UI @ 70

Faculty of Education University of Ibadan in Historical Perspectives: Impact and Prospects

FACULTY OF EDUCATION

Editors

J. A. Ademokoya Ph.D
B. O. Lawal Ph.D
A. Kehinde Ph.D

Faculty of Education,
University of Ibadan,
Ibadan, Nigeria.

First Published 2018

TABLE OF CONTENTS

AN OVERVIEW OF EDUCATIONAL TECHNOLOGY UNIT, DEPARTMENT OF SCIENCE AND TECHNOLOGY EDUCATION, FACULTY OF EDUCATION, UNIVERSITY OF IBADAN

Ayotola Aremu (Ph.D)
Sola Adedoja (Ph.D)
Adetunmbi Akinyemi (Ph.D)
A.O. Abimbade (Ph.D)
I.A. Olasunkanmi (Ph.D)
Educational Technology Unit, Department of Science and
Technology Education, University of Ibadan, Ibadan

Introduction

Educational technology is a veritable tool employed to identify and proffer solutions to problems in Education. In 1972, the Association for Educational Communications and Technology defined educational technology as the field of education that involves the facilitation of human learning through systematic identification, development, organization and utilization of a full-range of learning resources and through the management of these processes. Later in 1977, the association reviewed and re-defined the term "Educational technology' as " a complex, integrated process involving people, procedures, ideas, devices and organization for analyzing problems and devising, implementing, evaluating and managing solutions to those problems involved in all aspects of human learning"

Recently, Benedict (2017) explained that educational technology is a professional field that emerged from a re-thinking process on what education is, what it might become and what should be done about it. The field is said to be saddled with the responsibility of

identifying aims and objectives, the planning of learning environment, analyzing the content and restructuring such selection of appropriate teaching strategies and learning media, evaluation of effectiveness of teaching and learning systems which may exist at micro or mega levels.

Professionals in the field of educational technology have authored several publications with consistent affirmation that educational technology has two branches; *Technology in Education* and *Technology of Education*. Technology in Education can be described as the bringing in of technological products and resources into the classroom with the chief aim of facilitating learning. This happens at all levels. Such resources grow in numbers year in year out. This is simply because technology is never static but dynamic. This list has grown from the non-electronic visuals like newspapers, journals, books, models, realia, charts, posters, maps, display boards, and so on, to electronics. It has also expanded beyond the audio media of radio, gramophones, audio cassette players/recorders or the like of audio-visuals of television, cinefilm projectors and video cassettes. Classrooms are recently supported with many more resources ranging from modern printed media, sophisticated electronic gadgets, interactive display boards and projected devices. Many institutions, the world over, including the Faculty of Education, University of Ibadan have supported learning in the classroom with software for writing and publishing, web-based interactive software, educational software and digital camera to document class events. Others include, newsletters with digital photos, electronic pen pal, lesson presentation using PowerPoint, mobile learning technologies, electronic portfolio and varieties of social media technology platforms.

Goals of Educational Technology
Educational technology research always had an ambitious agenda.

Sometimes it only aims at increased efficiency or effectiveness of current practise, but frequently it aims at pedagogical change. While it can be considered as a design science it also addresses fundamental issues of learning, teaching and social organization and therefore makes use of the full range of modern social science and life sciences methodology.

Educational Technology in University of Ibadan
For over three decades, at least two Educational Technology courses have been offered in University of Ibadan as stipulated by National Universities Commission. The courses, titled 'Introduction to Instructional Media and Resources' and 'Introduction to Instructional Technology' are registered for and taken by all students of the Faculty of Education (except one Department) during second and third year respectively. The teaching of the courses has been coordinated by the Educational Technology Unit of the defunct Department of Teacher Education. The courses are currently domiciled in the Department of Science and Technology Education. The goal of the two courses is to introduce pre-service teachers to principles that guide selection, design and uses of instructional resources in the formal and informal school setting.

At the postgraduate level, the focus of the Master of Education (M.Ed) degree in Educational Technology is to develop the skills of students in research as well as design, use and evaluation of instructional resources. At the Ph.D level, the chief aim is to provide students with adequate training and support to conduct cutting edge researches that prove the veracity or otherwise of various educational resources and technologies which are systematically designed and developed for use at the various levels of education and disciplines. Impacts on various learning outcomes are also investigated.

Programmes in Educational Technology Unit

B.Ed. courses	PGDE Courses	M.Ed. Courses	Ph.D. Courses
STE 202 - Introduction to Instructional Media and Resources	STD 703 - Introduction to Instructional Media and Resources	STE 782 – Learning system design	STE 883 – Advance Seminar in Educational Technology
STE 353 - Introduction to Instructional Technology	STD 717 - Introduction to Instructional Technology	STE 784 – Evaluation of educational media and resources	STE 881 – Technology for Social Change
		STE 781 – Organisational Technology	STE 882 – Conceptualisation of Instructional Strategies
		STE 785 – Instructional Material Production	
		STE 786 – Information Technology and Computer Application I	
		STE 787 – Information Technology and Computer Application II	

Educational Technology (ET) in University of Ibadan is situated within the academic sphere of the university, yet its impact transcends into developing solutions within the university and the society. Though, it is often understood that ET is problem-focused, and analysis-driven, which usually results into relatively lasting solutions, depending on the problem at hand, ET has proffered solutions in the area of human resource development/capacity building and learning-teaching packages.
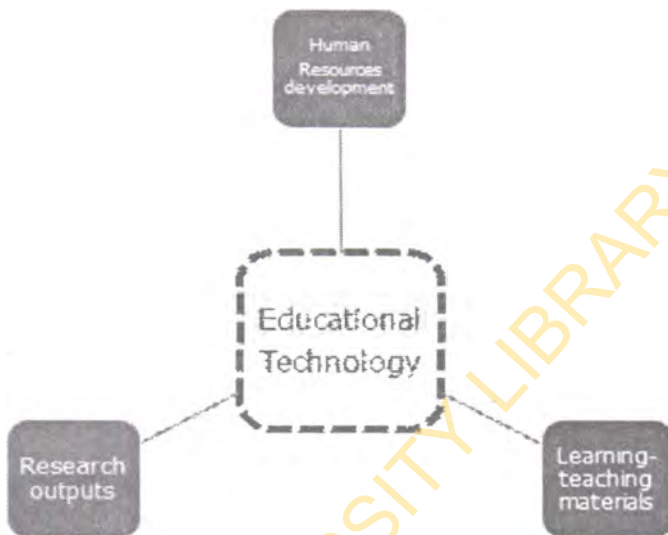
Fig. 1: Three-way impact of Educational Technology

Human development in Educational Technology has been achieved in many ways, as its products are found in different capacities and parastatals, particularly in the field of lecturing being the commonest. Other areas of impact are school administration, research management, and educational resource centre management.

Some of the bottlenecks in the classroom have been traced to lack of access and dearth of learning materials in the classroom. EduTech has been providing support for some of these classrooms and training teachers on how learning materials can be effectively utilized. While issues around instructional systems exist with different complexities, varied interventions have been proffered. Needful to posit that while some of these interventions have solved found problems, some others have generated other issues. For instance, in a situation whereby lack of learning resources has been a problem, upon provision of such learning resources, issues that

bother on lack of skills or usage may arise. In such a situation, training of facilitators becomes inevitable.

In the Educational Technology Unit, students are trained to:
- develop proficiency with the diverse technological tools and improve their digital literacy.
- design packages and share information for global communities to meet a variety of purposes
- build relationships with others to pose and solve problems collaboratively
- create, critique, analyse, and evaluate videos, multi-media texts
- engaged in students centered activities and share their work online.
- learn computer programming software like LOGO, Python, Scratch etc
- use **open educational resources which** are learning and research resources that reside in the public domain and are freely available to anyone over the Web.

Also,
- primary, secondary and tertiary institution teachers were trained to use different technological tools to facilitate their teaching and learning process.
- collaboration with other lecturers within and outside to design and evaluate their course materials
- use of different learning platforms like edmodo, schoology to stay in touch with students all the time.
- flipping classrooms were introduced, students learn through reading or lecture videos at home then do projects or discuss what they learned in the classroom.
- going paperless by putting more materials online and utilizing different learning platforms.
- using different presentational tools like prezi and mindmapping

➢ development of instructional games and gamification which can make boring subject fun and exciting
➢ Blended learning opportunities to incorporate both face-to-face and online learning.
➢ **using open educational resources which** are teaching, learning, and research resources that reside in the public domain and are freely available to anyone over the Web.

Research Output

Research efforts of scholars in Educational Technology Unit have indisputably generated creative and innovative technology-enhanced methods of teaching. Projects and research in the unit transcend the four walls of the formal classroom and provide the basis for policy formulation as regards the use of technology in schools, as well as, the use of technology-enhanced training methods in companies and industries. Research in the unit has facilitated the access to education through the use of technology. In addition, the researches have been basis for designing seamless professional development and capacity building programmes using digital technologies.

Research in the unit promotes projects and interventions that engender:
• Student-Student Relationship
• Student-Teacher Relationship
• Student- Media Relationship
• Teacher-Media Relationship
• Teacher-Teacher Relationship

The general observation of the research reviews carried out at the Educational Technology Unit of the Department of Science and Technology, Faculty of Education, University of Ibadan is that the research works were geared towards improving the academic performance and attitudinal disposition of students in various subjects. Across the three levels of education, research has

explored learning outcomes in the area of cognitive skills, affective and psychomotor skills, problem solving skills, hand and eye coordination, self-esteem and social interaction. Other explored learning outcomes are but not limited to: technology usage, development of artefacts, instructional planning and delivery skills, and self-efficacy in relation to use of various tools.

Learning Outcomes

The general observation of the research reviews carried out so far from 1987 to 2017 at Educational Technology Unit of the Department of Science and Technology, Faculty of Education, University of Ibadan is that the research works were geared towards improving the academic performance and attitudinal disposition of students in various subjects. These learning outcomes are consistent across the three levels of Education. Apart from these, some of the other learning outcomes investigated at the primary level of education were, cognitive skills, problem solving skills, hand and eye coordination, self-esteem and social interaction. At the secondary level, in addition to cognitive skills, affective and psychomotor skills were also investigated, at the tertiary level more complex outcomes were investigated in addition to achievement and they include technology usage, development of artefacts, instructional planning and delivery skills, and self-efficacy in relation to use of various tools. For all these outcomes, the resource and technology/media based strategies have been very effective.

In addition to these learning outcomes, which are the dependent variables in the researches, there were intervening or moderating variables, which were identified to most likely affect the outcomes of the researches. One of the major ones is Gender. Mixed results were found with respect to gender, but for most of the researches, gender did not have a significant effect on achievement and attitudes. The main effects of these other moderating variables where also investigated; experience, expectation and engagement

in using technology, self-concept, technology competencies, technology usage skills, computer self-efficacy, computer literacy, school types, age, emotional intelligence. All these indicate that a wide range of variables that could also affect implementation of the use of technology and media tools have been explored. These variables to a great extent help us to conclude about subgroups of the study population and not just make a general sweeping statement about the veracity of the technology and media based strategies. For example, how does games affect students with low, average and high mathematical abilities or students who come from various backgrounds, how does computer packages affect participants with varying levels of computer self-efficacy and emotional intelligence. These researches have provided us with deep and great insights on all these interactions. It however does not imply that there are no other variables that need to be investigated. In addition, as new technologies and media evolve, it would also be expedient to explore the moderating effects of all these variables and not just make a general assumption.

Technologies deployed in the Educational Technology Unit

S/n	Time Span	Technologies deployed
	1988-1990	Electronic Calculators, Pictorial illustration, Audio, audio visual and Visual
	1991- 1999	Cardboard games, Visual Mnemonics Computer assisted programmed instruction Text assisted programmed instruction
	2000-2009	Computer assisted programmed instruction Text assisted programmed instruction CAI modes
	2010-2018	Group based audio tape, CAI modes, Computer graphics, Animation, Webquests LOGO programming, Puzzle ,Games / Computer games Computer based puzzles, Web based seminars, Mobile learning, Videos Flipped classroom, User generated content

The above shows us that over the years, there has been changes from non-computer based resources, which were termed media resources, to computer based resources and to internet based resources. The implication is firstly that the Educational Technology researchers over the years have not been static; they have followed the trend of changes in the world of technology globally. It is quite evident that different types of technologies evolve everyday and they impact on various sectors and in particular, the educational sector. This shows indeed that the researchers have systematically in the fashion of Educational technology carried out problems and need analysis. The latter is what would lead to the selection of appropriate technologies. In the problem and needs analysis, the students and their characteristics are put into consideration amongst so many other things. The solutions that are proffered must match with the characteristics of the target group. The generation of students that are the target of these researches increasingly become sophisticated in their use of technology, therefore researches must take this into cognizance.

That as it may, there are still lots of technologies that meet the learning needs of students, which have not been explored. One of the major reasons is non-availability of such resources to the researchers as well as the students. It is anticipated that with more investment in internet facilities by education stakeholders in schools, more of the resources would be deployed and more of our students would have access to computer and internet-based learning which would qualify them to be global citizens with 21st century skills and competencies.

PRODUCTS

Products of Educational Technology Unit of University of Ibadan are found in various continents and countries of the world including Nigeria, Ghana, United Kingdom, United State of America, Sierra Leone, to mention a few and they are holding

good positions in all facets of work. These include Professor Akinpelu, Lecturer of Educational Technology, Lagos State University; Professor Victor Adeoluwa, Former Deputy Vice Chancellor, Ekiti State University, Ado-Ekiti; Professor Tunde Salawu, Lecturer and Western Zone Coordinator/Director of the National Open University of Nigeria (NOUN); Professor Ayotola Aremu, Lecturer of Educational Technology and Director of Centre for Entrepreneurship and Innovation, University of Ibadan; Late Dr Gloria Olusola Adedoja, Former Head, Educational Technology Unit, University of Ibadan; Dr Segun Egunjobi, Centre for Educational Media Resources Services, University of Ibadan; Dr Bola Ahmed; Dr Beatrice B. Bankole and Abayomi Adedokun, United States of America; Dr Johnson O. Aleburu, Former Dean and Director of Sandwich Degree Programmes, Yaba College of Technology, Lagos; Morakinyo Daniel (United Kingdom); Dr Adetunmbi L. Akinyemi and Dr Dara Abimbade, Lecturers of Educational Technology Unit, University of Ibadan.

In addition, the unit has produced Dr Ayo Oyekola, Head, Department of Education, Yaba College of Technology, Akoka Lagos and Dr Bidemi Oguntunde, Yaba College of Technology, Akoka Lagos; Dr Abidoye, Dean School of Education, College of Education, Oro and Dr Ganiyat Oyedeko of Michael Otedola College of Education, Noforija, Epe, Lagos State; Dr Israel Olasunkanmi, Former Research Administrator, Research Management Office and Lecturer of Educational Technology, University of Ibadan; Dr Elizabeth Adediran, Lecturer at Federal College of Education, Osiele, Abeokuta and Dr Bola, Lecturer, University of Ilorin, Nigeria; Mrs Tolu Lotu (Abuja); Mrs Mr Kolapo, The Proprietor of a fast growing private school in Ibadan. The list is unending.

References

Association for Educational Communications and Technology (AECT) 2004. The definition of Educational Technology. Association for Educational Communications and Technology. USA

Benedict, J.N. 2017. Advancing Nigerian education system through the application of technology. *Advancing education through technology: A book of readings.* In honour of

Professor Alade Abimbade. C.O.O. Kolawole, R.O. Akinbote, T.A. Ige, G.O. Adedoja and A.S. Aremu. Eds. Ibadan: His Lineage Publishing House. 115-126. (Nigeria) ISBN:978-978-53340-2-9