

**DIGITAL LITERACY AND BUSINESS TEACHERS' CAPACITY
BUILDING FOR 21ST CENTURY IN ONUEKE
EDUCATION ZONE, EBONYI STATE**

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Abstract

This research assessed the digital literacy among business teachers for 21st century and the capacity building training needs of business teachers for 21st century. A descriptive survey methodology was adopted for the study. The study area was Onueke Education Zone in Ebonyi State, comprising four Local Government Areas. The population comprised 153 business teachers in 70 public secondary schools in the zone. Due to the small and manageable population, the entire population was studied without sampling. The instrument for data collection was a self-structured 20-item questionnaire tagged "Digital Literacy and Capacity Building Needs Questionnaire (DLCBNQ)". The questionnaire was divided into two clusters. An expert in business education validated the instrument and subjected to trial testing. Cronbach Alpha was used to obtain index reliability of 0.85. Mean and standard deviation were used to answer research questions while independent samples t-test was used to test hypotheses at 0.05 level. The findings revealed low competence in advanced digital tools such as LMS, virtual classroom tools and content creation, but high competence in basic operations. The study also showed high demand for hands-on, business-subject-specific training. It was therefore recommended that Ebonyi State Ministry of Education should organize compulsory digital literacy audit and retraining; schools should create Business Digital Resource Hubs; and continuous peer mentoring should replace one-off workshops.

Keywords: *Digital Literacy, Capacity Building, Business Teachers, 21st Century, Business Educators*

Introduction

In the contemporary digital-driven era, digital literacy for teachers has become imperative. Classrooms have moved from chalk and textbook to technology-mediated spaces where knowledge is jointly created and shared instantly (Selwyn, 2016). Teachers must therefore align with emerging technologies to remain relevant. Selwyn (2016) argued that with rapid evolution of technology, schools are under pressure to integrate digital tools meaningfully to enhance learning. As classrooms evolve with technology, educators must adapt to new tools and platforms to enhance their teaching methodologies and remain effective in delivering quality education. It is a wide set of competencies, which allow the user to effectively manage technology in both environmental and professional contexts. Educators must therefore adapt to emerging tools to remain effective. Selwyn (2016) explained that as digital technologies rapidly evolve; educational environments face increasing pressure to incorporate these tools in a meaningful way that promotes learning.

Digital literacy is an evolving set of competences. Vidosavljevic and Vidosavljevic (2021) sees it as ability to use digital devices to improve productivity. Son, Robb and Charismiadi (2021) conceptualized it as capacity to use ICT to create, collaborate and communicate effectively. Singh (2022) and Eryansyah et al. (2019) described it as ability to search, evaluate and utilize digital information in technology-rich communities. Similarly, Son, Robb and Charismiadi (2021) viewed it as the ability to apply computer skills for effective creation, collaboration and communication in a digital society. The capacity to efficiently use, interpret and evaluate digital technologies and information in different contexts is regarded as digital literacy. According to Singh (2022) and Eryansyah, Erlina, Fifinova and Nurweni (2019), it involves the skills needed to search, assess and effectively apply digital information within technology-mediated communities. It is the proficiency to appropriately utilize digital tools, applications and information. This encompasses critical thinking, problem-solving, cyber-security awareness, as well as competence in operating smart devices and engaging on social media platforms. Dudeney, Hockly and Pegrum (2014) defined digital literacy as not only operating available

digital technologies but also understanding the social contexts and practices associated with new media use. Martin and Grudziecki (2016) conceptualized digital literacy as a combination of awareness, attitudes and capability that enables individuals to locate, evaluate, organize and create digital content, as well as to communicate and collaborate effectively for purposeful social engagement while reflecting on the process. Vidosavljevic and Vidosavljevic (2021) explained that digital literacy doesn't consist just of the ability to use software and manage a digital device. This modern literacy includes emotional, cognitive, sociological and motor skills which are necessary for all users who want to use technologies effectively and participate actively in digital environments.

Digital literacy, in the context of teaching, extends beyond basic ICT skills. Digital literacy for teachers refers to the ability to confidently and effectively use digital tools, resources, and platforms to enhance teaching and learning. In this research, a business teacher is regarded as a professionally trained teacher with business orientation who imparts business knowledge at secondary and tertiary levels. They predominantly instruct secondary and post-secondary learners in secondary schools, colleges, universities and other tertiary institutions. Igboke (2012) noted that business educators share similar duties with other teachers in fostering learners' holistic development; however, they have the additional mandate of equipping learners aspiring for business careers with fundamental competencies, knowledge and dispositions essential for initial employment and business success. Nonetheless, it is the duty of the business teacher preparation programmes to produce competent professional business teachers who will do this job, using digital tools while teaching in the classroom. According to Nwagwu (2021), business teachers are well positioned to handle business related courses at all levels of Nigerian Educational system and as well facilitate business knowledge improvement in industries. Digital literacy is essential for business teachers, as it empowers them to handle interactive learning, promote responsible online behaviour, and personalise education. It goes beyond basic computer skills and involves understanding how to: Use learning management systems (LMS); incorporate multimedia content, facilitate digital collaboration, ensure cybersecurity and privacy and promote digital citizenship among students. For business teachers, it means having the skill set to integrate technology into lesson plans, assess students using digital

tools, and continuously adapt to new educational software and platforms. According to Muhammad, Muhammad, Ahmad, and Muhammad (2024), digital literacy is an expansive idea that has become essential for the acquisition of 21st-century skills especial business teachers. Digital literacy plays a significant role in enhancing learning outcomes in different subject areas. Through the utilization of digital tools and resources, learners are able to: gain access to a wide range of educational resources beyond conventional textbooks, and participate in interactive learning activities that suit varied learning preferences. For business teachers, this competence is particularly critical because business educators must mirror workplaces that are driven by data analytics, digital marketing, e-commerce, and automated systems. Empirical evidence, however, shows that the level of digital literacy among business teachers remains uneven and often below the demands of the digital economy.

Capacity building is viewed as a systematic process of enhancing teachers' knowledge, competencies, and attitudes required to function effectively in evolving educational demands (Marin-Bayona et al, 2022). The OECD emphasizes that policy reform fails at the classroom level without adequate teacher capacity, ownership, and tools. María-Bayona et al (2022) stated that capacity building in the digital domain is therefore not a one-off training event but a continuous process that blends initial teacher education, in-service professional development, peer collaboration, and reflective practice. Recent research shows that micro-courses linked to authentic teaching needs, supported by feedback and opportunities for content creation, can improve both self-perception and actual performance in digital tasks. Kanyarat (2023) explained that when teachers design open educational resources or engage in digital storytelling, their digital competence and 21st-century skills show measurable gains. The 21st century requires business teachers to move from being users of technology to designers of digital learning. Business teachers in this 21st century need capacity building that is discipline specific, pedagogically grounded, and continuous process that aligns technological skills with business content and pedagogy. The focus must shift from how to use a computer to how to use digital tools to teach business courses, empower students and mirror workplace practice. Srivastava (2018) argued that modern teachers must continually update their digital knowledge and integrate technological approaches into pedagogy. Digital literacy plays a vital role in education,

hence ongoing retraining for teachers is essential and highly recommended. Amin (2016) further explained teachers are now expected to become technologically proficient, collaborative, open-minded and serve as a facilitators who guide learners to evaluate digital information critically.

In this 21st century, digital competence has transitioned from being a supplementary skill to a fundamental professional requirement for teachers. For business teachers, the imperative is even more pronounced. This is because **digital literacy for business teachers** enables better engagement, innovation, and inclusivity. Business education sits at the intersection of practice and theory, preparing students for workplaces where data analytics, digital communication, e-commerce, and automated systems shape daily operations. If business teachers themselves lack the capacity to navigate and teach through digital tools, the gap between school learning and workplace demand widens. Business educators are expected not merely to adopt tools, but to critically evaluate them, embed them in instructional design, evaluate their effectiveness and exemplify responsible digital citizenship to learners. Payton and Hague (2020) indicated that educators must be able to generate, locate, and disseminate information in a critical and creative manner. Sharma (2017) identified the competencies required for teachers to function as learning facilitators in the digital age, including networking, communication, critical thinking, mentoring, and knowledge management capabilities. Networking skills are necessary for classes in a digital classroom because it facilitate collaborative learning of students to build technological competence, produce digital content or short videos and broaden opportunities to connect via the internet to a broader community sharing ideas, projects and interacting with learners from other nations. Srivastava and Dey (2018) found that teachers possess moderate perceptions regarding the use of digital tools for teaching and learning, but also experience significant challenges in technology integration such as inadequate technical support, insufficient resources and time constraints. Similarly, Garcia-Perez, Rebollo-Catalan, and Garcia-Perez (2016) found moderate digital literacy among general education teachers. Cote and Milliner (2018) observed teacher have high digital proficiency levels and are willing to develop their understanding and control of digital practice. Despite the necessity to incorporate digital technologies and the teaching of digital literacy skills in the classroom, many teachers are not equipped to do this. Reports indicate a digital divide in the country, with many business

teachers lacking adequate digital literacy and training. The challenge is that many teachers enter the profession with uneven digital preparation. Studies of pre-service and in-service teachers across contexts reveal profiles ranging from “barely qualified” to “highly inconsistent,” with innovativeness and conscientiousness emerging as key predictors of digital literacy development. Without targeted capacity building, digital tools risk being used instrumentally for presentation rather than transformatively for learning. It is on this premise that researcher is motivated to assessed the digital literacy and capacity building among business teachers for 21st century.

The 21st century is defined by rapid technological advancement, globalization, and a digital economy. Consequently, the classroom of 21st century is expected to produce graduates who are not just knowledgeable in business theory, but also competent in using digital tools to solve real-world business problems. However, in Nigeria and particularly in many secondary schools, business studies are still being delivered using analogue methods. A large number of business teachers lack the required digital literacy skills to teach effectively in a technology-driven classroom. Many can only use basic phone functions like WhatsApp and calls, but cannot use MS Excel, PowerPoint, Google Classroom, or other tools relevant to teaching business subjects. Furthermore, capacity building efforts for teachers have been irregular, generic, and not subject-specific. Most training workshops are one-off events with no follow-up, mentoring, or provision of teaching tools. Schools also lack basic infrastructure such as computers, projectors, stable internet, and electricity to support digital teaching and learning. This is more severe in rural areas. As a result of this gap, business students graduate without practical digital skills. Despite the importance of digital literacy and continuous capacity building for teachers, there is limited empirical data on the current level of digital literacy among business teachers and their specific training needs for the 21st century, especially in this context.

Method

A descriptive survey methodology was adopted for the study. The research was carried out in Education Zone of Onueke, Ebonyi State. The education zone has four Local Government Areas. The population for the study consisted of 153 business educators serving in 70 public secondary schools

within Onueke Education Zone of Ebonyi State. Owing to the manageable size of the population, the entire population was used as the sample through census approach. The data collection instrument was a researcher-constructed 4-point rating scale titled: “Digital Literacy and Capacity Building of Business Teachers For 21st Century” (QDLCBBTC). Instrument was researcher-developed 4-point scale tagged QDLCBBTC with two sections. Section A was demographic data, Section B had 20 items on a scale of Strongly Agree (4) to Strongly Disagree (1). Instrument was face-validated by one expert in Business Education. Trial test of 10 business teachers in Ebonyi LGA was conducted. Cronbach Alpha yielded 0.85. 153 copies of the questionnaires were administered to the respondents with four (4) research assistants, one per local government area in the study. Data gathered were analyzed using mean and standard deviation for the research questions, with a criterion mean of 2.50 adopted. Any item with mean of 2.50 and above was regarded as Agreed, while below 2.50 was regarded as Disagreed. The null hypotheses were tested with independent samples t-test at 0.05 level of significance. A null hypothesis was upheld where the calculated t-value was less than the critical t-value, otherwise it was rejected.

Results

Research Question One: What is the level of digital literacy among business teachers for 21st century?

Table 1: Mean Rating Responses on Level of Digital Literacy among Business Teachers for 21st Century

S/N	Level of Digital Literacy Skills among Business Teachers	N	$\bar{X}$	S.D	Remarks
1	I can operate a computer, connect to the internet troubleshoot basic ICT problems independently	153	3.10	1.09	SA
2	I can use Microsoft office tools: word, Excel and PowerPoint for business teaching tasks	153	2.97	1.04	A
3	I can create manage and deliver lessons using an LMS like Google classroom or Moodle	153	2.17	1.21	D

4	I can upload course materials, create online quizzes, and use the grade book effectively	153	2.12	0.78	D
5	I can use Zoom, Google Meet, or Microsoft Teams for synchronous online teaching	153	2.13	0.87	D
6	I can use forums, chats, collaborative tools like Google Docs for group work in business education	153	2.18	1.19	D
7	I can create digital content such as videos, infographics and e-portfolios into my lessons	153	1.05	1.05	D
8	I can use Open Educational Resources for teaching business concept	153	2.05	1.13	D
9	I can use spreadsheets, accounting software, e-commerce platforms to teach practical business skills	153	2.07	0.88	D
10	I can teach students about data literacy in business	153	2.01	0.88	A
Grand Mean		153	2.19	1.01	A

Note: SA – Strongly Agree; A-Agree; D-Disagree

Table 1 analysis showed cluster mean 2.19 indicating low digital literacy among business teachers in Onueke Education Zone.

Research Question Two: What are the capacity building training needs of business teachers on digital literacy for 21st century?

Table 2: Mean Rating Responses on the Capacity Building Training Needs of Business Teachers on Digital Literacy for 21st Century

S/N	Capacity Building Training Needs of Business Teachers	N	$\bar{x}$	S.D	Remarks
11	I need training on how to structure modules learning paths on an LMS like Moodle or Google Classroom	153	3.32	0.67	Agree
12	I need training on uploading, organizing digital content such as Videos, PDFs, and slides for business courses	153	3.51	0.74	Agree

13	I need training on creating and grading online quizzes, assignments and e-portfolios using an LMS	153	3.42	0.71	Agree
14	I need training on using LMS gradebooks and learning analytics to track student performance	153	3.40	0.74	Agree
15	I need training on using LMS forums, chats and group tools to facilitate collaborative business projects	153	3.31	0.79	Agree
16	I need training on integrating zoom, Google Meet, or Teams with the LMS for hybrid teaching	153	3.15	0.89	Agree
17	I need training on using spreadsheets, e-commerce platforms, and business simulation software for teaching	153	2.97	1.09	Agree
18	I need training on teaching data literacy cybersecurity, ethical AI use in business education	153	2.55	1.19	Agree
19	I need training on creating digital content, and infographics for teaching business concepts	153	3.40	0.73	Agree
20	I need training on designing mobile friendly and accessible LMS courses for all learners	153	3.27	0.71	Agree
Grand Mean		153	3.23	0.82	Agree

Findings in Table 2 shows cluster mean of 3.23 indicates high need for capacity building training requirements of business educators regarding digital literacy for the 21st century

Hypotheses

H0₁: There is no significant difference in the mean rating of teachers on the level of digital literacy skills among business teachers for 21st century based on the gender based on the gender

The result of the t-test analysis of data gathered to test null hypothesis one is shown in Table 3

Table 3: t-test Analysis on the Level of Digital Literacy Skills among Business Teachers for 21st Century Based on the Gender

Gender	N	Mean	SD	Df	Alpha	t-cal	P-value	Decision
Male	63	3.28	.698	151	0.05	-.408	.683	Not Significant
Female	90	3.32	.635					

Table 3 indicates a P-value above the alpha level of 0.05 at 151 degrees of freedom. The null hypothesis was upheld, showing no statistically significant difference in the mean ratings participants on the extent of digital literacy skills among business teachers for the 21st century classroom with respect to gender

H₀₂ : There is no statistically significant difference in the mean responses of respondents concerning the capacity building training requirements of business teachers on digital literacy for the 21st century classroom in relation to gender

The t-test analysis of data collected to test the null hypothesis one is presented in Table 4

Table 4: t-test Analysis on the Capacity Building Training Needs of Business Teachers on Digital Literacy for 21st Century Based on the Gender

Gender	N	Mean	SD	Df	Alpha	t-cal	P-value	Decision
Male	63	3.39	.630	151	0.05	.663	.508	Not Significant
Female	90	3.34	.629					

Table 4 reveals that P-values exceed the alpha threshold of 0.05 at 151 degrees of freedom. The null hypothesis was retained, showing no statistically significant difference in respondents' mean ratings regarding the capacity building training requirements of business teachers on digital literacy for the 21st century classroom with respect to gender.

Discussion

The study revealed that the business teachers lack digital literacy in utilizing MS Excel, PowerPoint, and virtual learning platforms. While many teachers can use smartphones for basic communication, they lack competence in productivity tools like MS Excel, PowerPoint, and online

learning platforms that are critical for teaching business subjects in today's world. This means most business lessons are still taught theoretically. Students are not exposed to practical tools like spreadsheets, Accounting software, or e-commerce platforms that are used in real businesses today. This creates a mismatch between what is taught and what the labour market demands. There is also no digital divide between male and female teachers, with female teachers facing more challenges due to poor digital literacy among most business teachers. The outcome of this study aligns with the report of Srivastava and Dey (2018) who found that teachers exhibit a moderate perception concerning the application of digital tools in teaching and learning, coupled with considerable challenges in integrating technology such as inadequate technical support, resources and time. It also supports Garcia-Perez et al. (2016) who found moderate digital literacy among general education teachers. It also agrees with Cote and Milliner (2018) who found teachers willing to improve digital practice. The present results also correspond with Cote and Milliner (2018) who assessed teachers' digital literacy and observed high levels of digital competence, and more importantly, that these teachers demonstrate willingness to enhance their understanding and mastery of digital practice.

The study further revealed that business teachers have specific and urgent capacity building needs. They require practical, subject-specific training in tools such as Excel for Accounting, Canva for Marketing, and e-commerce platforms for Commerce. One-off workshops are not effective. Teachers need continuous support, access to devices and internet, and a community for peer learning to sustain their skills. The findings are in conformity with the findings of Srivastava (2018) who found that one of the main tasks of modern teachers is to familiarize themselves with approaches and application of digital technology, updating their own knowledge and develop digital literacy constantly. Digital literacy has an essential role in education and because of that reason the continuous training for all teachers is necessary and recommended. The outcome of the study corroborates the assertion of Fischer and Mandle in Amin (2016) who noted that contemporary teachers are expected to be technological inclined, more cooperative, collaborative, open-minded and critical independent, and to function as a facilitators who guide learners to evaluate the credibility of new information sources and to acquire learning skills in a digital environment.

Conclusions

The findings show that business teachers have a willingness to learn but are limited by low skill levels, poor infrastructure, and lack of continuous support. To prepare students for the 21st century, we must first prepare the teachers. The 21st century classroom demands a shift from traditional, teacher-centered and analogue methods of teaching to a technology-driven, student-centered approach. For business education, this shift is non-negotiable because the world of business itself has gone digital. By assessing, training, equipping, and supporting business teachers continuously, we can bridge the gap between classroom teaching and the digital workplace. In conclusion building the capacity of business teachers in digital literacy is not an option but a necessity. A digitally competent business teacher will produce digitally competent students who can create jobs, use technology to solve business problems, and thrive in the 21st century economy.

Recommendations

It was recommended that:

1. The Ebonyi State Ministry of Education should conduct mandatory digital competency assessment and subject-specific training for all business teachers in secondary schools
2. The State Government should establish business digital resource centers in schools with ongoing technical support in secondary schools
3. Secondary Education Board in the state should appoint and incentivize a Digital Lead Teacher in each school to manage the hub and mentor others in secondary schools in the area of study.

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