# INFORMATION AND COMMUNICATION TECHNOLOGY IN HIGHER EDUCATION:
# THE CASE OF BABCOCK UNIVERSITY

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**Abstract**

*The scope of Science and Technology in Higher Education in Nigeria is experiencing an exponential increase in awareness with operators incorporating several Information and Communications Technology (ICT) techniques in management, administration, admission processes and dissemination of information; including e-learning modules. This paper examines the relevance of ICT in Higher Education with emphasis on Babcock University experience. The study relied on the internet and relevant texts including books, journals and observable trends in the use of ICT in Nigeria. For instance Science and Technology is an integral part of Joint Admissions and Matriculations Board (JAMB) operations. The Purchase of forms, Registration for examinations are now being done online and as well as Computer Based Tests. The West African Examination Council (WAEC) also uses technology in its operations. Babcock University operates as dual mode institution providing on and off campus access to education and integrates science and technology in all its processes. The acceptance and use of technology is further made possible by the high rate of proliferations of laptops, smart phones and internet facilities. This paper recommends that Science and technology should be harnessed as a major tool to salvage the deteriorating state of higher education as well as mitigate the challenges posed by globalization to the education system. Furthermore, it recommended that huge funding should be made available specifically for science and technology, available facilities should be improved upon and personnel should be trained to compete with the global trends so as to successfully drive innovations inherent in sector for the betterment of our educational system which will translate into the development of the society at large.*

**Keywords: Higher Education, Globalization, Information and Communication Technology, e-learning**

## INTRODUCTION

A distinctive feature of human beings is their ability to acquire knowledge, and what makes this knowledge an ever-thriving requirement is man ’s ability both to acquire and then to pass on this knowledge to others. Transfer of knowledge, which is one of the

foundations of learning, is among the most fundamental social achievements of human beings (Sarkar, 2012).

Information and Communication Technology (ICT) can contribute to not only local but universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration (UNESCO, 2015). ICT has tremendously broadened the opportunities for people to acquire information, interact, network, address issues of common concern, generate income and participate in society. Babcock University as an institution of higher learning has in various ways and times incorporated science and technology into its daily operations from communication dissemination, interactions, collaboration, research, teaching, learning and administration. This is further seen in the curriculum of the school. Babcock University can pride itself as foremost in the use of science and technology in education with its operation as a dual mode institution. Babcock University uses Google Apps for Education has one of the ICT tools for communication among the students, staff and faculty. According to (Boukelif, 2013) one of the basic requirements for education in the 21st century is to prepare populations for participation in a knowledge-based economy. Babcock University is in the frontline doggedly pursuing excellence in education delivery.

## DEFINITION OF TERMS

**Science:** According to University of California website Science is both a body of knowledge and a process. (University of Califonia, 2013)

**Technology:** The Merriam-Webster dictionary defines technology as "the practical application of knowledge especially in a particular area" and "a capability given by the practical application of knowledge". This implies that it is a far-reaching term that may include simple tools, such as a crowbar or wooden spoon, or more complex machines, such as a space station or particle accelerator. Tools and machines can be material or virtual technology, such as computer software and business methods. (Meriam-Webster, 2015)

**Information Communication Technologies (ICT):** For the purpose of this paper refers to the computer and internet connections used to handle and communicate information for learning purpose (Mikre, 2011).

The word science and technology is often used together to denote the intricate relationship between the two. However for the sake of this paper science and technology which is often used interchangeably is used interchangeably with Information and Communication Technology (ICT) for the sake of narrowing down the scope.

**Education:** Dictionary.com defines education as “The act or process of imparting or acquiring general knowledge, developing the powers of reasoning and judgment, and generally of preparing oneself or others intellectually for mature life.

"True education means more than the pursual of a certain course of study. It means more than a preparation for the life that now is. It has to do with the whole being and with the whole period of existence possible to man. It is the harmonious development of the physical, the mental, and the spiritual powers. It prepares the student for the joy of service in this world and for the higher joy of wider service in the world to come."— (Ellen G. White, *Education*, p. 13.)

**Higher Education:** Dictionary.com defines Higher Education as "Education beyond high school, specifically that provided by colleges and graduate schools, and professional schools"

## THE BENEFIT OF ICT IN EDUCATION

The benefits of ICT in higher education are numerous. A few of them were discussed below:

## SCIENCE AND TECHNOLOGY: SHAPING EDUCATION POLICY

Science and technology has contributed immensely to strengthening and rejuvenating a system of democratic as well as transparent education planning and management. Through the use ICT educational policies can expand access to learning, leading to improved quality and guaranteeing inclusion. The policy of education that allows inclusion will lead to the achievement of society where the level of literacy is high and the rate of development is exponential (Kozma, 2008).

In Nigerian schools today where resources are scarce, Science and Technology provides a solid platform that enables access to open source materials (Olaniyan & Okemakinde, 2008). The proper and judicious use of open-source materials can provide the means to bypass the bottleneck of textbook production, distribution and updating thus reducing the cost of education. Policy decision that encompasses this can influence education for the betterment of all stakeholders in higher education.

## SCIENCE AND TECHNOLOGY: SHAPING TEACHER EDUCATION

The need for competent and professional teachers has never been more necessary than it is today. According to (Thakral, 2015), the number and quality of teachers, teaching practice and teacher education are facing serious systemic challenges across the world. UNESCO opined that we are

at a critical time and that at present the world needs an estimated 9.1 million new teachers to reach internationally-agreed education targets by 2015. Hence, the quality of teachers, their continuing professional education and training remain cardinal to the achievement of quality education. These challenges facing teacher education can be addressed through a holistic, systemic approach to education and teacher development systems in ways through incorporating ICT. Existing teacher development practices, multi-stakeholder partnerships, capacity building of policy-makers and the development of international standards via ICT and on ICT competencies for teachers can mitigate the challenges that currently bedevil Higher education (Usun, 2009).

With government Interventions and training seminars organized in developed worlds, ICT tools stimulate teachers. According to a recent research, majority of teachers in Europe (90 %) claim to use ICT to do tasks, such as preparing lessons and sequencing classroom activities, these enable teachers plan their lessons more efficiently. ICT also help teachers to work in teams and share ideas related to schools curriculum. There is also evidence that broadband and interactive whiteboards play a central role in fostering teachers' communication and increasing collaboration between educators. (Yacine, 2014)

## SCIENCE AND TECHNOLOGY: SHAPING OPEN EDUCATIONAL RESOURCES (OER)

OER are teaching, learning or research materials that are in the public domain or that can be used under an intellectual property license that allows re-use or adaptation (e.g Creative Commons).

(UNESCO, 2015) The potential of opening up educational resources for use and adaptation by everyone, especially those in resource-poor environments, is a great opportunity to achieve quality education. The National Open University of Nigeria (NOUN) for example makes its educational materials available for others to use freely.

Today the broad movement working to encourage creators of knowledge and information (including software), are actively active in promoting OER. It worth noting that according to UNESCO Nigeria has a very low percentage of its publications available on-line and in Open Access (UNESCO, 2015). UNESCO itself, for instance, has bought into OER thus allowing learners, teachers, administrators and governments to freely access, create and share open document-format educational resources (UNESCO, 2015).

## SCIENCE AND TECHNOLOGY: THE INTERNET REVOLUTION

According to the Internet world statistics (2014), the Internet usage in Nigeria has grown from 200,000 users in the year 2000 to about 70 million users as of June 2014. This implies that the current internet penetration (% of Nigerian population) is 39.7%. The Internet has truly revolutionized how knowledge is communicated. In the world's most developed economies, the presence of ICTs has expanded exponentially and touched virtually all dimensions of the higher education enterprise (Altbach, et. al, 2009).

## SCIENCE AND TECHNOLOGY: RESOLVING THE PROBLEM OF EDUCATION IN NIGERIA

Plethora of problems plagues education in Nigeria today and though the Educational system in Nigeria is decades behind compared to the rest of the world, the viable ways to catch up is to

take a giant leap at ICT Solutions. The problem of inadequately incorporating ICT in our education system can be overcomed with tremdendeous benefits. For instance Education delivered through ICT can bring the best quality of education at a low cost deployed across all spheres to the doorstep of students nationwide at the same time delivered in the simplest and most understandable way to individual student; this will inspire and task student's independent thinking. The possibilities of such solution are endless because when students are inspired, they can imagine solutions from what they learn and apply it in their daily life and environment. Challenges such as poor quality of teachers, lecturers and administrators, poor delivery of educational content, non-conducive learning environments, increasing cost of education etc., can all be addressed by ICT, through collaboration with the developed world.

Other advantages of ICT in higher education include

| **Stakeholder** | **Benefits** |
|---|---|
| Students | • Increased access,<br>• Flexibility of content and delivery,<br>• Combination of work and education,<br>• Learner-centred approach,<br>• Higher-quality of education and new-ways of interaction. |
| Employers | • High quality, cost effective professional development in the workplace,<br>• Upgrading of employee skills, increased productivity,<br>• Developing of a new learning culture,<br>• Sharing of costs and of training time with the employees,<br>• Increased portability of training. |

| Stakeholder | Benefits |
|---|---|
| Governments | • Increase the capacity and cost effectiveness of education and training systems,<br>• To reach target groups with limited access to conventional education and training,<br>• To support and enhance the quality and relevance of existing educational structures,<br>• To ensure the connection of educational institutions and curricula to the emerging networks and information resources,<br>• To promote innovation and opportunities for lifelong learning. |

**Source:** UNESCO, 2002.

## THE CHALLENGES OF ICT IN EDUCATION

The challenges of ICT in Education are numerous. They include:

1. Cost: The cost of ICT tools for education can be expensive.
2. Plagiarism could be on the rise: Students can just copy from the internet instead of doing a thorough work.
3. Digital divide: Students with more ICT knowledge would tend to benefit more and learn faster than those who are not technological driven.
4. Lack of clear policy direction on the funding and implementation of ICT innovations.
5. Lack of trained and qualified teachers to teach ICT in the Schools
6. Lack of stable electricity
7. Lack of internet or low bandwidth
8. Increasing moral decadence in the society and the fear that introducing ICT may heighten the situation.

However, the advantages that accrue from using ICT far outweighs the challenges and in many cases these challenges can be mitigated through commitment to better life and progressive development.

## THE BABCOCK UNIVERSITY EXPERIENCE: THE PRESENT

The Babcock University experience is rich in the use of Information and Communication technology as a first class institution of Higher learning. Some of these are discussed further.

- **ICT COMPLIANT CLASSROOMS**

Babcock University recently just signed a Memoradum of Understading (MOU) with the WiniGroup Company on a project called Total Classroom Revolution(TCR). TCR will wirelessly connect all undergraduates, postgraduates students, lecturers and the school administrators to the classrooms. It enhanced and accelerated learning, research and social collaboration.

## E-LEARNING

**E-Learning** or Electronic learning is a general term used to refer to computer-enhanced learning. It is commonly associated with the field of advanced learning technology (ALT), which deals with both the technologies and associated methodologies in learning using networked and/or multimedia technologies. (Audrey et. tal, 2008) It is also known as online learning. Distance education provided the base for e-learning's development. E-learning can be 'on demand'. It overcomes timing, attendance and travel difficulties. E-learning allows delivery, dialogue and feedback over the internet. It allows mass customization in terms of content and exams. E-

education can provide access to the best gurus and the best practices or knowledge available (UNESCO, 2002).

E-learning is an innovative, technology- driven revolution that increases accessibility to higher education in the present global age.

Babcock University e-Learning centre was established in the year 2010. The Centre was charged with the responsibility of promoting qualitative, engaging and holistic education to a diverse target population which could be categorized into those teeming, young but university-qualified individuals who had found it difficult to be absorbed into the limited number of admission slots in the existing universities and those who had been settled in the nation's work force, married with children, unable to enroll in full-time academic programme because of other completing demands but whose yearning desires for academic and professional advancement are yet to be fulfilled.

The e-Learning Centre had run several content development workshops with over hundred fulltime and associate staffs who are contributing to the curriculum and course development. The centre is in partnership with several Institutions, some of those are British Open University and African Virtual University

**-THE UNIVERSITY MANAGEMENT SYSTEM**

At every stage of education management process, the university management information system (UMIS) should inform the different stakeholders and partners on the state of education, its efficiency, its pedagogical and institutional operation, its performance, shortcomings and needs. These should also be presented in a format that enables decision making to become natural. This will help policy and decision-makers as well as other planning managers find clear and easy to

interpret documents that are accompanied by relevant analyses on which to base their policies. Babcock University has a University Management System (UMIS) that serves the students, faculty, staff, management, even parents in this regards. This UMIS provides up to date information which is the basis of management, planning and evaluation in a holistic manner.

**-FUNCTIONAL WEBSITE AND SOCIAL MEDIA**

At present Babcock University has a functional website that is frequently updated. This has made the school and the activities done to be well publicized. The outside world can get to know Babcock University at a click. Furthermore, the university has a functional facebook account that the students can communicate through while socializing and boosting their network.

**-CBT TEST**

Babcock University now makes use of Computer Based Test (CBT) for its entrance examinations. Also, some of the General Education Courses (GEDS) exams are done through the CBT.

**-MOBILE LEARNING**

Today there are more mobile phones amounting to almost the more than 6 billion population of the world (UNESCO, 2015). On this pedestal, Mobile technology is changing the way people live and learn. The M-Learning involves the use of mobile technology, as standalone technology involves the use of mobile technology, either alone or in combination with other information and communication technology (ICT), to enable learning anytime and anywhere. Learning can unfold in a variety of ways: people can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms. Mobile learning also

encompasses efforts to support broad educational goals such as the effective administration of school systems and improved communication between schools and families. Mobile devices can be used to access educational resources, connect with others, or create content, both inside and outside classrooms. M-learning encompasses efforts to support broad educational goals such as the effective administration of school systems and improved communication between schools and families.

Babcock University provides mobile tablet with educational resources and internet bandwidth for her students at all levels. This allows the student to access educational resources online and interact with their colleagues and lecturers.

**THE BABCOCK UNIVERSITY EXPERIENCE: FUTURE**

The future plan of Babcock University includes various collaborations that will enhance access to ICT facilities thereby placing Babcock as one of the best Universities in the world. This pursuit has birth the plan of Building a state of the art ICT facility by New Horizon in Babcock.

> "The foundation for a N400 million ($2 million) second ICT skills acquisition centre has been laid at Babcock University, Ilesan-Remo, Ogun State, by New Horizons.
>
> The four-storey building will contain 2,000 computers, best-in-class in-motion-biometrics (IMBM), SAP LMS Success Factor, U-Pointer among others.
>
> The building which will be called the New Horizons/Babcock ICT Empowerment Centre will be used by undergraduates, postgraduates and those outside seeking the university's international ICT certifications.

It is being built beside the present 1,000-capacity computer centre operated by the company. Each floor of the new building will have 500 sitter computers, including intelligent boards, multimedia projectors, networking software, international IT-E biz courses/curricula, furniture, UPS, certified instructors, international exams centre and students courseware/books. After completion, Babcock will boast of a 3,000-computer training facility which will most likely be one of the largest in any university in the world."

Other works in the pipeline includes a software solution that can enable the school to harness the publications of its researching faculties so as to make their works more visible to the outside world.

**CHALLENGES OF ICT IN BABCOCK UNIVERSITY**

- Internet Bandwidth- This is still a major challenge of ICT in Babcock University. The internet bandwidth is low compared to some universities overseas.
- Digital Divide: There is high level of digital divide among the academic staff. The old lecturers (Professors) find it difficult to adapt to the new trends in technology while the younger ones adapt easily.
- Power Supply: Babcock University still faces the challenge of uninterrupted power supply on its campuses.
- Lack of Proper maintenance of ICT tools and infrastructures
- Lack of policy (Gulati, 2008)

**Source: (https://koreafundman.wordpress.com/2010/08/18/ict-in-education-in-developing-countries-challenges-and-solutions/)**

## RECOMMENDATIONS

To maximize the use of ICT in higher education in Nigeria, the following needs to be noted:

Training and re-training of staff and faculty members on the use of ICT tools. Policies that support ICT in higher education should be adopted. There is need to put up infrastructures that support the integration of ICT. ICT should be included in the education curricula.

Proper maintenance of the ICT tools should be core. Current topics in ICT should be part of research areas for students and faculty. Government and education managers should come up with a comprehensive policy on the use of ICT in the academia to forestall improper use and encourage proper use.

## CONCLUSION

In conclusion, ICT has become an integral part of modern day society. The advantages abound to be harnessed and as the phenomenon of ICT continues to gain awareness in the whole gamut of higher education, all stakeholders must continuously plow the ground to foster ICT-enabled development in the Higher education sector of Nigeria. The world as a global village will not wait for the giant of Africa, Nigeria, if she slumber on, taking no deliberate and planned actions to be at par with the rest of the world. Today Babcock University, a private institution, is not relenting on its achievements but scaling greater heights with the introduction of one-student-one-tab for educational purposes.

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