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UTILIZATION OF DIGITAL TECHNOLOGIES AMONG SANDWICH STUDENTS OF ALVAN IKOKU FEDERAL UNIVERSITY OF EDUCATION

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ABSTRACT
This study investigated the utilization of digital technologies among sandwich students of Alvan Ikoku Federal University of Education, Owerri. The study was prompted by the difficulties inherent in the sandwich programme, particularly in the context of technology-based instruction which presents unique challenges. The study adopted a descriptive survey research design because it portrayed information from the respondents without manipulation. The population of the study was all the 327 sandwich degree students of Alvan Ikoku Federal University of Education purposively used for the study. "Utilization of Digital Technologies among Sandwich Students' Questionnaire" (UDTSSQ) (r-0.78) was used to obtain the data. Data collected were analysed using frequencies, bar charts and pie charts. Findings showed that types of digital technologies commonly used by sandwich students include; Social Media platforms (13.1%), Digital libraries (11.9%) and Microsoft word (11.9%). It also showed that sandwich students rarely use digital technologies (65.4%) while the challenges faced in utilizing digital technologies include; technical issues (11.1%) and lack of support services (11.1%). The study recommended among others that the University management should offer support services such as organizing workshops and training sessions to assist sandwich students learn these new technologies.

Keywords: Utilization, Digital Technologies, Sandwich Students, Sandwich Programme.

Introduction
The use of digital technologies has assumed a primacy of place in the current dispensation. All sectors, fields and disciplines are rated in line with their utilization of digital technologies. This no doubt has made significant impact especially on global educational environment. Tertiary institutions worldwide strive to facilitate teaching and learning through the utilization of digital technologies. In this regard, sandwich students (those who alternate between study and job periods) among other categories of students face inimitable challenges and opportunities when it comes to integrating digital tools into their learning processes. Digital technologies provide adaptable learning settings, which are

particularly helpful for sandwich students who often juggle academic responsibilities with professional commitments. Researches (Anderson & Dron, 2017; Means et al., 2014) showed that the use of digital tools like collaborative software, digital libraries, and online learning platforms improves these students' learning experiences by giving them access to opportunities and resources that are not limited by space or time.

The proficiency of digital technologies in learning, however, depends on how these tools are used by students. Digital tools can assist sandwich students fit in their work and academic life seamlessly. Selwyn (2016) affirmed that students' academic performance and engagement can be enhanced by the use of digital technology. It helps in fostering a more personalized and lively learning environment. Additionally, these technologies can help with skill development and ongoing learning, which is vital for students who must use their academic knowledge in practical contexts. When the implementation of digital technologies is meticulously planned, it bridges the divide between academic knowledge and practical application, hence enhancing the overall educational experiences of sandwich students.

According to Lindqvist (2024), digital technologies are gadgets like computers, tablets, and mobile phones that enhance teaching and learning, as well as online resources, learning management systems, programmes, and apps. Digital technologies in education comprise tools, methods, and equipment that support the digitalization of learning experiences (Brooks, 2022). They are sometimes called technology enhanced learning (TEL) or e-learning. They can involve educational theories and practices, software, and hardware. Researches (Brooks, 2022; Heick, 2022; Mishra, 2023; Lindqvist, 2024 & Fabivo, 2024) enumerated some of the digital learning techniques, resources and devices as: adaptive learning, badging and gamification, e-textbook, blended learning, online learning, interactive whiteboards, software applications, word processing software, PowerPoint presentations, digital flashcards, game design software, online quizzes, educational games, information exchange platforms, digital platforms for student-teacher collaboration, digital notebooks, classes via videoconference, audios or podcasts, questionnaires, learning achievements/badges, video games, learning management systems (Moodle, Google Classroom, etc.), the cloud, voice search, haptic response, blockchain, augmented reality, virtual reality, 5G, AI-Generated Applications, deep neural networks, smart 'Bots', spatial computing, automation and hyper automation, internet of things, internet of behaviors, social media platforms like Facebook, Instagram and YouTube. Sandwich students are expected to be familiar with most of these digital resources to facilitate their learning and remain relevant in a digitalized world.

Sandwich students use digital technologies in various ways for academic and non-academic purposes. Means et al, (2024) opined that frequently utilized digital technologies include online learning systems like Moodle and Blackboard, which offer a centralized location for accessing course

materials, turning in assignments, and participating in discussions. Others are productivity tools like Google Workspace and Microsoft Office 365 for finishing school assignments and working with classmates and teachers. Similarly, Anderson and Dron, (2017) affirmed that video conferencing platforms like Zoom and Microsoft Teams are essential for online meetings and remote learning. Also inclusive are scholarly databases and digital libraries for academic researches and publications. Sandwich students use digital tools both synchronously and asynchronously to access lecture materials, engage in discussion forums, participate in virtual meetings, and researching of project topics. In addition, the utilization of digital tools helps sandwich students improve learning efficiency, communicate with classmates and teachers as well as bridge the gap between academic understanding and practical application.

Sandwich programmes involve reformation in teacher education aimed to produce capable and experienced workforce to realize the goals and objectives of education (Obasi & Nwakaire cited in Anurugwo, 2020). They are part-time programmes intended to increase the number and caliber of teachers. The programme also accommodates other classes of students who wish to be certified teachers or expand their capabilities in teaching profession. Tamanja (2016) affirmed that sandwich teacher education denotes education where scholars (mainly teachers) move into institutions of study during vacation when the regular or full-time students are not in residence and teachers themselves are on holidays. This helps teachers to grow professionally in the sense that sandwich education programmes give them the chance to further their careers while still teaching. In other words, the course is positioned between the second semester of the academic year, which ends at the end of the school year, and the first semester of the subsequent academic year, thus they will only relocate to the study campuses during the summer break. Universities and other higher education institutions are on summer break during this time, allowing teachers to engage in activities and return before the start of the next academic year. In Alvan Ikoku Federal University of Education, Sandwich programme is run between July and September. It is organized by the Faculty of Education. Students can access all courses offered by various departments in the Faculty of Education during the contact time. Sandwich degree students are NCE certified or equivalently qualified. Unlike normal programmes, which run three years (with direct entry for NCE holders), sandwich degree programmes last four to five years, depending on the candidate's cumulative grade point average (CGPA).

Sandwich programmes are designed to update and upgrade teachers who lack the desired qualification while maintaining their teaching jobs. This is to actualize a basic goal of teacher education which is the provision of teachers with intellectual and professional background adequate for their assignments and to make them adaptable to changing situations (Federal Republic of Nigeria, 2013). Ordinarily, the jobs and family commitments of sandwich students as adults would not let them enroll in to regular school programme. Sandwich education therefore affords them the opportunity to further their

intellectual growth and competence in their professional assignments. Borode (cited in Anurugwo 2020) asserted that sandwich education is a structured adult education programme run outside regular school hours and that is unique in the sense that it provides workers with on-the-job training. Sandwich degree programmes are meant to familiarise participants with contemporary methodologies, strategies, information, and skills to improve their efficacy and update their understanding of fundamental subjects. Oluwayemi cited in (Manu, Ampofo and Ampomah, 2020) stated that sandwich programme enhances instructional delivery, broadens teachers' knowledge and model teachers for optimum performance. Undoubtedly, Sandwich degree programme has helped to improve the level of competencies and productivities of teachers since its establishment.

In spite of the benefits of sandwich programme, some of the glaring challenges include the little duration given for the acquisition of knowledge. The duration of sandwich programmes raises serious concerns as to the actualization of the objective. These programmes are compressed in design, and content is covered in half the time as compared to the regular mode of delivery. Hence there are doubts regarding students' ability to master the knowledge in their respective areas of specialization. Obasi and Nwakire (2015) were of the view that the three-month's time frame, stipulated for covering all the topics, may be a factor that gives the impression that the quality of knowledge acquired by sandwich students may not be comparable to that of regular or full-time students. On the other hand, the use of digital technologies among sandwich students is not without challenges. Beetham and Sharpe, (2013) perceived that sandwich students' utilization of digital technologies is influenced by a number of institutional, technological, and sociodemographic factors. This perspective is supported by Ogunjimi et al. (2022), who found that age, education level, and personal beliefs significantly affect ICT utilization. Age, gender, and degrees of digital literacy are sociodemographic variables that influence the use technology. Ordinarily, younger students and those who are technologically savvy are likely to be at ease with the use of digital technologies more than the adult learners. Similarly, administrative related issues that affect the utilization of digital technologies may include value of the digital resources, institutional backing and accessibility of technological substructure. In this regard, students' utilization of digital technology can be facilitated through extensive training, practical support and accessibility to high-quality digital materials (Tulinayo, 2018). Students' acceptance and incorporation of digital technologies into their learning is also determined by technical variables, including digital devices' reliability, convenience, and ease of use. It is therefore imperative to address these factors to ensure that all sandwich students fully benefit from digital technology and positively actualize their academic and career objectives.

Statement of the Problem

Sandwich degree program is a reformation in teacher education meant to improve, upgrade and reskill serving teachers to cope with global best practices in teacher education. The programme has not only assisted most

teachers in obtaining the requisite qualification but has enriched their knowledge and competence in their places of work. However, the rigorous nature of sandwich programme including its short duration coupled with the numerous engagements of the participants who are mainly adult learners raises some worries in relation to the demands of the 21st century instructional process. One of such demands in teacher education is the utilization of digital technologies in teaching and learning. This implies that all categories of students have to be technologically savvy to fit into to the innovative instructional procedure. It therefore becomes imperative to investigate the utilization of digital technologies among sandwich students with a view of proffering solution on the effective means of integrating technologies in sandwich education.

Purpose of Study

The purpose of the study was to investigate the utilization of digital technologies among sandwich students of Alvan Ikoku Federal University of Education, Owerri. Specifically, the study sought to find out:

1. Types of digital technologies commonly used by sandwich students
2. Frequency of utilization of digital technologies among sandwich students
3. Challenges to utilization of digital technologies among sandwich students

Significance of the Study

The findings of the study will be beneficial to lecturers, university administration, policy makers, researchers and sandwich students. Lecturers and researchers through the finding of this study would understand better how sandwich students use technology to learn thereby unveiling operative learning techniques and possible areas of improvement. Identification of commonly used technologies among sandwich students will assist lectures to determine which technologies to incorporate into their teaching methods to improve students' learning experiences. Investigation on technology usage would help in identifying links between particular technologies and higher academic achievement, thereby developing evidence-based teaching strategies. Researching students' usage of technology might expose difficulties with access, skill gaps, or other roadblocks that can prevent them from using it effectively, thus enabling focused assistance. University management through the findings of this study can create focused interventions to raise students' digital literacy, a critical issue in today's technologically advanced society.

Research Questions

1. What are the types of digital technologies commonly used by sandwich students?
2. What is the frequency of utilization of digital technologies among sandwich students?
3. What are the challenges to the utilization of digital technologies among sandwich students?

Methodology

The study was carried out in Alvan Ikoku Federal University of Education Owerri, Imo State. The study adopted a descriptive survey research design. The entire population of 327 sandwich degree students was used for the study. The

researchers developed a 39-item questionnaire titledreliable. With the help of a research assistant, 327 "Utilization of Digital Technologies amongcopies of the questionnaire were administered, 295 Sandwich Students' Questionnaire" (UDTSSQ) to(90%) was returned and used for the study. elicit relevant information from the respondents. TheFrequencies and pie chat were used to answer the questionnaire was divided into three clusters thatresearch questions.
covered the three research questions. It was validated
by an expert in Educational Technology and another**Results**
expert in Research Methodology. Cronbach Alpha**Research Question 1:** What are the types of statistic was used to determine the internaldigital technologies commonly used by consistency of the instrument which yielded 0.78sandwich students?
coefficients indicating that the instrument was

Table 1.1

$Q1 Frequencies

		Responses		Percent of Cases
		N	Percent	
Types of digital set commonly used[a]	Google Classroom	147	7.1%	49.8%
	Zoom	172	8.3%	58.3%
	Online Lecture Videos	173	8.4%	58.6%
	Mobile Learning App	222	10.7%	75.3%
	Video conferencing	98	4.7%	33.2%
	Podcast	99	4.8%	33.6%
	Digital Libraries	246	11.9%	83.4%
	Microsoft word	246	11.9%	83.4%
	Power point Presentation	74	3.6%	25.1%
	Excel	49	2.4%	16.6%
	Online quizzes	25	1.2%	8.5%
	Blended Learning	172	8.3%	58.3%
	Social Media Platform	271	13.1%	91.9%
	Others Specify	74	3.6%	25.1%
Total		2068	100.0%	701.0%

Table 1.2

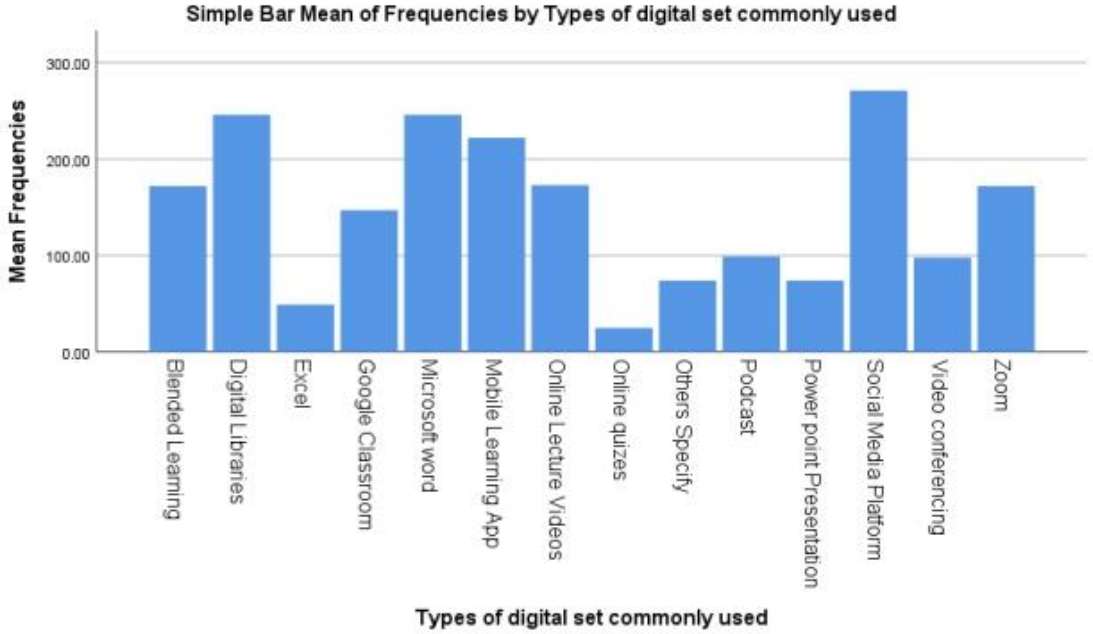


Table 1.3

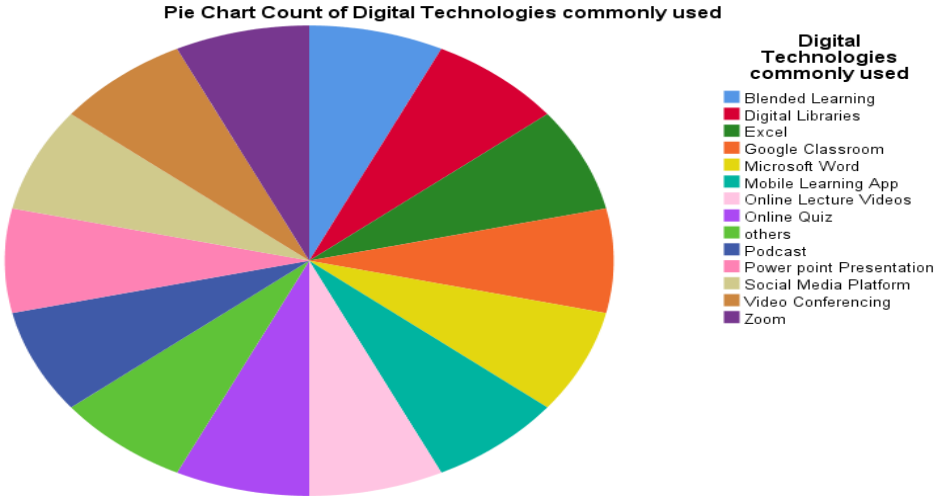


Table 1 showed that most commonly used digital technology is social media platform with 13.1% while the least is online quizzes with 1.2%

Research Question 2: What is the frequency of utilization of digital technologies among sandwich students?

Table 2

$Q2 Frequencies

		Responses N	Responses Percent	Percent of Cases
How frequntly do you use digital tech[a]	Rarely	2701	65.4%	915.6%
	Occasionally	1182	28.6%	400.7%
	Frequently	222	5.4%	75.3%
	Almost always	25	0.6%	8.5%
Total		4130	100.0%	1400.0%

Table 2 indicated that digital technologies are rarely utilized by Sandwich students. 65.4% of sandwich students rarely use digital technology.

Research Question 3: What are the challenges to the utilization of digital technologies among sandwich students?

Table 3.1

$Q3 Frequencies

		Responses N	Responses Percent	Percent of Cases
Challenges to the use of digital tech[a]	Technical Issues	295	11.1%	100.0%
	Difficulty in navigating platforms	270	10.2%	91.5%
	Ease of Use	245	9.2%	83.1%
	Digital Illiteracy	247	9.3%	83.7%
	Lack of support services	295	11.1%	100.0%
	Accessibility to digital tools	246	9.3%	83.4%
	Limited internet access	245	9.2%	83.1%
	Lack of power supply	271	10.2%	91.9%
	Financial constraint	270	10.2%	91.5%
	Distraction	172	6.5%	58.3%
	Others Specify	98	3.7%	33.2%
Total		2654	100.0%	899.7%

Dichotomy group tabulated at value 1.

Table 3.2

Bar Chart

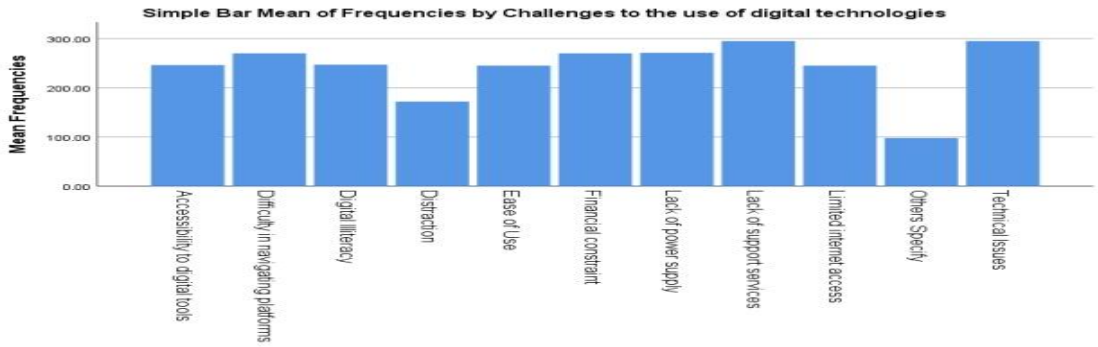


Table 3.3

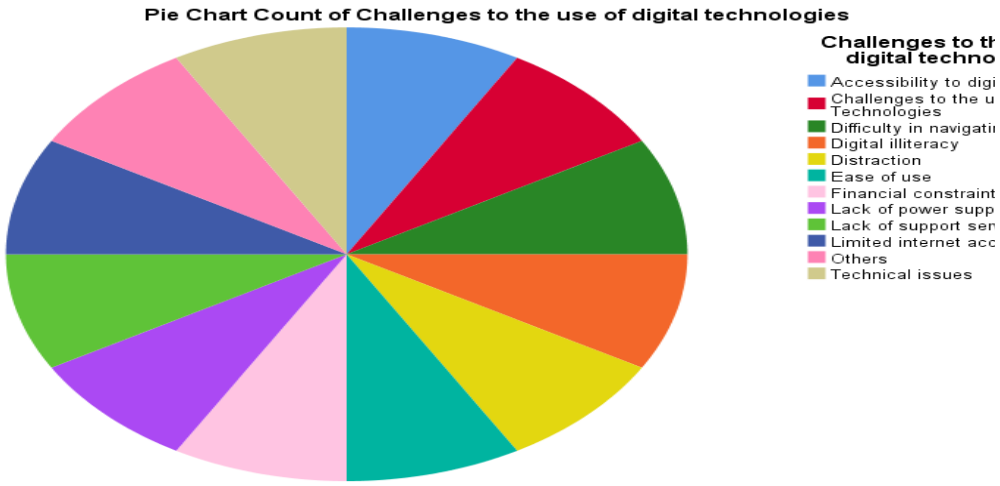


Table 3 showed the challenges to the utilization of digital technologies by sandwich students, most prominent being technical issues (11.1%) and lack of support services (11.1%). It also showed the least challenge as other problems not indicated in the list.

Discussion

The study showed that most commonly used digital technology among sandwich students is Social Media platform with (13.1%), this is followed by Microsoft words (11.9%), Digital Libraries (11.9%) and Mobile Learning App (10.7%). On the other hand, the least in order of usage is online quizzes with (1.2%) followed by Excel (2.4%) and others (3.6%) not indicated in the list. This finding corroborated with researches of Anderson & Dron, (2017) and Means et al, (2014) who observed that the use of digital tools like collaborative software, digital

libraries, and online learning platforms improves students' learning experiences by giving them access to opportunities and resources that are not limited by space or time. Similarly, Social media platform was the most commonly used digital technology probably because of its entertainment feature enjoyed by all and sundry. The least commonly used digital technology seem to be more technical in nature and requires adequate training to master the skills.

It was discovered from the study that sandwich students rarely use digital technologies (65.4%). This finding is in concord with Beetham and Sharpe, (2013) who perceived that utilization of digital technologies by sandwich students' can be affected by institutional, technological, and sociodemographic factors. In other words, there is a high degree of digital illiteracy among sandwich students that can be attributed to lack of institutional assistance and other social factors. Most of the sandwich students are only familiar with the social media platforms in their android phones and are yet to receive training on the use of educational digital tools.

The study indicated challenges to the utilization of digital technologies as technical issues (11.1%), lack of support services (11.1%), difficulty in navigating platforms (10.2%), lack of power supply (10.2%) and financial constraint (10.2%) as the most prominent among other challenges. The least of the challenges include others (3.7%) not indicated in the list followed by distraction (6.5%). Beetham and Sharpe, (2013) affirmed that younger students and those with greater digital literacy are more adept and at ease with digital technologies when compared with older students (adult learners). They equally identified quality of digital resources, support services, and the availability of technological infrastructure as other factors that constitute hitch to the use of digital technologies. Similarly, Tulinayo et al, (2018) noted that students can use technology more effectively when they are trained extensively, given technical assistance and access to high-quality digital materials. In addition, poor power supply inherent in our society coupled with economic hardship all deter the utilization of digital technologies by sandwich students.

Conclusion

- Commonly used digital technologies among sandwich students are social media platforms, digital libraries, Microsoft words and mobile learning app.
- The least digital technology commonly used is online quizzes.
- Sandwich students rarely use digital technologies.
- Prominent challenges to the utilization of digital technologies among sandwich students are technical issues, lack of support services, difficulty in navigating platforms, lack of power supply and financial constraint.
- The least of challenges to the utilization of digital technologies among sandwich students involve others outside the range of the study.

Recommendations

1. University management should provide adequate technological resources to promote technology-enhanced learning
2. Workshop and training should be organized for sandwich students on the use of digital technologies in learning during their contact periods
3. Lecturers should be encouraged to use blended learning strategies in teaching the sandwich students. This will acquaint them with some of the digital tools and skills
4. Provision should be made for student support services and resources for the promotion of digital literacy
5. University management should ensure free internet services and regular power supply during the contact periods of sandwich students.

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