FACTORS INFLUENCING STUDENTS' INTENTION TO ADOPT ONLINE CLASSES IN THE NATIONAL OPEN UNIVERSITY OF NIGERIA (NOUN)

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Abstract

Understanding factors influencing adoption of online classes by distance learners is growing exponentially in the contemporary world. The reason for this is not farfetched. Just as the number of young and old students enrolling in distance learning continues to grow so also the rate of drop-out from the programme continue unabated. Hence, the study was set out to empirically understand factor influencing student intention to adopt online classes in Nigeria. Based on technology acceptance model, factors such as perceived usefulness, ease of use and self efficacy were hypothesized to influence adoption of online classes. To test the factors, an adapted questionnaire was administered on 171 students of Open University in Nigeria. The validity and reliability of the research instrument was conducted. A Crobach Alpha of 0.89 co-efficient was obtained and a factor analysis was carried out with Varimax Rotation to ascertain the dimensionality of the constructs used in the study. Regression analysis was used for analyzing the data of the study. The findings of the study revealed that ease of use and computer self efficacy significantly influenced student intention to adopt online class, while perceived usefulness had no significant influence on students' intention to use online class. These findings have theoretical and practical Implication for online instructors, administrators and curriculum developers. The study therefore recommended among others that students should be given orientation on technical and pedagogical aspect of their programme at the onset so that they could be well prepared to stay on the programme and achieve success in open and distance learning environment.

Keywords*: Perceived ease of use, Perceived usefulness, Computer Self-efficacy, Student intention to use online class*

Introduction

In the last two decade, almost all the higher institutions of learning in the world have either introduce online class or on the threshold of introducing it as a mode of instruction for implementing the curriculum. The evolution of Information and Communication Technology (ICT) through the Internet has been the (enabler) driving force behind this new mode of teaching and learning which has transforms the entire educational landscape and altered the educational equation in a fundamental ways (Aduwa-Ogiegbaen, 2013). Online class is a mode

of instruction which enable teachers and the learners to interact through the Internet and thereby extending the classroom beyond the traditional boundaries of time and space (Kalema, Olugbara, & Kekwaletswe, 2011).

In spite of global acceptance of online mode of instruction and the general belief that it is an effective way of instructional delivery, there are some fundamental issue which is still continue to attract researchers attention in order to take maximal advantage of the new innovation in teaching and learning process. Tarhini, Hone, and Liu (2013) were of the view that implementation and acceptance of online learning goes beyond technological solution, but a function of many other factors, such as social, environmental and behavioural intention. One of such issues that keep on recurring is the matter of student intention to accept online classes in the developing countries like Nigeria. Intention according to Masrom and Hussein (2008) "is a measure of the strength of one's attitude to perform a specified behavior, that is, the use of an information system"(p, 12). Ajzen (1991) in Masrom and Hussein (2008) opined that intention is "an indication of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (pg 10).

According to Grandson, Alshare, and Kwun (2005) there are many studies conducted on distance learning, yet understanding factors influencing students' intention to accept online mode of instruction required to be known. Since intention is a predictor of a behavior, undestanding student intention to accept online learning will invariably assist the academic, curriculum planners and the school administrators to device a mechanism to attract students to adopt online classes.

Literature Review

There are stream of literatures on factors that influences students' attitude and their behavioral intention toward acceptance of new information technology. According to Masrom and Hussein (2008) there are variety of theoretical perspective been advanced to provide an understanding of the determinant of IT usage. Most of the study on IT and online instruction acceptance focuses on the identification of the determinants of intention such as, student attitudes, social influences, and facilitating conditions (Davis et al., 1989; Hartwick & Barki, 1994; Mathieson, 1991). Most of these works were grounded in the models of the Theory of Reason Action (TRA) and Theory of Planned Behaviour (TPB). However, Technology Acceptance Model (TAM) which was developed by Davis (1986) emerged as a powerful and most parsimonious mean of understanding the antecedents of system usage through beliefs about two factors. These factors are perceived ease of use and perceived usefulness of an information system (Davis, 1989, 1993). Based on previous research, this study adopt technology acceptance model as the theoretical foundation for prosecuting the study and added self efficacy as determinants of the intention of adoption of online learning technologies. It is of the belief that this will better explain students' intention to adopt online classes in the cultural context of the study.

Perceived ease of use (PEOU) was a construct developed by Davis (1989), the construct was a product of Technology Acceptance Model. PEOU "is the degree to which a person believes that using particular system would be free from effort. Similarly, Davis, Bagozzi, and Warshaw (1992) in another study reported that perceived ease of use is antecedent in determining users' intention to use information system. In this study, it is assume that the student will find online classes free from effort and would attract them to use it for learning. From this assumption, the first research hypothesis was derived.

Like perceived ease of use, Davis (1986) posited that perceived usefulness (PU) is another factor that can influence acceptance of IT system. PU "is the degree to which a person believes that using a particular system would enhance his or her job performance. The study of Edmund, Thorpe, and Conole (2012) on student attitudes towards and use of ICT in course study, work and social activity reported that perceived usefulness is the strongest driver of information use Based on the assertion of Davis (1986) and Edmund et al. (2012) that perceived usefulness is a precondition for the adoption of IT system, it is therefore assume that PU will strongly influence student intention to adopt online class in the present setting of this study. Thus, we generated the second hypothesis of the study.

Self-efficacy is defined as "people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives". Research evidence has showed that self-efficacy is a good predictor of IT system and that it is also a determinant of perceived ease of use and perceived usefulness (Adam, Nelson & Tod, 1992; Hendrickson, Massey, & Cronan, 1993). In a study conducted by Ahmad, Basha, Marzuki, Hisham and Sahari (2011) reported that self efficacy was an important determinant of computer use. Similarly, Easten and LaRose (2000) study on Internet use among experienced and novice users equally submitted that self efficacy stand to be an important factor, and that it is a determining factor in closing the so call digital divide. Wu et al (2008) in a study attest to the importance of self efficacy as a determinant of IT use reported that the construct as been statistically significant at influencing teachers' intention to use information system. In the context of this study, it is considered that self-efficacy will influence student intention to use online class. Thus, we derived the third hypothesis of the study.
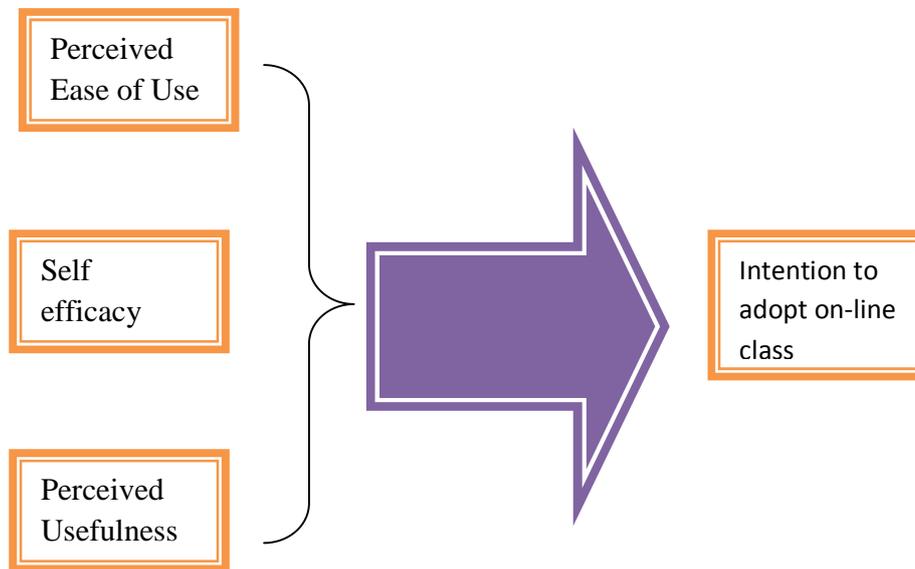
Fig 1: The Conceptual framework of the study

From the above theoretical framework of the study, the following hypotheses were formulated to guide the study.

Research Hypotheses
(i)   Perceived ease of use of IT will significantly influence students' intention to adopt online class.
(ii)   Perceived usefulness of IT will significantly influence students' intention to adopt online class.
(iii)   Student self efficacy in IT will significantly influence their intention to adopt online class
(iv)   There will be a significant difference in male and female students' intention to adopt online class.

Methodology
The study was a survey type. The researcher employed survey method for data collection because of its appropriateness and empirical nature of the study. The data of the study was collected from the students of the National Open University of Nigeria (NOUN) Ilorin study centre through an adapted questionnaire. The instrument of the study consisted of few questions on demographics variable of the respondents. The item on PEOU and PU was adapted from Davis (1989). The items on computer self-efficacy were adapted from Compeau et al. (1999) scale. Lastly, the items on intention were derived from Ajzen (1991) study. The study questionnaire was designed on a five point Likert scale on which one (1) to five (5) represented strongly agree to strongly disagree respectively. A total of two hundred (200) questionnaires were administered out of which one hundred and seventy one (171) representing 86%

response rate was found useable for the study. Prior to the administration of the research instrument on the respondents of the study, the validity and reliability of the research instrument was ascertained. A Crobach Alpha of 0.89 co-efficient was obtained and a factor analysis was conducted to ascertain the dimensionality of the constructs used in the study. Regression analysis, Mean, Standard Deviation and T-test analysis was finally used to answer all the hypotheses generated for the study.

Table 1: Results of Mean and Standard Deviation on items of the study

S/No.	ITEMS	M	SD
PU1	Attending online classes would enable me to accomplish my learning task more quickly	3.52	1.19
PU2	Online class would improve my academic performance	3.75	1.02
PU3	Online class would enhance my learning effectiveness	3.57	1.17
PU4	Online classes would be easier for my learning	3.56	1.04
PU5	I would find online classes useful for my learning	3.66	1.11
PEU1	Learning through online class would be easy for me	3.56	1.05
PEU2	I would find it easy to use online for my learning	3.54	1.18
PEU3	My interaction in online class would be clear and understandable	3.68	4.42
PEU4	It would be easy for me to be skillful in online class	3.34	1.15
PEU5	I would find online class flexible to actualize my learning objective	3.46	1.10
PEU6	I would find online classes easy to use for learning	3.38	1.26
SE1	I could study through online class, if there was no one around to tell me what to do	3.29	1.32
SE2	I could study online, if I could call someone for help if I got stuck	3.36	1.24
SE3	I could study online alone with just the built-in help facility	3.46	1.21
INT1	If the barrier to use online classes are overcome, I intend to study online	3.39	1.25
INT2	If significant barrier did not exist, I predict I would use online classes	3.62	1.14
INT3	I intend to attend online classes if available	3.90	1.06

The reliability of all the constructs of the study are: Perceived usefulness (.90), Perceived ease of use (.65), Computer self efficacy (.72), and Intention to adopt online learning (.77)

Table 2: Model summary output of the regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728[a]	.530	.519	1.98909

a. Predictors: (Constant), SE, PU, PEU
b. Dependent Variable: INT

Table 3: ANOVA output of the regression analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	610.106	3	203.369	51.402	.000[a]
	Residual	542.036	168	3.956		
	Total	1152.142	171			

a. Predictors: (Constant), sumse, sumpu, sumpeu

b. Dependent Variable: sumint

Table 4: Multiple regression analysis of students' online adoption

	Unstandardize Coefficient		Standardize Coefficient	T	Sig	Collinearity Static	
	B	Std Error	BETA(β)			Tolerance	VIF
Constant	3.644	.698		5.220	.000		
PU	.013	.050	.021	.257	.798	.509	1.965
PEU	.060	.032	.157	1.883	.062	.492	2.032
CSE	.570	.805	.600	7.093	.000	.480	2.082

$P<0.001$

Multiple regression analysis was conducted to test the research hypotheses of the study. Prior to multiple regression procedure, collinearity diagnostic were performed to ascertain that the data was free from multicollinearity. The result shows that the assumption of multicollinearity has not been violated in anyway. A look at the VIF value shows that the values were greater than 0.10 which is above the cut-off point for multicollinearity (Pallant, 2007). The data of the study has satisfied all the assumption for regression analysis. The results of the analysis are hereby presented.

Results
The analysis of the result shows that the three independent variable of the study (perceived ease of use, perceived usefulness and computer self efficacy) all together explain 53 per cent variance (R Square) in Table 2, which is statistically significant, this is also explained by the F-

value of 51.402, P=0.000 in Table 3. Following this, is the analysis of the research hypotheses generated to prosecute the study; the analysis is conducted to know which of the independent variable contributed to the prediction of the dependent variable. Therefore we check the beta value of the standardize coefficient in Table 3.

Hypothesis 1: Students perceived ease of use of (IT) will significantly influence their intention to adopt online class

The result of the regression analysis in (Table 4) showed that perceived ease of use significantly influence students intention to adopt online class. A look at the beta (β) in Table 4 shows a coefficient of (β=.15, p> 0.001), this shows that perceived ease of use predict students intention to adopt online class with total variance explained of 22 percent.

Hypothesis 2: Students perceived usefulness of (IT) will significantly influence their intention to adopt online class
The result of the regression analysis in (Table 4) showed that perceived usefulness is statistically insignificant at influencing students' intention to adopt online class. A look at the beta (β) in Table 4 shows a coefficient of (β=.02, p> 0.001), this indicates that perceived usefulness was not a predictor of students' intention to adopt online class in the cultural setting of this study.

Hypothesis 3: Student self efficacy in (IT) will significantly influence their intention to adopt online class
The result of the analysis in Table 4 showed that students self efficacy in Information technology statistically influenced their intention to adopt online class with coefficient of (β=.60, p> 0.001). The beta value stand to be the strongest predictor of students' intention to adopt online class in the cultural set up of the study with total variance explained of 36 per cent.

Table 5: Result of T-test analysis on female and male intention to adopt online class

Gender	N	Mean	Std. Deviation	t-value	df	Sig (2 tailed)	Mean Difference
Male	79	4.0923	.97984			.056	.34231
				1.927	.170		
Female	92	3.7500	1.10905			.054	.34231

Hypothesis 4: There will be significant difference in male and female students' intention to adopt online class
The result of the t-test analysis in Table 5 revealed that there is no statistical difference between female and male students intention to adopt online class. The analysis shows

insignificant difference in figure for males (M= 4.09, SD= 0.97) and females (M= 3.75, SD= 1.10), t (170) = 1.92, p= .06 (two tailed). The magnitude of differences in the mean (mean difference=.34231, at 95% confidence interval within upper and lower is (.69356 and .69018), was found to be very small. We therefore conclude that there is no statistical difference in the male and female intention to adopt online classes.

Discussion

Findings from the analysis indicates that the second item among the five indicators representing latent variable perceived usefulness (PU) "online class would improve my academic performance" have a highest mean score of 3.75 with standard deviation of 1.02, while the first item "attending online class would enable me to accomplish my learning task more quickly" have the lowest mean of 3.52 with standard deviation of 1.19. The finding suggests that the student have strong believed in online learning, this explain why the item stand-out among the indicators of perceived usefulness. A look at the item that represent perceived ease of use also show that the third item "my interaction in online class would be clear and understandable" have a highest mean of 3.68 with standard deviation of 4.42. This finding indicates a positive perception of students to online class because it may not be difficult for them to use online resources if it is required for their learning. Similarly, the finding on items of students IT self efficacy showed that the third item of the self efficacy indicator "I could study alone in the online class with just the built-in help facility" has the highest mean of 3.46 and standard deviation of 1.21. The finding further indicates that the students are technology savvy and they may required little support to effectively use online resources for their learning.

Furthermore, the findings of the research questions of the study indicate that perceived ease of use statistically influenced students' intention to adopt online class. This finding was congruent with Davis (1989) finding that feature ease of use as one of the determinant of acceptance of information system. The finding also supported the finding of Chokri (2012) that reported the significant of ease of use as a factor influencing the use of e-learning among Saudi-Arabia students. The study also validate the finding of Davis et al. (1992) that reported perceived ease of use as antecedent to determining users' intention to accept information system.

However, the study shows that perceived usefulness was statistically insignificant predictor of students' intention to accept online class. The finding was in contrast with Davis (1986) and Edmund et al. (2012) submission of the strength of perceived usefulness in determining users' intention to accept new innovation.

Lastly, this study revealed that self efficacy was the strongest determinant of student intention to adopt online class. The finding was consistent with previous finding that demonstrated the significant influence of self efficacy on adoption of information system (Ahmad et al.2011; Wu et al. 2008; Easten & LaRose, 2000). In summary, this study shows that adoption of online class in the cultural setting of the study depends majorly on students' perceived ease of use of

online resources and their self efficacy at using them for learning. However, perceived usefulness was found to be insignificant at influencing student adoption of online class.

Recommendations
The findings of this study have several implications for distance educators, facilitators and curriculum developer. The study have revealed that the students are generally technological savvy and would found online easy to use for learning. Therefore,

(i)   They should be given orientation on technical and pedagogical aspect of their programme at the onset so that they could be well prepared to stay on the programme and achieve success in open and distance learning environment.

(ii)   Online resources use should be integrated into the curriculum in other to use the preferred medium and best practice to facilitate learning to student in open and distance education.

(iii)   Online educators and facilitators should be encouraged to upgrade their level of competence on online resources use through professional development (in house training) in order to be able to effectively deploy the new innovation for teaching. Thus, the dependence on old ways (correspondence) system of teaching distance learners through teacher-centered method of instruction should be changed to a one where rich aural and visual interaction takes place between teacher and learners as well as between learner and learner.

(iv)   They should as a matter of necessity employ the use of web resources as their teaching tool. In conclusion, it is apparent that student self efficacy in the use of internet resources may lead to their satisfaction in online classes if the resources is used to teach them and will invariably encourage their academic performance.

References

Aduwa-Ogiegbaen, S. E. (2013). *Extending and enriching students' learning experience in distance education in Nigeria.* Proceedings of the 34th international conference, Nigeria Association for Educational and Media Technology. (NAEMT)

Ahmad, T. B. T., Basha, K. M., Marzuki, A. M., Hisham, N. A., & Sahari, M. (2010). Faculty's acceptance of computer-based technology: cross-validation of an extended model. *Australian Journal of Educational Technology, 26(2), 268-279.*

Adam, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived usefulness, ease of use and usage of information technology: A replication. *MIS Quarterly, (16) 227-247*

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behaviour, and Human Decision Process, (50), 179-211.*

Chokri, B. (2012). Factors influencing the adoption of the elearning technology in teaching and learning by students of a university class. *European Scientific Journal, 8(28).*

Compeau, R. D., Higgins, A. C., & Huff, S. (1992) Social cognitive theory and individual reactions to computing technology: a longitudinal study. *MIS Quarterly, 23(2),145-158.*

Davis, F. D. (1989). Perceived usefulness, ease of use and usage of information technology. *MIS Quarterly, 13(3), 319-340.*

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science, 38(8), 982-1003.*

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in work-place. *Journal of Applied Social Psychology, 22(14),1111-1132.*

Davis, F.D (1993). User acceptance of information technology: System characteristics, user perception and behavioural impacts. *International Journal of Man-Machine Studies, 38(3),475-487.*

Eastin, M. S., & Larose, R. (2000). Internet self efficacy and the psychology of digital divide. Retrieved from http://www.ascusc.org/icmc/vol6/issuel/eastin.html

Edmunds, R., Thorpe, M. & Conole, G. (2012). Student attitudes toward and use of ICT in course study, work and social activity: A technology acceptance approach. *British Journal of Educational Technology,43(2012),71-84.*

Grandon, E., Alshare, O. & Kwan, O. (2005). Factor influencing student intention to adopt online class: A cross-cultural study. *Journal of Computing Sciences in College. 2(4), 45-56*

Hartwick, J., & Barki, H. (1994). Explaining the role of user participation in information system use. *Management Science, 40(4), 40-65.*

Hendrickson, A. R., Massey, P. D. & Cronan, T. P. (1993). On the test-retest reliability of perceived usefulness and perceived ease of use scales. *MIS Quarterly, 227-230.*

Kalema, B. M., Olugbara, O. O. & Kekwaletse, R. M. (2011). The application of structural equation modeling technique to analyse students priorities in using course management system. *International Journal of Computing and ICT Research. 5, 34-44.*

Mathieson, K. (1991). Predicting user intention: Comparing the technology acceptance model with the theory of planned behavior. *Information System Research,* 2(3), 173-191

Pallant, J. (2007). *SPSS survival manual.* UK: Open University Press.