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Article

Lecturers' Awareness and Use of Technology for Assessment of Learners in Higher Institutions in Anambra State, Nigeria

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Abstract

Technological innovations in educational learners' assessment have advanced and are still progressing. Consequently, it is pertinent for 21st century lecturers to harness and integrate technological advancements into learning assessment. In this study, the extent of lecturers' awareness and harnessing ability of technological advancements in learners' assessment were determined. Six research questions and four hypotheses guided the study. Descriptive survey research design was adopted with consenting 210 lecturers (50 (23.8%) males, 160 (76.2%) females, 141 (67.1%) in non-professorial cadre, and 69 (32.9%) in professorial cadre randomly drawn from education discipline in four higher institutions in Anambra state, Nigeria. Instrument used for data collection was a 16-item questionnaire developed by the researchers. Percentages, frequencies and chi-square (χ^2) tests were used in data analysis. A p-value ≤ 0.05 was taken as significant. The findings revealed that majority of the lecturers from both gender and cadre are aware and have the ability to harness some of the technological advancement tools in learners' assessment. But, gender and cadre of the lecturers in higher institutions in Anambra state exerts no significant effect on their awareness and ability to harness technological advancement tools in learners' assessment. The researchers made some recommendations based on the study findings.

Keywords: Lecturers, technological advancements, awareness, harnessing ability, learners' assessment.

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INTRODUCTION

The world in contemporary times is technology driven. As the world continues to advance, technology in diverse careers of life continues to advance. This is also true with the technological innovations in educational learners' assessment (Eleje, Esomonu & Ufearo, 2019; Saad & Sankaran, 2020). For past years, technological innovations in learning assessment have advanced. Effective technological advancements for handling assessment of student learning in education includes the clickers, peer-wise, twitter, wall-wisher, computer-assisted test, electronic test item, electronic examination and on-line results (Dunne & Ryan, 2012; Landry et al., 2017; Neumann et al., 2019).

The personal response devices also known as clickers enable the students to work together in their groups to answer a Multiple-Choice Question (MCQ). Peer-wise is an effective and adaptable online web-based database that allows students to create and review MCQs. Twitter as a social media aid to connect and communicate quickly with the students concerning assessment information. On the other hand, wall-wisher as a virtual notice board provides space for students to share ideas and comments specifically concerning class assignment. A computer-assisted test is able to learn the language preference of the students and automatically switch to it to increase the validity of its measurement. Electronic examination makes the test/examination administration process more standardized, efficient, and diverse. Automates the collation and scoring of examination data as well as on-line result reporting and interpretation. Technology advancements significantly facilitates the use of learners' assessments and research (OECD, 2013).

Consequently, it is pertinent for 21st century lecturers to harness and integrate technology advancements into learners' assessment, especially, with the larger and more diverse classes in Nigerian institutions. This is in addition to the need to reduce lecturer/student class contact due to COVID-19 pandemic ravaging the human race at present. Harnessing technological advancements for educational learners' assessment in universities and colleges of education in Nigeria as well as the world in general is of utmost importance. It is also especially vital as the teaching and learning assessment workload has jam-packed due to the shortened school calendar as an aftermath of COVID-19 lockdown. But, are the lecturers aware of technological advancements in learners' assessment in order to harness it? What is the extent of the lecturers' harnessing ability of technological advancements in learners' assessment? Very little is known about the answers to these questions.

A search on the literature revealed that despite the importance of technological advancements in educational assessment, there is paucity of studies on lecturers' awareness of technological advancements in learners' assessment and their ability to harness them. Most previous studies focused only on secondary school teachers and teaching (Ikwuka et.al, 2020). The study by Okoye and Okwuogu (2020) was on lecturers' literacy and usage of some basic ICT devices. Their work was based on quality of teaching and not on learners' assessment. Likewise, studies by Jegede, Dibu-Ojerinde and Ilori (2007), and Bamigboye, Bankole, Ajiboye and George (2013), focused on computer skill and its usage in teaching and learning. The only known study is that of Eleje, et al (2022) where they recommend for more research investigations.

Thus, in this study, the awareness and the ability to harness technological advancements in learners' assessment for the lecturers in tertiary institutions in Anambra state was investigated. Also, in this study, the possible difference in the lecturers' awareness and their harnessing ability of technological advancements in learners' assessment based on gender and cadre were determined.

Objectives of the study

To determine lecturers' awareness and their harnessing ability of technological advancements in learners' assessment in tertiary institutions in Anambra state.

Research questions

The following research questions guided the study:

1. What level of the lecturers are aware of technological advancements in learners' assessment?
2. What level of the lecturers are aware of technological advancements in learners' assessment based on gender?
3. What level of the lecturers are aware of technological advancements in learners' assessment based on cadre?
4. What level of the lecturers have the ability to harness technological advancements in learners' assessment?
5. What level of the lecturers have the ability to harness technological advancements in learners' assessment based on gender?
6. What level of the lecturers have the ability to harness technological advancements in learners' assessment based on cadre?

Hypotheses

To carry out the study, the researchers tested the following formulated research hypotheses for rejection or otherwise at 5% level of significance:

Ho 1: There is no significant difference between male and female lecturers' awareness of technological advancements in learners' assessment.

Ho 2: There is no significant difference between the awareness of lecturers on professorial and non-professorial cadre of technological advancements in learners' assessment.

Ho 3: There is no significant difference between male and female lecturers' harnessing ability of technological advancements in learners' assessment.

Ho 4: There is no significant difference between professorial and non-professorial lecturers' harnessing ability of technological advancements in learners' assessment.

METHODS

A descriptive survey research was conducted with 210 lecturers randomly drawn from the 903 lecturers in education discipline from four government owned tertiary institutions in Anambra state, Nigeria. The lecturers' cadre was categorized as professorial and non-professorial. The non-professorial cadre includes assistant lecturers, lecturer II, lecturer I, and senior lecturers, while the professorial cadre includes readers and professors. The 210 lecturers comprised of 50 (23.8%) males, 160 (76.2%) females, 141 (67.1%) in non-professorial cadre and 69 (32.9%) in professorial cadre. Instrument used for data collection was a 16-item questionnaire developed by the researchers. Section A elicits information from the personal data of the respondent while section B elicits responses from the respondents to answer the research questions. The researchers adopted the Direct Delivery Method (DDM) to administer copies of the questionnaires to the lecturers, which gave them the opportunity to collect back the instrument immediately. This yielded 100% return of the distributed questionnaires. Percentages, frequencies and chi-square (χ^2) test

were used in data analysis. Analysis was by Statistical Package for Social Science version 23 (SPSS v 23.0). A p-value ≤ 0.05 was taken as significant.

Table 1: Demographics

Gender * Cadre Crosstabulation				
		Cadre		
		Non-Professorial Cadre	Professorial Cadre	Total
Gender	Male	28	22	50
	Female	113	47	160
Total		141	69	210

Results

The collected data based on the stated research questions and hypotheses were analyzed and the resulting outcomes presented.

Research question 1. What level of the lecturers are aware of technological advancements in learners' assessment?

In Table 2 is presented the frequency and percentage of the lecturers' awareness of technological advancements in learners' assessment.

Table 2: The Extent of Lecturers' Awareness of Technological Advancements in Learners' Assessment. N = 210

S/N	Have you ever heard of these technological advancements in learners' assessment?	Frequency of Yes	Percentage (%)	Frequency of No	Percentage (%)
1.	The personal response devices (clickers)	45	21.40	165	78.6
2.	Peer-wise (eg., *Gamification*)	33	15.70	177	84.30
3.	Twitter	197	93.80	13	6.20
4.	Virtual noticeboard (Wall-wisher)	198	94.30	12	5.70
5.	Computer-assisted test	203	96.70	7	3.30
6.	Electronic test item	191	91.00	19	9.00
7.	Electronic examination	202	96.20	8	3.80
8.	On-line results	206	98.10	4	1.90
	Total	1275	75.89	405	24.11

Data in Table 2 indicated that majority of the respondents (lecturers) are aware of five out of the eight listed technological advancements in learners' assessment except in items 1, and 2 where 78.6% and 84.3% of lecturers respectively indicated that they are not aware of the clickers and peer-wise as

technological advancements in learners' assessment. In total, 75.89% of the lecturers accepted to be aware of the technological advancements in learners' assessment.

Research question 2 and hypothesis 1.

What level of the lecturers are aware of technological advancements in learners' assessment based on gender?

There is no significant difference between male and female lecturers' awareness of technological advancements in learners' assessment.

In Table 3 is presented the frequency, percentage and chi-square of the lecturers' awareness of technological advancements in learners' assessment based on gender.

Table 3: Lectures' Awareness of Technological Advancement in Learners' Assessment Based on Gender

S/N	Have you ever heard of these technological advancements in learners' assessment?	Male (n=50)		Female (n=160)		Chi-square p-value
		Frequency of Yes	Frequency of No	Frequency of Yes	Frequency of No	
1.	The personal response devices (clickers)	15(30%)	35(70%)	30(18.75%)	130(81.25%)	.091
2.	Peer-wise eg., *Gamification*	8(16%)	42(84%)	25(15.62%)	135(84.38%)	.949
3.	Twitter	50(100%)	0(0%)	147(91.88%)	13(8.12%)	.037
4.	Virtual noticeboard (Wall-wisher)	49(94%)	1(16%)	149(93.13%)	11(6.87%)	.921
5.	Computer-assisted test	47(94%)	3(16%)	156(97.50%)	4(2.50%)	.229
6.	Electronic test item	44(88%)	6(12%)	147(91.88%)	13(8.12%)	.404
7.	Electronic examination	48(96%)	2(14%)	154(96.25%)	6(3.75%)	.936
8.	On-line results	50(100%)	0(0%)	156(97%)	4(2.50.50%)	.259
	Total	311(77.75%)	89(22.25%)	964(75.31%)	316(24.69%)	

The lecturers' awareness of technological advancement in learners' assessment presented in Table 3 according to gender revealed that to a higher extent (≥ 75%) lecturers of both genders are not aware of the clickers, peer-wise and wall-wisher technological advancements in learners' assessment. All the male lecturers are aware of the twitter and on-line results as technological advancements tools in learning assessment. In total more of the male lectures (77.75%) than the female lecturers (75.31%) are aware of the technological advancement tools in learning assessment.

Table 3 above showed that the difference in the lecturers' awareness of technological advancements in learners' assessment based on gender is not significant since χ^2 values for the items at 0.05 significance level with degree of freedom of 1 is greater than 0.05 ($P > 0.05$; $df = 1$). The null hypothesis which states

that there is no significant difference between male and female lecturers' awareness of technological advancements tools in learners' assessment is then not rejected.

Research question 3 and hypothesis 2.

What level of the lecturers are aware of technological advancements in learners' assessment based on cadre?

There is no significant difference between the awareness of lecturers on professorial and non-professorial cadre of technological advancements in learners' assessment.

Presented in Table 4 is the frequency, percentage and chi-square of the lecturers' awareness of technological advancements in learners' assessment based on cadre.

Table 4: Lecturers' Awareness of Technological Advancement in L learners' Assessment Based on Cadre

S/N	Have you ever heard of these technological advancements in learners' assessment?	Non-Professorial (n=141)		Professorial (n=69)		Chi-square p-value
		Frequency of Yes	Frequency of No	Frequency of Yes	Frequency of No	
1.	The personal response devices (clickers)	25(17.73%)	116(82.27%)	20(28.99%)	49(71.01%)	.062
2.	Peer-wise (eg., *Gamification*)	15(10.64%)	126(89.36%)	18(26.09%)	51(73.91%)	.004
3.	Twitter	129(91.49%)	12(8.51%)	68(98.55%)	1(1.45%)	.046
4.	Virtual noticeboard (Wall-wisher)	137(97.16%)	4(2.83%)	61(88.41%)	8(11.59%)	.010
5.	Computer-assisted test	138(97.87%)	3(2.13%)	65(94.20%)	4(5.80%)	.164
6.	Electronic test item	128(90.78%)	13(922%)	63(91.30%)	6(8.70%)	.901
7.	Electronic examination	135(95.74%)	6(4.26%)	67(97.10%)	2(2.90%)	.630
8.	On-line results	139(98.58%)	2(1.41%)	67(97.10%)	2(2.90%)	.461
	Total	**846(75.00%)**	**282(25.00%)**	**429(77.72%)**	**123(22.28%)**	

Table 4 reveals that many lecturers (> 71%) of both cadres are not aware of 2 out of the 8 items listed, with more lecturers from the non-professorial cadre. However, items 3, 4, 5, 6, 7 and 8 depict the areas that more than 88% lecturers from both non-professorial cadre and professorial cadre have high extent awareness of technological advancements in learners' assessment. More of the lecturers in professorial cadre are aware of twitter (item 3) as a technological advancement tool in learners' assessment. Generally, the lecturers in professorial cadre have higher percentage (77.72%) awareness of these technological advancement tools for learners' assessment.

From Table 4 the difference in the lecturers' awareness of technological advancement in learners' assessment based on cadre is not significant since χ^2 values at 0.05 significance level with degree of freedom

of 1 is greater than 0.05 (P >0.05; df = 1). Except that of item 2 with a chi-square value of 0.04. In total, the null hypothesis which states that there is no significant difference between the awareness of lecturers on professorial and non-professorial cadre of technological advancements in learners' assessment is then not rejected.

Research question 4. What level of the lecturers' have the ability to harness technological advancements in learners' assessment?

Presented in Table 5 is the frequency and percentage of the lecturers with the ability to harness technological advancements in learners' assessment.

Table 5: The Extent of Lecturers' Ability to Harness Technological Advancements in Learners' Assessment. N = 210

S/N	Lecturers' Harnessing Ability Items	Frequency of Yes ability	Percentage (%)	Frequency of No ability	Percentage (%)
1.	I can use clickers to induce students' interaction/ discussion before clicking the correct answer	52	24.8	158	75.2
2.	I can use the Peer-wise online web-based database that allows students to create and review multiple choice questions	27	12.8	183	87.1
3.	I can use the social media (Twitter) to connect, evaluate and communicate quickly with the students	149	71.0	61	29.0
4.	I can employ the virtual noticeboard (Wall-wisher) for my students to share ideas and paste comments concerning class assignments	109	51.9	101	48.1
5.	I can use a video-based computer-assisted test to automatically switch to language preference of the student	137	65.2	73	34.8
6.	I can use electronic test item banking	154	73.3	56	26.7
7.	I can use electronic examination to evaluate my students	175	83.3	35	16.7
8.	I can post my results on-line for results' checking	163	77.6	47	22.4
	Total	**966**	**57.50**	**714**	**42.50**

Data in Table 5 indicated that to a high extent, up to 75% of the lecturers lacked the ability to harness clickers and peer-wise in learning assessment. The 48.1% of the lectures cannot use the wall-wisher while 51.9% can harness wall-wisher in learners' assessment. Items 3, 5, 6, 7 and 8 have many of the

lecturers with the ability to harness it in learners' assessment. Generally, a greater percentage (57.50%) of the lecturers can harness the technological advancement tools in learners' assessment.

Research question 5 and hypothesis 3

What level of the lecturers' have the ability to harness technological advancements in learners' assessment based on gender? There is no significant difference between male and female lecturers' harnessing ability of technological advancements in learners' assessment.

Presented in Table 6 are the frequency, percentage and chi-square of the lecturers with ability to harness technological advancements in learners' assessment based on gender.

Table 6: Lecturers' Ability to Harness Technological Advancements in Learners' Assessment Based on Gender (Male = 50; Female 160).

S/N	Lecturers' Harnessing Ability Items	Male Frequency of Yes	Frequency of No	Female Frequency of Yes	Frequency of No	Chi-square df=1
1.	I can use clickers to induce students' interaction/ discussion before clicking the correct answer	16 (32%)	34 (68%)	36 (22.5%)	124 (77.5%)	.174
2.	I can use the Peer-wise online web-based database that allows students to create and review multiple choice questions	8 (26%)	42 (84%)	19 (11.87%)	141 (88.13%)	.447
3.	I can use the social media (Twitter) to connect, evaluate and communicate quickly with the students	38 (63.33%)	12 (36.67%)	11 1(68.38%)	49 (30.62%)	.368
4.	I can employ the virtual noticeboard (Wall-wisher) for my students to share ideas and paste comments concerning class assignments	27 (54%)	23 (46%)	86 (53.75%)	74 (46.25%)	.338
5.	I can use a video-based computer-assisted test to automatically switch to language preference of the student	34 (68%)	16 (32%)	103 (64.38%)	57 (35.62%)	.638
6.	I can use electronic test item banking	35 (70%)	15 (30%)	41 (25.62%)	119 (74.38%)	.541
7.	I can use electronic examination to evaluate my students	43 (86%)	7 (14%)	132 (82.5%)	28 (17.5%)	.562
8.	I can post my results on-line for results' checking	38 (76%)	12 (24%)	125 (78.13%)	35 (21.87%)	.753

Total	**239 (59.75%)**	**161 (40.25%)**	**553 (43.20%)**	**727 (56.80%)**

The lecturers' ability to harness technological advancement in learners' assessment presented in Table 6 according to gender revealed that to a higher extent, lecturers of both genders can harness 6 out of the 8 items listed. In total, more of the male lecturers (59.75%) have the ability to harness technological advancement tools in learners' assessment

Table 6 above revealed that the difference in the lecturers' ability to harness technological advancements in learners' assessment based on gender is not significant since χ^2 values at 0.05 significance level with degree of freedom of 1 is greater than 0.05 ($P > 0.05$; $df = 1$). The null hypothesis which states that there is no significant difference between male and female lecturers' harnessing ability of technological advancements in learners' assessment is therefore not rejected.

Research question 6 and hypothesis 4.

What level of the lecturers' have the ability to harness technological advancements in learners' assessment based on cadre?

There is no significant difference between professorial and non-professorial lecturers' harnessing ability of technological advancements in learners' assessment.

Presented in Table 7 is the frequency, percentage and chi-square of the lecturers with the ability to harness technological advancements in learners' assessment based on cadre.

Table 7 reveals that many lecturers (> 71%) from both cadres are not able to harness 2 out of the 8 technological advancement items listed, with more lecturers from the non-professorial cadre. However, items 3, 5, 6, 7 and 8 depict the areas that more than 68% lecturers from both non-professorial and professorial cadre have high extent of ability to harness the technological advancements in learners' assessment. More of the lecturers in non-professorial cadre are able to harness twitter (item 3) technological advancement in learners' assessment. Generally, the lectures in non-professorial cadre have the highest percentage ability to harness technological advancement tools in learners' assessment.

Table 7 above revealed that the difference in the lecturers' ability to harness technological advancements in learners' assessment based on cadre is not significant since χ^2 values at 0.05 significance level with degree of freedom of 1 is greater than 0.05 ($P > 0.05$; $df = 1$). The null hypothesis which states that there is no significant difference between non-professorial and professorial lecturers' harnessing ability of technological advancements in learners' assessment is therefore not rejected.

Table 7: Lectures' Ability to Harness Technological Advancements in Learners' Assessment Based on Cadre

S/N	**Lecturers' Harnessing Ability Items**	**Non-Professorial (N=141)**	**Professorial (N=69)**	**Chi-square**

		Frequency of Yes	Frequency of No	Frequency of Yes	Frequency of No	df = 1
1.	I can use clickers to induce students' interaction/ discussion before clicking the correct answer	32 (22.70%)	109 (77.30%)	20 (28.99%)	49 (71.01%)	.321
2.	I can use the Peer-wise online web-based database that allows students to create and review multiple choice questions	18 (12.77%)	123 (87.23%)	9 (13.04%)	60 (86.96%)	.955
3.	I can use the social media (Twitter) to connect, evaluate and communicate quickly with the students	99 (70.21%)	42 (29.79%)	19 (27.54%)	50 (72.46%)	.736
4.	I can employ the virtual noticeboard (Wall-wisher) for my students to share ideas and paste comments concerning class assignments	73 (51.77%)	68 (48.23%)	36 (52.17%)	33 (47.83%)	.956
5.	I can use a video-based computer-assisted test to automatically switch to language preference of the student	92 (65.25%)	49 (34.75%)	45 (65.22%)	24 (34.78%)	.996
6.	I can use electronic test item banking	107 (75.89%)	34 (24.11%)	47 (68.12%)	22 (31.88%)	.232
7.	I can use electronic examination to evaluate my students	119 (84.40%)	22 (15.60%)	56 (81.16%)	13 (18.84%)	.554
8.	I can post my results on-line for results' checking	110 (78.01%)	31 (21.99%)	53 (78.81%)	16 (23.19%)	.844
	Total	**650 (57.62%)**	**478 (42.38%)**	**285 (51.63%)**	**267 (48.37%)**	

Discussion

The result from this study as seen in Table 1 revealed that high percentage (75.89%) of the lecturers are aware of technological advancements in learners' assessment and 57.50% percentage of the lectures have the ability to harness the technological advancement tools in learners' assessment. The result is encouraging considering the need to be technology literate and complaint in order to enhance the quality of learning assessment. This study result is not surprising since humans have become very much dependent on the technological advancement tools to the extent that 78.3% of the developed world's population and

32.4% of the developing world's population are the ICT users (Eleje, Esomonu & Ufearo, 2019; Gul, 2015). However, majority of the lecturers have not heard about clickers and peer-wise technological advancement tools in learners' assessment. This can be attributed to lack of exposure or non-availability of those tools in the study area. Concurring to this finding, Kpai, Joe-Kinanee and Ekeleme (2012) and Okoye and Okwuogu (2020) observed that in Nigeria higher institutions lecturers are not equipped with technological advancement tools. Some lecturers in Anambra State are not aware of the clickers and peer-wise due to the fact that they were not trained with them while in school (Mba, 2013).

Further findings of this study revealed that all the male lecturers are aware of the twitter and on-line results as technological advancements tools in learners' assessment. In general, more of the male lectures are aware of the technological advancement tools in learners' assessment. It could be to the fact that the male gender is widely travelled than the female counterpart and as such are exposed to these technological tools. But the difference in the lecturers' awareness of technological advancement tools in learners' assessment based on gender is not significant (P values > 0.05; df = 1) (See Table 3). Therefore, the difference between male and female lecturers' awareness and ability to harness the technological advancements tools in learners' assessment as seen in Table 3 is not statistically significant. This study finding corroborates that of Okoye and Okwuogu (2020). They found out that gender has no significant effect on the extent of ICT usage of public tertiary institution lecturers. They attributed it to the fact that at the tertiary level of training, both male and female lecturers are exposed to the same platform, gender differences notwithstanding. This implies that irrespective of gender affiliation the extent of lecturers' awareness and ability to harness technological advancement tools in learners' assessment are the similar.

Also, there was an observed difference in the lecturers' awareness of technological advancements tools in learners' assessment in favour of the lectures in professorial cadre. This is more pronounced in gamification. This is understandable because gamification has been shown to increase learners' engagement with course materials and improve their motivation, learning participation and collaboration (Dicheva et al., 2015). Gamification has potential, but a lot of effort is required in the design and implementation of the experience for it to be fully motivating for participants (Domínguez et al., 2013). Thus, this study finding would be more suitable for lecturers in professorial cadre. This could be as a result of their depth of experience in the field which comes with versatile knowledge even in technological advancements in learners' assessment. But the ability to harness these technological advancement tools were more in non-professorial lecturers. This could be as a result of having more youth lecturers in non-professorial cadre. The youth according to Hamat, Embi and Hassan (2012) are more conversant with the modern technological advancements. The observed difference as seen in Table 3 is not statistically significant. The chi-square values for the items are greater than 0.05 though with the exception of the chi-square value of item 3. This implies that irrespective of lecturers' cadre, the extent of lecturers' awareness and ability to harness technological advancement tools in learners' assessment are the same.

The strength of the study was that this study is the first of its kind in Nigeria on learners' assessment. Despite this, there is potential for recall bias since the questionnaire instruments were distributed once.

Conclusion

Based on the study findings, the researchers concluded that that majority of the lectures from both genders and cadre are aware of twitter, wall-wisher, computer-assisted test, electronic test item, electronic examination and on-line results as technological advancement tools in learners' assessment; majority of the lectures from both genders and cadre are not aware of the clickers and peer-wise as technological advancement tools in learners' assessment; majority of the lecturers from both genders and cadre have the ability to harness/use twitter, computer-assisted test, electronic test item, electronic examination and on-

line results in learners' assessment; and that majority of the lectures from both genders and cadre do not have the ability to harness/use the clickers, peer-wise and wall-wisher in learners' assessment.

The researchers also concluded that gender and cadre of the lectures in higher institutions in Anambra state exerts no significant effect on their awareness and ability to harness technological advancement tools in learners' assessment.

Recommendations

The researchers made the following recommendations based on the study findings and conclusion.

1. The need for intensive training and retraining to reposition lecturers for maximum awareness and to harness technological advancement tools in learners' assessment.
2. Technical support from the tertiary institutions' management in collaboration with the government to equip the lecturers with knowledge and ability to harness the technological advancement tools in learners' assessment.
3. Government should enhance the provision of technological advancement tools in order to avail both male and female lecturers from all cadre the productivity and efficiency in quality learners' assessment delivery.
4. Annual evaluation of male and female lecturers 'awareness and harnessing ability of learners' assessment technological advancement tools should be adopted by tertiary institutions administration.
5. Further research is needed to check the consistency of findings and to identify whether the relationship is causal.

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