

The State of Teaching Practice-Based Courses in Nigerian Higher Education: A case study of weaving

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Abstract

Teaching practice-based courses in Nigeria can be more instructive if localised instructional tools are created to support the teachers' demonstrations. This study has attempted to discuss the challenges of teaching practice-based courses in developing nations of the world. Using Nigerian higher education as a case study, the challenges have here been delineated as: overpopulation problems, not enough teachers, poor funding, scarce/decaying infrastructure and low ICT literacy amongst teachers and students. Owing to the above, teaching a subject like weaving has become tough and dreary. A university of technology in Nigeria was selected as a case study and a purposefully selected set of persons representing the respective social groups that constitute the stakeholders in the education network were interviewed and the selected department's equipment were also appraised through the use of an observation tool. My findings revealed that, instructional video used on mobile phones could be a solution. Finally it advocated that industries in the country should take up the role of funding higher education in the country.

Keywords: Instructional tools, practice-based learning, ICT, Nigerian Higher Education

Introduction

My flatmate recently purchased a *Samsung Galaxy Note* for his three year old son living with the mother in Indonesia. Reason being that; “he uses her smartphone and it is becoming an issue”, which called for a transcontinental present (father lives in the UK). My first reaction was ‘what will a child do with such an expensive gadget at his age? Answer: Daddy can afford it. However, his reason for sending it takes care of my second question (unuttered), which is how can the little bloke handle the sophisticate gadget? Do today’s children have higher intelligence quotient or is it that there are better tools to teach them? Yes, they might be. Don’t we have better food, good health services and an endless retinue of new technological innovations which make life easier by the day? Why won’t the kids do great? Oh wait a minute; could the availability of high-tech only be the answer? Nonetheless, bottom line is, someone or something is teaching them and they are learning fast. So what is learning?

Learning generally has been defined as a change in behaviour by Birkenholz, (1999), which Cobb, (2010) perceives “as the lifelong process of transforming information and experience into knowledge, skills, behaviours, and attitudes”. However, as there are many ways of learning so are sources of acquiring it. Many scholars over the years have tried studying the phenomenon, (Brunner, 1968; Merriam; Reigeluth, 1999), but nonetheless, they all agree that learning is acquiring new knowledge. It is no longer news that the inception of the internet and a lot of other infrastructural and pedagogic developments in the world today has made learning or rather the act of teaching become an easier, more convenient and also exciting experience (Bonk, 2004). Nonetheless, this does not seem to be the case worldwide. The opportunities to learn have not been evenly distributed all over the world, and the developing nations seem to be the most challenged, especially now that all graduates end in the same labour market. Okebukola, (2008) states that teaching / learning establishments have always been the most important constituencies in every nation because they produce the leaders who help to run such worlds and that higher education provides the high level human resource needed for driving such economies and ensuring rapid societal transformation. However, the above is not the case with most developing nations of the world, because there, learning has suffered from a lot of setbacks, largely because the priority expected to have been accorded knowledge management has been misplaced or misappropriated.

A typical example is Nigeria, a developing nation situated in West Africa south of the Sahara, acclaimed the most populous black nation in the world. However, her rapid population growth has not been exploited positively but rather it has created a strain on those saddled with the responsibility of teaching her citizens, coupled with a dwindling population of teachers, all due to the *brain drain* and other reasons (Adebayo, 2010; Meyer & Brown, 1999; Oni, 2000). Nigeria’s educational system according to Okebukola, (2010) was originally patterned after the British school system, but now runs a hybrid of both the British and American system of education, this he states has evolved into a (confusing) system known today as the 6-3-3-4, established in 1981. Looking at Nigeria’s educational system retrospectively, Ajadi, (2010) recounts that it was one of Africa's most developed systems of higher education, and the largest too, but lately even with new schools sprouting everywhere every day, standards have degenerated drastically. In 2012, the Joint Admissions and Matriculation Board (JAMB); a body responsible for conducting entrance examinations into all tertiary institutions in Nigeria, stated that there were about 144 officially registered universities in the country (JAMB, 2012). Even with such numbers the universities are still a long way from satisfying the country’s demand for university education. Ajayi and Adeniji in (Aluede, Idogho, & Imonikhe, 2011) reveal that between 1960 and 2008 admission of students into Nigerian universities had risen from 1,395 to 1,096,312. Despite that, the percent of candidates admitted were still frightfully small in relations to the total number of

students who apply yearly. Okeke also in (Aluede et al., 2011) and (Shu'ara, 2010) aver that it is about 15% of the total candidates who apply become successful annually. Figure 1, below shows details of the enrolment statistics between 2004 and 2009:

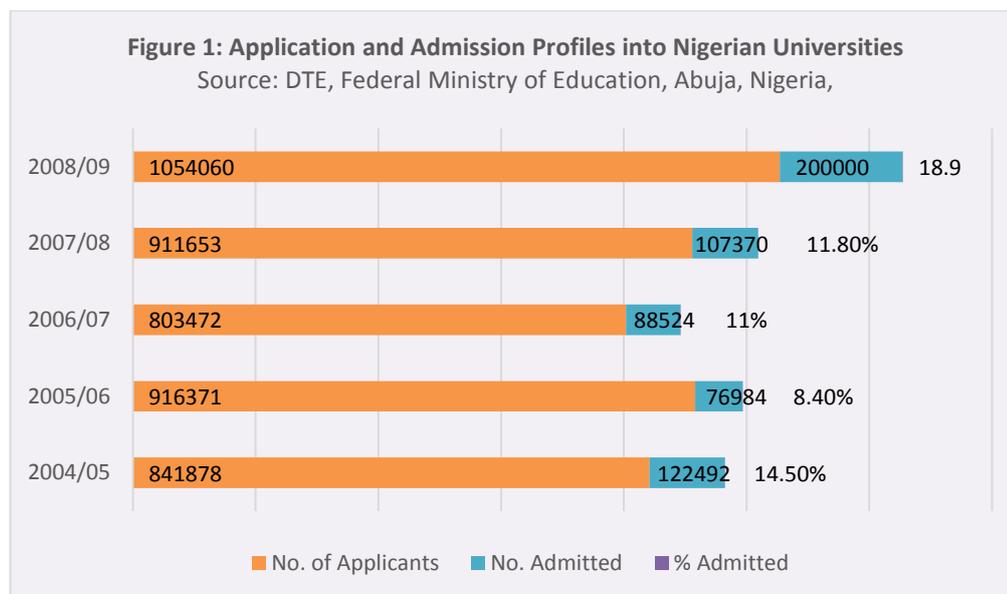


Figure 1: Application and Admission Profiles into Nigerian Universities
Source: DTE, Federal Ministry of Education, Abuja, Nigeria, (Shu'ara, 2010)

The above figures according to the Federal Ministry of Education are due to the limitations (carrying capacity) of the respective admitting universities. Thereby making most of the candidates stay away in frustration, (approximately about 84 per cent annually). The supposed lucky ones find themselves in dilapidated and overcrowded schools which unfortunately are what the state of most Nigerian higher institutions are today. These overcrowded schools are also staffed by already stretched and under paid academic staff, hence the constant disagreement with government or flight to better climes, (Adebayo, 2010; Dabalen, Oni, & Adekola, 2001; Punch Editor, 2006; UNESCO, 2010; Yaqub & GPO, 2007). A visit to one of the four Nigerian federal universities of technology offering weaving as a course, reveal that they suffer from an acute staffing shortfall coupled with poor and dilapidated teaching equipment. A sampled look at admission records of the department in question reveal that the number of student enrolment over the years has steadily increased. In the chart below (i.e. figure 2) a design department's enrolment figures reveal that there has been tremendous growth in enrolment in the last fifteen years that is from about 15 students in 1999 to about 70 in 2013i. However, infrastructural development in the same time span has not been commensurate to the population growth, rather the meagre facilities on ground have decayed over time.

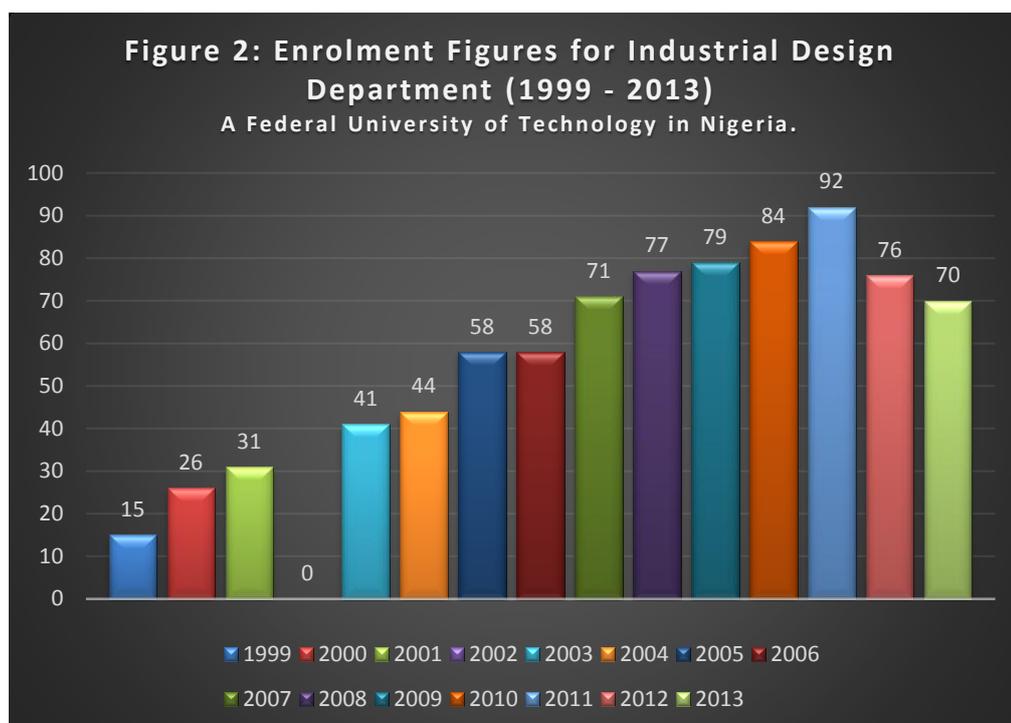


Figure 2. Enrolment figures of the Industrial Design Department, of a Federal University of Technology in Nigeria.

Source: Registration office of Industrial Design Department.

The following accounts by a teacher and his student vividly delineation realities on ground i.e. in respect of teaching / learning of a practice-based course like weaving:

Mark is a technologist who graduated from a Nigerian College of Technology in 1997 and has since being teaching weaving in a University of Technology. He recalls being one of 22 students in class, with about sixteen looms to work with. He now teaches about sixty students divided into three classes with just six looms. His access to ICT equipment is an overhead projector and a computer, which he is still in the process of learning to use proficiently, he states that not all his students are IT literate. And when teaching, he demonstrates the activity to learn, if a student is not there, 'he cannot pick it, that one is sure', he says. He has used Microsoft Power-Point tool to teach once and found it very effective. He acknowledges that his knowledge of instructional learning tools is limited; he did suggest the use of charts but later conceded that they were no more in vogue. He however agrees that videos would definitely be better*ii*.

Jane is a final year student who has studied the course weaving for three years. She says that they are 18 in class with machines that don't work well, so it makes studying the course very tedious. She also claims that the looms in use were produced by students, and they have not used computer in the course. She says that the lecturer is always available /approachable, even in a lecturer/student ratio situation of 1/18. She does not know of any instructional tool for the course, and agrees that instructional tools would make the course more convenient to study*iii*.

From the above narratives; one can agree that the Nigerian educational challenges (problems) can be viewed from the following categorizations: student population explosion, poor government planning/policy initiatives and funding; dearth in infrastructure; low level of ICT literacy and a shortage in qualified teaching staff. However, the challenges revealed under these themes are most felt in the practice-based learning sector because learning there, requires a closer interaction between the teacher and the learner. The term '*practice-based course*' is defined in this article, as a subject taught by the means of performance or

application of skilled '*praxis*'. Marshall, (2012) states that the term "work-based" has overtime been used interchangeably with "workplace", "work-related", "vocational" and "practice-based" respectively. However, it is in the context which Gallagher and Holland (2004) define them that is of interest here, which is; 'any work-based educational activity that encourages reflection, values learner expertise and learning opportunities in practice that ultimately contributes to the development of professional knowledge'.

The challenges associated with learning in Nigeria are as old as the state itself and literature abounds on its many facets, but unfortunately there hasn't been much on teaching/learning of practice-based courses. This might not be unconnected with the fact that until recently, student enrolment to such courses was low compared to the theory-based courses. Furthermore, most of them (practice-based course students) graduate with little or no practical skills acquired during the respective programmes undertaken. This has created a situation where a good proportion of the youth population always get certificated but remain unskilled. And as such Okebukola's earlier statement, though ideal is yet to be seen as a likely agenda for adoption by the Nigerian government. As the history of higher education in Nigeria now spans over seven decades; Ajayi, (1975) recalls that majority of the higher institutions of learning in the country were built without adequate funding arrangements. But despite the poor funding and policy initiatives of successive governments, the schools are still burgeoning with students. And scholars over the years have also investigated these concerns, hoping to throw light, manage or solve the problems through their studies, mainly by developing instructional aids; yet, none seems to have succeeded (Abegunde, 2008; Adeyanju, 2005; Alaba, 2012; Daniel, 2010). That is why questions like the following arise: what really is the problem? Why have the products not worked? What do the recipients of these tools have to say? Were they involved in the creation of the tools? If no, why were they not consulted? Is there a more compatible product or solution out there? What did the creators/producers not do right? Is it an issue of a lack of advocacy? The questions can go on and on. Consequently, this study started by first ascertaining that the assumed problems enumerated were confirmed to be valid, after which finding solutions ensued.

Conceptual Framework

What theoretical concept promotes the teaching of a large group of practice-based learners? Records show that existing apprenticeship learning methods only support small groups of expert/learner interactions (Wood, 2006). This study is based on a socio-educational context underpinned by the "Social Constructivist" concept, in which learning is perceived as a connection with and appropriation from the sociocultural milieu within which we are all immersed (Cobb in Bonk & Cunningham, 1998). Focusing on the learner-centred collaborative setting, the Social Constructivist paradigm is of the theoretical view that acquisition and participation are interactive strategies in learning situations, and that learning takes place through interactions with other students, teachers, and the world-at-large (Vygotsky, 1978; Wertsch, 1985). Vygotsky's theory and that of Bandura & McClelland, (1977): 'Theory of Social Cognitive Development', and 'Social Learning Theory' respectively, can be said to support large practice-based learning groups, as their respective framework delineate a taxonomy under which a learner can share ideas and copy skills from peers and other more knowledgeable members of their society. In this 'social milieu' where knowledge is constructed, Denzin & Lincoln, (2000) observe that the human mind actively constructs knowledge by inventing concepts, models and schemes to make sense of experience which are continually tested and modified in the light of new experiences. They reiterated that these constructions are not interpreted in isolation but against a backdrop of shared understandings, practices, language and so forth, which can support modern day large group interactions. In the spirit of the actor network theory (ANT) a community of participants for the study was selected (Clegg, Courpasson, & Phillips, 2006). They constitute

of people and nonhumans who by their professions, or otherwise have a stake in the discourse. These stakeholders (social groups): school administrators, students, teachers, government agents, employers, graduates and the machines, were expected to influence or be influenced by other actants in the network and the problems/product.

Methodology

The protocol used for this study is an adaptation of a reversed interpretative flexibility concept of the Social Construction of Technology (SCOT) approach in which Bijker, (1987) explains that technical artefacts do not exist without the social interactions within and among social groups, where the design details of artefacts are described by focusing on the problems and solutions that those relevant social groups have with respect to the artefact (Bijker, 1992; Bijker, Hughes, & Pinch, 1987). Hence, increasing and decreasing degrees of stabilization of the artefact can be traced. He reiterates that the interpretative flexibility of an artefact can also be demonstrated by, showing how, for different social groups, the artefact presents itself. Adapting the interpretative flexibility concept was to help pre-empt a 'stabilisation process scenario' of a hypothetical artefact's process of evolution supported by the dynamics of how it will be technologically and culturally created.

After the listed problems had been ascertained as valid by the respective social groups engaged for the study, who also unanimously agreed that the best solution was to employ the use of off-line instructional videos. I decided to test their suggestions without actually producing an instructional video; a hypothetical product (video) was served to the respective group representatives who were made to anticipate the likely constraints they would experience (stabilization) when using the said product and a record of their perceptions or interpretations was then analysed. To generate data for the study, the use of the interview and observation tools were employed and also materials from both the internet and the library. Furthermore, television, newspapers and local discussions related to the subject were monitored regularly to keep tabs on the synchronous discourse going on during the study. Although the study environment is a familiar terrain for the researcher, nevertheless he tried to reduce the element of bias his past experience will have on the study. Preliminary test interviews were conducted to try out the questions before leaving for the field, this happened through several Skype telephone conversations with selected actors from the respective groups earlier listed. A set of semi structured questions were used to discuss the problem themes. Although the questions had a uniform set of themes; they were constructed differently putting into consideration the unique profile of personalities in the respective groups to be interviewed. The interviews were recorded using the adaptive multi-rate format (.amr). Respondents were all based in Nigeria and the key themes were discussed exhaustively.

After the five persons earlier interviewed using the Skype telephone, 15 more interviews were conducted, with one rendered as a focus group consisting of seven students. The most populated group in the network was the students' group, while the group most difficult to access was the employers of labour group. Finally, a visual evaluation of the equipment available in the department was conducted through the use of photographs taken there, (see Plate 1).



Plate 1: Unkempt and over used looms in a Nigerian University of Technology studio.

Source: Photo taken by author.

To analyse responses from the respective groups, an adaptation of Fairclough's, (1989) 'Members Resources' concept was used; 'Margaret Thatcher's radio interview' as main reference. Respondents' replies were here matched with the respective study themes. This revealed the underlying power relations existing amongst the groups in the network and how closure was achieved. At the end of the analysis, some assertions made by respondents were found to require verification which was handled by a survey method using a social media tool like Facebook.

Findings:

Below is a summary of all the respective stakeholders' reactions to the themes:

Population explosion in schools: Most members of all the respective groups were in agreement that; Nigerian higher institutions of learning are experiencing a population explosion which they agree is affecting the teaching of practice-based courses. But a few feel differently, they believe that the more the number, the more comfortable it is to weave because weaving is a strenuous activity that demands the use of many hands.

Staffing Shortfall: All respondents interviewed in the following groups; students, teachers, school administrators agree that there exists a problem of inadequate teachers which some have blamed on poor funding and the brain-drain/capital flight syndrome.

Equipment: Teachers and students interviewed unanimously agree that there is scarcity and poor state of equipment available for learning. A visual evaluation conducted

also agree with this position. However, government's response is that they have been doing their best, but that the existing equipment have not been well utilised.

ICT Literacy: Most of the students interviewed were ICT literate but most teachers were not, but, despite the students' ICT savvy, it was observed that poor internet access conditions influenced by high costs and limited infrastructure was what teachers blamed for their inadequacies.

Instructional Tools of choice: In respect of students' and teachers' knowledge of instructional tools, some respondents had no idea of what instructional tools were before the interview, some could not differentiate between software and instructional tools, but in the final analysis they all agreed that their use will improve learning.

Lastly, after series of deliberations, most respondents agreed that the video was the most compatible instructional tool to use because of its visual power of illustration. Further stabilization revolved round what was to carry the video files, especially as the country's internet capabilities was poor, thus respondents suggested offline DVD. Some advocated that it could still be placed on the internet because access conditions were improving. On the question of why the already created instructional tools have not being put to use; a respondent blamed it on the lack of 'advocacy' stating that such products can only be known if they are publicized.

A later appraisal on m-learning by the use of video on mobile phones for facilitating learning in Asian classrooms, specifically Bangladesh (Valk, Rashid, & Elder, 2010) discovered that there are similar demographic conditions existing in Bangladesh and Nigeria, which is poor access to the broadband internet services and a high percentage of students' who own multimedia phones. (See figure 3, 4 & 5). A mobile phone has been adjudged by Valk et al to be accessible, user friendly and a cost effective way to browse the internet, it has also been deployed to intervene in learning in developing nations like Bangladesh. Thus the rationale behind the intent to exploit its use in Nigeria.

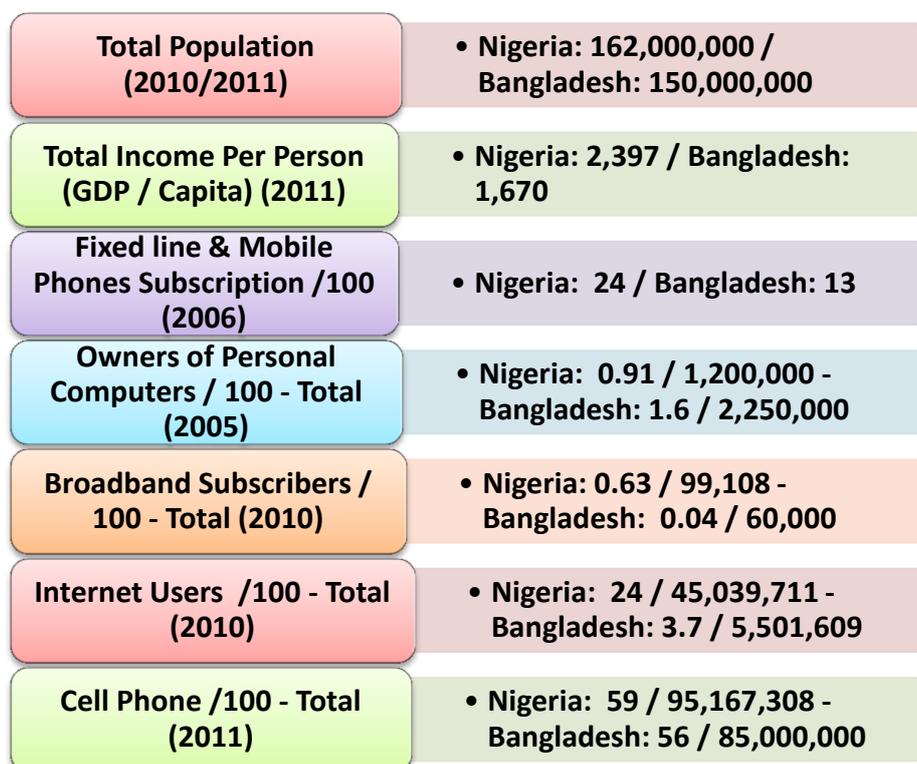


Figure 3: Comparative analysis of telecommunications in Nigeria and Bangladesh.

Source: <http://www.gapminder.org/>

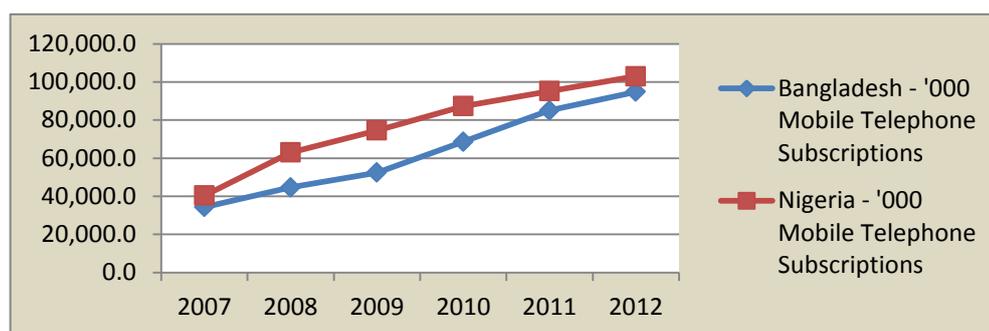


Figure 4. Bangladesh and Nigeria Phone subscription rates from 2007 to 2012
Source: Euromonitor International. Date Exported (GMT): 09/02/2013 04:23:22

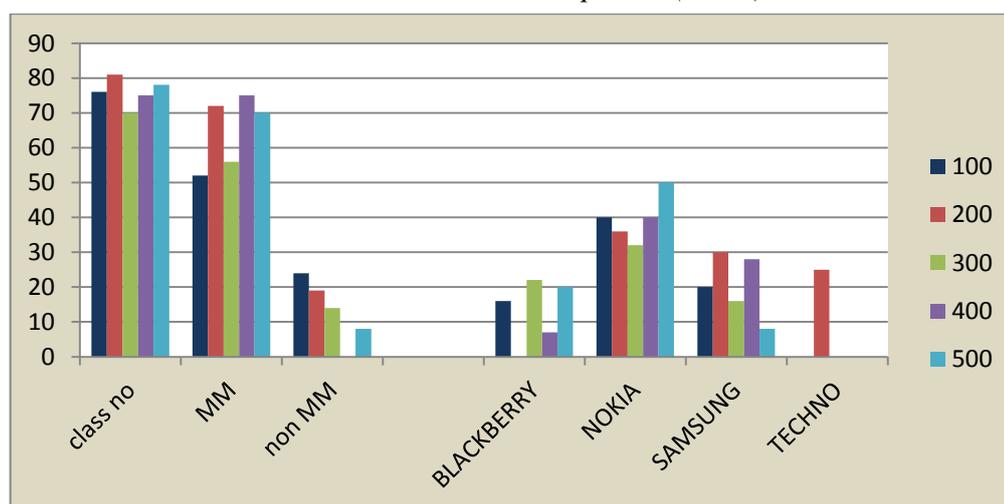


Figure 5. Results of a survey showing students with mobile phones and their preferences

Source: Lecturer, Time: 22 January 2013 10:51

Limitations:

Out in the field, all the interview sessions had their varied unique situations, which somehow influenced (limited) how the interviews were conducted, some examples are: the starch factory manager was interviewed in church, a student by a dye pit working furiously to meet a submission deadline, and the registrar's was interview conducted between other ongoing meetings etc. Hence it was difficult sticking totally to the rules as advised by Denzin & Lincoln, (Denzin & Lincoln, 2000; Johnson, 1988). However, most respondents were very enthusiastic about the topic while the researcher tried to make the best of it all.

Conclusion:

In conclusion, the central argument of this study is the position that teaching practice-based courses in Nigeria can become more instructive if localised instructional tools are created to support the teachers' demonstration in and out of the classroom, studio and laboratory. This is because developing nations like Nigeria need some interim remediation to support their teaching of practice-based courses. There should also be a continuous sensitization of teachers in the appreciation of ICT, as they are expected to be the 'gate-keepers,' drivers, managers and moderators of learning in their world. However, the average Nigerian teacher will need a reorientation of his attitude to teaching and learning which at the moment is skewed toward looking at the process as one involving a master and servant. It is hoped that when these video packages are eventually produced for the mobile phones, the

producers should put into cognisance the small sizes of the mobile phone display screens and the fact that the phones are driven by much smaller computing processors and memories. Most importantly it is recommended that the industries whose survival depends on the quality of man-power they get from the universities should endeavour to start funding them, by ensuring they get the right technology and up-to-date equipment to train students.

This research study is still work in progress, but the aim of this article is to give a picture of the reality on ground while work continues to attempt an interpretation of respondents' recommendations through the production of a prototype to be tested iteratively in the same environment.

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i Names and places that appeared in this article have been altered by the researcher in compliance with ethical pledges made while trying to elicit data for the study, I want to sincerely thank all for their assistant.

ii Excerpts from a Technologist's interview conducted at a Federal University of Technology in Nigeria, on 26th of May, 2012 by the Researcher.

iii Excerpts from a Female student's interview conducted at a Federal University of Technology in Nigeria, on 9th of July, 2012 by the Researcher.

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