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PERCEPTION OF INTERN TEACHERS' USE OF INTERACTIVE STRATEGIES IN TEACHING LARGE CLASSES IN ONLINE ENVIRONMENT

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Abstract

Higher education institutions experience large classes despite the National Universities' Commission's (NUC) and other supervisory agencies emphasis on carrying capacity of the institutions in Nigeria. The overpopulation affects effective teaching and learning and quality assurance. This study focused on perception of intern teachers of the use of interactive strategies in teaching Curriculum Studies in an online environment in a College of Education. 200 computer science students (intern teachers) in a Curriculum Studies class formed the study sample. Three research questions guided the study. A structured and validated questionnaire with reliability index of 0.79, made up of 25 items constructed on a four-point Likert-type scale was administered on the students for data collection. The data were analysed using simple mean and the results showed that the intern teachers supported the use of the teaching strategies in an online class as a complement to the face to face method of teaching. They are also recommended as alternative strategies to reduce the problems associated with large classes. However, the research subjects were sceptical about the implementation of online teaching as a result of power supply and access to internet facilities. The findings have a far reaching implication for the 21st Century teaching and learning. Suggestions towards effective online teaching and learning were made especially with theGovernment's reiteration of the need for Information and Communication Technology (ICT) in the schools in Nigeria.

Key Words: Interactive learning, online environment, Intern teachers, virtual learning and online teaching.

1. Introduction

The Nigerian higher education system currently has 95 universities, 27 Federal universities, 34 state universities and 34 privately owned universities and about 160 other tertiary institutions: Colleges of education, Polytechnics, and Monotechnics, (Aborisade, 2009; NUC (2009)). Every year, about a million or more students apply to enrol into these institutions of higher learning, but barely 10% of them actually secure admission (JAMB, 2009). A lot of concern is growing about the teeming population of youths who want to gain higher education, but were unable to get admission into the universities. In 2012, for instance a total number of 1,503,931 candidates wrote the 2012 Unified Tertiary Matriculation

Examination (UTME). In 2013, the number grew up to 10,338,000 candidates, and they were competing for only 500,000 admission slots (JAMB, 2009). Many students who were not offered admission in the faculties of their choice were offered admission in the faculty of education, a faculty majority of students will consider as their last option. The admissions into the faculty/school of education have increased the population of students taking courses in education. The growing population of students has impact on the human resources, facilities and infrastructure available in the institutions. The need to create a widening participation and improved social inclusion that will consider the growing population and the learning processes become inevitable. This paper therefore examined the intern teachers' perception of the use of interactive strategies in teaching a large class in an online environment.

Perceptions of class size are subjective and also depend on a number of variables. Hayes (1997) believes that there is no quantitative definition of what constitutes a large class, as people's perception of this varies from context to context. Describing a large class from an African context, (Onwu, 1998) was of the view that a large class is one "where the majority of characteristics and conditions present themselves as inter-related and collective constraints that can impede meaningful teaching and learning. Such constraints may be in the area of students' population, facilities and infrastructure or teacher-student ratio.

Population however, is contextual hence Buchanan (1990) estimated the population size in a large class as 80 or more students, (Enerson, 1997). In the University of Pretoria (version 2) large class is estimated at 100. Aborisade (2009), was of the view that about 150 students and above with one teacher can be seen as a large class and an extra-large class is within the range of 700 students with up to four teachers. Nilsson (2003) however argued that using learner– teacher ratio to describe a large class is not meaningful, because some courses by their design may have more or fewer students. This is true of foundation level courses in the universities and education courses in the faculty of education where the number of students is large, based on discipline.

The teacher in a face to face class is challenged with teaching a large group of students in a hall of small capacity. In some institutions, clashes on the time table schedules result in students struggling for space for their lectures. In some cases lectures are stretched far into the evenings on the same group of students. These practices may have some health, academic and social implications on the students. Such observations provide knowledge of what Council (2006), described as new trends in teaching and learning playing major roles in shaping the physical learning environment. In the context of this study, Onwu's (1999) view of serious conditions affecting learning is considered. More so, the National Policy on Education's stipulation for teacher-student ratio will be a yardstick for considering a class large. Invariably any class of above 45 students per teacher is termed a large class.

The percentage rise in students' population seems to grow with the sensitization programmes on the need for education in national development. According to (Oladipo. Adeosun and Oni, 2009), the demand for university education has reached an unprecedented high level that doubles the current number of universities in the country. Today the number of universities is 143. The students' population increase however, has a lot of implications on teaching and learning. The available physical facilities are severely overstretched and ill maintained. NUC (2004), Adeyemi (2007), observed that overcrowded class leads to distraction and indiscipline. Manjanga (2011) shows that large class minimizes interactions in the class. Osim (2012) is of the view that large class size affects the quality of evaluation,

assessment and feedback. In such a class the method of teaching is simply lecturing, and practical work. At the best, it is demonstration (Onwu, 2005). In effect, limited opportunities to meet individual learner's needs for active participation, inquiry, motivation, discipline, safety and socialization are lacking.

Discussing the consequences of indiscipline which may be an attribute of poor class control in a large class, The Telegraph of 26/02/2012 for instance, observed that "more teachers quit the classroom over indiscipline" and that teachers in England are retiring before the statutory retirement age. The observation suggests that if students are not properly engaged, if learning is not taking place, the students are likely to disrupt classroom activities to the detriment of the teachers' job satisfaction. There is need therefore for a strategy that discourages formal teaching spaces of large class with the teacher being a sage on the stage. With smaller, less formal settings where students learn from one another as well as from their appointed teachers; a strategy that considers learning occurring when a learner is not in a fixed or pre-determined location and at the same time ensuring effective teaching and learning for a better performance output may solve the problems of large class teaching. How would the intern teachers perceive such a strategy?

One of the goals of teacher education according to the National Policy on Education (FGN, 2004) is to provide teachers with the intellectual and professional background adequate for their assignment and to make them adaptable to the changing situations. One of such intellectual abilities inculcated in the pre-service teacher is the knowledge of information and communication technology (ICT). The knowledge of ICT is a basic requirement for teaching and learning in the 21st Century. Agyeman (2007), citing the ICT Policy pointed out that ICT skills have been made mandatory as part of minimum national standard for teacher education at NCE and undergraduate levels. Leye (2007), Olatokun, (2007) also observed that with the emerging technologies, the teaching profession is evolving from an emphasis on teacher-centred education, lecture-based instruction to student-centred, interactive learning environment. The shift from instructional paradigm to a learning paradigm has changed the role of the institutions of higher learning from a place of instruction to a place for producing learning. (Council, 2006).

New learning style determines the type of learning environment required. Learning environments may be simulated environment, immersive environment, social learning environment where less emphasis is paid on factual knowledge. Focus is more on ability to think critically and create information for solving complex problems. New teaching and learning environment provides room for both the real and virtual learning spaces to coexist (Brown, 2003). The new learning environment which encourages student-centred interactive learning is a characteristic of the 21st century teaching and learning environment. It incorporates the 4cs' creativity, collaboration, communication and critical thinking. The use of the 4c's produces proficient communicators, creators, critical thinkers, and collaborators who are globally competitive. The 4c's are derived from Kolb's and Vygotsky's (1978) theories of constructivism and socialization which allow the learner to experience the environment through problem solving, inquiry learning and socialization processes.

Online environment is an example of a new teaching and learning space which incorporates the 4c's in teaching and learning, with the teacher as a facilitator. According to Poe and Stassen (2002) online involves faculty delivered instruction through the internet using either real time- (synchronous) or anytime, anywhere (asynchronous) modes of teaching. They are two-way parallel processes within an online environment. The

asynchronous mode is mainly used in distance learning while the synchronous mode can be used in large theatre halls with the use of clickers. For the benefit of this study, the asynchronous mode where students are situated in different locations within the campus with their mobile devices was considered. (Kukulska-Hulme (2009), was of the opinion that mobile devices can be used in an online environment to record and to listen to audio presentations at any time. They encourage spontaneous reactions. (Alaba, 2005) notes the high prevalence in the ownership of mobile devices among Nigerian youths. This advantage can be harnessed and applied in the classroom.

Successful online teaching according to Gunawardena and Zittle (1995) promotes cognitive strategies, learner centeredness, interactivity, collaborative learning and social presence. Students are empowered to take control of their own learning, (Poyatos-Matas and Allan (2005). Students select and transform information, construct hypotheses and make decisions based in a cognitive manner. These attributes according to Greyling and Wentzel (2007) reduce and eliminate the emotional constraints of anonymity experienced in a large class setting.

The National Education Association also notes that the use of the 4c's in problem solving involves teamwork and cooperation which can be achieved using Wikis, blogs, and Web 2.0, that enable strangers separated in time and space to collaborate. The collaboration is enhanced with the strangers' communicative competencies which are achieved through articulated ideas, expressed in speaking or writing. The use of the spoken or written communication is given immediate feedback that helps one to realize if the contributed ideas are acceptable or not. Hence Lia Voerman (2012) describes the concept of feedback as information regarding one's performance or understanding, given by an agent, teacher, peer, computer, book, parent, self, or experience. Pauli (2010) identified four levels of feedback to include feedback on the task, feedback on the task process, feedback on self-regulation and feedback on self.

In this study, the teacher and peer feedback were taken into consideration to determine the extent the use of creativity, collaboration, communication and critical thinking strategies promoted immediate feedback in a large class. It is a phenomenon that most institutions of higher learning experience as a result of the teeming population of Nigerian youths seeking higher education. Large population can affect human and material resources and invariably affect students' attendance to class; active participation in class activities and the use of feedback. This paper examined the use of interactive teaching strategies in an online environment. It specifically sought to find out the perception of intern teachers of the use of the 4cs' in an online environment. Would that encourage active participation, improve class attendance and promote use of immediate feedback that is rarely used in a large class, in a face to face classroom? It also sought to find out if the online environment can provide an alternative source of learning environment in the face of shortage of accommodation for large classes.

Four research questions guided the study:

1.What is the perception of intern teachers of the reduction of accommodation problems created in a face to face classroom by online environment?

2.How do the intern teachers perceive the use of the 4c's in an online teaching in a large class size?

3.How do the intern teachers perceive the use of the 4c's in an online teaching to improve class attendance in a large class size?

4.What is the perception of intern teachers of the use of the 4c's in an online teaching to promote immediate feedback in a large class size?

2. Method

This study is an ipso facto study investigating the use of the 4c's in an online teaching in a large class. The study was carried out at Alvan Ikoku Federal College of Education, Owerri, Nigeria. The population of the study consisted of 200 second year Computer Science students offering Curriculum Studies which is one of the core education courses offered by undergraduate students to obtain a Bachelor's degree in Education (B.Ed). These students had earlier used a face to face lecture method in their first year and have an experience of face to face lecture method in a large class situation. This group of students was exposed to online environment in their second year. The students, in an online learning environment have working knowledge of the hardware and software used to deliver the online courses. They can chat, read, write and listen in an online class. The topics were uploaded and the students were made to read the online materials and react to the assignments given. Each student was made to respond to at least three different contributions from their peers (fellow students). They were also made to sign the participation sheet which served as attendance. They were requested to respond to the assignments from any location and anytime within the stipulated time scheduled for the tasks. At the end of the course, a questionnaire of 25 items constructed on a 4-pioint Likert type of scale was administered on the students electronically using a Survey Monkey. The instrument was face validated by three (3) lecturers in the Departments of Curriculum Studies and Educational Technology. The internal consistency of the instrument was calculated using Cronbach Alpha. An estimated reliability coefficient of 0.79 was realized showing high reliability index. The data were analysed using a simple mean. A mean of 2.5 was accepted while a mean below 2.5 was rejected.

3. Results

The results are presented in the Tables below.

The result in Table 1 shows that with a grand mean of 2.73 the respondents were of the view that online teaching would ease accommodation problem experienced in large class size in face to face classroom.

Table1**.** *What is the perception of intern teachers of the reduction of accommodation problems created in a face to face classroom by online environment?*

S/N	Items	SA	A	D	SD	Total	Mean
1	Learning can take place anywhere anytime	640	60	30	5	735	3.68
2	Non-physical classroom is a barrier to teaching and learning	112	75	128	83	398	1.9
3	Physical absence of the teacher affects teaching	88	90	104	96	378	1.8

4	Accommodation is not a problem as long as the learner is connected to the internet	580	105	44	8	733	3.66
5	Power supply was constant in online lessons	80	90	112	5	287	1.4
6	Stress on both teacher and learner is reduced	448	124	56	12	660	3.3
7	Conducive environment for learning is guaranteed	488	120	25	13	671	3.4
	Grand Mean						**2. 73**

The result in Table 1 shows that with a grand mean of 2.73 the respondents were of the view that online teaching would ease accommodation problem experienced in large class size in face to face classroom.

Table 2. *How do the intern teachers perceive the use of the 4c's in an online teaching in a large class size?*

S/N	Items	SA	A	D	SD	Total	Mean
8	collaboration will be encouraged	616	66	32	8	722	3.61
9	Effective communication is guaranteed	528	105	50	8	691	3.5
10	Quality and quantity of interaction is higher	500	114	50	13	676	3.38
11	Lesson is personalised	416	180	60	6	662	3.31
12	Online lesson improves construction of ideas	540	87	36	18	681	3.4
13	Online lesson gives one the opportunity to source for information.	512	144	36	9	701	3.5
14	Online lesson improves critical thinking skills	464	126	54	15	659	3.29
15	Connected networks provide more freedom and expressive power to the learner	424	144	56	18	642	3.21
16.	Active participation enhances the use of technology skills	496	108	52	14	670	3.3
	Grand Mean						**3.4**

Table 3**.** *How do the intern teachers perceive the use of the 4c's in an online teaching in improving class attendance in a large class size?*

S/N	Items	SA	A	D	SD	Total	Mean
17	Feedbacks are prompt in online teaching.	520	90	60	10	680	3.4
18	Immediate feedbacks are regular.	456	165	52	5	678	3.3
19	Immediate feedback promotes team spirit among peers.	476	132	40	17	665	3.3
20	Immediate feedback promotes motivation.	504	126	44	10	684	3.4
21	Immediate feedback creates new learning strategy.	480	114	60	12	666	3.3
22	Immediate feedback encourages peer editing.	408	120	60	28	616	3.01
23	Immediate feedback responses and contribution creates workload on teacher and	488	96	54	19	657	3.2

The result in Table 3 shows that with a grand mean of 3.2, the respondents agreed that online teaching promotes immediate feedback.

Table 4**.** *What is the perception of intern teachers of the use of the 4c's in an online teaching to promote immediate feedback in a large class size?*

SN	Items	SA	A	D	SD	Total	Mean
24	Immediate feedback contribution and responses help to detect absentee student.	464	120	66	11	661	3.3

The Table above shows that the intern teachers were of the view that the use of 4c's in an online teaching facilitates detection of absentees as shown by the mean of 3.3.

4. Discussion

The findings in Research Question 1 show that in an online class, learning can be realized from any location provided the learner is connected through the internet to the rest of the class members and can make contributions to thread discussions. This finding is a support from an earlier study showing high prevalence in the ownership of technological devices, such as mobile phones, laptops and palm tops among Nigerian youths (Alaba, 2005). A mean score of 1.9 and 1.8 respectively show that the respondents were of the view that the absence of a physical classroom environment or the physical absence of a teacher cannot be a barrier to teaching and learning. This may be based on their ownership of resource that can make the teaching and learning feasible.

The findings from this study also support Council's (2006)) observation that new environments are being designed or reshaped to respond to the pedagogical styles and changing numbers of learners. Again this can be made possible once the resource materials are available in the new environment. It also shows that the trend where the teacher is a sage on the stage is being overtaken by the online environment.

The results from the study equally show that with the online environment, excessive use of facilities, stress on human and material resources are reduced. Adebayo (2005) had earlier pointed out the implications of an overcrowded classroom in which indiscipline can occur when the facilities are not enough. Students may struggle over existing ones and in the process some of them may be destroyed. In an online environment, learning can take place in any location and at any time with a teacher as a facilitator. This is a new trend in teaching and learning which can occur outside the four walls of a classroom.

Emphasis is shifting on social inclusion which provides an opportunity for everyone to be literate. With the new trend in mobile learning, the challenges of large class size will be accommodated with new technologies. Millions of Nigerian youths are yearning for social inclusion in the education stratum to achieve their life ambitions. The lifelong education has provided equal opportunity for all irrespective of age or social stratum. The only snag in the online environment is power supply. The arrangement of the Federal Government to provide cloud network to institutions of higher learning through the National Communications Commission (NCC) is a step in the right direction. If the government can equally make power supply regular and constant, even if it is using the solar energy, the online environment will be used to address the large class and other issues encountered in teaching and learning.

The findings in research question two show that with a mean score of 3.4, the respondents agreed that the use of the 4c's in an online environment promotes active participation of the learner. The active participation occurred as a result of collaboration and communication skills which entailed sharing of ideas between and among one the peers. The students used threads of discussion through a written communication thereby sharing ideas between and among them. The written communication through collaborative ideas for instance enabled the learner to think critically before constructing and contributing personal ideas. The collaborative and communicative mechanisms support Kolb's and Vygotsky's (1978) theories of constructivism and socialization. Though the students were not physically present, they were able to exchange ideas and reconstruct and contribute ideas to the forum through the online threaded discussions and chats.

The exchange of ideas agrees with Greyling's and Wentzel's (2007), views that online lessons reduce and eliminate the emotional constraints of anonymity experienced in a large class setting. A mean score of 3.5 shows that with the use of the 4c's in an online lesson a learner has an opportunity to source for information on the net. Sourcing for information improves the learner's online reading habits and builds confidence in the expressive power of the learner which is realized through personal contribution of ideas. The use of 4c's equally helps the learner to gain hands-on experience using technology to learn rather than learning technology. The use of technology supports social inclusion theories of Kolb and Vygotsky which accommodates all, irrespective of age or social inclination, thereby reducing digital divide that occurs in admission processes. Ownership of mobile devices among students helps to ensure that lifelong education is achievable and realizable.

Research question 3 shows that a grand mean of 3.2 indicates that the respondents agree that the use of 4c's in an online environment promotes immediate feedback. The promptness and regularity of feedback by the students and the teachers eliminate the delayed feedbacks experienced in face to face classroom and promote students seeing their performances on time and taking corrective measures where necessary. The prompt feedback and number of feedbacks coming from both peers and the teacher provide more information that would enable the student to critically reconstruct knowledge to an acceptable standard. The peer editing involved in the immediate feedback encourages the pre-service teachers in the art of providing feedbacks especially, as other persons react to comments on feedback provided by fellow participants. Through immediate feedback, the learner can develop a learning strategy that can enhance learning and will help the learner to become independent and confident.

Independence and autonomy are some of the things lacking in an average face to face large class learning that most often may lead to cheating and examination malpractice. Another major attribute of the immediate response is that it will at a glance detect a student who is not contributing to the discussion as a result of absence from the class. This is hardly detected in a face to face large class mode despite the attendance strategy the teacher may have developed. The students' contribution in an online class can help to ascertain a students' eligibility to write an examination as some of the contributions carry some marks, especially under continuous assessment mode.

One thing that has been taken for granted is the students' attendance and active participation rate in the classroom. This often leads to poor performance of the students. The use of the 4c's will to a great extent reduce inactivity in the class and at the same time promote and encourage regular attendance. A mean score of 3.2 shows that the respondents were of the opinion that the workload in the use of the 4c's in an online environment is

cumbersome, but it will not be compared with when the teacher was bearing the burden alone, neither will it be compared with when the student, a pre-service teacher who is being prepared for the teaching profession cannot create, think critically, communicate or collaborate in a classroom environment. The pre-service teachers will definitely prepare the learner in the way they were prepared thereby revolving the cycle.

One major essence of technology is to make work easier for the teacher. The teacher in an online class has ample opportunity to read and make comments on the students work because the students do not post their assignments at the same time. The teacher does not need to comment on all the assignments, but the thread of the discussion will enable the teacher post a general comment and make specific comments where necessary.

This study has examined the use of the 4c's in an online environment and it specifically examined how the use of the 4c's in an online environment can reduce students accommodation problems, encourage active participation and enhance the use of immediate feedbacks. These variables are some of the factors that have affected large classes in a face to face class. The use of the 4c's has shown a lot of improvements for the variable and they have educational implications. There is need to train the pre-service teacher in the use of the 4c's in an online environment as the world of work expects competence in communicative process, collaboration and team spirit, ability to think critically in the face of challenges and be able to create a product that will compete favourably in the global market economy. The only avenue to realize the objective is in the educational institutions by given learner opportunity to make a contribution.

5. Conclusion

The results from the study show that in online teaching environment with the 21st century teaching skills some of the problems encountered in face to face large class size are minimized. The idea of classroom accommodation problems experienced in a face to face class can be solved by using online environment which encourages learning from any location. In the same vein, the challenges of passive and inactive nature of students in a large class are reduced as every student has an opportunity to contribute an experience in an online class. When written assignments are given in a face to face class, immediate feedbacks are not given to enable students realize their mistakes, but in an online class immediate feedback (knowledge of result) is not only essential, but encourages reconstruction of ideas that will enable a student understand a the materials better.

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