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DIGITAL DIVIDE AMONG BUSINESS EDUCATION STUDENTS IN TERTIARY INSTITUTIONS IN ANAMBRA STATE: BRIDGING THE GAP THROUGH ICT IN SCHOOL LIBRARIES

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Abstract

School libraries are increasingly expected to provide technological devices and instruction on interacting with the digital world appropriately. The survey research design was adopted to examine digital divide among Business Education students in tertiary institutions in Anambra state, Nigeria: Bridging the gap through ICT in school libraries. The population comprised of all the 701 year two and year three Degree students of 2022/2023 academic session of Federal College of Education (Technical) Umunze, Nnamdi Azikiwe University Awka, Nwafor Orizu College of Education Nsugbe and Chukwuemeka Odumegwu Ojukwu University. The sample of the study is 254 degree business education students. Taro Yamane formular was used to determine the sample size of the study. Thereafter, Stratified Proportionate Random Sampling Technique was used to select respondents from the various strata. Two research questions guided the study. A 22-item structured questionnaire was used to collect data from the respondents. Data were analyzed using mean and standard deviation. The findings indicated among others that extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state was to a low extent. It was recommended among other things that institutions should invest in ICT infrastructure and resources in school libraries to make available adequate ICT resources in the school libraries.

Keywords: Business Education, Digital Divide, ICT, Tertiary Institution, School Library.

Introduction

Technological revolution has put forward greater opportunities as well as challenges before nations. It has divided the world's population into two groups: people having access to ICTs and people without it. This division has been termed

as digital divide (DD). Nafiz and Rowshon (2011) defined digital divide is a phenomenon that results from the unequal application of, and access to, information and communication technologies leading to a global knowledge gap between information haves and have nots. It is the gap between those who can effectively use new information and communication tools, such as the Internet, and those who cannot. Burchill and Kenney (2020) viewed it as differences due to geography, race, economic status, gender, and physical ability in access to information through the Internet and other information technologies and services, and in the skills, knowledge, and abilities to use information, the Internet and other technologies. It is a social problem that is caused, in part, by inequities in the ability to access and to use information communication technologies. Barron *et al* (2021) submitted that the DD is not between countries only; it also exists within a country, and even within cities. There are disparities within countries based on race, income, geographical location, educational levels, age, gender, and disabilities.

In many cases, even though the technology is available, people do not use it because either they do not understand it, they are uncomfortable using it, they cannot afford it, or they cannot see its utility. For these people, the digital divide means lost opportunities – opportunities to offer better educational tools and courseware to students, opportunities to use information tools to bring medical applications to rural villages, opportunities to give local businesses access to global markets, or opportunities to make governments more effective and efficient. Johnston (2019) identified the causes of digital divide as: Perceived or actual costs (the perceived or actual cost of personal computers (PC) and other equipment, and the perceived or actual cost of web-related telephone calls); access (the lack of near-by/affordable facilities providing access to the Web/ICT, and the lack of work-related access to ICT and the Web to build skills and awareness); skills (the lack of literacy and

numeracy skills, ICT skills, and the lack of knowledge/appreciation of the information and services that can be found on the Web); cultural issues (the lack of a critical mass of other Web/PC users among community/ family/friends, and other cultural barriers) and personal factors (such as the lack of confidence, lack of credit card/bank account, a fear of technology, a feeling it is too late in life to learn about new technologies, no interest in the internet, physical difficulties such as poor eyesight or manual dexterity and co-ordination).

Independently, Scorse (2021) as well as Feridooni *et al*.(2022) summarized the types of actions that need to be taken to overcome the digital divide as: Awareness and promotion (it is essential to ensure that excluded individuals and groups are aware of the opportunities that ICT can provide); access (all people, but particularly disadvantaged individuals and communities, must have access to ICT at the time, place, method and price appropriate to their needs and lifestyles); support (providing reliable, accessible and cost-effective sources of advice and support is crucial); skills (providing the basic computer and technological skills that will instill individuals with the confidence to use ICT); content (ensuring that disadvantaged individuals and communities are provided with, or develop themselves, online content and services that they value and wish to use) and community involvement (making sure that the initiatives are sustainable at a local level, and that local communities have a sense of ownership). This means that bridging digital divide entails providing people with the information they need through avenues like the library.

Libraries are well suited to helping address the digital divide. Afzal (2022) defined libraries as collections of sources of information and similar resources, made accessible to a defined community for reference or borrowing, often housed in a building or room. Connaughton (2021) submitted that four of the essential tools

required to bridge the digital divide are readily available through the library, including: literacy (the foundation for all information use); access (to free public information); training (to empower individuals to find and use information effectively) and content (the rich source material that is needed to make the Internet a powerful information resource). Libraries, particularly, school libraries and their services are vital to the development of a literate population that is able to participate fully in a thriving society, democracy, culture, and economy.

The school library provides information and ideas that are fundamental to functioning successfully in today's information and knowledge-based society. It equips students with life-long learning skills and develops the imagination, enabling them to live as responsible citizens. Intahchomphoo (2022) posited that school libraries are increasingly expected to provide technological devices and instruction on interacting with the digital world appropriately. Information and communication technology has facilitated networking, creation and accessing of remote electronic data base, putting at the disposal of libraries and library users a wide range of information services and product. Use of information technology and access to electronic information networks is slowly transforming libraries from book-centered to information-centered institutions.

In the views of Feridooni, *et al* (2022), ICT incorporates a range of technologies used to support communication and information. ICT includes both networks and applications. Networks include fixed, wireless and satellite telecommunications, broadcasting networks. Well-known applications are the Internet, database management systems and multimedia tools. By implication, a holistic understanding of ICT necessarily includes consideration of telecommunications policies, information policies and human resource development policies. Information and Communication Technology (ICT) is a diverse set of

technological tools and resources used to communicate and to create, disseminate, store and manage information. Nkanu and Ikon (2019) and Iyoha *et al* (2023) enumerated the components of Information Technology (IT), which are frequently used in library as follows: Computer Technology, Communication Technology, Reprographic, micrographic and printing technology. The integration of Information and Communication Technology (ICT) in education has revolutionized the learning landscape, particularly in business education.

Business education is an educational programme that prepares students for an occupation in business or business related field or a teaching career in academics (Iyoha *et al*, 2023). It is one of the programmes offered in tertiary institutions in Nigeria. Tertiary institutions are educational institutions that provide education beyond secondary school level, typically leading to certificates, diplomas, or degrees. They include universities, polytechnics, colleges of education, among others. Tertiary institutions, as catalysts for human capital development, must provide students with access to ICT resources to enhance their competitiveness in the digital economy. School libraries, as hubs for knowledge acquisition, play a crucial role in bridging the digital divide among students. Ashikuzzaman (2023) elucidated that students that have inclusive and speedy access to information through assigned ICTs, constitute the beneficiary group whereas students that have limited or zero access to information are fallen in the distressed group who risk further marginalization in societies where ICT skills open the doors to: economic success and personal advancement, entry to good careers and educational opportunities, full access to social networks, and opportunities for civic engagement. This means that through ICTs in the school libraries, the digital divide can be bridged.

ICTs have offered school libraries more efficient ways of acquiring, organizing, storing and disseminating or transmitting information. School libraries

now shift the focus of their operation from library-centered to information-centered, from the library as an institution to the library as an information provider (Nkanu & Ikon, 2019). School libraries are now poised to play more effective roles using the internet, email, CD-ROM other peripherals as tools for generating, obtaining, processing, storing, retrieving and dissemination of information services. Iyoha, *et al* (2023) opined that the internet is now the dominant mode of information exchange in school libraries which must be adopted to close the digital gap. ICT extends library services beyond the physical space through mobile applications, online data bases, electronic resources, interactive platforms, search engines, and so on enabling students to access resources and support remotely.

ICTs in school libraries bridge the digital gap in a number of ways, namely:

- Enhanced access to information (Barron *et al*, 2021; Feridooni, *et al*, 2022)

Through ICT, school libraries provide seamless access to a variety of information resources. Digital libraries, online databases and electronic resources allow users to search, retrieve and access information remotely, breaking down geographical barriers and providing round-the-clock access to knowledge. In this way, digital divide is bridged.

- Effective information retrieval (Burchill& Kenney, 2020; Johnston, 2019)

ICTs facilitate efficient library information retrieval. Online catalogs, search engines and discovery platforms enable students locate and access needed and up-to-date materials quickly. Recommendation algorithms, advanced search features and filters allow accuracy and adequacy as well as relevancy of search results. This helps students find the most appropriate resources quickly and closing the digital divide.

- Digital preservation and archiving

ICT allows libraries to preserve and archive valuable digital contents. This ensures long-term access and preservation of cultural heritage. Burchill and Kenney (2020)

noted that cultural Issues – the lack of a critical mass of other Web/PC users among community/ family/friends, and other cultural barrierscause digital divide. So, by preservation of cultural heritage through digital archiving, school libraries bridges the digital gap. Digital preservation technologies, metadata standards, digitalization efforts ensure that important documents, manuscripts, images and multi-media resources are stored and made available for future generation.

- Collaborative learning and research (Nafiz&Rowshon2011; Intahchomphoo, 2022)

ICT promotes collaborative learning and research within the school library. Online communication tools, virtual meeting spaces and collaborative platforms enable students to engage in group projects, share resources and collaborate with peers and experts. This fosters a vibrant learning community and promotes knowledge exchange and collective learning.

- Personalized services and recommendations (Connaughton, 2021; Feridooni, *et al*, 2022)

ICT enables school libraries to provide personalized services and recommendations based on students' preferences and behaviours. School libraries are able to understand students' needs and interests through user profiles, borrowing libraries and data analytics and this allows them to offer customized recommendations, curated reading lists and so on. This enhances overall students' experiences and closes up the digital gap.

- E-learning and digital literacy (Iyoha, *et al*, 2023)

ICT supports e-learning initiatives within school libraries, providing access to online educational resources and interactive platforms. School libraries can offer digital literacy programs and training session to help students develop vital skills for effective utilization of digital information.

- Remote and mobile services (Afzal, 2022; Nafiz&Rowshon, 2011)

ICT enables school libraries to extend their services beyond the physical space. Mobile applications, virtual reference services and online chat support allow students to access resources, seek assistance and engage with library services from anywhere at any time. This makes students able to connect conveniently thereby closing the digital divide.

- Data management and analytics (Barron *et al*, 2021)

Through ICTs, school libraries can manage and analyze data relating to school library operations, usage statistics and user behavior. Data management systems and analytics tools provide insights into resource utilization, user preferences and trends, enabling school libraries to make data-informed decisions, optimize resources allocation and improve service offerings. This way, school libraries allow students have access to ICT at the time, place and method appropriate to their needs and lifestyles. This bridges the digital divide.

In Anambra State, tertiary institutions have school libraries but it is still worrisome as to whether or not, relevant ICTs are available in this libraries and the extent to which these ICTs help in bridging the digital divide among students generally and Business Education students specifically. This necessitates the research on digital divide among Business Education students in tertiary institutions in Anambra state: Bridging the gap through ICT in school libraries.

Statement of the Problem

In an ideal scenario, business education students in tertiary institutions would have seamless access to ICT resources, fostering digital literacy and competitiveness. School libraries would provide state-of-the-art digital devices, and ICT infrastructure would support collaborative learning, research, and innovation. Students would leverage ICT to develop skills in data analysis, digital marketing,

and entrepreneurship, positioning themselves for success in the global economy and closing the digital divide.

However, the reality in many Nigerian tertiary institutions, including those in Anambra State, diverges from this ideal. ICT resources in school libraries are probably inadequate, outdated, or unavailable, exacerbating the digital divide among Business Education students. Limited digital devices, poor internet connectivity, and insufficient ICT training for librarians hinder effective utilization of existing resources. This disparity disproportionately affects students, further widening the gap.

The consequences of this digital divide are far-reaching, compromising the quality of Business Education and the employability of graduates. Without adequate ICT skills, Business Education students struggle to compete in the job market, hindering Nigeria's economic growth and development. The lack of digital literacy also limits entrepreneurship opportunities, innovation, and social mobility. Addressing this digital divide is crucial to ensuring Business Education students in Anambra State's tertiary institutions are equipped to thrive in the digital economy. This warrants the study on digital divide among Business Education students in tertiary institutions in Anambra state: Bridging the gap through ICT in school libraries.

Research Objectives

The main objective of this study is to determine digital divide among Business Education students in tertiary institutions in Anambra state: Bridging the gap through ICT in school libraries. Specifically, the study sought to:

1. Investigate the extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state

2. Determine extent to which ICT resources in school libraries bridge the digital divide among Business Education students in tertiary institutions in Anambra state

Research Questions

The following questions guided the study.

1. What is the extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state?
2. To what extent does ICT resources in school libraries bridge the digital divide among Business Education students in tertiary institutions in Anambra state?

Methods

A descriptive survey design was adopted for the study. This was done by seeking the opinions of Business Educators on the problem of the study. The study was carried out in the two Colleges of Education in Anambra state- NwaforOrizu College of Education, Nsugbe (NOCEN) and Federal College of Education (Tech), Umunze (FCETU). The population of the study comprise of all the 701 year two and year three Business Education students of 2022/2023 academic session of Federal College of Education (Technical) Umunze, NnamdiAzikiwe University Awka, NwaforOrizu College of Education Nsugbe and ChukwuemekaOdumegwuOjukwu University. The sample of the study is 254 degree business education students. Taro Yamane formular was used to determine the sample size of the study. Thereafter, Stratified Proportionate Random Sampling Techniques was used to select respondents from the various strata. The sample size of Federal Colleges of Education (Technical), Umunze is (47); Nnamdi Azikiwe University Awka is (70); NwaforOrizu College of Education Nsugbe (73) and Chukwuemeka Odumegwu Ojukwu University is (64).

The instrument for data collection was a questionnaire constructed by the researchers based on the research questions. The questionnaire was made up of 22 items and was divided into two parts 1 and 2. Part 1 with 12 items to elicit information on extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students and part 2 has 10 items which covered extent ICT resources in school libraries bridge the digital divide among Business Education students. The instrument was validated by three experts from the Faculty of Education, Nnamdi Azikiwe University, Awka. The instrument was pilot tested to ensure its reliability and the data collected was analyzed using Cronbachs' Alpha. This gave a coefficient reliability of 0.73 which was considered to be high. The questionnaire was administered by the researchers using direct administration method. Out of the 254 copies of the questionnaire administered only 247 copies were used for analysis representing about 97.24%. The other 7 copies were not duly filled. The data obtained were analyzed using mean based on the 4-point scale ranging from very high extent of 4 points to very low extent of 1 point. A mean score of 2.50 and above was interpreted as "High Extent (HE)" while any mean score below 2.50 was interpreted as "Low extent (LE)"

Research Question 1: What is the extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state?

Table I: Mean and Standard Deviation of Respondents on Extent of Availability of ICT Resources in School Libraries for Bridging the Digital Divide among Business Education Students in Tertiary Institutions in Anambra state.

S/N	ITEMS	X	SD	Remark
1.	Computers	2.36	0.87	HE
2.	Storage devices	2.66	0.47	HE
3.	Learning management systems	2.23	0.73	LE
4.	Educational softwares	2.29	1.18	LE
5.	Digital libraries	2.19	0.81	LE
6.	Accessibility softwares like screen readers	2.39	0.77	LE
7.	High-speed internet connectivity	2.20	0.83	LE
8	Virtual private network (VPN) solutions	2.22	0.68	LE
9	Online educational platforms	2.19	1.17	LE
10	Virtual labs/simulations	2.18	0.79	LE
11	Accessibility feature like text-to-speech softwares	2.32	0.77	LE
12	Online collaboration platforms	2.73	0.45	HE
	Grand mean	**2.45**	**0.72**	**LE**

Source: authors' computation, 2024

From the presentation of data in Table I above, items 1, 2 and 12 were above the cut-off point. This revealed that the respondents were of the opinion that extent of availability of ICT resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state for the three items is high. However, every other item was below the cut-off point meaning that the respondents were of the opinion that the extent those items bridge the digital divide among Business Education students in tertiary institutions in Anambra state is low. The grand mean of 2.45 indicate that the extent of availability of ICT

resources in school libraries for bridging the digital divide among Business Education students in tertiary institutions in Anambra state is low. The standard deviation of .72 shows that the data points are closely clustered around the mean, suggesting low variation in the opinion of respondents.

Research Question 2 To what extent does ICT resources in school libraries bridge the digital divide among Business Education students in tertiary institutions in Anambra state?

Table II: Mean and Standard Deviation of Respondents on Extent ICT Resources in School Libraries Bridge the Digital Divide among Business Education Students in Tertiary Institutions in Anambra State.

S/N	ITEMS	X	SD	Remark
1.	Increases access to technology	2.61	0.47	HE
2.	Develops digital literacy skills	2.32	0.77	LE
3.	Equal access to internet	2.64	0.48	HE
4.	Provides inclusive resources	2.47	0.71	LE
5.	Fosters school community engagement	2.20	0.83	LE
6.	Provides online educational contents and resources	2.22	0.68	LE
7.	Provides low-cost device programmes to address socio-economic barriers	2.18	0.77	LE
8	Access to online databases	2.19	1.17	LE
9	Provides multilingual resources for diverse students populations	2.32	0.77	LE
10	Provides assistive technologies like text-to-speech software	2.23	0.44	LE
	Grand Mean	**2.40**	**0.71**	**LE**

Source: authors' computation, 2024

From the presentation of data in Table II above, only two items (items 1 and 3) out of the 10 items had mean scores above the cut-off point, revealing that respondents

were of the opinion that those items to a high extent bridge the digital divide among Business Education students in tertiary institutions in Anambra state. However, the remaining 8 items were below the cut-off point showing that the items to a low extent bridge the digital divide among Business Education students in tertiary institutions in Anambra state.

Discussion of Findings

The study's results indicate that ICT resources such as computers, storage devices, learning management systems, educational software, digital libraries, accessibility software, high-speed internet connectivity, virtual private network (VPN) solutions, online educational platforms, virtual labs/simulations, and online collaboration platforms are available to a low extent. This scarcity of ICT resources undermines the potential for Business Education students to develop essential digital literacy skills, thereby exacerbating the digital divide. The finding supports Nkanu and Ikon(2019) and Iyoha *et al* (2023) that enumerated the components of Information Technology (IT), which are frequently used in library as follows: Computer Technology, Communication Technology, Reprographic, micrographic and printing technology. Since ICT resources are inadequate in school libraries, it will restrict students' access to digital resources like e-books, online databases and educational websites. Again, students from disadvantaged backgrounds may lack access to ICTs outside of school, widening the digital divide. Similarly, students without adequate ICT skills may struggle to compete with their peers in the digital economy.

Also, from the analysis in research question two, the study found that ICTs in school libraries bridge the digital divide among Business Education students to a low extent. This suggests that the existing ICT infrastructure and resources are insufficient to address the disparities in access to information and communication

technologies, further marginalizing students who already lack access to these technologies outside the academic environment. The limited availability of ICT resources implies that students' ability to develop skills in data analysis, digital marketing, and entrepreneurship, essential for success in the global business landscape may be hindered. This digital divide also limits entrepreneurship opportunities, innovation, and social mobility, ultimately compromising Nigeria's economic growth and development. These findings align with previous studies (Barron *et al*., 2021; Feridooni *et al*., 2022) highlighting the digital divide's persistence in developing countries, particularly in educational institutions. The study's results also resonate with Intahchomphoo's (2022) assertion that school libraries are increasingly expected to provide technological devices and instruction on interacting with the digital world. The finding that school libraries bridge digital divide to a low extent shows the need to increase investment in digital infrastructure, including hardware, software and internet connectivity to support digital learning.

Conclusion

In conclusion, this study highlights the role of ICTs in school libraries in bridging the digital divide among Business Education students in tertiary institutions in Anambra State, Nigeria. It was found out that ICT resources such as computers, educational software, digital libraries, accessibility software, high-speed internet connectivity, virtual private network (VPN) solutions, online educational platforms, virtual labs/simulations, and online collaboration platforms are available to a low extent. It was also found that ICTs in school libraries bridge the digital divide among Business Education students to a low extent. Hence it is concluded that enhancing ICT availability and utilization in school libraries is very crucial for bridging this divide among students.

Recommendations

Based on the findings, the following are recommendations:

1. Institutions should investment in ICT infrastructure and resources in school libraries to make available adequate ICT resources in the school libraries. This will allow school libraries perform their role of bridging digital divide among students.
2. Institutions should ensure that the ICTs in the school libraries help to bridge the digital gap among students by ensuring effective utilization of those ICTs by all students.

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