POLICY BRIEF

Safeguarding Professional Accountancy Examination Integrity in Ghana's AI Era

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Technical & Research Directorate of Institute of Chartered Accountants, Ghana

EXECUTIVE SUMMARY

Policy Goal: To protect the integrity and credibility of professional accountancy examinations in Ghana by establishing AI-resilient assessment systems that ensure examination results reflect genuine candidate competence.

The Challenge: Large Language Models (ChatGPT, Gemini, Claude) now pass professional accountancy examinations at human-expert levels, rendering conventional security measures obsolete. Without urgent intervention, examination results may no longer reflect authentic candidate competence, undermining professional standards and public trust in chartered accountants.

Key Finding: Experimental study of March 2024 ICAG examinations tested four AI systems against 5,698 human candidates across all three professional levels. Advanced AI models significantly outperformed top human candidates ($p=0.019$), with domain training further enhancing performance ($p=0.039$). All AI systems passed Level 1 courses: Level 2 and 3 performances varied by subject complexity, with highest scores in strategy-oriented papers. Advanced models substantially outperformed basic versions ($p=0.029$), enabling sophisticated potential examination fraud.

Strategic Recommendation:

- **Technology Deployment:** Advanced proctoring systems with AI detection capabilities across all examination levels; secure device-free examination environments.

- **Regulatory Framework:** Updated regulations explicitly prohibiting AI assistance with enforceable graduated sanctions; comprehensive awareness campaigns.

- **Assessment Innovation:** Oral examinations for Level 3 strategic papers to assess real-time professional judgment.

- **Enforcement Mec-hanisms:** Dedicated oversight systems to investigate suspected AI-assisted misconduct and ensure consistent compliance.

Safeguarding Professional Accountancy Examination Integrity in Ghana's AI Era: Detailed Policy Framework

This section provides a comprehensive analysis of emerging threats to the integrity of Ghana's professional accountancy examinations posed by advanced AI systems. Drawing on empirical evidence from ICAG's March 2024 examinations, it identifies vulnerabilities across all qualification levels, highlights AI performance patterns relative to human candidates, and examines the implications for credential credibility and public trust. The framework presents actionable recommendations for AI-resilient assessment systems, including technology deployment, regulatory updates, innovative assessment designs, and enforcement mechanisms. It is intended to guide ICAG, examination administrators, educators, and policymakers in implementing robust safeguards that ensure examination results accurately reflect genuine candidate competence while preparing the profession to responsibly engage with AI technologies.

Policy Goal

Protect the integrity and credibility of professional accountancy examinations in Ghana by ensuring AI-resilient assessment systems while preparing candidates and educators to use AI responsibly in professional practice.

The Challenge

Ghana's professional accountancy examination systems operate under security protocols designed for traditional misconduct detection. These frameworks cannot adequately address sophisticated AI-enabled examination fraud, creating systematic vulnerabilities that threaten credential integrity. Large Language Models such as ChatGPT, Gemini and Claude have achieved the capability to pass professional accountancy examinations at human-expert levels, rendering conventional security measures obsolete. Without urgent intervention, examination results may no longer reflect genuine candidate competence, potentially undermining professional standards, public trust in chartered accountants, and Ghana's reputation in regional and international professional services markets.

Research Evidence

An experimental study using the March 2024 ICAG professional examinations tested four leading AI systems (ChatGPT-3.5, ChatGPT-4, Claude 3, and Google Gemini) against 5,698 human candidates across eight courses spanning all three professional levels. AI-generated responses were transcribed into standard examination booklets and marked blind alongside human scripts to eliminate evaluator bias. The study measured both untrained AI performance and performance after exposure to ICAG textbooks and past examination papers.

Key Findings

AI Significantly Outperforms Top Human Candidates

Untrained AI models achieved examination scores of 79.75% (Claude 3) and 77% (ChatGPT-4), substantially exceeding the top human candidate average of 72.25% ($p=0.019$), indicating potential compromise of current assessment standards.

Domain Training Further Enhances AI Performance

Exposure to ICAG materials resulted in statistically significant performance gains ($p=0.039$), with ChatGPT-4 improving to 80.25% and Claude 3 maintaining 79.88%, demonstrating that candidates with foundational accounting knowledge can leverage AI tools to commit examination fraud and achieve scores beyond their actual competence.

Advance AI Models Demonstrate Superior Capabilities

Advanced AI models substantially outperformed basic versions across all examination levels ($p=0.029$), indicating that well-resourced candidates can leverage premium tools for more sophisticated examination fraud.

AI Exhibits Distinct Performance Patterns

AI excels at theoretical explanations, case study analysis, and ethical reasoning but demonstrates weaknesses in Ghana-specific regulatory frameworks (Chart of Accounts, local taxation), precise financial statement formatting, and jurisdiction-specific compliance requirements.

Examination Security Varies by Level and Subject

All AI systems passed Level 1 courses, indicating complete vulnerability of foundational assessments. Level 2 and 3 performances varied by subject complexity, with highest scores achieved in strategy-oriented and theory-intensive papers, suggesting differential risk across the qualification pathway.

Policy Recommendations

1. Deploy Advanced Proctoring Technology: Implement AI detection capabilities and sophisticated monitoring systems to identify patterns consistent with unauthorized AI assistance during online examinations.

2. Establish Secure Examination Environments: Create mandatory device-free examination zones with signal jamming or controlled connectivity to prevent real-time AI tool access during Paper-Based Examinations.

3. Update Examination Regulations: Explicitly prohibit AI assistance in examination regulations, establishing clear definitions of unauthorized use and implementing graduated sanctions ranging from warnings to qualification disbarment.

4. Launch Comprehensive Awareness Campaigns: Conduct targeted education initiatives for candidates, examiners, and educators on AI-assisted fraud risks, detection methods, and ethical implications for professional integrity.

5. Strengthen Examination Protocols: Enhance invigilation procedures and examination hall security measures to detect and prevent AI-enabled cheating mechanisms.

6. Introduce Oral Examinations for Critical Assessments Implement oral examinations for Level 3 strategic papers to assess real-time professional judgment, reasoning capacity, and authentic competence that AI cannot replicate.

7. Establish Monitoring and Enforcement Systems: Create dedicated oversight mechanisms to investigate suspected AI-assisted misconduct and enforce regulatory sanctions consistently across all examination levels.

Call to Action

[1] ICAG Council must urgently expand existing proctoring systems to all examination levels, update regulations to explicitly prohibit AI assistance with enforceable sanctions, and establish investigation mechanisms before examination integrity is irreversibly compromised across the qualification pathway.

[2] All stakeholders including Council, educators, examiners, and candidates must collectively commit to safeguarding examination integrity through enhanced security measures, regulatory compliance, and ethical vigilance, recognizing that inaction threatens the profession's future credibility and public trust.

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