Actualization of Critical Predictors in Online Studies and Students' Educational Experience: Case Study of National Open University of Nigeria

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ABSTRACT

The study was necessitated by the fact that there is strong need for measurement of the effectiveness of online education in Nigeria since some segment of society feel that the level of engagement in online teaching and learning as represented by the National Open University of Nigeria, may not be as strong as what is obtainable in traditional teaching and learning. The indices for measurement are the extent of actualization of teaching, social and cognitive presence and their effect on students' experience. The underpinning theoretical framework is the community of inquiry model (CoI). Data collection was done using an instrument: a questionnaire dubbed, Online Presences and Quality Questionnaire OPQQ. Samples of 240 first-year students were surveyed. Data were analyzed using multiple regressions. Findings show that social presence was the least developed in the online National Open University of Nigeria, it has a very minute beta value of .047 and a very statistically insignificant value of .400.

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The study was necessitated by the fact that there is strong need for measurement of the effectiveness of online education in Nigeria since some segment of society feel that the level of engagement in online teaching and learning as represented by the National Open University of Nigeria, may not be as strong as what is obtainable in traditional teaching and learning. The indices for measurement are the extent of actualization of teaching, social and cognitive presence and their effect on students' experience. The underpinning theoretical framework is the community of inquiry model (CoI). Data collection was done using an instrument: a questionnaire dubbed, Online Presences and Quality Questionnaire OPQQ. Samples of 240 first-year students were surveyed. Data were analyzed using multiple regressions. Findings show that social presence was the least developed in the online National Open University of Nigeria, it has a very minute beta value of .047 and a very statistically insignificant value of .400. It is followed by teaching presence which though is slightly statistically insignificant and weak with a Beta value of .125 and p-value of, 052 is far greater in magnitude or extent than social presence. Cognitive presence with a Beta value of .685 and p-value of .000 showed a remarkable high extent in magnitude in the National Open University of Nigeria and affected the students 'educational experience most. Some of the recommendations that were made included the fact that: students should be made to reach the final stage of cognitive presence in their online course design, there should be a well-designed course content to improve motivated interaction between the instructor and learners. It is also recommended that there should be advancement in technology to facilitate implementation of the online presences. The importance of the presences in online studies should be given attention during accreditation.

Keywords: actualization, critical predictors, online studies, educational experience.

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II. INTRODUCTION

Before the introduction of formal education by the missionaries, the informal education characterized with learning goals and very functional for the society at the time was achieved mainly by observation and practice. (Fafuwa, 1991). This informal learning therefore demands that the student must be physically present at the point of learning. The students mimic and perfect the skills or set of skills set out for them as the objective of study (Wagner, 1999).

The formal education under the auspices of the missionaries underwent successive modifications from the 4Rs -reading, writing, arithmetic and religion to what we have today that were catalyzed by the different ordinances and policies which

were set by successive governments. However, these modifications did not change the physical presence of the students in the place of learning.

With the advancement in technology, a variant of education from distant learning where the students did not necessarily need to be physically present to learn from their instructors, to online education was introduced. At this point, Colleges and Universities started adding some distant education components into their curriculum. Finally, came the initiative, to run an entire university system online; university without walls. A good example of this is the National Open University of Nigeria. At start up, enrolment was tardy but in recent times the enrolment has hit astronomical rates. Many academic staff, working class men and women, even non-working students now have recourse to the online components of the National Open University of Nigeria to actualize their academic dreams. Garrison, Anderson & Archer (2000), developed the Community of inquiry model into a framework that identified three elements which contribute to educational experience in online learning or computer-mediated communication. These include; social, teaching and cognitive presences. The model established a framework that provided insight and clue to explore interactive online teaching and learning experiences. Previously, before online interactive opportunities like discussion forums and other media came to be used widely, students offering distance education worked independently. Today, research invests into understanding issues and dynamics of collaborative online teaching and learning. Garrison & Vaughan (2008) posits that there is little question from both theoretical and empirical perspectives, as to the necessity and effectiveness of interaction and collaboration to achieve deep and meaningful learning outcomes. More recently, researchers have begun to adapt the model into a hybrid format to explore connection between face to face and online learning to function as interactive communities of inquiry (Garrison, Anderson & Archer, 2010; Garrison & Vaughan, 2008). These three

identified overlapping elements: social presence, teaching presence and cognitive presence are represented graphically in figure 1 below.
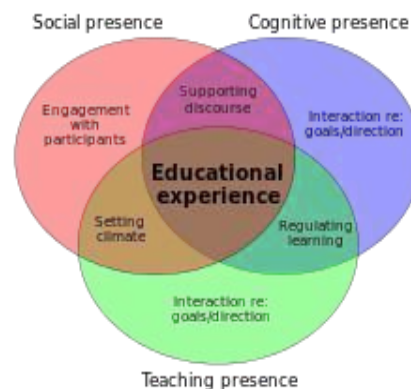

Figure 1: online community of inquiry model

Social presence is the ability of participants in a community of inquiry to project themselves socially and emotionally, as "real" people (i.e., their full personality), through the medium of communication being used, (Garrison et. al. 2000,).

Teaching presence is the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes, (Anderson, Rourke, Garrison & Archer, 2001,).

Cognitive presence refers to an environment that enables learners to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry, (Garrison, Anderson & Archer, 2001.)

In fact, survey results suggest that the growth in online courses continues unabated not only in Nigeria. According to Allen & Seaman (2006), active degree awarding institutions were studied in the United States in a survey. The result showed that in the fall of 2002, 1.6 million students undertook at least one online course. Then over the next three years the number of students taking at least one online course increased by 23 percent, 18 percent and 35 percent respectively. This amounted to 3.2 million students in the fall of 2005, twice as many students in just three years and enrolment has not reached its plateau yet.

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In any case, there appears to be some reasons why students' appetite for online courses is on the rise. Proserpio & Gioia (2007) argued that the web-based tools may be consistent, rather than traditional approaches, with the learning style of a 'virtual generation'. Therefore, the attraction of some students to courses with a significant online component may as well reflect their perception of its consistency with their preferred learning style or developed personality. Also, there is another argument that the asynchronous components of online courses may be an advantage for those students who prefer written rather than oral, face-to-face interactions, or those who need more time to prepare their participation (Smith, 2001).

However, the primary advantage of online courses for students appears to be convenience (Bocchi, Eastman & Swift, 2004; Hiltz & Shea, 2005). A part of convenience is the flexibility it introduces (Farzaneh, 2011; Giannousi, Vernadakis, Derii, Antoniou, Kioumourtzoglou, 2014). For some students, inconvenience is such an overriding issue that it is actually a constraint. This is, because of work, travel schedule, or distance from campus, it may be inconvenient for some students to take a traditional classroom course. In other words the online component of distant education has opened up opportunities to people who previously had no way of continuing their education and entirely eliminates the barriers associated with physical presence, (Bebestos, 2015; Vernadakis, Derri, Tsitskari, Antoniou, 2014). For others, however, convenience may be a euphemism for a desire for an easier or less demanding course.

III. OBJECTIVE OF THE STUDY

Online education is very different from traditional face to face classroom teaching and learning. Though it has recorded remarkable growth rate in recent times, there is still doubt, and reluctance in its acceptance totally in society. The cause for this reservation is not far from the fact that some segment of society feel that the students' educational experience or engagement in online

teaching and learning, may not be as strong as what is obtainable in traditional education (Robb & Sutton 2014). These suspicions are rooted in the fact that, inherently, the paradigm lack the physical presence of the human instructors which naturally leaves the online system bereft of vital teaching skills like verbally set inducing the students, pausing and pacing, verbal repetitions and even the instructor taking cognizance of individual differences of students in the classroom for effective delivery of teaching and learning. This therefore, necessitates a strong need for measurement of its effectiveness. The community of inquiry (CoI) model by Garrison and Archer (2003) provides a theoretical framework that reveals such indices which are; cognitive, teaching and social presences. There are many institutions today that offer online courses but the question is, how many of them actualize these presences in their operations and how does it impact on the students' educational experience? Based on this uncertainty therefore, this study set out to ascertain the impact actualization of critical predictors in online studies has on students' educational experience.

This study will specifically determine;

(1) The level of actualization of social presence on online studies and its effect on the educational experience of students.

(2) The level of actualization of teaching presence on online studies and its effect on the educational experience of students.

(3) The level of actualization of cognitive presence on online studies and its effect on the educational experience of students.

Based on these objectives, six hypotheses were proposed as follows;

(1) HO: The extent of actualization of teaching presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

(2) HA: The extent of actualization of teaching presence in the online National Open University of Nigeria is high and has significant effect on students' educational experience.

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(3) HO: The extent of actualization of social presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

(4) HA: The extent of actualization of social presence in the online National Open University of Nigeria is high and has significant effect on the students' educational experience.

(5) HO: The extent of actualization of cognitive presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

(6) HA: The extent of actualization of cognitive presence in the online National Open University of Nigeria is high and has significant effect on the students' educational experience.

IV. METHODS

This research was designed as a descriptive survey. Questionnaire dubbed Online Presences and Quality Questionnaire, (OPQQ) was used for data collection. The population used for this study was the entire first year students doing online studies in the National Open University of Nigeria across Imo state. The entire population is six hundred (600) students. With a 5 percent error, using the Taro Yamane Formulae, the determination of the sample size, is as follows:

$$n = \frac{N}{1 + Ne^2}$$

n = sample size

e = sampling error

N = population.

Therefore, $n = 600/1 + 600(.05)^2 = 240$

The sample size for this research is two hundred and forty students.

The instrument was validated by the supervisor of this work; it was also validated by an external supervisor and an IT expert. Both face and construct validity were checked. The data were analyzed using a multiple regression model. For better accuracy the researcher used the electronic Statistical Package for the Social Sciences (SPSS) to run the analysis.

V. RESULTS

The actualization of each critical predictor – social presence, teaching presence and cognitive presence which are independent variables to the variance of the dependent variable, educational experience is presented here using the research hypotheses.

Hypothesis 1

HO: The level of actualization of social presence in the online National Open University of Nigeria is not high and has no significant effect on students' educational experience education.

HA: The level of actualization of social presence in the online National Open University of Nigeria is high and has significant effect on students' educational experience.

Table 3: Coefficient[a] ; Actualization of social presence on students' educational experience.

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
1 (Constant) social_presence	4.278 .042	.855 .050	.047	.000 .400

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The beta value for social presence is 0.047 which represents its magnitude with a significance, p = .400 which is way greater than p = .05. Therefore, the extent of social presence is very low and its contribution very statistically insignificant. Therefore we reject the alternate hypothesis and accept the null hypothesis;

HO: The level of actualization of social presence in the online National Open University of Nigeria is not high and has no significant effect on students' educational experience education.

This implies that social presence in the online programme of the National Open University is too minute indicating that an online course meets at least the condition of having a well-designed course content, which suggests a very strong teaching presence. Cho & Tobias (2016) recorded a similar result in a study to demonstrate that online discussion and the degree of instructor participation in discussion (social presence) did not significantly influence student learning experiences. Garrison & Vaughan (2008) posit

however that there is little question from both theoretical and empirical perspectives, as to the necessity and effectiveness of interaction and collaboration to achieve deep and meaningful learning outcomes. They emphasized that Open communication, group cohesion and affective/ interpersonal interaction are the indicators of social presence and that, where they are lacking, social presence is conspicuously absent. (Alman, Frey, & Tomer, 2012; Bulu, 2012; Filippou, 2015 emphasized the fact that due to the idiosyncrasy of online courses students can easily feel isolated and stressed without social presence.

Hypothesis 2

HO: The level of actualization of teaching presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

HA: The level of actualization of teaching presence in the online National Open University of Nigeria is high and has significant effect on the students educational experience.

Table 4: Coefficients[b]; Actualization of teaching presence on students' educational experience.

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
1 (Constant)	4.278	.855		.000
teaching_presence	.112	.057	.125	.452

Table 4 coefficients[b] evaluates the actualization of teaching presence to the prediction of the educational experience. The beta value for teaching presence is .125 with a significance, p =.052 which is closer to p = .05 which is the critical point. Therefore, the extent is low though much higher than the extent of social presence and its contribution is close but not statistically significant. Therefore we reject the alternate hypothesis and accept the null hypothesis:

HO: The level of actualization of teaching presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

Activities of teaching presence include; diagnosing comments for accurate understanding, providing sources of information, guiding discussions in productive directions, facilitating critical reflection, and providing content-specific assessment and feedback

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(Garrison & Arbaugh, 2007). It is important to note that in the context of the community of inquiry, actions reflective of teaching presence are not necessarily the sole responsibility of the instructor; rather, all participants assume teaching and learning roles and responsibilities to varying degrees (Akyol & Garrison, 2011). 21st century pedagogy also advocates for learner centered approach which limits teaching presence of the instructor though with much positive influence on students' educational experience.

Hypothesis 3

HO: The level of actualization of cognitive presence in the online National Open University of Nigeria is not high and has no significant effect on the students' educational experience.

HA: The level of actualization of cognitive presence in the online National Open University of Nigeria is high and has a significant effect on the students educational experience..

Table 5: Coefficients[c]; Actualization of cognitive presence on students' educational experience.

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
1 (Constant) cognitive_presence	4.278 .636	.855 .053	 .685	.000 .000

From table 5 the Beta value of .685 is very impressive, showing a high extent by implication. When the other variables; social presence and teaching presence are controlled, cognitive presence accounts for the prediction of the students educational experience by the magnitude .685. Also from the table, it has a statistical significance of p = .000 which represents a high significance. Therefore we reject the null hypothesis and accept the alternate hypothesis:

HA: The level of actualization of cognitive presence in the online National Open University of Nigeria is high and has a significant effect on the students educational experience.

The result based on the third hypothesis showed a high extent of cognitive presence in the National Open University of Nigeria. A study carried out by Giannousi, & Kioumourtzoglou (2016), showed cognitive presence had the highest impact ahead of teaching and social presence similar to the result we obtained here. However, the emphasis of their study was focused on determining, if the predictors were significant predictors of overall students' satisfaction in hybrid studies.

VI. CONCLUSION AND RECOMMENDATION

This study ascertained that though there are low teaching and social presences limiting direct instruction, facilitation of discourse, instructional design and organization identified by Anderson, Rourke, Garrison and Archer (2001) as components of instructional delivery that enhance collaborative learning, students in the National Open University of Nigeria undergo cognitive cycles without much influence from both teaching and social presence. Nevertheless, increased teaching presence is needed during the integration phase so that students are encouraged toward higher levels of critical thinking and the development of ideas as they progress to the resolution stage. Integration and resolution are more demanding than exploration, necessitating more time for reflection and more directed facilitation from instructors.

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It is therefore recommended;

1) That the administrators National Open University should put more effort to ensure that students are able to reach the final stage of cognitive presence in online course design.
2) There should be creation of a sense of online community.
3) There should be advancement in technology to facilitate implementation of the online presences.
4) The administrators and instructors in The National Open University of Nigeria should be specially trained to reflect the peculiarities of online education
5) The basis for the accreditation of online education in the National Open University should be different from conventional face-to-face universities. Accreditation for online programmes should include effective check for these presences for better educational experience by the students.

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