The Impacts of Life-Long Learning to Facilitate Both Teachers and Students of Computer Science in Nigerian Polytechnics

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Abstract:
It has become necessary for the National Board for Technical Education (NBTE) to embark on training both the teachers and the students of computer science. This came as a result of unbundling Higher National diploma in Computer Science in all Nigerian polytechnics. The article analyses the possibility of lifelong Learning/Distance learning as a means to educate all computer science teachers/lecturers of Nigerian polytechnics via online studies through collaboration of NBTE with Commonwealths Learning-Google-Nigeria (COL-Google-Nigeria). This lifelong learning is conducted regardless of the age, location or social affiliation of either a teacher/lecture or a student. The development of new curricula by NBTE had arouse the need for special training to all lecturers of the concerned units of specializations. To sponsor all the teachers involved at the same time is tedious and time consuming. The best solution to the problem raised is long life/distance learning. The power of ICT and networks has greatly facilitated the online training/learning on which the finding shows that 75% of participants have fully completed their training within the time frame of the training, 16.7% not completed and 8.3% partially completed, even though every participant was learning at his/her own phase. The findings of this work have shown that it can be generalize to all the geopolitical zones of the nation. Lastly, it was realized the participant from different age group had participated and came up with different specializations.

Keywords: *Distance learning, Life-long-learning (LLL), ICT, NBTE, COL-Google-Nigeria, MOOC.*

INTRODUCTION

It has become necessary for NBTE to adopt the new world changes in the field of computing technology to be able compute with the outside world. What are the agents of these technological changes? The only answer to this question is the Nigerian polytechnic and University lecturers. To begin with, the NBTE has now unbundled HND Computer Science in all Nigerian polytechnics thereby calling on all Computer Science lecturers to embark on E-learning/Distance learning with COL-Google Nigeria to study all the four proposed computing courses: *Artificial Intelligence*, *Software and Web Development*, *Cloud Computing & Networking* and *Cyber Security & Data processing* (Ayeni & Shaibu 2024). It was made mandatory to all the lecturers of computer science in all Nigerian polytechnic to undergo training on all or any of the above mention computer discipline. Lecturers from different age-group, different background and different grade levels have under gone in any of the discipline. Learning did not stop after obtaining basic degrees and other certificates, rather a continuous process that makes learning very flexible and dynamic approach to learning (Oksana, 2023). This process of learning adopted by the NBTE According to Cambridge Dictionary is a process of acquiring education and skills throughout the entire lifespan someone. The NBTE observed that large percentage of the Polytechnic lecturers lacks either one or all the specialized fields of computer science that was unbundle, and thereby lecturers from computer science should embarked on studying these fields of knowledge. As such NBTE finds a solution to the ongoing problem of not having a specialized areas by allowing lecturers to study on their own phase irrespective of *age*, *Geographical locations* and *time.*

The importance of subdividing Computer Science largely relied on equipping Nigerian educator to simplify the ways in which they will be handling their students and as well to have an innovative graduate that will face the future challenges of the nation (Abdulmajeed, 2020).

The Study also focuses how can the Nigerian system of education will change the traditional ways of conducting students' projects through allowing them to have a choice in a particular field of endeavor, and they should be become self-reliance after graduation (Javis, 2004).

BACKGROUND

Current Structure of HND Programs

The present structure of structure of HND Computer Science, the curriculum is design in such a way that the graduate of Higher National Diploma will have no specialized area in the field of computer science, all aspect of computer science will be touch in order to make graduate aware of the various field of computer technology. This has now been considered by the NBTE outdated as is yielding a positive and productive graduate, as such Computer science was unbundled.

Challenges with the Traditional Model

The versatility of the traditional model makes the system very wide that student will not specialize in one or many of the fields of computer science thereby making students nonproductive. The NBTE will now design new curriculum as the present structure is outdated, thereby both teachers and students will embark on the new curriculum (Abdulmajeed, 2020).

THE CONCEPT OF UNBUNDLING

Definition and Explanation

Unbundling HND Computer Science is any attempts to disintegrating the complete traditional computer Science curriculum into modular, specific and more specialized units. This process allows more accessibility in learning different concepts of computer discipline, flexibility and

more commercialized. Such a process also allows people to upgrade their skills through their adult lives as they are aging in almost all technological and scientific advancement, basically adopt to change to new world changes as you are aging (Marjan 2011). (Hildebrand, 2008) highlighted some powerful benefits of LLL:

- **Sharpens the mind:** As getting older learning always keeps mind sharp and boost the capability of our minds
- **Sharpens confidence:** As we always update our knowledge, we tend to become up-to-date and confident.
- **Sharpens interpersonal skills:** Our inter-personal skills improve because we are always educationally, socially and morally motivated when embark on LLL.
- **Sharpens career opportunities:** As we grow older and embark on continues more doors and opportunities opens and become closer.
- **Sharpens the ability to communicate:** Learning generally has to do with reading, Listening and Writing skills, thereby the ability to communicate well improves.

Benefits of Unbundling

The unbundling of HND Computer Science has so many advantages that spans the personal development, professionalism and societal impacts, for both teachers and the students in the various fields of computer science. This will promote learning by keeping the brain active, improve memory capability solving various problems in your own area of specialization. Solving so many similar problems in your field will improve your cognitive functions. Another remarkable benefits of unbundling HND computer science are in the area of increasing Confidence and Self-Esteem, the knowledge acquired can boost confidence and sense of actualization in a particular field of study. Adoptability and Flexibility would equally be improved as one is always subjected to any future changes that may occur.

Implementation Strategy for Unbundling

The unbundling of computer science came after the announcement by the NBTE Executive Secretary of the board on January 8, 2024, that all HND computer science no longer be taken as a course because the wide variety of the course (Victor & Natheniel, 2024). HND computer science was sub-divided into four different units namely: Software & Web Development, Cloud computing & Networking, Cyber Security and Data Processing, and Artificial Intelligence (AI). Therefore, all Heads of Nigerian Polytechnic were directed to inform all head of computer science get enrolled on Distance/Lifelong Learning via the provided mediums to obtain the knowledge and skills on these unbundled areas.

MODULAR CURRICULUM DESIGN

Flexible Learning pathways

The learning pathways is made so flexible that cover the four (4) unbundled areas of HND computer science i.e, Artificial Intelligence, Software and Web Development, Cloud Computing & Networking and Cyber Security & Data processing. Every participant is to go on distance learning via the provided medium of learning by the NBTE in collaboration with Commonwealths Learning-Google-Nigeria (COL-Google-Nigeria)

SUPPORTING INFRASTRUCTURE

Technology and Resources:

The supporting technology for training the trainers of HND computer science students was via Massive Open Online Course (MOOC) platforms. An example of these platforms is: *Coursera*, *Udemy*, *Udacity*, EdX etc. All the platforms come along with instructors in every

field learning together with the available materials for each course. Distance/Lifelong learners were acquiring skills and knowledge on different face of learning

Partnerships and Collaborations:

The Nigerian NBTE in collaboration with Commonwealth-Learning-Google Nigeria has taken the responsibility for train the Trainers of HND computer science in Nigerian Polytechnics. A google meeting was organized to all the participants together with the members of the commonwealth of learning to discussed the ethical ways of enrolling on the course taken on the various areas of unbundling the computer science.

PROBLEM STATEMENT

The major problem necessitated this research is that the need for unbundling Computer science has aroused and lecturers in this field are expected to go on additional knowledge in these sub-divided areas of computer discipline. The traditional and the conventional ways of learning would be inconvenient because all lecturers of computer science to leave their class room for further learning will create a big gap in the learning architecture and is expensive. Therefore, to eliminate these issues is simple by going for distance and self-learning via MOOCs to solve the potential barriers (Williams, 2014).

PURPOSE OF THE STUDY

This research aims at investigating the effectiveness of lifelong learning among the lecturers of computer department in Nigerian Polytechnics as directed by the NBTE. The objectives of the study include:

- To investigate the effectiveness of lifelong learning.
- To compare the learning phase of people with different age group on the same platform.
- To record the rate of success and failure of lifelong learning with regard to unbundling computer science

RELATED LITERATURE

The modern world is always changing and developing, and this requires not only accepting developmental changes but also there is need to grow and improve our selves. The only tools that allow us to remain up-to-date is Lifelong learning (Oksana, 2023). To continue learning will raise aspiration among people of different age group, different caliber, different social and cultural practices is to have confidence and skills in the field of computing to support their learning to aspire what they intended to, through Lifelong Learning. Lifelong learning should be extended so long so that children of pre-school and kindergarten should equally be taught by the parents and teachers so that children will not be left out. (Housseini & Assareh, 2011). Also, Problem-Based Learning is another key area that motivate LLL, for instance, students learn to stop learning after finishing their courses in our traditional classroom learning mode. While in this age of IT learners never stop because of the nature of the lifelong learning, learners got motivated and learn thorough out their life-span (Housseini & Assareh, 2011). Eurostst Define Lifelong learning as All attempts to learning activities undergone throughout your life with the mission to improve knowledge and skills and specialization in a particular area of science and technology (Field, 2006). Self-Instruction is another means of distance education and lifelong/lifelong self-regulatory studied even though it differs in so many aspects conceptually and procedurally cognitive-behavioral Self-Instruction (Knowles, 1975). A conceptual model that provides Self-Regulatory Learning on Institutional Lecturers gives them motivation and learning which offers a broad outline of the different of self-regulatory strategies that college students and lecturers might use to control their

own cognitive, motivations and behavior (Pintrich, 2004).

MATERIAL AND METHOD

This paper aimed at investigating the effectiveness of Lifelong Learning among lecturers of computer science in Nigerian Polytechnics after the recent unbundling of HND computer science to four (4) different specialized areas of computing technology. This is conducted with some few polytechnic institution's staff in Yobe, Borno and Bauchi.

A google form is design with some set of question which are to be respond by the staff of the selected institutions, which was later analyzed and came up with the following results and recommendations.

RESULTS:

A questionnaire has been sent across some respondents around the catchment area of the research demographic, where the results was collected and discuss below:

Q1. The names of the respondents and their identity was captured here.

Q2. The different ages of the respondents are equally obtained and this one of the key areas of this work. The results show that the age group between 25-34 of the respondents was 16.7%, and the age group between 35-50 of the respondents was 83.3% which cover the largest members the under gone four different courses at the same phase as shown in the figure 1 below:

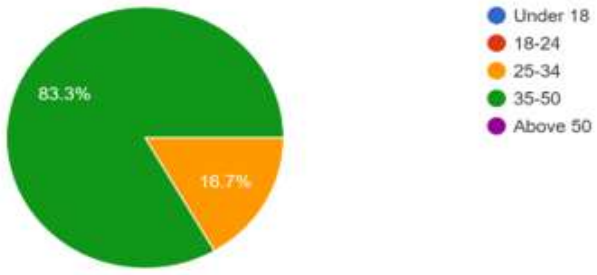

Figure 1: showing age of respondents

Q3. What is your gender?

This captures the gender of the respondents and almost 100% male, 0% female teacher in demographic zone.

Q4. What is the highest qualification of the respondents

About 8.3% of the respondents were having BSc/BTech, about 66.7% of the respondents were having MSc/MPhil and 25% of the respondents were having PHD. This is to tell you that people of different qualification can equally learn under the same umbrella as can be seen below in figure 2:

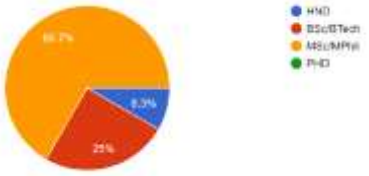

Figure 2: showing the highest qualification

Q5. How has lifelong learning impacted/affected your personal and professional life?

The larger percentage of the response shows that Lifelong learning impacted so much to the life of the respondents, by keeping continued personal growth, updating them with industrial trend and development and enhancing their capability and adaptability to faced new challenges. Improve the skills and enhancing them toward problem

solving technique and contributed to their career advancement, their innovation and creativity has equally been improved.

Q6. Which course have you completed?

About 33.3% of the respondents completed Software & Web Development, 16.7% of the respondents have completed Cloud Computing & Networking, 16.7% of the respondents completed Artificial Intelligence and lastly 33.3% of the respondence have completed Cybersecurity & Data Processing as can be seen below in figure 3:

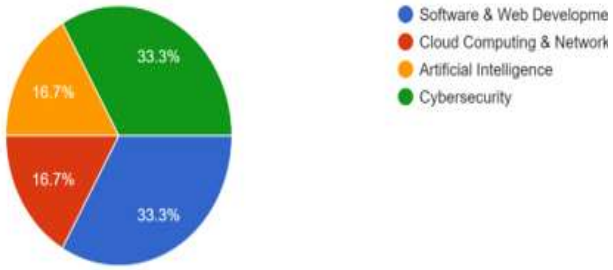

Figure 3: showing different courses and the percentage taking

Q7. How important do you believe lifelong learning is for career success?

About 58.3% of the respondents believe that it is Extremely important, 41.7% of the respondents believe that it is Very Important. This is to say that one can easily achieve his/her career through lifelong learning. The figure below 4 shows the results:

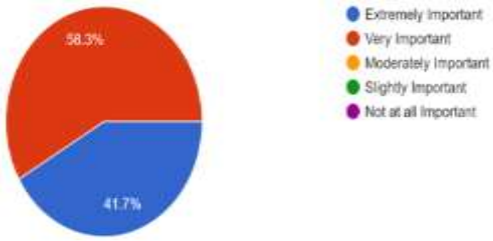

Figure 4: showing the importance of lifelong learning

Q8. What is the challenge experience during the course?

There are a lot of challenges face during the course which will further be discuss in the next section of the work.

Q9. Do you plan to go for more Online/Distance Learning in future?

About 8.3% of the respondents say NO, 8.3% of the respondents say SURE, 75% of the respondents say YES and 8.3% say YES IF PRACTICAL ASPECT IS IMPROVE. This is telling you that people were motivated and willing to go for further studies on LLL.

Q10. Have you successfully completed your course?

About 75% of the respondent fully completed their courses, 16.7% of the respondents did not complete their courses and 8.3% partially completed their courses as can be seen in the figure 5 below:

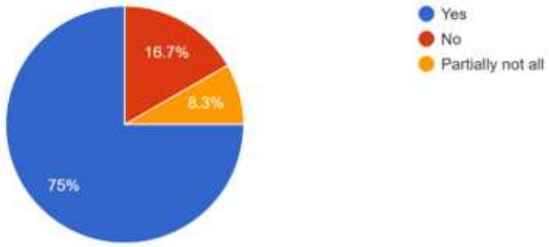

Figure 5: showing the level of completeness of a course.

Q11. Are you motivated with lifelong learning?

About 91.7% of the respondents were motivated with LLL, only 8.3% were not motivated.

Q12. The personal contribution of the respondents.

In some of the views of the respondents they are inquisitive to know the relationship between LLL and Unbundling computer science which clearly

shown that the learning context is what relate the two, where people of different status socially, economically, agedly and educationally come together under the same platforms to learn the same or different courses at the same phase. And some were of the opinion the such an update should inculcated in our lives from time-to-time.

CHALLENGES AND SOLUTIONS

Time constraint: one of the problems faced during the taken these courses was time management. It has become difficult for most of the people to balance the for taken these courses with day-today normal routine time. This is because of the nature of the course and the phases at which every learner is taken his/her courses.

Network: A sound network is only the problem of LLL/Distance learning but a general problem faced by the sectors that deals with a network in the demographic zone of conducting this research.

Power: Again, electricity power supply is another major problem of country as a whole not to talk of demographic zone for conducting this research.

Lack of good devices: Lack of up-to-date Computer and other Distance Learning devices.

PROPOSED SOLUTIONS

For someone going for LLL/Distance Learning should get fully prepared toward learning by inculcating the time for learning in his personal and professional responsibilities so that time for learning will not be affected.

A proper network must be put in place prior to enrollment in any course of study that one is willing to undergo via LLL/Distance learning, so government has put an Eagle eye on the affairs all network and the telecommunication networks to make sure proper services have been deliver to the customers.

Individuals (via small solar power plan) and the government should embark on power plan project in order to alleviates this nation from lack of power supply.

Good and up-to-date computing devices should be provided to lecturers of the higher institutions by both government agencies and non-governmental agencies.

CONCLUSION

This research Investigate Lifelong learning/Distance learning after unbundling HND computer science and the results has shown that lifelong learning is one of the most trending ways of acquiring knowledge and is effective with numerous advantages. The results have equally shown that people with varying age, cultural background can acquire knowledge at the same phase. Lastly, Unbundling computer science which leaded Lifelong learning has yielded a positive result with high percentage success.

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