



Evaluation of Preparation and Outcome of the Joint Admissions and Matriculation Board Examinations Among First Year Medical Students in Rivers State

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Abstract:

Background: In most countries of the world, entrance into tertiary institution is regulated by statutory examining councils / bodies, after passing recommended examinations. The aim of this study was to evaluate the determinants of success at the Nigerian University Tertiary Matriculation Examination (UTME) among first year undergraduate medical students in Rivers State in the year 2022.

Materials and Methods: A retrospective cross-sectional analytical study was carried out among first year undergraduate medical students in four universities. Data was collated and analysed using the Statistical Package for the Social Sciences (SPSS) version 20.0.

Results: There were 219 (45.1%) males and 267 (54.9%) females, and their mean age was 19.45 ± 2.80 years. Majority ($n=372$, 76.6%)

of students prepared daily for at least 3-4 hours over at least 3 to 4 months ($n=179$, 36.8%) before passing their examinations. There were computer-related (134, 27.6%) and other issues. Only 257 (52.9%) students passed their UTME at first attempt. The number of UTME attempts reduces as average daily preparation hours increases; the higher the average daily examination preparation hours, the higher the chances of scoring above 200 in first attempt; the higher the number of months of active preparation, the lower the number of attempts at UTME; and these relationships were statistically significant (being $p=0.000$, $p=0.009$, and $p=0.036$ respectively). **Conclusion:** The determinants of success at the UTME of the JAMB among others are associated with students' quality of input in preparing for the examinations. There are roles to be played at multiple levels to achieve needed improvement.



Keywords: *Preparation and Outcome, UTME/JAMB Examinations, Medical Students, Port Harcourt, Rivers State Nigeria.*

Introduction

In most countries of the world, entrance into tertiary institution is regulated by statutory examining councils / bodies, after passing recommended examinations. This is the case with Gaokao / National College Entrance Examination organized by the National and Provincial Educational Examination Authorities in China (Li, 2010; Ogunniran, Longlong, & Adu, 2019; Wang, 2006), the National Testing Agency in India (Joshi, Parashar, & Sharma, 2019), the College Board in the United States of America (Chenoweth, 1998), and other countries (Farnham, 1982; Nam & Tak, 2016). In Nigeria, the University Tertiary Matriculation Examination (UTME) is conducted by Joint Admissions and Matriculations Board (JAMB), established in 1977 by the Federal Government of Nigeria. Advocacy for progression from paper-based examination to electronic examination for the national agency (JAMB) was partly based on the demerits of the former and the advantages inherent in the latter (Ayo, Akinyemi, Adebisi, & Ekong, 2007; Ubulom & Wokocho, 2017). However, after many years of commencement of the computer-based tests, and the successes recorded (Danladi, 2019), some complains still abound (Nwagwu & Adebayo, 2016; Udechukwu, 2020; Wordu, Olutimilehin, & Kelechi, 2020). In a study evaluating negative factors influencing students' performance at FCT Abuja, listed unqualified and unskilled examination invigilators, students' lack of information communication and technology (ICT) knowledge, inadequate ICT centers, late posting of candidates to examination centers, and over bearing attitudes of parents (Aprebo & Achonwa, 2019).

Success at the UTME is a mandatory requirement for admissions into Nigeria's tertiary institutions of learning, after passing the necessary subjects to qualify for the examination. There are arguments for and against JAMB and University-organized UTMEs (Aromasodun, 2022; Ikoghode, 2015; Onebunne & Igwe, 2021;

Osakuade, 2011). However, yearly poor performance at the UTME examinations have been severally reported with less than 20% gaining admission (Onebunne, 2022), much of which bothers on students' preparations for the examinations. It is tasking for the students who spend time and resources to prepare for these examinations. Inability to meet the required standards for success is also a source of worry to parents and guardians who spend their resources in sponsorship. More worrisome is the case for government and institutions of learning when the needed number of medical man-power is not available directly or indirectly resulting from the above. For JAMB supervisors and proctors of the UTME, it is worrisome to see shades of candidates: we observed some candidates would be on question 16 while another would be on question 178 (in first one hour of a two-hour examination where candidates were required to answer 180 questions). Some other candidates had hard times operating the keys of the computer. The aim of this study was to evaluate the determinants of success at the Joint Admissions Matriculations Examinations among first year undergraduate medical students in Rivers State in the year 2022.

Materials and Methods

Research Design

A retrospective cross-sectional analytical study.

Study Area

The study was conducted in Rivers State, Nigeria. Rivers State hosts four tertiary institutions involved in the training of undergraduate medical students – two private school, and two public institutions.

Study Sites

The study sites were the PAMO University of Medical Sciences, Madonna University Medical School, Rivers State University Medical School,

and the University of Port Harcourt Medical School.

Study Population / Participants

The first-year undergraduate medical students participated as the study population.

Sample Size Determination

Total population of consenting students was used, involving 486 students.

Sampling Method

All the students in the first-year class who gave consent were recruited for the study.

Study Instrument

Semi-structured self-administered questionnaire was used for collection of data.

Variables

Information on socio-demographics, level of preparations for the University Tertiary Matriculation Examinations, in-hall experiences of students, and the outcome of students' UTME, were obtained using the study instrument.

Bias

A study conducted among participants at the venue of the JAMB examinations would have been an ideal study population, however, the outcome of the students' preparation would not have been out by then. This necessitated the use of first year medical students whom we consider would be the next study population that could satisfy the easy recall needed for the data of this study.

Data Analysis

The obtained data was collated, analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0, and presented as tables. The relationship between categorical variables were studied using Chi square.

Validity / Reliability of Instrument

The study instrument was scrutinized by all authors. The study was piloted in similar institutional environment, and corrections made before commencement of study. The Cronbach alpha (in SPSS) was used for the reliability of the study instrument.

Results

Table 1. Socio-Demographic Characteristics of Respondents (n = 486)

Variables	Number	Percentage (%)
Sex		
Male	219	45.1
Female	267	54.9
Age in years (Mean= 19.45±2.80 Min=15 Max= 30)		
15 - 20	363	74.7
21 - 25	101	20.8
26 - 30	22	4.5
Marital Status		
Single	461	94.9
Married	25	5.1
Religion		
Christianity	469	96.5
Islam	15	3.1
Traditional	1	.2
Buddhist	1	.2

The demographic characteristics of the respondents is summarized in Table 1. There

were 219 (45.1%) males and 267 (54.9%) females. The mean±SD age of the respondents

was 19.45 ± 2.80 years, the youngest being 15 years and the oldest 30 years. Majority (461 =

94.9%) were single and 467 (96.1%) were Christians.

Table 2. Quality of Preparation before the JAMB Examination (n = 486)

Variables	Number	Percentage (%)
Average number of hours spent per day preparing for JAMB Examinations		
Less than 1hour	22	4.5
1 - 2 hours	92	18.9
3 - 4 hours	203	41.8
5 - 6 hours	87	17.9
7 - 8 hours	65	13.4
More than 8 hours	17	3.5
Number of months of active preparation before JAMB Examinations		
Less than 1 month	73	15.0
1 - 2 months	87	17.9
3 - 4 months	179	36.8
5 - 6 months	87	17.9
7 - 8 months	50	10.3
More than 8 months	10	2.1
Use of JAMB syllabus to prepare for the examinations		
Yes	327	67.3
No	159	32.7
Percentage of JAMB syllabus coverage before passing Examinations		
1 -20%	32	6.6
21 - 40%	52	10.7
41 - 60%	99	20.4
61 - 80%	170	35.0
81 - 100%	122	25.1
Not Applicable	11	2.3
Percentage of JAMB syllabus coverage when failed		
1 -20%	21	4.3
21 - 40%	49	10.1
41 - 60%	33	6.8
61 - 80%	41	8.4
81 - 100%	12	2.5
Not Applicable	330	67.9

Table 2 shows the quality of preparation before the JAMB Examinations. Majority of students (n=372, 76.6%) had spent at least 3-4 hours of daily preparation before passing their examinations. A large number (179, 36.8%) had 3 to 4 months of active preparation before they passed the examinations. Three hundred and twenty-seven (67.3%) used the recommended

JAMB syllabus for preparation. Forty-nine (10.1%) of those who failed the JAMB examinations only covered 21 - 40% of the syllabus, while 33 (6.8%) students had only covered 41 - 60% of the syllabus. Majority of the students (292; 60%) had covered 61-100% of the syllabus when they passed the JAMB Examinations.

Table 3. Other Quality Metrics for JAMB Examination Preparation (n = 486)

Variables	Number	Percentage (%)
Review past question paper to prepare for JAMB		
Yes	460	94.7
No	26	5.3

Engaged in group discussion in preparing for JAMB		
Yes	270	55.6
No	216	44.4
Attend JAMB classes to prepare for the examination		
Yes	248	51.0
No	238	49.0
Sat for mock exam before main JAMB examination		
Yes	178	36.6
No	308	63.4
Attend computer lessons before main JAMB examination		
Yes	173	35.6
No	313	64.4
Have relevant textbooks for each examination subject		
Yes	398	81.9
No	30	6.2
Not at all	58	11.9
Type of registration for the JAMB examination		
Early	385	79.2
Late	101	20.8

Table 3 shows other quality metrics for JAMB examination preparation. Those who had relevant textbooks for the examination were 398 (81.9%), 173 (35.6%) attended computer classes before sitting for the JAMB examinations, and 385 (79.2%) registered early for the JAMB examinations. Four hundred and sixty (94.7%)

students reviewed past JAMB question papers before the examinations, 270 (55.6%) had engaged in group discussions, while 248 (51.0%) attended preparatory JAMB classes. Only 178 (36.6%) students participated in JAMB mock examinations before the main examinations.

Table 4. Experience during the JAMB Examinations (n = 486)

Variables	Frequency	Percentage (%)
Subjects attempted first among key science subjects		
English	219	45.1
Mathematics	18	3.7
Physics	36	7.4
Chemistry	62	12.8
Biology	151	31.1
Reason for choosing the first subject during the exam		
No reason	232	47.7
Easiest/Favourite subject	196	40.3
Difficult subject	10	2.1
First to appear	27	5.6
Time consuming	21	4.3
Subjects attempted last among key science subjects		
English	76	15.6
Mathematics	44	9.1
Physics	241	49.6
Chemistry	61	12.6
Biology	64	13.2
Reason for chosen the last subject during the exam		
No reason	260	53.5
Easiest / Favorite subject	28	5.8
Difficult subject	118	24.3

As it appears	12	2.5
Time consuming	68	14.0
Finished the examination within given time		
Yes	418	86.0
No	68	14.0
Wish the exam time more than 2 hours		
Yes	292	60.1
No	194	39.9
Expended all examination time given		
Yes	281	57.8
No	205	42.2

Table 4 shows the experience of students while answering the JAMB questions. Two hundred and nineteen (45.1%) students started English Language first, followed by Biology (151; 31.1%). While 196 (40.3%) of student gave the reason for their first choice to be because it was considered “easiest/favourite subject”, 232 (47.7%) students had no reason for their choice. Physics was the last subject to be attempted by

241 (49.6%) of students, and 260 (53.5%) had no reason for their choice, while 118 (24.3%) students felt it was a difficult subject. Four hundred and eighteen (86.0%) finished writing their examination within the given time frame, while 292 (60.1%) students wished they had more than the required time for the examinations.

Table 5. Experience Highlighting Usefulness of JAMB Provided Items and Other Challenges (n = 486)

Variables	Number	Percentage (%)
Exam Batch during first attempt		
Batch A	304	62.6
Batch B	120	24.7
Batch C	62	12.8
Exam Batch during second attempt		
Batch A	97	20.0
Batch B	79	16.3
Batch C	38	7.8
Not Applicable	272	56.0
Exam Batch during third attempt		
Batch A	35	7.2
Batch B	22	4.5
Batch C	32	6.6
Not Applicable	397	81.7
Use JAMB worksheet during examination		
Yes	388	79.8
No	98	20.2
How helpful was JAMB worksheet		
Very helpful	190	39.1
Helpful	202	41.6
Not helpful	45	9.3
No response	49	10.1
Calculator JAMB provided was helpful		
Yes	276	56.8
No	210	43.2
Prefer JAMB to give scientific calculator		
Yes	432	88.9

No	54	11.1
Have computer issues during the examination		
Yes	134	27.6
No	352	72.4
Computer issue affects examination performance		
Yes	127	26.1
No	126	25.9
Not applicable	233	47.9
Cheating during JAMB examination		
Yes	10	2.1
No	476	97.9
Awareness of CCTV camera in the examination hall		
Yes	299	61.5
No	181	37.2
No response	6	1.2

Table 5 highlights the usefulness of JAMB provided items. The provided JAMB worksheet was considered useful by 292 (80.7%) students. The JAMB-provided calculator was considered helpful by 276 (56.8%) students, although 432 (88.8%) of the students would have preferred a scientific calculator for use. One hundred and

thirty-four (27.6%) students had computer-related issues / challenges which affected their examinations. Ten (2.1%) students admitted to being aware of cheating (examination malpractice) during their examinations, and 299 (61.5%) students were unaware of the presence of CCTV camera in the examination halls.

Table 6. Attempts, Scores and Suggested Measures at Improvement of JAMB Examinations (n = 486)

Variables	Number	Percentage (%)
Number of attempts of JAMB exam before admission		
Once	257	52.9
Twice	148	30.5
Thrice	64	13.2
Four times	9	1.9
Five times	5	1.0
More than five times	3	.6
JAMB Score first attempt (Mean:229.67±33.02 Min=141 Max= 322)		
140 - 200	77	15.8
201 - 250	292	60.1
251 - 300	105	21.6
301 and above	12	2.5
JAMB Score second attempt (Mean= 235.29±29.33 Min=181 Max= 320)		
140 - 200	22	4.5
201 - 250	148	30.5
251 - 300	56	11.5
301 and above	9	1.9
Not applicable	251	51.6
JAMB Score third attempt (Mean= 248.25±28.95 Min=192 Max= 321)		
140 - 200	6	1.2
201 - 250	38	7.8
251 - 300	36	7.4
301 and above	5	1.0
Not applicable	401	82.5
Convinced to pass the examination before release of result		
Yes	399	82.1

No	87	17.9
Point of success conviction		
Before the examination	78	16.0
During the examination	99	20.4
After the examination	232	47.7
Not applicable	77	15.8
How to improve success at JAMB examination		
Show answer to questions after exam	14	2.9
More time should be given	90	18.5
Need good computers and CBT development	82	16.9
Syllabus should be used in schools	16	3.3
Thorough preparation	70	14.4
Need for a scientific calculator	62	12.8
Students' orientation before exam	12	2.5
No response	140	28.8

Table 6 shows students' number of attempts, their scores and suggested measures at improving the JAMB examinations. Two hundred and fifty-seven (52.9%) students sat for the examinations only once before they gained admission into the university, 148 (30.5%) had written twice, while others did so for varying number of times. Students' mean score was 229.67 ± 33.02 (at first attempt), 235.29 ± 29.33 (at second attempt), and 248.25 ± 28.95 (at third attempt). Three hundred and ninety-nine (82.1%) students were convinced of success at

the examinations before the examinations result was out. Two hundred and thirty-two (47.7%) had this conviction of success after the examinations, while 78 (16.0%) knew before the examinations started. Students' suggested measures at improving the JAMB examinations include: giving more time for the exam (90; 18.5%), need for good computers and CBT development/knowledge (82; 16.9%), students' thorough preparation (70; 14.4%), need for provision of a scientific calculator (62; 12.8%), etc.

Table 7. Relationship between Average Hours Spent per Day to Prepare for JAMB Examinations and the Number of Attempts of JAMB Examination before Admission

Hours spent per day	Number of attempts at JAMB examination before admission							(X ²)	P-Value
	Once	Twice	Thrice	Four times	Five times	More than 5 times	Total		
Less than 1hour	9(45.0%)	4(20.0%)	5(25.0%)	0(0.0%)	2(10.0%)	0(0.0%)	20	59.669	0.000
1 - 2 hours	42(45.7%)	42(45.7%)	4(4.3%)	4(4.3%)	0(0.0%)	0(0.0%)	92		
3 - 4 hours	117(57.6%)	47(23.2%)	33(16.3%)	3(1.5%)	1(0.5%)	2(1.0%)	203		
5 - 6 hours	53(60.9%)	22(25.3%)	9(10.3%)	0(0.0%)	2(2.3%)	1(1.1%)	87		
7 - 8 hours	30(44.8%)	27(40.3%)	8(11.9%)	2(3.0%)	0(0.0%)	0(0.0%)	67		
More than 8 hours	6(35.3%)	6(35.3%)	5(29.4%)	0(0.0%)	0(0.0%)	0(0.0%)	17		

Relationship between the average number of hours spent per day to prepare for JAMB examinations and number of attempts at JAMB examinations before gaining admission into the university is highlighted in Table 7. The number

of JAMB attempts reduces as average number hours spent per day in JAMB examination preparation increases, and this relationship was statistically significant ($p=0.000$).

Table 8. Relationship between Average Daily JAMB Preparation Hours and JAMB Score in First Attempt

Hours spent per day	JAMB Score at first attempt					(X ²)	P-Value
	140 - 200	201 - 250	251 - 300	301 & above	Total		
Less than 1 hour	4(20.0%)	14(70.0%)	1(5.0%)	1(5.0%)	20	30.982	0.009
1 - 2 hours	12(13.0%)	63(68.5%)	17(18.5%)	0(0.0%)	92		
3 - 4 hours	36(17.7%)	121(59.6%)	45(22.2%)	1(0.5%)	203		
5 - 6 hours	11(12.6%)	45(51.7%)	25(28.7%)	6(6.9%)	87		
7 - 8 hours	14(20.9%)	36(53.7%)	13(19.4%)	4(6.0%)	67		
More than 8 hours	0(0.0%)	13(76.5%)	4(23.5%)	0(0.0%)	17		

Table 8 shows the relationship between average daily JAMB preparation hours and JAMB Score at first attempt (sitting). The higher the average daily examination preparation hours, the higher

the chances of scoring above 200 in first attempt, and this relationship was statistically significant ($p=0.009$).

Table 9. Relationship between Number of Months of Active Preparation before JAMB and Number of Attempts of JAMB Examination before Admission

Months of preparation	Number of attempts at JAMB examination before admission						(X ²)	P-Value	
	Once	Twice	Thrice	Four times	Five times	More than 5 times			Total
Less than 1 month	33(44.0%)	31(41.3%)	9(12.0%)	0(0.0%)	2(10.0%)	0(0.0%)	75	39.072	0.036
1 - 2 months	50(57.5%)	25(28.7%)	11(12.6%)	0(0.0%)	1(1.1%)	0(0.0%)	87		
3 - 4 months	89(49.7%)	52(29.1%)	32(17.9%)	6(3.4%)	0(0.0%)	0(0.0%)	179		
5 - 6 months	55(63.2%)	22(25.3%)	5(5.7%)	2(2.3%)	2(2.3%)	1(1.1%)	87		
7 - 8 months	26(54.2%)	14(29.2%)	5(10.4%)	1(2.1%)	0(0.0%)	2(4.2%)	48		
More than 8 months	4(40.0%)	4(40.0%)	2(20.0%)	0(0.0%)	0(0.0%)	0(0.0%)	10		

Table 9 shows the relationship between number of months of active JAMB examinations preparation and the number of attempts at JAMB examinations before admission into the university. The higher the number of months of active preparation, the lesser the number of attempts at JAMB examinations. This relationship was statistically significant ($p=0.036$).

Discussion

The qualification for entry into the university in Nigeria is determined by the Joint Admissions

and Matriculation Board (JAMB), and this applies to entry of students for undergraduate Medical Education. Medical students (studying a professional course) occupy a peculiar pride of place at the top hierarchy along with a few other disciplines, as evident by the relatively higher cut-off marks needed for their university admission (Orenuga & da Costa, 2006). This implies therefore that the experiences and challenges encountered by medical students from four medical schools in this study could well provide insight into the entry issues of other students. These issues, elements, or factors that have the potential to affect outcome of the UTME were investigated in this study as

determinants of success. More than half of the medical students were females, and the mean age of this predominantly Christian population was 19.45 ± 2.80 years. The mean age of students in our study is less than reported value of 21.75 ± 3.25 years in Kano Nigeria, in which male predominated (Suraj, Umar, Gajida, & Umar, 2021). It also differs from a observations in a four-regional Nigerian study among medical students that had a mean age of 22.4 ± 3.6 years in which males were also higher in number (Okoye et al., 2019).

Almost a fourth of the respondents did not have the relevant textbooks needed to prepare for the UTME, more than half did not attend any computer classes, and a fifth of students had late JAMB registration. These three combinations point to socio-economic issues among the students, and socio-economic factors have been found to affect students' academic performance in Portugal (Ferrão & Almeida, 2019). However, almost all students reviewed past JAMB question papers, and more than half of them engaged in group discussion, and attended JAMB preparatory classes. Additionally, most of the students made a daily investment of at least 3 to 4 hours of preparation over at least 3 to 4 months to guarantee their success at the JAMB examinations. Hours spent in personal reading has been found to affect outcome of learning (Kind et al., 2021). This factor holds true as it was also observed in our study that the number of UTME/JAMB examination attempts reduces as average number hours spent per day in examination preparation increases. Most of the students knew about their success at the examinations before the results were released, while a few had this convinced of success before the examinations. This could only be the outcome long period of hard work, as the quality of students' input in academics has direct relationship with the outcome of the examinations. This thought is corroborated by a South African study that reported that learners' academic input, learning environment, demographic variables, educational environment, and challenges impact on their academic outcomes (Chigbu & Nekhwevha, 2021).

The UTME is usually multiple-choice questions (MCQs) in nature, and students have different reasons for their approach of the questions. While some start from the number one question, others choose to begin from the last number. In our study, most of the respondents had no reason for choosing any subject to begin the examination, although almost half of them started with English Language, while almost half ended their examinations with Physics. Ultimately, about two-third attempted all the questions within the specified time. Most respondents admitted to the usefulness of the provided worksheet and e-calculator. Students inability to use the computer and other related computer issues were also reported in south-eastern Nigerian study (Buoye & Bada, 2021). The mean JAMB score of the students in our study in their attempts was above 200. A researcher reported that more students scored 200 and above during the pre-computer Based era than in this Computer-Based era introduced by JAMB (Buoye & Bada, 2021). However, in the opinion of respondents, occurrence of cheating (malpractice) in the JAMB examinations was almost insignificant, although more than half of the students were unaware of the presence of close-circuit camera / television (CCTV) in the examination halls. Similar finding of reduction in malpractices in JAMB examination has been reported in another study (Buoye & Bada, 2021).

We found a significant direct relationship between the average daily examination preparation hours and the chances of scoring above 200 in first attempt at JAMB examinations. Only about half of the students passed their JAMB examinations at first attempt, about a third wrote twice, while a few others had attempted many times. The implication of this observation is that the remaining half of the students had experienced many episodes of the consequences of failure to timely pass their examinations and gain admission, including psychologic, social and economic setbacks before they were eventually admitted into medical school. Similar issues have been reported in another study in the United States (Covington, 1989). Also, an inverse strong

relationship between months of active preparation and the number of attempts at JAMB examinations. This implies that the shorter the preparation time, the higher the number of times the student is likely to repeat the examination. Our finding share similarity with a Norwegian Dissertation that established a strong link between students' preparation time and examination scores / outcome in tertiary education (Bensnes, 2016). There are some Nigerian studies that reported similar findings (Adebayo, 2015; Ukpong & George, 2013). Indeed, planning with time in focus, and indeed early time management is essential to avoid the challenge of attempting to cover a long-time work within a few days, thereby breeding anxiety that could have the potential to dampen individual confidence. Allocation of more time for the examinations, need for good computer and CBT development/knowledge, students' thorough preparation, need for provision of a scientific calculator, were some of the suggestions made by the students for improvement of the university entrance examinations.

Study Limitations

This study describes the issues surrounding preparations and outcome of entrance examinations into Nigerian Universities, and the choice of medical students as the study was guided by the interest of the authors, where lecturers involved in medical education.

Conclusion

The determinants of success at the UTME of the JAMB among others are associated with students' quality of input in preparing for the examinations. In the opinion of the students, the daily number of hours (at least 3-4hours) of study, number of months (at least 3-4months) of preparation, having the relevant textbooks, review of past UTME question papers, engaging in group discussions, attended JAMB preparatory classes, attending computer classes (computer knowledge), and socio-economic

issues were identified determinants of success in the examinations.

Recommendations

It is therefore the opinion of the authors, that parents and guardians should ensure that prospecting UTME students are equipped or have access to laptops / computers at least during their final year in the secondary schools, textbooks, JAMB syllabuses, past JAMB question papers, and possibly enroll students in JAMB preparatory classes to facilitate learning and success. Training secondary educational institutions should emphasize and inculcate in students the habit of personal learning and the benefits of academic discussion groups (peer assisted learning). The supervising agency - JAMB may, aside from confirming Success in "O" Level subjects and UTME registration fees payment, consider seeking for evidence of parents' willingness to sponsor or provide needed requirements for examinations preparation. And finally, the Government - States and Federal (and private secondary school proprietors) should provide computers and quality teachers to expose the students to the use of this modern medium for the CBT-based examinations, and set up scheme for the early payment of UTME registration fees for all or underprivileged students.

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Ethical Considerations

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Conflict of Interest

None declared.

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