INFUSING TECHNOLOGY INTO GENERAL STUDIES PROGRAM: THE NNAMDI AZIKIWE UNIVERSITY EXPERIENCE

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Abstract

Technology continues to expand as diverse groups of higher institutions adopt both blended and fully online learning. There has also been a tremendous need for special preparations and training for instructors and teachers to enable them discharge their chores using emerging technologies. This paper is intended to give a summary of the efforts of school of general studies, Nnamdi Azikiwe University at moving in specified dimensions to realise her present status in blended procedures. It is hoped that the measure will be introductory enough to encourage and motivate other tertiary institutions to get in step.

Keywords: Computer usage, Training, Data capturing, power point presentations and Computer Based Training (CBT).

Introduction

Times have changed and our lives are continually being intertwined with technology in ways we never thought possible even a decade ago. This situation lends credence to the view expressed by Warlick (2014) that infusing technology into teaching and learning processes has become imperative and no longer negotiable. He asserts that "We need technology in every classroom and in every student's and teacher's hand because it is the pen and paper of our time, and it is the lens through which we experience much of our world. (David Warlick, 2014:2).

In spite of Warlick's view, Ogar (2015) found that there is a low utilization of media among teachers and learners in Nigeria and this has negatively impacted on teaching and learning. He lamented that while the National Policy on information and communication technology (ICT) on education clearly stated several initiatives and strategies for integrating ICT into the education system, there remains none or minimal application of these in the schools. Should the situation be allowed to continue uninterrupted?

Yusuf and Onasanya (2004) opine that when used properly, technology in the classroom can be a useful tool for improving academic outcomes for learners of all ages. Research has also shown that when used correctly, computers and other forms of interactive technology can play important roles in developing learner's brain (Mikre, 2011). Such technological resources help learners to develop their curiosity, problem solving and independent thinking skills. (Kaimal 2012) reports that electronic technologies have helped to create learner centred learning environments where attention is paid to knowledge, skills, attitudes and beliefs that learners bring with them to the learning processes based on constructive arraigning.

Nigerian tertiary intuitions cannot continue to ignore the infusion of technology into their educational practices. There are however, some misconceptions about what technology is needful in the education enterprise and which ones are not. This situation should not be being allowed to keep the educational processes stagnant. Any technology that can serve a purpose in the education sector can be adopted, named, and used as educational technology.

Richey (2008) defined educational technology as the study of ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources. The Association for Educational Communications and Technology (AECT) denoted instructional technology as the theory and practice of design, development, utilization management and evaluation of processes and resources for learning. Educational technology therefore, refers to all valid and reliable applied education sciences such as equipment, processes, procedures, that are derivable from scientific research.

Educational technology is more than physical. It includes the development and management of innovative efforts in educational settings for the enhancement of learning. This is the view adopted by this paper. Educational technology is thus viewed in relation to teaching as a whole factor in the learning process. Focus is on the educational value of the tools and applications in use, how adequate they are in the acquisition of knowledge, whether there is an interaction between users and the tools and whether there are positive effects in using them.

Geer and Sweeney (2012) suggest that users of technology for educational purposes focus on five areas of software programs that have potential to strongly influence the learning experiences of learners.

These include:
-The educational value of the program
-Its ability to engage people in learning
-Ease of use
-Interactivity between the learners and the programs and
-The possibility that a software program monitors the progress of the learner

The School of General Studies, NAU, Awka Experience

Fully cognizant of the submission of the National Policy on Education, FRN (2004), on the fact that the nation cannot rise above the quality of its teachers, the school of General studies NAU, targeted the training of general studies (GS) course lecturers as needful for success; after all, Bill Gates rightly said that technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important. Our lecturers needed to be keyed into the technologies they would be required to use in teaching and how they would use them.

The multimedia projectors, the screens and the computers were identified as basic classroom implements. The perennial issue of power supply added standby generating sets, as well as safe but temporary power circuiting to the equipment. Considering the busy schedules of lecturers in the University, adequate time frame was allowed for the publicity of staff training to ensure that everyone attended. An expert in the use of the items was engaged to explain and teach the course lecturers what the implements were and how they could be used in the classrooms. No gain saying the fact that efforts was made to ensure Trainer and trainee comfort and motivation. Adequate timing for the presentation of each item and the processes was provided for. Training was structured in the seminar workshop mode.

This segment featured personalised computer application and training efforts on one to one basis. Lecturers' interests hinged on the fact that learning and mastering the training program content determined continual involvement in GS course teaching. All lecturers thus trained and mastered the use of power point to teach and present information and other necessary computer based educative tools that can be applied in class.

Fig.1 Expert Trainer at work

Fig 2. Participants in a seminar workshop for the Media training

The next step was the designing, acquisition and mastery of management gadgets to facilitate the process of student registration and identification. This was a further exploration of Richey (2008) submission that technology should create, use and manage appropriate technological processes and resources for both procedural and performance evaluation processes. Learners can learn more, with speed and accuracy when they engage technology appropriately for educational purposes (Adirika, 2014). Teachers can do more creative work by allowing technology to handle routine jobs of information transmission and heavy burden of administrative tasks such as marking and recording. To do these effectively, student's information should be collected and stored for reference and other decisions in a properly designed format.

A vital skill in the new digital world is the ability to work collaboratively on projects. The school sought the expertise of program designers for the development of software that can capture the details and images of students at the point of entry. An establishment engaged was able to capture, store, compare, and do other analysis on students' data. Capturing of staff data was also done to complete the circle. Computer Based Training procedure was opted for.

Fig 3: Database for Capturing Students

Computer Based Training (CBT) is a linear learning method involving self-paced learning activities delivered on a computer and linearly presented. Assessing learning in a CBT is often by assessments that can be easily scored by a computer. CBTs provide learning stimulus beyond traditional learning methodology from textbooks, manuals or classroom based instructions. It can be alternative to printed learning materials or it can be embedded to enhance learning. The school adapted a blend of digitally aided instructions and the traditional teaching and instruction.

Blended learning has been described as one of the most promising approaches in educational innovations. It is a technologically friendly approach that can use time split. Students are taught using the computers in power point modes in class to enhance understanding. The advantages of both sight and sound are at the disposal of the students. However, each student is provided texts written by their teachers for each course to enable them have indebt study outside the classroom. The use of microphones facilitate a clear recording of teachers' voices, from the computers the students can copy from the PowerPoint presentations done in class and utilise all to gain better insights into the GS course contents.

The creation, availability and use of the GS portal is aimed at providing access, without limits, to a student's desire and need. At the registration point, each student acquires a code that can be used only by that student to access information on GS portal. This code can be used to access a lecture summary posted by a lecturer which a student might have missed or may have been distracted while it was going on. This allows for greater individualization of learning. Students are all different, the use of various information technologies to reach them in the teaching process permits them to break step with the class and go at a pace and order that suits them better - especially when for unforeseen reasons, clashes in time occur in the courses they offer. Moreover, difficult lessons can be repeated and explored as many times as they find them interesting. Using all the gadgets seems more like using the services of a private tutor rather than getting lost because of inability to catch up or follow lectures in class (Greer & Sweeney 2012).

The GS portal serves diverse purposes. It can be used to access information about the school. It can also be used as a data base for posting processed information regarding staff and students of the school. Several lecture and assessment items are posted in the portal to motivate and challenge students to work harder and better. It provides a practice platform for people learning how to access themselves and their performances using the computer. What is more, students who have any form of difficulty can easily access the registration tables for assistance and clarifications any time within the work hours.

Students and staff can use the portals interactively through chats. According to Trentin (2010) social networking skills are found to be significantly useful in the classroom. After initial instruction and mastery of networking tools, students are able to work collaboratively among themselves and with their teachers to advantage. Several other applications (apps) have been designed into the system to compare students' entries and to fish out errors or double registration.

Locus of control has been a contention in examinations malpractice issues. The GS portal and registration procedures and facilities have proved helpful in the reduction of examinations

malpractices. Persons who dared to register in place of their friends were caught and tried. The moment the students discovered that their information were stored and kept in data bases for as long as possible, they get discouraged at impersonating for their friends and mates. Punishment meted to persons found guilty of meddling with established records left serious concern on the minds of serious students. The quality of Nigerian certificates has been questioned for inability of the possessors of such certificates to prove beyond reasonable doubts that the certificates were earned and achieved by them. This is strongly related to the issue of examination malpractice that had been witnessed widely in the education sector in the country. The blended format of the School of General Studies, Nnamdi Azikiwe University has reduced this to its barest minimum.

The curriculum process is incomplete without evaluation. Formative and summative evaluations are used by teachers to focus, control, and place teaching/learning efforts. Evaluation is very vital and involves many processes and procedures for their effective realization. It is within this process that one's adaptability to learning, growth and development within learning environment are determined so that allowances can be made for further growth. Assessing students' performance demands from the teacher- from preparation of the items, to the administration and ratings/grading – and recording.

The CBT adapted by the School of General Studies, Nnamdi Azikiwe University, Awka, reduces the teacher's workload in terms of marking, grading and recording of student performance. These processes take away enormous stressors from the teacher and by implication leave him healthier and with more time to pursue other instructional and training duties demanding his attention.

Students log into the systems to write examinations in the courses they have registered for using the pin numbers acquired on registration. When the students log in, all information about them including their photographs are displayed on the computer screen [a further discouraging issue for malpractice]. The courses they registered for are the only ones for which items are displayed and they respond to the terms and submit their efforts before leaving their seats. Students, through this method, work only with the courses they chose and leave off any other intentionally by not registering it if they so desire without calling much attention to themselves.

Every student who writes a course in the school of general studies gets his/her results the same day the examination is done on his or her mobile phone without fail. This is possible because the systems were programmed to generate both questions and answers from an already prepared item bank. The system by the same token, marks the responses of the candidates to the items, calculates their scores and places them beside the data of the respondents. The master disc is retrieved and information fed into the database from which results are disseminated to individual students through their phone numbers contained in the database.

Receiving immediate feedback on learning efforts has many advantages. The layman can easily guess to some common effects of immediate feedbacks especially when the reports are positive. It fires the zeal for further achievements which is motivational in itself; where the report is negative – efforts are strengthened and introspection can lead to modified learning processes for out rightly better results. Aside making parents to know the outcome of their children's effort, widely circulated immediate feedback indicates that a system is alive and healthy and leaves little or no room for manipulations due to delays and malpractices. It is also easier to consistently verify output.

Results of students are shown and compared individually, with course mates between courses and across faculties and departments. Failure and pass rates are easily and promptly

analyzed. This yields an enlarged scope of comparisons using different tools and mechanisms. This is possible because of the evaluation apps built into the program.

Fig.4 Pass and fail rates can be compared

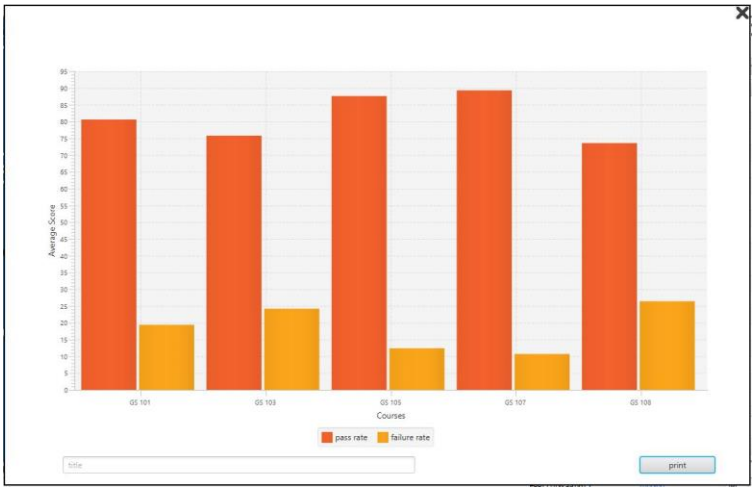

Fig5. Performance Across faculties can be compared.

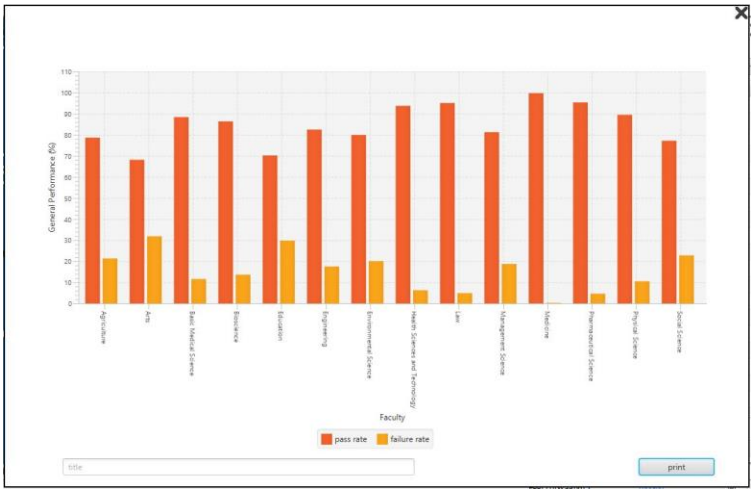

Fig 6. Performance In a particular course can be compared.

Some Specific Challenges

The school of General Studies continued to set deadlines their students failed to adhere to. At all times, the deadlines were posted on the GS portal yet students – registered and unregistered pleaded ignorance of those deadlines. The situation could be unnerving as it frustrates planning. Notice also the point towards registered and unregistered students. Many students fail to register for GS courses as demanded by the General Academic Rules and Regulation (GAR). Such students present themselves on the examination days, at appropriate venues, even when they claim that they did not know that they should register for GS courses – stating that they thought that registration of courses was meant to be done in their fields of specialization alone.

The "freedom" students access on entry into tertiary intuitions mislead a good number of them to believe that it is a place where they can do whatever they like due to the absence of strict parental and teacher control. They realise too late what problem they had launched themselves into. Such student may miss lectures indiscriminately – fail to log online for assignments, do not even devote enough time to reading texts and manuals given to them on registration let alone practice the item response modes included and demanded for in the portal . The committed teacher gets heartbroken after all efforts to facilitate learning and carry everyone along in the teaching – learning process.

Electricity had constituted strong inhibitions for both teaching and assessment of GS courses. The teaching and assessment are done with electronic gadgets and these need electricity to function. To beat the epileptic supply of current, generators are used in every classroom where GS courses are taught irrespective of the accompanying raise in noise pollution within the teaching learning arena and unhealthy environmental carbonization. The irregular pricing of petrol in an oil producing country beats the imagination of everyone in Nigeria. Vendors and dealers fix their prizes at random and without regard to any rules or procedures. People buy at such exorbitant prices that are capable of getting other needs in the school kept in abeyance.

In spite of these challenges the school of General Studies, Nnamdi Azikiwe University has survived. The school was the first to use the CBT blended procedure in teaching learning

efforts in at least, the South East Universities. This process has been determinedly supported because of its several advantages and benefits.

The professionalism dimension of teaching can be greatly improved by the constant use of technology in institutions. The GS course lecturers were bonded together in their learning efforts at the onset of the program. No one was allowed to fail in the application of the identified technologies. They related so closely within that period, sharing their difficulties and excitements. The emerging friendship ties are still very visible in their dealings personally and in group ways. People easily offer to stand in for friends – colleagues who are indisposed or called off by emergencies. They easily mingle and intermingle in the resolution of issues in the school. Each is trying to become an expert in the use of technologies even in their other dealings aside when they are teaching their GS courses. A professional has in- depth knowledge of the tools which he uses to discharge his teaching chores. This is becoming a reality in the school. The spirit of camaraderie is also very welcome.

Resources for teaching and learning are easily sourced, imported and shared online by GS lecturers. They have acquired skills to communicate with others across the world in an instant. They discuss shortcomings of their own work; seek for advice and professional help which help them to refine what they have on ground. The students are getting the best available and teachers are actively and effectively engaged their teaching chores.

Students and teachers have access to a large expense of material for teaching and learning. Useful and general ones can be stored in the portal and the lecturers' cites on the portal. They can be retrieved and reused in the facilitation of learning in special and general ways. They can even be lent, borrowed or exchanged as the need arises among and between students and teachers.

Supporting student success had become a major concern of both the educational curricular and the educationist. A good way to ensure this support is the effective integration of emerging technologies in the learning environments. More so, the students of this age are more comfortable with experimenting with new technologies than their predecessors. While the teacher may not have met these technologies in his per service years and training, he necessarily needs to venture and delve into their comprehension and application himself in order to brace up with the demands of the times. Confidence and openness are needed in this venture especially with the realisation that learning is a lifelong thing and everyone who has the opportunity to learn something new must be encouraged to do so with pride and gratitude – especially if the one is a teacher!. From experience in the CBT venture, it is clear that all the people who are regarded as the members of the net generation may not be fluent with all the technological tools so as to fully understand how to use them to be as productive as they are expected to be. The maturity of the teacher and the enrichment of the learning environment with objectivity and openness help to contribute significantly to fluency, use and consistency in the use of technology.

Adirika (2014) did show that new instructional architectures are emerging. Provisions are imperative for receptive, directive, guided discovery and exploratory architectures in order to adequately deal with all the features of content aimed at achieving educational goals. The features of cognitive apprenticeship and interdisciplinary dimensions of education call for necessary adjustments which no teacher can afford to ignore especially at the tertiary level.

Classes are usually composed of diverse groups that may be generationally and culturally different. While some may be apprehensive in the use of technologies hitherto unused, others may be excited about trying out new grounds and looking forward to their growth in those areas.

It becomes unimportant to make everyone to understand the need for evaluating one's adaptability to life.

Conclusion

It is an important step to start everyone off on solid footing in the use of tools by outlining ***what*** tools would be necessary, ***how*** the tools will enhance experience, ***why*** they are required as well as what constitute appropriate behaviour in their use. Teachers of GS courses and indeed all educationists are called upon to rise to the needs of the time. The society is becoming more of a global entity and the teacher and the learner, by using whatever is ethically acceptable in the development of the self and others, may be forging stronger bonds among persons in their constituencies.

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