Edmodo Technology as a Tool for Post-Primary Education Development in Nigeria

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Abstract- Edmodo technology has been identified as a social media educational platform that can be used for remote learning between instructors and students. Many studies have been carried out separately to determine Edmodo technological impact, advantages or disadvantages and effectiveness. However, few studies focussed on the factors such as ease of use, usefulness and effectiveness of Edmodo technology together on instructors. The objective of the study is to investigate the ease of use, usefulness and effectiveness of using Edmodo technology by instructors for development of post-primary education in Nigeria. A convenience sampling method was used to select 30 instructors (12 males and 18 females) from six different post – primary education in Ibadan North, Oyo state, Nigeria and a structured questionnaire that included age, year of experience, educational qualification and three researched questions on perception of usefulness, easy to use and effectiveness of Edmodo technology was designed. A descriptive statistics and chi-square at 0.05 significant level were used to analysis the collated data. The result shows that 66.7% instructors' aged between 25 and 35 years, 33.3% aged between 35 and 45 years, 33.3 and 66.7% had less than five and above five years' experience, respectively while 23.3, 56.7 and 20% instructors had OND/NCE, B.Sc./B.Ed. and M.Sc./PhD, respectively. The chi-square result shows that Edmodo technology is useful, easy to use and effective tool for development of post-primary education in Nigeria. The use of Edmodo technology in post-primary education should be encouraged within instructors for educational development in Nigeria.

Indexed Terms- Easy to use, Edmodo, Effectiveness, Post-primary, Technology, Usefulness

I. INTRODUCTION

The importance of post-primary education in Nigeria made the Federal Government of Nigeria (FGN) to state the broad aims of post-primary education as preparation for useful living within the society and for higher education. The underlining principle here is that post-primary schools should be able to provide quality education to all those who can benefit from it. Post-primary education offers diversified curriculum to cater for differences in talents, opportunities and future roles. It provides opportunity for man power in the applied science, technology and commerce at sub-professional grades, develops and promotes Nigerian languages, art and culture. It inspires students with desire for self-improvement and achievement of excellence. It provides technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.

Moreover, if post-primary education is properly planned, executed and encouraged, it could be used to develop innate genius in the youth and enhance their capacity to stand by themselves. Post-primary education could be used as investment that could yield rich productive dividends in a very near future, which could have far reaching effects on national development. However, to be able to produce quality and well trained student as stated effective teaching, assessment, reporting and monitoring should be carried out and this cannot be done without the presence of an instructor with well-equipped technological tools. Therefore, there is need to study usefulness, ease of use and effectiveness of Edmodo technology as a tool of developing post-primary education in Nigeria.

II. LITERATURE REVIEW

A campus based social networking (CBSN) was designed for University community for interactions that includes learning and information sharing but this has not been hosted on the internet [1]. While the Edmodo is seen as a blended platform for learning that can be used by many educational institutions all over the globe because its features are attractive, friendly to use, free and secure e-environment. [2] studied possible awareness of the use of Edmodo as an online platform for sustaining teaching and learning activities during Covid-19 era in the public tertiary in the North Central of Nigeria. They used simple random sampling, percentage and t-test technique tools. They found the awareness of Edmodo to be very low in the studied selected tertiary institutions. The adoption of Edmodo technology within higher educational system was found lacking despite the possibility of its use improving learning skills among students' of tertiary institution [3]. The likely cause of the lack of its adoption was not studied. The present study of Edmodo technology is based on its usefulness, easy of use and effectiveness among post-primary education instructors for post-primary education development in Nigeria. [4], [5] investigated strengths and drawbacks of Edmodo among Indonesian University tutors and students. The strength of Edmodo was found in terms of its practicality and efficiency while the drawbacks was the need for strong internet facility. A study conducted during Covid-19 era to determine effectiveness of use of Edmodo among students of Informatics Engineering Education in Indonesia and in the English literature study program of students of University of Flores indicated a positive effectiveness [6]. The present study among other factors also considering effectiveness of Edmodo among post-primary education instructors' in Nigeria. A study was carried to determine factors impelling students' behavioural intention to use the educational social network like Edmodo. It was noted that students' antecedents significantly predicted the sudents' intention to use Edmodo, usefulness of Edmodo had moderate effect on predicting the sudents' intention and perceived easy of use predicted perceived usefulness directly. The perceived usefulness and easy of use of the Edmodo by students' were significant [6]. [7] studied effectiveness of e-learning platform of Edmodo with or without a video conference Jisti meet in reducing students' mistakes in answering the questions given and this was found to have reduce error level in answering questions by 50%. [8] investigated effect of students' perception to integration of Edmodo to their learning system and found a positive perception to students' learning by integrating Edmodo into the system. A positive impact of inquiry skills and academic achievement of prospective teachers was found when a project based learning application was assisted by Edmodo platform [9]. The effectiveness of a blended learning using Edmodo platform in teaching Indonesian Nursing students English was carried out and a significant effect was found compared to face - face teaching [10]. This current study is focussing on the usefulness, easy of use and effectiveness of Edmodo technology among post-primary education instructors to develop post-primary education in Nigeria.

III. METHODOLOGY

A sample size of thirty instructors comprising 12 males and 18 females were selected by using convenient sampling technique from six post-primary educational sector in Ibadan North, Oyo state, Nigeria. The research questionnaire include gender, age, year of experience and educational qualification of the instructors and three structured questions to access usefulness, ease of use and effectiveness of Edmodo technology among instructors of post-primary education in Ibadan North, Oyo state, Nigeria. The gathered data from the questionnaires were presented and analysed using descriptive statistics and chi-square at 0.05 level of significance to test the three research hypotheses formulated in the present study

IV. RESULTS PRESENTATION & DISCUSSIONS

Figure 1 shows the instructors' gender distribution. This indicated 40% were males while 60% were females. There were more female than male instructors in this study.
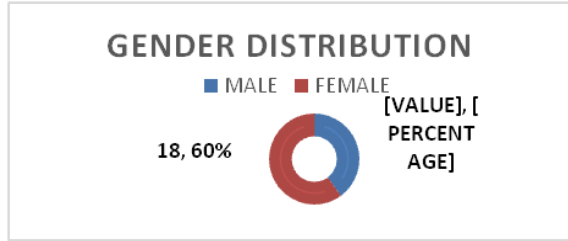
Figure 1. Instructors' gender distribution

Figure 2 gives the instructors age distribution that were involved in the study. The age from 25 to 35years were 66.7% and age from 35 to 45 years were 33.3%. This means that most of the instructors that participated in this study were in their productive age.
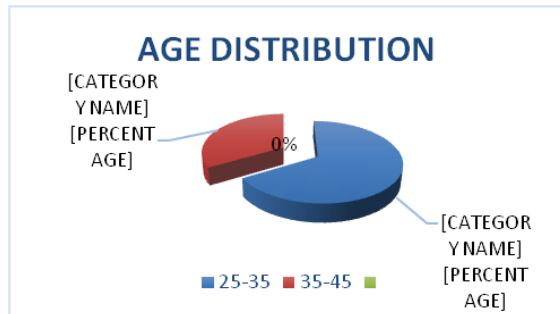

Figure 2. Instructors' age distribution

Figure 3 shows length of years of experience of the instructors that participated in this study. Ten out of the 30 participant indicated they have less than 5years experience which is 33.3% while 20 participants have above 5years experience as an instructor in post-primary education service which is 66.7% of the total participants. This means that majority of the instructors were experienced in the field.
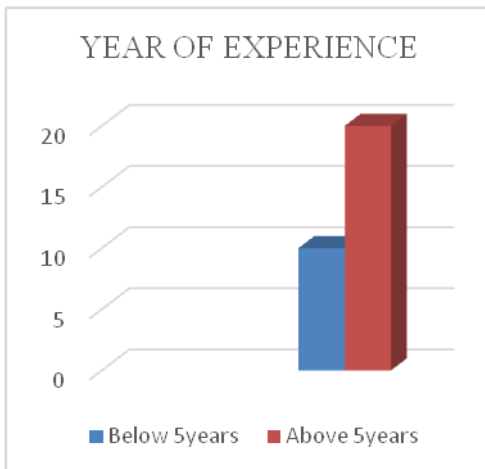

Figure 3. Instructors' years of experience distribution

Figure 4 shows educational qualification of the instructors. Seven of the instructors have OND/NCE, seventeen instructors have B.Sc. /B.Ed. while six participants have M.Sc./PhD. These were 23.3, 56.7 and 20% respectively. Majority of the instructors were well trained to the level University education first degree.
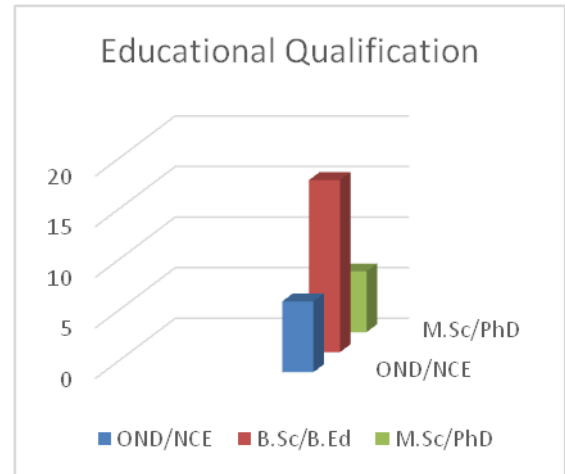
Figure 4. Instructors' educational qualification distribution

V. ANALYSIS OF THE RESEARCH QUESTIONS

- RESEARCH QUESTION ONE: What is the perceptions of the instructors to the usefulness of Edmodo technology?

Table 1 indicates that 60% (108 responses) of the participated instructors strongly agreed to Edmodo technology perception as a useful tool for post-primary education development in Nigeria as it influences their work, 37.2% (67 responses) only agreed while 2.8% (5 responses) disagreed.

TABLE 1. Instructors' perception to usefulness of Edmodo Technology

Items	Strongly Agreed	Agreed	Disagreed	Total

Using the Edmodo technology enables me to accomplish tasks more quickly	22	7	1	30
Using the Edmodo technology enhances the quality of my work.	20	10	-	30
Edmodo technology is found useful in my work.	20	9	1	30
Edmodo technology platform has improved my productivity.	18	10	2	30
Edmodo technology platform enhances my efficiency on the job.	19	11	-	30
Edmodo technology platform allows for greater control of my job.	9	20	1	30
Total	108	67	5	180

- Test of hypothesis

Research hypotheses were formulated to determine the usefulness, ease of use and effectiveness of Edmodo technology as a tool for post-primary education development in Nigeria.

- Hypothesis one

H_o: Edmodo technology is not useful as a tool for post-primary education development in Nigeria

H_1: Edmodo technology is useful as a tool for post-primary education development in Nigeria

Table 2. Chi-Square calculation from Table 1

s/n	Observed	Expected	$O - E$	$(O - E)^2$	$(O - E)^2 /E$
1	22	18.00	4.00	16.00	0.89
2	7	11.20	-4.20	17.64	1.58
3	1	0.80	0.20	0.04	0.05
4	20	18.00	2.00	4.00	0.22
5	10	11.20	-1.20	1.44	0.13
6	0	0.80	-0.80	0.64	0.80
7	20	18.00	2.00	4.00	0.22
8	9	11.20	-2.20	4.84	0.43
9	1	0.80	0.20	0.04	0.05
10	18	18.00	0.00	0.00	0.00
11	10	11.20	-1.20	1.44	0.13
12	2	0.80	1.20	1.44	1.80
13	19	18.00	1.00	1.00	0.06
14	11	11.20	-0.20	0.04	0.00
15	0	0.80	-0.80	0.64	0.80
16	9	18.00	-9.00	81.00	4.50
17	20	11.20	8.80	77.44	6.91
18	1	0.80	0.20	0.04	0.05
Total	180	180	0.00	211.68	18.44

Degree of freedom = (Rows – 1) (Columns – 1) = (6 – 1) (3 – 1) = (5×2) = 10. The chi-square value when degree of freedom is ten from the table at 0.05 level of significance is 18.31. Therefore the H_o will be rejected while H_1 will be accepted. Hence, Edmodo technology is useful as a tool for post-primary education development in Nigeria.

- RESEARCH QUESTION TWO: What is the perceptions of the instructors to the ease of use of Edmodo technology?

Table 3. Instructors' perception to the ease of use of Edmodo Technology

ITEMS	Strongly Agreed	Agreed	Disagreed	Total
Learning to use Edmodo is easy	18	12	-	30
Interacting with Edmodo is easy	16	14	-	30
Learning to interact with Edmodo is easy	17	13	-	30
It easy to use Edmodo to do what I want to do	10	20	-	30
Rarely frustrated when using Edmodo.	6	20	4	30
Rarely become confused to use Edmodo	5	23	2	30
Rarely make errors when using Edmodo	3	22	5	30
Total	75	124	11	210

- Hypothesis Two

H_o: Edmodo technology is not an easy to use tool for post-primary education development in Nigeria
H_1: Edmodo technology is an easy to use tool for post-primary education development in Nigeria

Table 4. Chi-Square calculation from Table 3

s/n	Observed	Expected	O – E	(O – E)^2	(O – E)^2/E
1	18	10.71	7.29	53.14	4.96
2	12	17.71	-5.71	32.60	1.84
3	0	1.57	-1.57	2.47	1.57
4	16	10.71	5.29	27.98	2.61
5	14	17.71	-3.71	13.76	0.78
6	0	1.57	-1.57	2.47	1.57
7	17	10.71	6.29	39.56	3.69
8	13	17.71	-4.71	22.18	1.25
9	0	1.57	-1.57	2.47	1.57
10	10	10.71	-0.71	0.50	0.05
11	20	17.71	2.29	5.24	0.30
12	0	1.57	-1.57	2.47	1.57
13	6	10.71	-4.71	22.18	2.07
14	20	17.71	2.29	5.24	0.30
15	4	1.57	2.43	5.91	3.76
16	5	10.71	-5.71	32.60	3.04
17	23	17.71	5.29	27.98	1.58
18	2	1.57	0.43	0.19	0.12
19	5	10.71	-5.71	32.60	3.04
20	23	17.71	5.29	27.98	1.58
21	2	1.57	0.43	0.19	0.12
Total	210	209.93	0.07	878.47	37.37

Degree of freedom = (Rows – 1) (Columns – 1) = (7 – 1) (3 – 1) = (6×2) = 12. The chi-square value when degree of freedom is twelve from the table at 0.05 level of significance is 21.03. Therefore the H_o will be rejected while H_1 will be accepted. Hence, Edmodo technology is an easy to use tool for post-primary education development in Nigeria.

- RESEARCH QUESTION THREE: What is the perceptions of the instructors to the effectiveness of Edmodo technology in teaching, learning and administration?

TABLE 5. Perceptions of effectiveness of Edmodo Technology for teaching, learning and administration

Items	Strongly Agreed	Agreed	Disagreed	Total
Edmodo builds on intuition and familiarity	15	11	4	30
Edmodo's familiar appearance makes instructors instinctively know where to look, what to do, and how to interact with the program	13	16	1	30

Edmodo's efficiency and strong functionality makes it effective to use	15	14	1	30
The code system in Edmodo is clear and effective	4	19	7	30
Features such as store, library, grade on the icons are strategically placed which makes them relevant to their location	14	15	1	30
Ability to give students access to class content, deadlines, and upcoming events, through their own profiles makes Edmodo effective for use.	11	18	1	30
Effective transition in Edmodo provides effective support in using the platform	15	14	1	30
Edmodo is quick to load and generally very reliable	9	20	1	30
Total	96	127	17	240

- Hypothesis Three

H_o: Edmodo technology is not an effective tool for post-primary education development in Nigeria

H_1: Edmodo technology is an effective tool for post-primary education development in Nigeria

Table 6. Chi-Square calculation from Table 5

s/n	Observed	Expected	O – E	(O – E)^2	(O – E)^2/E
1	15	12.00	3.00	9.00	0.75
2	11	15.88	-4.88	23.81	2.16
3	4	2.13	1.87	3.50	1.64
4	13	12.00	3.00	9.00	0.75
5	16	15.88	0.12	0.01	0.00
6	1	2.13	-1.13	1.28	0.60
7	15	12.00	3.00	9.00	0.75
8	14	15.88	-1.88	3.53	0.22
9	1	2.13	-1.13	1.28	0.60
10	4	12.00	-8.00	64.00	5.33
11	19	15.88	3.12	9.73	0.61
12	7	2.13	4.87	23.71	11.13
13	14	12.00	2.00	4.00	0.33
14	15	15.88	-0.88	0.77	0.50
15	1	2.13	-1.13	1.28	0.60
16	11	12.00	-1.00	1.00	0.08
17	18	15.88	2.12	4.49	0.28
18	1	2.13	-1.13	1.28	0.60
19	15	12.00	3.00	9.00	0.75
20	14	15.88	-1.88	3.53	0.22
21	1	2.13	-1.13	1.28	0.60
22	9	12.00	-3.00	9.00	0.75
23	20	15.88	4.12	16.97	1.07
24	1	2.13	-1.13	1.28	0.60
Total	240	240.08	1.92	211.73	30.17

Degree of freedom = (Rows – 1) (Columns – 1) = (8 – 1) (3 – 1) = (7×2) = 14. The chi-square value when degree of freedom is fourteen from the table at 0.05 level of significance is 23.68. Therefore the H_o will be rejected while H_1 will be accepted. Hence, Edmodo technology is an effective tool for post-primary education development in Nigeria.

CONCLUSION

The significant of ease of use, usefulness and effectiveness of Edmodo technology found in this study should make Nigeria Government through the ministry of Education adopt the platform for post-primary education development in Nigeria. The strength of Edmodo has been found to be significant in practicality and efficiency in a published data while the only drawback is the need for strong internet facility. Hence, Nigeria government should make available strong internet facility in order to take full benefit of the Edmodo technology for post-primary education development.

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