional accountability can prevent malpractice before it reaches the classroom. Sustainable integrity in Sierra Leone's assessment system requires moving beyond simple deterrence toward an ethical data governance framework that rebuilds trust in public education.

5. Research Methodology

The study adopts a mixed-method research design that combines quantitative and qualitative approaches. The quantitative component uses surveys to capture the prevalence of malpractice and perceptions of interventions among students and teachers. The qualitative component involves interviews with WAEC officials and policy makers to provide deeper insights into institutional and governmental strategies. This combination allows for a more comprehensive analysis of the problem.

5.1 Study Area

Figure 1: Study Area



5.2 Research Design

The study adopted a survey research design. This is because it enables the selection and studying of samples chosen from the population in order to discover the relative incidence, distribution and inter-correlation of sociological and psychological variables (Kerlinger & Lee, 2000)

5.3 Population of the Study

The study population consists of students, teachers, invigilators, WAEC officials and policymakers involved in examination processes across Sierra Leone. A stratified random sampling technique will be used for students and teachers to ensure representation from all five regions of the country, while purposive sampling will be applied to WAEC officials and government stakeholders because of their specialized roles.

5.4 Sample and Sampling Procedure

Multi-stage sampling technique was used to select the sample. The country was stratified into its five administrative regions; the Western Region or Capital City and the other four regions in the province (North, North-West, East and South). From each region two (2) districts were randomly selected. seven (7) schools from each selected district in the provinces and 8 and 11 schools from each district in the Western region were randomly selected to ensure representation. Seven (7) supervisors and ten (10) invigilators and twenty-five (25) students from each school were included in the sample using simple random sampling technique.

All WAEC staff from the rank of EO/AO participated in the study. In addition, four (4) each of MBSSE and ACC officials from each of the regions were interviewed. A total of seventy-five (75) supervisors, one hundred and twenty-five (125) invigilators, three hundred (300) students, twenty (20) MBSSE officers, twenty (20) ACC officials and twenty (20) WAEC staff were sampled, as shown in Table 3.

Table 2: Sample Distribution of Respondents

	Province								Capital city		Total
Regions	North		North West		East		South		Western Area		5
District	2		2		2		2		2		10
School	7	7	7	7	7	7	7	7	8	11	75
Supervisor	7	7	7	7	7	7	7	7	8	11	75
Invigilato	10	10	10	10	10	10	10	10	20	25	125
Students	25	25	25	25	25	25	25	25	40	60	300
MBSSE	2	2	2	2	2	2	2	2	2	2	20
ACC	2	2	2	2	2	2	2	2	2	2	20
WAEC Staff	1		1		1		1		16		20

5.5 The Research Instruments

The research instruments include structured questionnaires for students and teachers, which will use Likert-scale items to measure perceptions of malpractice and interventions, and semi-structured interview guides for WAEC officials and policy makers. Data will also be collected from official WAEC documents, government policies, and media reports.

5.6 The Data Collection Process

The data collection process was done through the administering of questionnaires in selected schools, using Google Forms. The data were downloaded into Excel and later exported to SPSS for more descriptive statistics. Interviews were conducted with institutional stakeholders in schools, MBSS, ACC and WAEC, respectively.

5.7 Data Analysis

Quantitative data will be analyzed using statistical techniques such as t-tests, ANOVA, and chi-square tests and frequency count in SPSS to identify relationship between variables. Qualitative data will be analyzed through thematic or content analysis to capture recurring patterns and insights.

5.7.1 Validity and Reliability

To ensure validity and reliability, the instruments were validated using Cronbach's Alpha to measure internal consistency. Table 3 shows the reliability test conducted during the pilot.

Table 4: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.730	33

Ethical considerations are central to this study. Informed consent was obtained from all participants, confidentiality of responses will be maintained and ethical clearance will be sought from the relevant authorities in Sierra Leone.

5.8 Summary of Chapter

This chapter has outlined the methodology for the study, highlighting the design, population, sampling, instruments, data collection process, analysis techniques and ethical considerations. The next chapter will present the results and findings based on the data collected.

6. Data Analysis and Discussion

This chapter introduces the data analysis and discussion based on the research findings. ITS covers the demographic characteristics of the respondents and addresses key research questions about malpractice in the WASSCE exams in Sierra Leone. It builds on the previous chapters by interpreting the findings in light of the research objectives and questions. It will provide the context for understanding the perspectives and experiences they shared. This includes variables such as age, gender, occupation, level of education, and relationship to the WASSCE examination process in Sierra Leone.

Following the demographic overview, the chapter delves into the core issues surrounding examination malpractice in the West African Senior School Certificate Examination (WASSCE) within the Sierra Leonean context. The data is analyzed thematically to explore the various forms and trends of malpractice reported by respondents. These include commonly known practices such as cheating, impersonation, collusion, and the unauthorized use of technology during examinations. The analysis also identifies emerging patterns and how these practices have evolved over time.

In addition to identifying malpractice trends, the chapter examines the existing interventions by both government bodies and educational institutions aimed at curbing examination malpractice. These include laws, policies, monitoring systems and disciplinary procedures. The effectiveness of these interventions is assessed based on respondents' perceptions and the frequency of malpractice incidents reported.

Another important dimension of the analysis focuses on the role of data ethics in enhancing examination integrity. The principles of fairness, transparency, accountability, and privacy are discussed in relation to how they can be integrated into examination processes and systems to minimize opportunities for malpractice and ensure greater trust in the outcomes.

The chapter further identifies key challenges that hinder the successful implementation of anti-malpractice interventions. These challenges range from

inadequate resources and poor infrastructure to systemic corruption and a lack of stakeholder commitment. Understanding these barriers is essential for proposing practical solutions.

Finally, the discussion highlights the reforms necessary to strengthen examination integrity in Sierra Leone. These recommendations are grounded in the findings of the study and are aimed at creating a more ethical, transparent, and credible assessment environment.

Through this analysis and discussion, Chapter Four provides critical insight into the nature, causes and possible solutions to examination malpractice, contributing significantly to the overall aim of the study.

Research Question One: What Are the Common Forms and Trends of Malpractice in Wassce in Sierra Leone?

Table 4: Common Forms and Trends of Malpractice

S/N	Nature of Irregularity	Interventions
1	Leakage	WAEC and the government have put strict security measures in place to avoid leakage of examination papers before the examination date.
2	Foreknowledge	Keeping of the keys to security bags that are used to convey question papers in the custody of principals.
3	Impersonation	The use of a photo album to verify the identity of candidates has always been used. The use of an attendance marksheet during the examination has always been used. The use of examination officials to monitor the conduct of the examination. The use of CIVAMPEMS device to verify candidates' biometrics identity cards being with them.
4	Collusion	Complying with the WAEC sitting arrangement specification of 4ft by 5ft apart. Enforcement of candidates sitting according to their numbers. Posting multiple supervisors to supervise examinations in multiple classrooms.
5	Bringing of foreign materials into the examination hall	Use of metal detectors to check for phones and other electronic devices. Searching of candidates before the commencement or entering examination halls. Searching of candidates when returning from the restroom during examination.
6	Multiple registrations/ registration of unqualified candidates	Use of biometric device during registration. Duplicate select.
7	Misconduct of examination officials	Invigilators not entering the examination hall with phones.

8	Contravention of instructions to candidates	Formatting of question papers to lay emphasis on key instructions.
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The table outlines various common forms of malpractice in the WASSCE examination in Sierra Leone alongside specific interventions designed to address each issue.

Leakage, which involves the premature release of examination papers, is tackled through strict security measures enforced by WAEC and the government to prevent the distribution of exam materials before the scheduled date. Foreknowledge of exam content is controlled by restricting access to security bags containing the question papers. These bags are kept under the custody of school principals to limit unauthorized access.

Impersonation is where someone other than the registered candidate sits the examination. This is addressed through multiple verification methods which includes the use of photo albums to verify candidate's identity, attendance mark sheets during exams, supervision by examination officials and the deployment of CIVAMPEMS biometric devices to check candidates' identity cards. Collusion among candidates is minimized by ensuring compliance with WAEC's specified seating arrangements, maintaining adequate spacing between candidates, assigning seating based on candidate numbers, and posting multiple supervisors to monitor different classrooms simultaneously.

Bringing foreign materials such as phones or electronic devices into exam halls is deterred by the use of metal detectors, thorough searches conducted both before candidates enter the examination halls and during breaks such as restroom visits. The issue of multiple registrations or registration of unqualified candidates is mitigated by using biometric devices during candidate registration to detect duplicates and improper entries.

Misconduct by exam officials, particularly regarding the use of phones in exam halls, is addressed by enforcing rules that prevent invigilators from bringing phones into examination rooms. Finally, to reduce contraventions of instructions by candidates, question papers are formatted to emphasize key instructions clearly, ensuring candidates are well aware of examination rules.

In summary, the interventions combine heightened security protocols, biometric technology, strict supervision, and clear communication strategies to combat various forms of malpractice occurring during the WASSCE in Sierra Leone.

Table 5: Dangers of Examination Malpractices and Their Form

S/N	Statement	Category	Agree	Disagree
1	Examination malpractice is a serious problem in WASSCE in Sierra Leone.	Student	117(39%)	183(61%)
		Invigilator	53(42.8%)	71(57.3%)
		Supervisor	35(46.7%)	40(53.4%)
		ACC Officer	16(80%)	4(20%)
		WAEC Officer	12(60%)	8(40%)
		MBSSE Officer	13(65%)	7(35%)
2	The use of mobile phones and other electronic devices contributes significantly to	Student	160(53.3%)	140(46.6%)
		Invigilator	60(48.4%)	64(51.6%)
		Supervisor	35(46.6%)	40(53.4%)

	malpractice.	ACC Officer	11(55%)	9(45%)
		WAEC Officer	13(65%)	7(35%)
		MBSSE Officer	17(85%)	3(15%)
3	Weak enforcement of rules contributes to persistent malpractice.	Student	204(68%)	96(32%)
		Invigilator	86(69.3%)	38(30.6%)
		Supervisor	50(66.7%)	25(33.3%)
		ACC Officer	12(60%)	8(40%)
		WAEC Officer	14(70%)	6(30%)
		MBSSE Officer	11(55%)	9(45%)
4	Inadequate funding limits the effectiveness of anti-malpractice interventions.	Student	187(62.3%)	113(37.3%)
		Invigilator	80(64.5%)	44(35.5%)
		Supervisor	42(56%)	33(44%)
		ACC Officer	5(25%)	15(75%)
		WAEC Officer	7(35%)	13(65%)
		MBSSE Officer	12(60%)	8(40%)
5	Corruption among examination officials undermines malpractice prevention.	Student	225(75%)	75(25%)
		Invigilator	87(70.1%)	37(29.8%)
		Supervisor	52(69.3%)	23(30.7%)
		ACC Officer	14(70%)	6(30%)
		WAEC Officer	16(80%)	4(20%)
		MBSSE Officer	13(65%)	7(35%)
6	Overcrowded examination halls make supervision difficult.	Student	190(63.3%)	110(36.6%)
		Invigilator	82(66.2%)	42(33.9%)
		Supervisor	48(64%)	27(36%)
		ACC Officer	10(50%)	10(50%)
		WAEC Officer	15(75%)	5(25%)
		MBSSE Officer	9(45%)	11(55%)
7	Lack of proper training for invigilators and supervisors weakens intervention measures.	Student	209(69.6%)	91(30.3%)
		Invigilator	89(71.8%)	35(28.2%)
		Supervisor	52(69.3%)	23(30.7%)
		ACC Officer	14(70%)	6(30%)
		WAEC Officer	13(65%)	7(35%)
		MBSSE Officer	11(55%)	9(45%)

The data captures the perspectives of six different groups—Students, Invigilators, Supervisors, ACC Officers, WAEC Officers, and MBSSE Officers—regarding examination malpractice in the WASSCE in Sierra Leone. Across all groups, there is a general consensus that examination malpractice is a serious issue, with agreement percentages ranging widely but notably high among ACC Officers (80%), MBSSE Officers (65%), and WAEC Officers (60%). This widespread acknowledgment underscores the perceived gravity of the problem.

When considering the role of mobile phones and other electronic devices in facilitating malpractice, the responses reflect moderate to strong agreement. MBSSE Officers led with the highest agreement at 85%, followed by WAEC Officers and Students, indicating that the use of such devices is largely seen as a significant contributing factor. The perception of weak enforcement of rules is even stronger, as all

groups expressed substantial agreement, particularly Invigilators and WAEC Officers, which suggests that inadequate enforcement allows malpractice to persist.

Regarding funding, there is some divergence. While a majority of Students, Invigilators, and Supervisors believe that inadequate funding limits the effectiveness of anti-malpractice measures, this view is less strongly held by ACC and WAEC Officers, indicating a differing assessment of financial constraints on interventions. Corruption among examination officials is broadly viewed as a serious problem, with the highest agreement from WAEC Officers and Students, revealing an acknowledged ethical challenge that undermines prevention efforts.

Overcrowded examination halls are recognized as a practical obstacle to effective supervision, with the WAEC Officers and Students again showing the strongest consensus. Lastly, the lack of proper training for invigilators and supervisors is seen as a critical weakness, particularly by those groups directly involved in the examination process. Students, Invigilators, and Supervisors overwhelmingly agree that inadequate training impairs the ability to intervene effectively against malpractice.

In summary, the analysis reveals a shared understanding across multiple stakeholders that examination malpractice is a significant issue in Sierra Leone's WASSCE system, influenced by technological misuse, weak enforcement, corruption, logistical challenges, and insufficient training, with some variation in views on funding limitations. These suggest that tackling malpractice requires a coordinated approach addressing both ethical and operational dimensions.

Research Question Two: What Government and Institutional Interventions Exist to Curb Malpractice and How Effective Are They?

Table 6: Measures Addressing Examination Malpractice

S/N	Statements	Category	Agree	Disagree
1	Biometric registration of candidates has helped reduce Impersonation.	Student	205(68.3%)	95(31.7%)
		Invigilator	87(69.3%)	37(29.9%)
		Supervisor	47(62.7%)	28(37.4%)
		ACC Officer	15(75%)	5(25%)
		WAEC Officer	13(65%)	7(35%)
		MBSSE Officer	14(70%)	6(30%)
2	The deployment of supervisors and invigilators is effective in curbing malpractice.	Student	98(32.7%)	202(67.3%)
		Invigilator	39(31.4%)	85(68.5%)
		Supervisor	33(44%)	42(56%)
		ACC Officer	8(40%)	12(60%)
		WAEC Officer	7(35%)	13(65%)
		MBSSE Officer	12(60%)	8(40%)
3	Sensitization campaigns have increased awareness of malpractice consequences.	Student	157(52.2%)	143(47.6%)
		Invigilator	70(56.4%)	54(43.5%)
		Supervisor	43(57.4%)	32(42.6%)
		ACC Officer	16(80%)	4(20%)
		WAEC Officer	15(75%)	5(25%)
		MBSSE Officer	14(70%)	6(30%)

4	Sanctions against schools and candidates involved in malpractice are effectively enforced.	Student	221(73.7%)	79(26.3%)
		Invigilator	88(71%)	36(29%)
		Supervisor	52(69.3%)	23(30.7%)
		ACC Officer	12(60%)	8(40%)
		WAEC Officer	15(75%)	5(25%)
		MBSSE Officer	16(80%)	4(20%)
5	Overall Government and institutional interventions have reduced the prevalence of malpractice.	Student	175(58.4%)	125(41.7%)
		Invigilator	75(60.4%)	49(39.5%)
		Supervisor	45(60%)	30(40%)
		ACC Officer	15(75%)	5(25%)
		WAEC Officer	13(65%)	7(35%)
		MBSSE Officer	17(85%)	3(15%)
6	Holding officials accountable reduce the risk of malpractice.	Student	145(48.3%)	155(51.7%)
		Invigilator	62(50%)	62(50%)
		Supervisor	37(49.3%)	38(50.7%)
		ACC Officer	17(85%)	3(15%)
		WAEC Officer	15(75%)	5(25%)
		MBSSE Officer	16(80%)	4(20%)

The data highlights the perspectives of key stakeholders—including students, invigilators, supervisors, ACC, WAEC, and MBSSE officers—on various measures addressing examination malpractice.

A strong majority across all groups agree that biometric registration has effectively reduced impersonation during exams. Specifically, 68.3% of students, 69.3% of invigilators, 62.7% of supervisors, 75% of ACC officers, 65% of WAEC officers, and 70% of MBSSE officers believe this technology has helped curb malpractice. Disagreement is notably low, showing widespread confidence in biometric systems as a deterrent.

In contrast, most stakeholders are skeptical about the effectiveness of deploying supervisors and invigilators to prevent malpractice. Disagreement rates are high, with 67.3% of students, 68.5% of invigilators, 56% of supervisors, 60% of ACC officers, 65% of WAEC officers, and 40% of MBSSE officers doubting this approach. Agreement ranges from 32.7% to 60%, reflecting mixed but generally doubtful views.

Sensitization campaigns aimed at raising awareness of malpractice consequences receive moderate support. Agreement ranges from 52.2% of students and 56.4% of invigilators to 80% of ACC officers, indicating that awareness efforts are viewed as somewhat effective—especially by enforcement officials.

Sanctions against schools and candidates involved in malpractice are largely seen as well enforced. Agreement rates are strong, especially among students (74%) and officials (60% to 80%), demonstrating confidence that penalties are applied consistently. Disagreement remains below 30% across all groups.

Regarding the overall impact of government and institutional interventions in reducing malpractice, the majority of stakeholders agree, with support ranging from 58.4% of students to 85% of MBSSE officers. However, a significant minority disagrees, indicating that improvements are still needed.

Finally, opinions are divided on the effectiveness of holding officials accountable to reduce malpractice. While 48.3% of students, 50% of invigilators, and 49.3% of supervisors agreed, a significant majority of ACC (85%), WAEC (75%), and MBSSE (80%) officers strongly support accountability. This suggests front line exam participants are less convinced of its impact compared to those responsible for enforcement.

Overall, the findings reveal high confidence in biometric registration and sanction enforcement, mixed views on supervision deployment, official accountability, and moderate support for sensitization campaigns and institutional efforts to combat examination malpractice.

Research Question Three: How Can Data Ethics Principles Enhance Examination Integrity?

Table 7: Ethical Perspectives Regarding Examination Integrity

S/N	Statement	Category	Agree	Disagree
1	Transparency in handling examination materials can improve integrity.	Student	209(69.7%)	91(30.3%)
		Invigilator	89(71.7%)	35(28.2%)
		Supervisor	51(68%)	24(32%)
		ACC Officer	12(60%)	8(40%)
		WAEC Officer	15(75%)	5(25%)
		MBSSE Officer	11(55%)	9(45%)
2	Applying data ethics principles is essential for trustworthy examination processes.	Student	169(56.4%)	131(43.7%)
		Invigilator	62(50%)	62(50%)
		Supervisor	39(52%)	36(48%)
		ACC Officer	8(40%)	12(60%)
		WAEC Officer	11(55%)	9(45%)
		MBSSE Officer	10(50%)	10(50%)
3	Integrating technology guided by principles will reduce malpractice.	Student	194(64.6%)	106(35.3%)
		Invigilator	88(71%)	36(29%)
		Supervisor	53(70.7%)	22(29.3%)
		ACC Officer	5(25%)	15(75%)
		WAEC Officer	6(30%)	14(70%)
		MBSSE Officer	8(40%)	12(60%)
4	Do you believe the use of ethics (fairness, transparency, accountability) can improve examination integrity?	Student	146(48.7%)	154(51.3%)
		Invigilator	62(50%)	62(50%)
		Supervisor	42(56%)	33(44%)
		ACC Officer	12(60%)	8(40%)
		WAEC Officer	14(70%)	6(30%)
		MBSSE Officer	16(80%)	4(20%)

Research question three focuses on the ethical perspectives regarding examination integrity and the application of data ethics principles in WASSCE in Sierra Leone. Various stakeholders, including students, invigilators, supervisors, ACC officers, WAEC officers, and MBSSE officers, were surveyed on their agreement or disagreement with statements related to ethics and examination integrity.

Transparency in handling examination materials received strong agreement across all respondent categories, with most students (69.7%), invigilators (71.7%), supervisors (68%), ACC officers (60%), WAEC officers (75%), and MBSSE officers (55%) believing that transparency improves examination integrity. A smaller proportion across groups disagreed with this statement.

Applying data ethics principles was also considered essential for trustworthy examination processes by a majority of respondents, though with slightly less consensus. About 56.4% of students, 50% of invigilators, and similar proportion of supervisors and other officers agreed, while a sizeable minority disagreed, indicating some divergence on the criticality of data ethics.

The integration of technology guided by ethics principles was believed to reduce malpractice by 64.6% of students, 71% of invigilators, and over 70% of supervisors. However, ACC, WAEC, and MBSSE officers showed more skepticism, with less than half agreeing, reflecting concerns possibly related to implementation challenges.

There was no different opinion on whether the use of ethics—the principles of fairness, transparency, and accountability—can improve examination integrity. Less than half of the students (48.7%) agreed, with supervisors and ACC, WAEC, and MBSSE officers showing varying degrees of agreement, some quite high (up to 80% for MBSSE officers) and others lower, indicating some debate among stakeholders about the impact of ethics on integrity.

In sum, the data shows that stakeholders broadly support the role of transparency and ethical principles in improving examination integrity with some variation in confidence about applying data ethics and technology. These perceptions highlight the importance of clear ethical standards and transparent management in maintaining the credibility of examination processes in Sierra Leone.

7. Summary, Conclusion and Recommendation

7.1 Summary

Examination malpractice in Sierra Leone, especially related to the West African Senior Secondary Certificate Examination (WASSCE), has become a significant issue undermining the integrity of the education system. Forms of malpractice include smuggling foreign materials, bringing mobile phones into exam halls, collusion, impersonation, and bribery involving invigilators and teachers. These practices have been fueled by economic pressures, corruption and weak enforcement mechanisms. Government and institutional interventions such as the establishment of a Presidential Taskforce, coordination with the Anti-Corruption Commission, and sanctions on individuals and schools have been implemented, aiming to restore examination integrity and reduce malpractice rates, which has been increasing over the years.

7.2 Conclusion

Examination malpractice poses a threat to the credibility of the educational system and negatively impacts national development in Sierra Leone. Despite ongoing government efforts through task forces and stricter penalties for perpetrators, malpractice remains a persistent problem due to socio-economic challenges, corruption within examination bodies and inadequate enforcement of regulations. The involvement of multiple stakeholders, including students, teachers, and institutional officials, complicates the issue but also highlights the need for a coordinated, multi-sectoral approach to protect examination integrity.

7.3 Recommendations

- Strengthen enforcement of examination ethics laws and ensure consistent application of penalties on individuals and institutions found guilty of malpractice.
- Enhance collaboration between government institutions like the Ministry of Basic and Senior Secondary Education (MBSSE), the Anti-Corruption Commission, and examination body (WAEC).
- Increase public awareness campaigns about the consequences of examination malpractice and promote a culture of academic integrity among students and educators.
- Improve economic conditions and support for educators to reduce incentives for corruption and malpractice.
- Utilize technology for examination monitoring and secure handling of examination materials to prevent leaks and unauthorized access.
- Implement regular training for teachers and exam supervisors on ethical standards and malpractice prevention.

This synthesized information provides a coherent summary, conclusion and actionable recommendations regarding data ethics and examination integrity interventions to curb WASSCE malpractice in Sierra Leone.

Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Authors

Foday Bassie Turay is an accomplished educationist, statistician and academic leader with extensive experience in teaching, research, educational administration and national statistics. He is currently pursuing a PhD in STEM Education and Entrepreneurship specialist in Mathematics, at Lagos State University, reflecting his strong commitment to advancing innovative, technology-driven, and entrepreneurial approaches to education. He holds a Master's degree in Statistics from Njala University, a Postgraduate Diploma in Education (PGDE) from FBC University of Sierra Leone, and a Bachelor of Science (Honours) in Environmental Science from Njala University. His interdisciplinary

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