



EDUWATCH WASSCE 2021 MONITORING

KEY POINTS FROM REPORT

OBJECTIVES

- a. To assess the progress made in strengthening the pre-tertiary external assessment system.
- b. To ascertain the existence of questions leakages in examination questions.
- c. To ascertain incidents of examination malpractices and irregularities at centres
- d. To make recommendations to improve credibility, relevance and accountability in the conduct of pre-tertiary external assessments in the education sector.

METHODOLOGY

- **Sample Size and Sampling:** A sample frame of fifty (50) schools which were examination centres were purposively selected based on our ability to undertake a successful entry and monitoring.
- **Tools:** The mix method of research was adopted where quantitative and qualitative data collection instruments were developed and administered on google forms to collect data from schools and online.
- **Scope:** The scope covered suspected examination malpractices planning activities in schools one month ahead of the first paper and actions of students, teachers, security officers, WAEC supervisors and school heads and their assistants in the period before, during and after examinations.

METHODOLOGY cntd.

Data collection methods

- Fifty (50) undercover data collectors were recruited and trained to collect data through structured school level observation. They included invigilators, teachers, media personnel and security officials. Interviews were conducted with students, teachers, question marketers and other contacts within the school and examination system. Key Informant interviews were also conducted to gain deeper insights on issues and validate findings.
- An online team of twelve (12) data collectors were in addition trained and deployed to purchase, receive and verify the credibility of questions sold on telegram pages while undertaking 24-hour monitoring of eighteen different social media pages where WASSCE 2021 questions were advertised and sold.
- Data was collected from 8th August to 8th October 2021

PAPERS MONITORED BY EDUWATCH

- Integrated Science 1 (Objectives)
- Integrated Science 2 (Essay)
- Integrated Science 3 (Alternative to Practical Work)
- English Language 1 (Objective)
- English Language 2
- English Language 3 (Oral)
- Chemistry 1 (Objective)
- Chemistry 2 (Essay)
- General Mathematics/
Mathematics (Core) 1 (Objectives)
- General Mathematics/
Mathematics (Core) 2 (Essay)

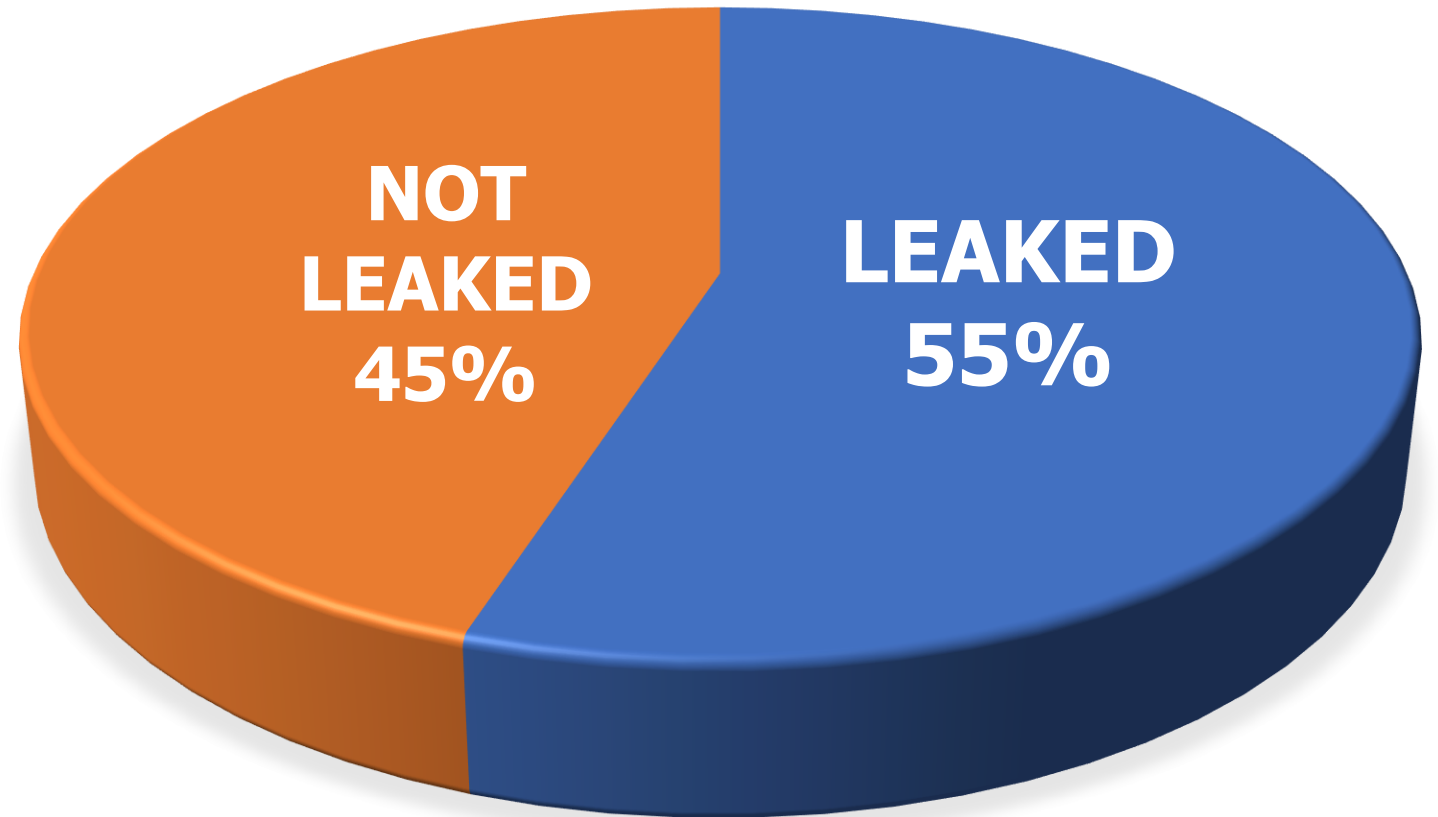
- Further Mathematics/
Mathematics (Elective) 2 (Essay)
- Physics 2 (Essay)
- Government 2 (Essay)
- Financial Accounting 2 (Essay)
- Economics 2 (Essay)
- Christian Religious Studies 2 (Essay)
- Social Studies 2 (Essay)
- Foods and Nutrition 3 (Practical)
- Biology 2 (Essay)
- Biology 3 (Practical) (Alternative A)

HOW DID WE OBTAIN THE QUESTIONS?

- Our Online Monitoring Team joined over thirty (30) free WhatsApp and Telegram Pages to observe proceedings before and during examinations. This included three (3) prominent platforms with acclaimed statuses attained in the questions marketing business since 2013 - Grandmaster's WAEC Link, Hot Stage and Legit WASSCE Telegram Channels, with over 100,000 subscribers on their free pages, while operating a paid page on WhatsApp and Telegram called "VIP Pages", where questions are leaked before or at the midnight/dawn for between GHC 30 and GHC 150.
- Our School Level Monitors intercepted questions from schools being monitored to corroborate online leaks.
- Questions were sold online for students in Ghana and Nigeria.

LEAKED PAPERS

LEAKED	11
NOT LEAKED	9
TOTAL	20



SUMMARY OF LEAKAGES

WASSCE	NABPTEX
1. Foods and Nutrition 3 (Practical)	
2. Further Mathematics/ Mathematics (Elective) 2 (Essay)	
3. English Language 2 (Essay)	
4. Physics 2 (Essay)	
5. Biology 3 (Practical) (Alternative A)	1. English Language 2
6. General Mathematics/ Mathematics (Core) 2 (Essay)	2. Social Studies 2
7. General Mathematics/ Mathematics (Core) 1 (Objectives)	
8. Economics 2 (Essay)	
9. Chemistry 1 (Objective)	
10. Integrated Science 2 (Essay)	
11. Integrated Science 1 (Objectives)	

DETAILS OF LEAKAGES

NO	DATE	SUBJECT PAPER & TIME	LEAKED	FAKE	PLATFORM LEAKED	TIME OF LEAK
1	20/08/21	Foods and Nutrition 3 (Practical) @ 1:00 PM	✓		Grandmaster's WAEC Link Telegram Page	11:08 AM
2	9/09/21	Further Mathematics/ Mathematics (Elective) 2 (Essay) @ 8:30 AM	✓		Hot Stage VIP WhatsApp Platform	11:41 PM on 8 th September
3	13/09/21	English Language 2 (Essay) @ 8:30 AM	✓		"Grandmaster's English VIP" Page	9:48 PM on 12th September
4	15/09/21	Physics 2 (Essay) @ 8:30 AM	✓		"Grandmaster's Physics VIP" Telegram Page	4:53 AM
5	17/09/21	Biology 3 (Practical) (Alternative A) @ 8:30 AM	✓		Faith SHS & 5 schools in Ashanti	10:09 PM on 12 th Sept. & 9:25 PM on 16 th Sept.
6	20/09/21	General Mathematics/ Mathematics (Core) 2 (Essay) @ 8:30 AM	✓		"Grandmaster's Core Mathematics VIP Page"	6:23 AM
7	20/09/21	General Mathematics/ Mathematics (Core) 1 (Objectives) @ 2:00 PM	✓		"WAEC Update" Telegram Page	1:03 PM
8	23/09/21	Economics 2 @ 8:30 AM	✓		Legit WASSCE Platform	7:14 AM
9	28/09/21	Chemistry 1 (Objective) @ 3:00 PM	✓		"WASSCE BECE Updates" Telegram Page	12:55 PM
10	6/10/21	Integrated Science 2 (Essay) @ 8:30 AM	✓		"Correct" WhatsApp Page	11:00 PM on 5 th October
11	6/10/21	Integrated Science 1 (Objectives) @ 10:00 AM	✓		"Legit WASSCE" Telegram Page	8:59 AM
	10/09/21	NABPTEX English Language @ 8:30 AM	✓		"Social Zone" (formerly "Grandmasters WAEC Link")	7:51 AM
	13/09/21	NABPTEX Social Studies @ 9:00 AM	✓		the "WASSCE Dito Dito" Telegram Page	7:09 AM

FAKE LEAKS

NO	DATE	SUBJECT PAPER & TIME	LEAKED	FAKE	PLATFORM LEAKED	TIME OF LEAK
1	1/09/21	English Language 3 (Oral)		✓		
2	10/09/21	Biology 2 (Essay)		✓		
3	2/09/21	Financial Accounting 2 (Essay)		✓		
4	13/09/21	English Language (Objective)		✓		
5	22/09/21	Government 2 (Essay)		✓		
6	28/09/21	Christian Religious Studies 2 (Essay)		✓		
7	28/09/21	Chemistry 2 (Essay)		✓		
8	4/10/21	Social Studies 2 (Essay)		✓		
9	6/10/21	Integrated Science 3 (Alternative to Practical Work)		✓		



@Jerusalem @ELECTIVE MATHS @JERUSALEM

1. If $x^2 - xy - y^2 = 15$, find $\frac{dy}{dx}$ at point $(2, 5)$
2. Given that one of the roots of the equation $(x-3)(x-5) = p$ is 3 times the other, find the value of p
3. Given that $x = \frac{1}{2-\sqrt{3}}$ and $y = \frac{1}{2+\sqrt{3}}$, find the value of $(x^2 + y^2)$
4. Eleven traders seeking hostel accommodation were informed that there were 3 vacant rooms which could take 5, 4 and 2 people at a time. In how many ways can these traders be accommodated?

5.

Students	A	B	C	D	E	F	G
Physics	13	15	16	17	14	12	11
Maths	12	15	17	16	18	11	14

@Jerusalem
Santosh @

calculate Spearman's rank correlation coefficient between the marks obtained in Physics and Maths

6. A Particle with uniform acceleration of 6 ms^{-2} covers 45 m in the 6th second. Find its initial velocity
7. The first and second terms of a linear sequence (AP) are 3 and 8 respectively. Determine the least number of the AP that must be added so that the sum will be greater than 250.
8. Given that $P = \begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$ and $Q = \begin{pmatrix} -2 & 5 \\ -3 & 1 \end{pmatrix}$, find PQ^{-1} where Q^{-1} is the inverse of Q

5. The table shows the marks obtained by seven students in Physics and Mathematics tests.

Students	A	B	C	D	E	F	G
Physics	13	15	16	17	14	12	11
Mathematics	12	15	17	16	18	11	14

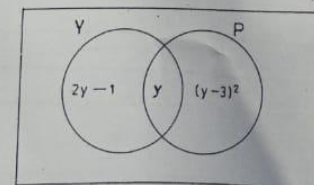
Calculate the rank correlation coefficient between marks obtained in Physics and Mathematics.

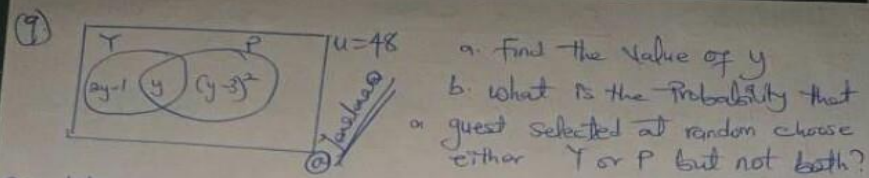
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Do not
write in
this margin.

6. The breakfast menu in a hotel is a choice of Yam (Y), Plantain (P) or both. The Venn diagram shows the choices made by 48 guests of the hotel.

$$n(J) = 48$$





(10) How many 3 digits numbers can be formed using 2, 3, 5, 7 and 8. If the number is odd and no digit repeated.

(11) Thirty percent (30%) of the bulbs in a large box are defective. If 12 bulbs are selected randomly, Calculate the Probability that
(a) Exactly 6 are defective (b) between 2 and 5 are defective.

(12)

Marks	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Frequency	2	7	8	11	24	30	6	5	3	2

a) Construct a Cumulative frequency table and draw a Cumulative frequency curve.
b) use the graph to estimate (i) the median (ii) Interquartile range.

(13) A Circle Passes through the Points $P(-2,0)$, $Q(1,0)$ and $R(2,-1)$. Find a) the Coordinates of the center b) the radius c) equation of the circle.

(14) A body at rest is acted upon by two forces $P(50N, 030^\circ)$ and $Q(xN, 120^\circ)$.
a) Express each force as a column vector
b) If the magnitude of the resultant force is 65N. Find

(i) the Value of x (ii) the direction of the resultant force converted to the nearest degree.

(15) An exponential sequence (AP) has a Positive Common ratio. If the sum to infinity of the sequence is 25 and the sum of the first two terms is 16. Find
(a) the 5th term
(b) the sum of the first four terms.

Question No:.....

13. The table shows the distribution of marks scored by candidates in an Examination.

Marks(%)	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Frequency	2	7	8	13	24	30	6	5	3	2

- (a) Construct a cumulative frequency distribution table and use it to draw the cumulative frequency curve (ogive).
(b) Use your graph to estimate the:
(i) median mark;
(ii) inter-quartile range.

PART III

VECTORS AND MECHANICS

14. A body at rest is acted upon by two forces $P(50N, 030^\circ)$ and $Q(XN, 120^\circ)$.
(a) Express each force as a column vector.
(b) If the magnitude of the resultant force is 65 N, calculate the:

- (i) value of X , $X > 0$;
(ii) direction of the resultant force, correct to the nearest degree.

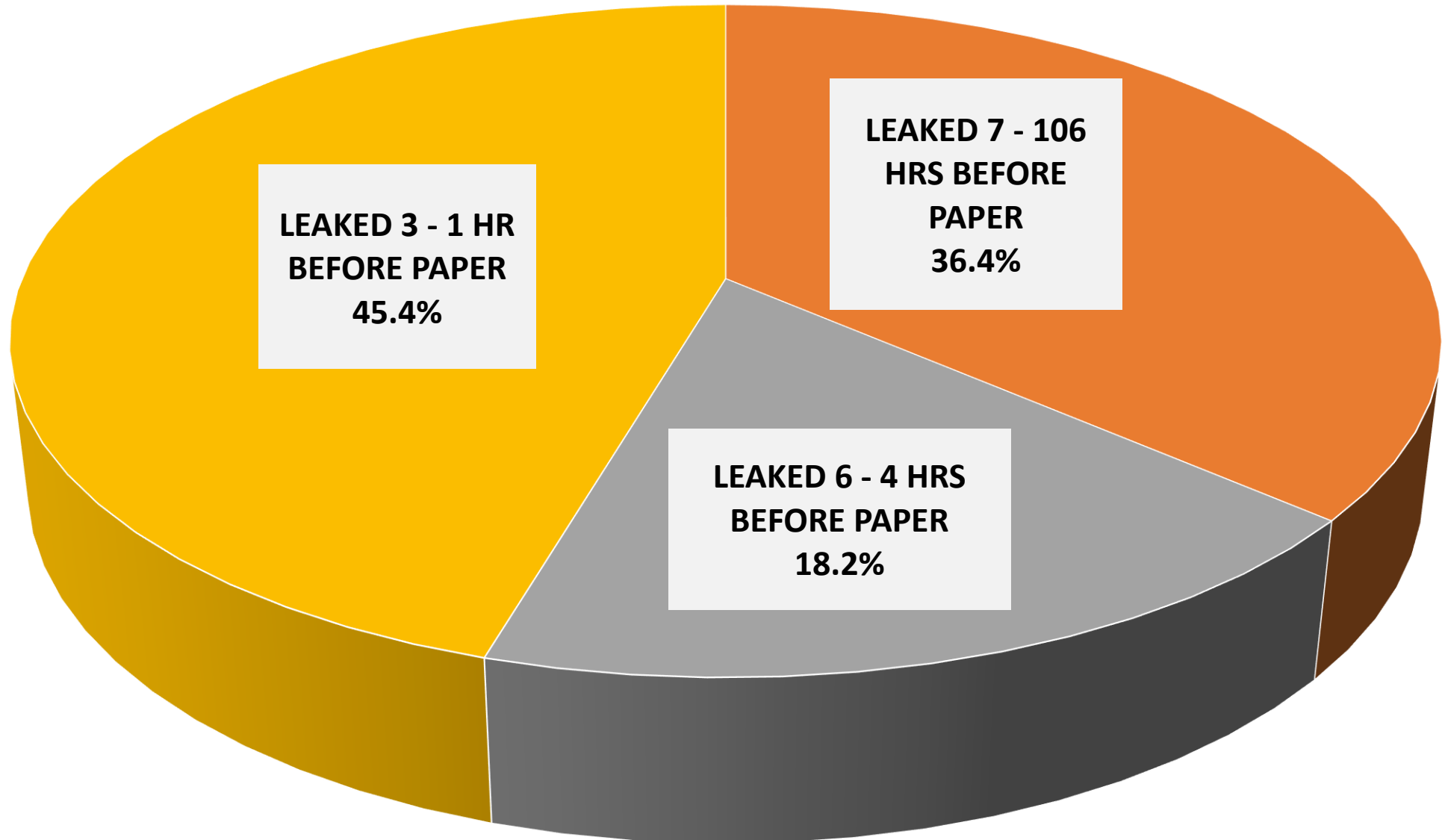
15. (a) A uniform beam PQ of length 8 m and mass 10 kg is supported horizontally at the end P and at point R, 3 m from Q. A boy of mass 20 kg walks along the beam starting from P. If the beam is in equilibrium, calculate the reactions at P and R after he had walked 1.5 m.
[Take $g = 10 \text{ ms}^{-2}$]

(b) An object P of mass 5 kg is suspended by means of two light inextensible strings TP and QP. The strings TP and QP make angles of 60° and 30° with the downward vertical respectively. The magnitudes of the tensions in TP and QP are T_1 and T_2 respectively.

- (i) Illustrate the information in a diagram.
(ii) Calculate, correct to one decimal place, the values of T_1 and T_2 .
[Take $g = 10 \text{ ms}^{-2}$]

END OF PAPER

BREAKDOWN OF LEAKED PAPERS



SCHOOL LEVEL MONITORING

- 500 Students interviewed in all 50 schools monitored had prior knowledge of the eleven leaked papers we intercepted.
- Evidence of teachers solving questions, transmitting questions through WhatsApp platforms for sharing both at dawn and during exams, in cases where leaks happened in the morning or proved fake.
- Students paid for papers in 6% of schools; Students paid for relaxed invigilation in 11% schools.
- 11% of schools did not have an external supervisor for all core subjects.
- The use of mobile phones to buy questions and transmit answers in exam room occurred in some schools.
- There is a general sense of entitlement to leaks and relaxed invigilation by students, to the extent that, attempts to deny them what they are used to attracts fierce resistance. They believe strongly without leaks and cheating, they will be disadvantaged compared to their colleagues in other schools.
- Some teachers who did not compromise were threatened [Atta Mills SHS], some had their farms burnt [Osei-Tutu SHS] and a dormitory block burnt [Nyinahini SHS].

PUSH AND PULL FACTORS DRIVING LEAKS

Demand Factors:

1. High stakes nature of our pre-tertiary external assessment system where one can be pronounced a failure based on a 90-minute test after 14 years of schooling.
2. High cost of remedial schooling (private sector led).
3. Increased competition for pride among SHS through WASSCE Ranking (League Table) and KPIs for SHS.

PUSH AND PULL FACTORS DRIVING LEAKS

Supply Factors:

1. Poor questions security at WAEC.
2. Social media and mobile phone penetration [in schools] creating business opportunities.
3. No external regulation of standards, compliance. International Treaty used as an excuse to avoid regulation leading to poor standards.
4. Persistent denial by WAEC and GES.
5. MoE inertia towards system reform.
6. Unintended outcomes (benefits) of exams fraud to the system.

Recommendations (Immediate)

**Commission An Independent Inquiry Into Examination
Fraud To Ascertain The Actual Source Of Leakages
(Community, School, National Level Actors)**

RECOMMENDATIONS (Short term)

- **Regulate WAEC:** Due to no regulation, WAEC determines its own standards, including the magnitude of a social media spread of leaked papers and whether it must be cancelled or deferred.
- In other jurisdictions like UK where a regulator sets these standards, including determining the cancellation or suspension of a paper, at least ten papers should have been cancelled in WASSCE 2021 and WAEC sanctioned by the regulator, compelling stringent review of questions security. This, when done repeatedly, without recourse to cost and image, would also diminish interest of students in leaked questions purchasing.

E.g. After the deferred Physics paper, students were unwilling to pay even GHC 30 cedis to marketers, after they wasted GHC 100 on a deferred paper.

RECOMMENDATIONS (Short term) cont'd

- **Strengthen accountability of WAEC:** Staff of WAEC and third parties responsible for questions security must be sanctioned when leaks occur. Management must take ultimate responsibility.
- **Digitize questions distribution** via end to end encrypted email systems.
- **Introduction of CCTV cameras** in Examination Halls.
- **Embark on National Campaign against Cheating and Examinations Fraud** led by the Moral Community/Faith-based Organisations.

RECOMMENDATIONS (Medium term)

- In the medium term, **consider activity based assessments**, where assessment items are given to students ahead, to deflate demand and supply of apo. In countries like Finland, there is 100% activity based assessment for external assessment. This would require training of examiners, markers and instituting systems to reduce score variations (inter-rater variability) due to the high level of discretion in marking and scoring analytical, applied activity based assessment. In such assessment, there is no failure, thereby reducing the high stakes in test based assessment.
- **Enhancing School Based Assessment:** This should begin with the training of teachers in assessment item construction/development, to ensure a more valid and authentic teacher-made assessment (more aligned to curriculum goals and objectives). Quality and reliable school based assessment can then be upgraded to constitute about 50% of the final grade of students (e.g. Scotland, in some subjects) to diffuse the high stakes nature of Final Examinations.

THANK YOU