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21st Century Skill Acquisition in Business Education Programme: The Role of Digital Literacy and Tools

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Abstract: This study examined how digital literacy and tools can facilitate 21st century skill acquisition in business education programme in universities in Anambra State. Two research questions guided the study and two null hypotheses which were tested. A descriptive survey design was adopted for the study. The population of the study comprised 34 business educators in universities in Anambra state. Data collected was analyzed using arithmetic mean and standard deviation while t- test was used to test the hypotheses at 0.05 level of significance. When the p value was found to be equal or less than 0.05 alpha levels, the noted difference was said to be significant, therefore, the null hypothesis was rejected. However, a p value found to be greater than 0.05, the noted difference was insignificant, therefore, the null hypothesis will be accepted. The findings of the study revealed among others that digital literacy, use of technology tool facilitate 21st century skill acquisition in universities in Anambra state. Based on the study's findings, the researcher recommends integrating digital literacy into the core

curriculum of business education programs. This can be achieved by designing courses and learning activities that explicitly include digital tools and technologies pertinent to the field, such as data analysis software, project management platforms, and digital marketing tools.

Keywords: Skill Acquisition, Business Education, Digital Literacy, Digital Tools

Introduction

Business Education is a specialized field of education that focuses on teaching the skills and operations required in the business industry. It employs various instructional methods to impart fundamental business practices to students. The primary goal of business education is to provide individuals with the necessary knowledge and skills to succeed in business-related occupations (Oriola, 2016). The objectives of business education encompass several aspects. Firstly, it aims to prepare students for initial employment by equipping them with the skills and knowledge needed to enter the workplace. Secondly, it facilitates the upgrading and retraining of individuals in new and related business and office occupations. Additionally, business education provides opportunities for students to gain information about the business world, developing their understanding of various areas of work where they can earn a living (Association of Business Educators of Nigeria, 2017). It is career oriented that aims at preparing students with skills necessary for gainful employment. Therefore, skill acquisition is one of the goals of a business education programme.

Skill acquisition is the process of acquiring specific skills or expertise from professionals in order to secure employment or educate others. It involves the development of entrepreneurial competencies that foster the willingness and ability to engage in enterprise development. In the digital era, digital skills are crucial for performing tasks across a wide range of occupations. Examples of digital skills include programming, web and app development, digital business analysis, digital design, digital marketing, social media marketing, and data analysis, among others.

In the current landscape, higher education institutions have a mission to cultivate students' employability skills for their chosen careers and equip them to thrive in the job market. Therefore, these institutions must prioritize the development of students' self-efficacy and adaptability skills. Digital transformation plays a vital role in achieving contextualized learning in this regard. Key dimensions of digital transformation include the utilization of digital tools and the promotion of digital literacy (Bond et al., 2018; Valenduc & Vendramin, 2017).

By incorporating digital tools into educational practices, higher education institutions can enhance the learning experience and provide students with practical skills applicable in the digital world. Digital literacy, which encompasses the ability to effectively navigate and utilize digital technologies, is an essential skill for students to succeed in the modern workforce (Thompson & Lee, 2012; Tobin, 2014).

In the rapidly evolving landscape of education and the workplace, the integration of digital tools and the cultivation of digital literacy have become pivotal. The utilization of digital tools, encompassing various technological devices and methods, has redefined the educational paradigm, aiming to meet contemporary educational standards while leveraging technology-based approaches (Haleem et al., 2022). Simultaneously, digital literacy has emerged as an essential dimension in the context of digital transformation, fostering the development of highly skilled individuals equipped with technological expertise and up-to-date knowledge (Nikou et al., 2022).

Amid this digital revolution, it is paramount to scrutinize the existing body of literature to identify gaps, ascertain what has been studied, and delineate the contributions of this study. While previous research has delved into the incorporation of digital educational tools to enhance interactivity, simulation, and engagement in teaching and learning (Almusaed et al., 2023). There remains a need for a comprehensive examination of how higher education institutions can effectively integrate these tools into their traditional pedagogical approaches. This study bridges this gap by offering insights into advanced education delivery tools that can enrich the existing education system.

Beyond the realm of education, the impact of digital skills on the employment landscape is a multifaceted issue. Automation, driven by digitalization, presents both challenges and opportunities, with millions of jobs at potential risk, particularly those involving routine tasks yet, it is equally crucial to recognize that digital skills can enhance employability and earning potential, opening up new avenues in the job market.

Business education plays a crucial role in equipping individuals with the necessary digital skills and competencies to thrive in the 21st-century world. However, there is a need for a comprehensive integration of digital skills and competencies throughout the modules, courses, and learning settings of business education. The current curriculum of business education may appear outdated, filled with courses and themes that may not align with the demands of the present world. This indicates a gap in the technological skills and expertise of the workforce in the field of business education.

The rapidly changing global environment presents both opportunities and threats to businesses. It is challenging to find a business today that is not impacted by global developments (Norton et al., 2021). Business education, as an integral part of the overall education program, is not exempt from the influence of modern technology. The COVID-19 pandemic and subsequent lockdowns highlighted the difficulties faced by teachers, parents, and students during remote schooling, partly due to the low level of digital skills among stakeholders and the existing inequalities in access to digital devices and infrastructure (Carretero et al., 2021; Kraus et al., 2018).

Digital literacy has not only altered educational standards but also the subject matter that must be taught in schools. Although today's students are sometimes referred to as "digital natives" (Prensky, 2001), Jones et al. (2010) found that they may not always be able to use these digital tools in a knowledgeable or critical manner. In order to use technology effectively, students must be taught these abilities, as well as how to evaluate and critically analyze information (Leu et al., 2015). Modern education has been and continues to be impacted by digital literacy. Students have easy access to information, and teachers are attempting to teach teenagers how to utilize this information safely, ethically, and successfully (ictQATAR, 2015).

The potential of digital tools and digital literacy to revolutionize the roles of researchers, teachers, and students, fostering interactive and engaging learning experiences, seems to be underutilized or unavailable in the field of business education. There is a need to improve the handling of students' data, records, and other management practices through digital means. Given these challenges, conducting a study on the transforming business education programs through digital literacy and tools for 21st-century skill acquisition in universities in Nigeria becomes paramount.

Research Problem

This research endeavor delves into the pressing challenges faced within the realm of business education at Nigerian universities. These challenges notably encompass the suboptimal preparation of graduates, an outdated curriculum that lacks crucial 21st-century digital competencies, and the limited

utilization of digital tools. The issue of inadequately prepared graduates stands as a significant concern. Many business education graduates find themselves ill-equipped for the demands of the modern workplace, and this research aims to bridge this gap. The overarching goal here is to enhance the employability and self-reliance of these graduates by identifying the root causes of their unpreparedness and proposing effective solutions. It is widely perceived that the current curriculum in business education may be obsolete, featuring courses and themes that do not align with the dynamic requirements of the contemporary world. This issue is particularly pronounced in terms of digital skills, which have become indispensable. Consequently, the research seeks to modernize the curriculum, making it more relevant and aligned with the digital skillsets demanded by the 21st century.

Despite the potential for digital tools to enhance interaction, engagement, and learning within the context of business education, their utilization has not reached its full potential. In light of these issues, the research aims to uncover the factors contributing to the underutilization of digital tools, identify areas for improvement, and recommend strategies to maximize their effectiveness. This research endeavors to bring about a transformative shift in business education programs within Nigerian universities. The identified challenges in graduate preparation, curriculum relevance, and digital tool utilization serve as focal points. By focusing on digital literacy and tools for 21st-century skill acquisition, the research seeks to equip graduates with the essential skills needed for success in the contemporary workforce, align the curriculum with modern demands, and optimize the use of digital tools. Ultimately, the aim is to empower graduates with the competencies required to thrive in the evolving landscape of business and technology.

Research Aim

The main purpose of this study is to ascertain how digital literacy and tools in business education programme can facilitate 21st century skill acquisition in universities in Anambra state. Specifically, specifically, the study intends to ascertain how to digitally transform business education through:

1. Digital literacy for 21st-century skill acquisition in universities.
2. Use of digital educational tools for 21st-century skill acquisition in universities.

Research Questions

The following research questions guided the study:

1. How can digital literacy facilitate 21st-century skill acquisition in universities?
2. How can the use of digital educational tools facilitate 21st-century skill acquisition in universities?

Research Hypotheses

The following null hypotheses will be tested at 0.05 levels of significance.

1. There is no significant difference in the mean response of business educators on how digital literacy can facilitate 21st-century skill acquisition in universities in Anambra state with respect to age.
2. There is no significant difference in the mean response of business educators on how the use of digital educational tools can facilitate 21st-century skill acquisition in universities in Anambra state with respect to age.

Research Methodology

Research Design

The study adopted descriptive survey design for this study. Descriptive survey designs generate quantitative data, which can be statistically analyzed to identify patterns, trends, and relationships. This is justified because it aligns with the research's comprehensive scope, the need for objective data collection, and the goal of assessing the current state of business education, digital literacy, and digital tool utilization in Nigerian universities.

Participants

The participants of this study consists of 34 business educators in universities in Anambra State. Business educators were considered appropriate for this study because business educators have specialized knowledge and expertise in the field of business and management education. They possess an in-depth understanding of the curriculum, pedagogical approaches, and industry trends, making them well-equipped to provide insights on how to integrate digital technologies effectively into business education programs. The entire population was used for the study because the population is manageable. Hence, there was no sampling.

Instrument and Procedures

A structured questionnaire was used for data collection. The questionnaire which is titled "Digital Transformation of Business Education programme for 21st Century skill acquisition in Universities in Anambra State" consists of two parts, 1 and 2. Part 1 contains items designed to collect demographic data of the respondents such as gender and age. Part 2 contains five sections A to B. Section A contains nine items on how digital literacy can facilitate 21st-century skill acquisition in universities in Anambra state. Section B contains eight items on how the use of digital educational tools can facilitate 21st century skill acquisition in universities in Anambra state. A total of 20 items were developed for this study and 15 were valid after face and content validation. The instrument was a five-point rating scale with the following options: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

The Instrument was subjected to face validation by three research experts. Two lecturers in the Department of Technology and vocational education and a lecture in Measurement and Evaluation, Department of Educational Foundations all from the faculty of education. The experts will be given copies of the instruments, together with the topic, purpose of the study, research questions, and hypotheses. The major corrections of the experts will be incorporated in the final draft of the instruments.

Method of Data Collection

The data was collected using the direct delivery method. A total of 34 questionnaires were distributed and 33 were collected after completion which represents a 97 % retrieval rate. However, follow-up visits was paid to the business educators who fail to submit on the spot. The distribution and retrieval of the research instrument will be concluded within 2 weeks.

Method of Data Analysis

Data collected was analyzed using descriptive statistics of arithmetic mean to answer the research questions. Standard deviation was used to find the mean spread whether mean scores are homogeneous or heterogeneous. The mean responses will be weighed with a real limit of numbers as follows:

Response Options	Ratings	Real limits of numbers
Strongly Agree (SA)	4	3.50-4.49
Agree (A)	3	2.50-3.49
Disagree (D)	2	1.50-2.49
Strongly Disagree (SD)	1	1.00-1.49

The items with mean scores between 1.00 to 1.49 was considered strongly disagreed. Items with mean scores between 1.50 to 2.49 was considered disagreed, items with means scores between 2.50 to 3.49 was considered agreed while items with mean scores between 3.50 to 4.49 was considered strongly agreed.

The null hypothesis formulated was tested using independent samples t-test at a 0.05 level of significance. Decisions was taken based on values of associated probabilities denoted by p. When the p-value will be found to be equal to or less than 0.05 alpha levels, the noted difference was said to be significant, therefore, the null hypothesis was rejected. However, if the p-value is found to be greater than 0.05, the noted difference was insignificant, therefore, the null hypothesis was accepted.

Research Results

Research Question 1

In what way can digital literacy facilitate 21st-century skill acquisition in universities?

Table 1

Mean Ratings and Standard Deviation Scores of Respondents on how Digital Literacy can Facilitate 21st-Century Skill Acquisition in Universities (N: 33)

SN	Digital literacy and 21 st -century skill acquisition	$\bar{x}$	SD	Decision
1	Digital literacy creates new ways to teach and learn within the classroom.	3.28	0.60	Agree
2	Digital literacy boosts students' engagement.	3.32	0.80	Agree
3	Digital literacy improves academic performance.	3.32	0.68	Agree
4	Digital literacy helps students stand out from their competition in the job market	3.20	0.68	Agree
5	It develops students' skills and knowledge	3.42	0.65	Agree
6	It enables students to safely navigate and discern all forms of digital technology	3.14	0.55	Agree
7	Digital literacy expands the scope of traditional literacy.	3.41	0.55	Agree
8	Students' develop dynamic creativity.	3.20	0.80	Agree
9	It helps students think, communicate, design and engage in the world around them.	3.20	0.64	Agree
Cluster Mean and SD		3.27	0.66	Agree

Table 1 illustrates the ratings given by lecturers regarding digital literacy and its impact on 21st-century skill acquisition in universities. The mean ratings for all nine items pertaining to digital literacy fall within the range of 3.14 to 3.42. This indicates that lecturers generally agreed on the positive role of

digital literacy in facilitating skill acquisition in the 21st century. Furthermore, the cluster mean of 3.27 suggests a unanimous consensus among the lecturers in the study area regarding the effectiveness of curriculum modernization in promoting 21st-century skill acquisition in Anambra state universities. This implies that all the lecturers surveyed shared the belief that updating the curriculum can contribute to the development of relevant skills for the 21st century. It is worth noting that the standard deviation scores for all the items are similar, indicating a high level of agreement among the respondents. The narrow range of standard deviations suggests that the lecturers' opinions on the influence of digital literacy and curriculum modernization were consistent and homogeneous.

Research Question 2

In what way can the use of digital educational tools facilitate 21st century skill acquisition in universities?

Table 2

Mean Ratings and Standard Deviation Scores of Respondents on how the Use of Digital Educational Tools can Facilitate 21st Century Skill Acquisition in Universities (N: 33)

SN	Use of Digital educational tools and 21 st -century skill acquisition	$\bar{x}$	SD	Decision
10	Digital tools can facilitate adaptive teaching.	3.58	0.60	Agree
11	Digital tools are a helpful resource for tailoring instruction to individual students	3.35	0.73	Agree
12	Digital tools motivate students.	3.11	0.68	Agree
13	Digital tools improve learning and teaching involvement.	3.41	0.65	Agree
14	Digital tools offer self-learning material.	3.26	0.75	Agree
15	Digital tools provide emotional and personal support.	3.20	0.68	Agree
16	Digital tools improve academic performance through collaborative learning	3.20	0.84	Agree
Cluster Mean and SD		3.30	0.70	Agree

Table 2 presents the ratings provided by lecturers regarding the utilization of digital educational tools and its impact on 21st-century skill acquisition in universities. The mean ratings for all eight items related to digital educational tools fall within the range of 3.11 to 3.58. This indicates a consensus among the lecturers, signifying their agreement on the positive role of digital educational tools in facilitating skill development in the 21st century.

Additionally, the cluster mean of 3.30 suggests that all the lecturers in the studied area concur that the implementation of digital educational tools can effectively enhance 21st-century skill acquisition in universities. This implies that the surveyed lecturers collectively acknowledge the importance of incorporating digital educational tools to foster the development of relevant skills. The standard deviation scores for all the items in Table 2 are similar, indicating a high level of agreement and consistency among the respondents. The narrow range of standard deviations suggests that the lecturers' opinions regarding the use of digital educational tools and its impact on skill acquisition were homogeneous.

Hypothesis 1

There is no significant difference between the mean ratings of business educators on how digital literacy can facilitate 21st century skill acquisition in universities with respect to age.

Table 3

Summary of T-test Analysis of Mean Ratings of Business Educators on how Digital Literacy can Facilitate 21st Century Skill Acquisition in Universities with Respect to Age

Age	N	Mean	SD	Df	t-value	p-value	Decision
25-45 year	25	3.32	.34	31	1.203	0.238	Accept Ho
45 years and Above	8	3.16	.25				

The analysis of the data from the table suggests that there is no statistically significant difference between the mean ratings of business educators of different age groups regarding how digital literacy can facilitate 21st-century skill acquisition in universities. This is supported by the t-test results, which yielded a t-value of -1.318 with degrees of freedom (df) equal to 31 and a p-value of 0.23.

Based on the acceptance of the hypotheses, it can be concluded that there is no significant variation in the mean responses between the different age brackets of business educators. In other words, the age of the educators does not significantly impact their opinions on how digital literacy can facilitate 21st-century skill acquisition in Anambra state universities.

Hypothesis 2

There is no significant difference between the mean ratings of business educators on how use of digital educational tools can facilitate 21st century skill acquisition in universities with respect to age.

Table 4

Summary of T-test Analysis of Mean Ratings of Business Educators on how the Use of Digital Educational Tools can Facilitate 21st Century Skill Acquisition in Universities with Respect to Age

Age	N	Mean	SD	df	t-value	p-value	Decision
25 – 45 year	25	3.39	.38	31	1.318	0.197	Accept Ho
45 years and Above	8	3.09	.42				

The analysis of the data presented in the table suggests that there is no statistically significant difference between the mean ratings of business educators of different age groups regarding how the use of digital educational tools can facilitate 21st-century skill acquisition in universities. This is supported by the t-test results, which yielded a t-value of -1.318 with degrees of freedom (df) equal to 31 and a p-value of 0.19.

Based on the acceptance of the hypotheses, it can be concluded that there is no significant variation in the mean responses between the different age brackets of business educators. In other words, the age of the educators does not significantly impact their opinions on how the use of digital educational tools can facilitate 21st-century skill acquisition in universities.

Discussion

Digital Literacy and 21st century skill acquisition in universities

The study findings demonstrate that digital literacy plays a crucial role in transforming the teaching and learning process within the classroom. It enables students to develop essential skills and knowledge while effectively navigating and discerning various digital technologies. This is in line with the findings of Hervé et al. (2020) that revealed that proficiency in digital tools, technologies, and practices proves to be advantageous for acquiring the skills necessary for success in the 21st century. According to Reddy et al. (2023) digital literacy is increasingly prevalent in the 21st century. Growing demands from the work sector for individuals to be digitally literate has prompted targeted interventions and innovations from the education sector to instil digital skills into the future workforce. The positive influence of digital literacy skills on the acquisition of 21st-century skills among university students becomes evident. Therefore, it is essential for business education to prioritize and promote digital literacy education and support. Equipping students with the necessary tools and competencies for success in the modern world should be a key focus (Chappell et al., 2020). According to Özer and Kuloğlu (2023) in the 21st century, individuals are exposed to technology from the moment they are born. They are expected to master 21st century skills and digital literacy in order to use technology appropriately, safely, and effectively and keep up with the times. These findings align with the Eze (2018), which emphasize the significance of broadening the deployment of comparative-pedagogical and empirical research in the field of education. Such research highlights important trends in the use of modern digital literacy by teachers and underscores the need for the sustainable development of education. Also Negi and Sain (2023) stated that Digital literacy is essential for the well-being of students in today's technologically advanced environment. Students must be educated properly so that they have the necessary skills to successfully complete their higher education learning journey.

Digital educational tools and 21st century skill acquisition in universities

The study findings demonstrate that the utilization of digital tools brings about several benefits in the educational context. These benefits include facilitating adaptive teaching approaches, providing valuable resources for tailoring instruction to individual students, and enhancing academic performance through collaborative learning, among others. These findings highlight the positive impact of integrating digital tools and technologies on the development and acquisition of skills necessary for success in the 21st century. According to Gratani et al. (2021), highlighted that digital tools can promote the acquisition of such skills such as computational thinking (CT) and digital literacy in general as well as to enhance transversal competences such as problem-solving. The integration and utilization of digital tools in university education play a vital role in fostering the acquisition of 21st-century skills. Therefore, it is crucial for universities to embrace and incorporate digital tools into their curriculum and instructional strategies. By doing so, universities can provide students with opportunities to develop and enhance the skills essential for success in the modern world.

These findings are consistent with the research conducted by Woods and Rosenberg (2016) which emphasizes the importance of creating an information and education environment based on contemporary software and hardware systems to promote the acquisition of 21st-century skills. A teacher's ideas, use of technological tools. According to Negi and Sain (2023) Educational technology tools can help you discover, organize, and utilize digital content effectively. Tools like Flipboard, Pocket, or Feedly allow you to curate and save articles, blogs, and news from multiple sources in one place.

Conclusions and Implications

Digital transformation is a vital aspect of acquiring 21st century skills in universities. The adoption of digital technology has revolutionized the educational sector, making it possible for students to access vast amounts of information, communicate and collaborate with peers and instructors, and develop skills that are relevant in the 21st century. The benefits of digital transformation in education cannot be overstated, as it has improved the quality of education, increased student engagement, and fostered a culture of innovation. The findings of this study have implication on business education graduates, curriculum planners, business educators among others. By actively using digital tools, students develop proficiency in navigating technology, utilizing digital resources, and effectively leveraging digital tools for various business purposes. Students gain hands-on experience in using data analysis software, project management platforms, digital marketing tools, and other digital resources commonly used in the workplace. This proficiency enables students to be more efficient, productive, and adaptable in their future careers. By developing digital literacy skills, students gain proficiency in utilizing digital tools, navigating online resources, and effectively engaging with digital technologies. These skills are crucial for communication, collaboration, problem-solving, data analysis, and innovation in the modern business environment.

Limitation of the Study

The limitation of the study is a potential lack of generalizability of the findings. Since the study focuses on the benefits of digital transformation in education, particularly in the context of business education, the results may not be directly applicable to other fields or educational settings. The extent to which digital transformation impacts learning outcomes and skill development may vary across disciplines, levels of education, and geographic regions. The study did not considered the digital divide, which can exist among students in terms of access to technology and digital resources. Some students may not have equal access to digital tools and may face barriers in fully benefiting from digital transformation in their educational experience.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Integrate digital literacy into the core curriculum of business education programs by designing courses and learning activities that explicitly incorporate digital tools and technologies relevant to the field, such as data analysis software, project management platforms, and digital marketing tools.
2. Management of business education should promote and encourage the utilization of digital tools throughout the curriculum. By integrating digital tools into various aspects of learning activities to enhance student engagement, collaboration, and skill development.
3. Engage in continuous evaluation and improvement of digital literacy programmes and initiatives to ensure that they remain relevant and effective in meeting the needs of students and the business community.
4. Develop and implement policies and strategies to address the digital divide, particularly in terms of access to technology and digital literacy skills among marginalized and underserved communities.
5. Encourage interdisciplinary collaborations and partnerships between business education programmes and other disciplines, such as computer science, engineering, and media studies, to promote cross-disciplinary learning and innovation in digital literacy.

Suggestions for Future Research

The following are suggested for further studies:

1. The present study could be replicated in another area, using a larger population and a wider scope.
2. A study could also be conducted on the challenges and opportunities of digital transformation in facilitating 21st Century skills acquisition in universities in Anambra State.

References

- Almusaed, A., Almssad, A., Yitmen, I., & Homod, R. Z. (2023). Enhancing student engagement: Harnessing “AIED”’s power in hybrid education—A review analysis. *Education Sciences*, 13(7), Article 632. <https://doi.org/10.3390/educsci13070632>
- Association of Business Educators of Nigeria. (2017). *Mandate of business education in Nigeria*. Ilorin: Integrity Publication.
- Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2018). Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education*, 15(1), 1–20. <https://doi.org/10.1186/s41239-018-0130-1>
- Carretero, S., Napierala, J., Bessios, A., Mägi, E., Pugacewicz, A., Ranieri, M. ... Gonzalez-Vazquez, I. (2021). *What did we learn from schooling practices during the COVID-19 lockdown*. Publications Office of the European Union. <https://doi.org/10.2760/135208>
- Chappell, C., Gonczi, A., & Hager, P. (2020). Competency-based education. In G. Foley (Ed.), *Understanding adult education and training* (pp. 191–205). London: Routledge.
- Eze, J. U. (2018). Digital literacy and the acquisition of 21st century skills among business education students in universities in Anambra State, Nigeria. *Journal of Educational and Social Research*, 8(1), 95–102.
- Gratani, F., Giannandrea, L., Renieri, A., & Annessi, M. (2021). Fostering students’ problem-solving skills through educational robotics in primary school. In M. Malvezzi, D. Alimisis, & M. Moro (Eds.), *Educational robotics international conference* (pp. 3–14). Cham: Springer. https://doi.org/10.1007/978-3-030-77022-8_1
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Hervé, A., Schmitt, C., & Baldegger, R. (2021). Internationalization and Digitalization: Applying digital technologies to the internationalization process of small and medium-sized enterprises. *Technology Innovation Management Review*, 10(7), 28–40. <https://doi.org/10.22215/timreview/1373>
- ictQATAR. (2015). *Digital literacy*. <http://www.ictqatar.qa/en/digital-society/digital-literacy>

- Jones, C., Ramanau, R., Cross, S., & Healing, G. (2010). Net generation or digital natives: Is there a distinct new generation entering university?. *Computers & Education*, 54(3), 722–732. <https://doi.org/10.1016/j.compedu.2009.09.022>
- Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J. (2019). Digital entrepreneurship: A research agenda on new business models for the twenty-first century. *International Journal of Entrepreneurial Behavior & Research*, 25(2), 353–375. <https://doi.org/10.1108/IJEBR-06-2018-0425>
- Leu, D. J., Forzani, E., Rhoads, C., Maykel, C., Kennedy, C., & Timbrell, N. (2015). The new literacies of online research and comprehension: Rethinking the reading achievement gap. *Reading Research Quarterly*, 50(1), 37–59. <https://doi.org/10.1002/rrq.85>
- Negi, A., & Sain, S. K. (2023). Digital literacy for the 21st century: Rethinking & redesigning the roles of libraries. *International Journal of Innovative Science and Research Technology*, 8(8), 1042–1047. <https://ijisrt.com/assets/upload/files/IJISRT23AUG805.pdf>
- Nikou, S., De Reuver, M., & Mahboob Kanafi, M. (2022). Workplace literacy skills — how information and digital literacy affect adoption of digital technology. *Journal of Documentation*, 78(7), 371–391. <https://doi.org/10.1108/JD-12-2021-0241>
- Norton, A., Shroff, S., & Edwards, N. (2020). *Digital transformation: An enterprise architecture perspective*. Publish Nation Limited.
- Oriola, A. (2016). Business education: Utility education in developing economy. *Journal of Business and Office Education*, 3(1), 22–35.
- Özer, M. & Kuloğlu, A. (2023). The relationship between primary school teachers' perceptions of 21st century skills and digital literacy level. *Malaysian Online Journal of Educational Technology*, 11(3), 173–183. <http://dx.doi.org/10.52380/mojet.2023.11.3.429>
- Prensky, M. (2001). Digital natives, digital immigrants Part 1. *On the Horizon*, 9(5), 1–6. <https://doi.org/10.1108/10748120110424816>
- Reddy, P., Chaudhary, K., & Hussein, S. (2023). A digital literacy model to narrow the digital literacy skills gap. *Heliyon*, 9(4), Article e14878. <https://doi.org/10.1016/j.heliyon.2023.e14878>
- Thompson, R., & Lee, M. J. (2012). Talking with students through screencasting: Experimentations with video feedback to improve student learning. *The Journal of Interactive Technology and Pedagogy*, 1(1), 1–16. <http://tinyurl.com/ymhe2dcd>
- Tobin, T. J. (2014). Increase online student retention with universal design for learning. *Quarterly Review of Distance Education*, 15(3), 13–24.
- Valenduc, G., & Vendramin, P. (2017). Digitalisation, between disruption and evolution. *Transfer: European Review of Labour and Research*, 23(2), 121–134. <https://doi.org/10.1177/1024258917701379>
- Woods, M., & Rosenberg, M. E. (2016). Educational tools: thinking outside the box. *Clinical journal of the American Society of Nephrology: CJASN*, 11(3), 518–526. <https://doi.org/10.2215%2FCJN.02570315>