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### EVALUATION OF UNDERGRADUATE STUDENTS' SKILLS FOR ONLINE LEARNING IN NIGERIA

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#### ABSTRACT

The study assessed the relevance of the skills required of undergraduate students towards online learning as well as evaluated the skills possessed by them for online learning. The study employed a descriptive survey research design. The population of the study comprised undergraduate students from the faculties of administration, science, and social science at Obafemi Awolowo University, Nigeria. A simple random sampling method was adopted to select 375 respondents from the faculties. Data were collected using a structured questionnaire that was emailed to respondents and analysed using frequency distribution tables and the chi-square method. The study revealed that personal and technical skills are extremely important for online learning, with average values exceeding the 2.5 standard, indicating that they are required. Also, the students possessed an appreciable number of personal skills that are conducive to online learning. However, students were not well-grounded in technical skills such as good control of database management software, Microsoft Excel, and so on. The study recommends that the university system should implement a hybrid lecture system in which students participate in a blended learning system. Additionally, more technical skill orientations, lectures, seminars, or workshops should be provided to help students improve technical abilities.

#### 1. Introduction

Learning is a necessary component of human life. People learn new things every day to survive in this changing world. This is informal learning in the sense that a person learns new things as he interacts with his environment at any given time (Rogers, 2016). In a formal learning scenario, however, learning begins at home in a cradle structure and continues in school, college, and business (Anekwe, 2017). Learning is a process that causes change as a result of experience, enhancing the possibility of improved performance and future learning (Radha et al., 2020). It is possible for the learner's knowledge, attitude, or behaviour to change. As a result of their

experiences, learners gain new views on concepts, ideas, and/or the world. Learning is something that students do for themselves rather than something that is forced upon them. It has to do with how students understand and react to their experiences.

The learning environment at school provides possibilities for lecturers and students to collaborate on institutional teaching and learning. Various technological gadgets are used in this learning process to make it easier for students to learn. The internet, e-mail, websites, mobile phones, iPods, etc. are examples of advanced technologies (Anekwe, 2017). These cutting-edge technologies can be applied in a variety of ways to provide valuable assistance and are a viable alternative to traditional educational approaches. Virtual learning, or online learning, is a sort of learning that takes place anywhere on the globe without the use of traditional face-to-face instruction.

Online learning is a type of learning that is facilitated by the use of computers and/or the internet, both outside and inside the educational institution's walls. The majority of educational activities are conducted online, with instructors and students separated by physical distance. Educators can now hold live interactive lectures and debates with students (Olukayode, 2015). The goal of online learning is to make it feel like being in a classroom, but with the added benefits of sharing files, getting feedback right away, and being more engaged.

Online learning in Nigeria dates back to the 1930s when some Nigerians were required to complete courses from British universities by correspondence before the first Nigerian university was established. The emphasis on online learning began in 2020 due to the COVID-19 pandemic when all students (from basic to tertiary) were asked to stay home compulsorily to reduce the spread of the virus. At this point, institutions do not have a choice other than to adopt another means to continue with the learning process. Many students and institutions were not prepared for this in terms of skills and technical know-how. Most of the research carried out is based on the readiness and perception of students towards online learning and also the technological infrastructure needed to carry out online learning effectively. However, the skills and technical know-how of students for online learning are completely understudied.

Many students across Nigeria do not have the required knowledge to study online since they were not exposed to it. The study therefore sought to evaluate the skills required of undergraduate students for online learning vis-a-vis the personal skills possessed by the students, which are conducive to online learning. This was with a view to determining the critical skills which students of institutions of higher learning in Nigeria would need to enhance their effectiveness in an online learning environment.

## 2. Literature Review

### 2.1 Online learning development in Nigeria

In the case of Nigeria, the history of the development of e-learning in Nigeria can be traced back to the development of telecommunication, which began in 1886 when colonial masters constructed e-cable links between Lagos and the colonial headquarters in London to transfer information and receive responses (Ajadi, 2008). By 1893, all government offices in Lagos had telephone service for quick communication, feedback, and access; and eventually, telephone service was extended to the rest of the country.

Since 1886, the telecommunications sector has seen several transformations. The provision of telecommunication services was initially monopolised by Nigeria Telecommunication (NITEL) until sometime in the 1990s when the federal government of Nigeria began the liberalisation strategy of the telecommunication business. Initially, four private telephone service providers were licenced to provide General System for Mobile Services: Mtel – NITEL, Econet Now Vmobile, MTN, and Communication Investment Limited – CIL. CIL's licence was eventually cancelled for failing to pay the licencing fee on time, and it was later transferred to Globacom (Glo) Nigeria (Ajadi, 2008). They went on to say that in Nigerian schools, the most common form of e-learning was in the form of lecture notes on CD-ROM, which could be played whenever the learner wanted. The disadvantage of this technique is that the number of students per computer is unappealing when compared to receiving lectures in the classroom. The federal government's e-learning proposal in the education sector was an examination of the possibility of using e-learning as a tool, as part of the federal ministry of education's efforts to improve creation and delivery via ICT, as well as to meet national, regional, and global development goals following the blueprint approved by the federal executive council.

Online learning saves money on transportation and time spent getting to and from school, and even the risk of travelling from one location to another is eliminated. This implies that learners can study from any location where they have access to a computer and the Internet (Oye et al., 2011). Also, learners may work at their own speed using self-paced learning modules, which allow them to manage their time and other resources efficiently and effectively. The ability to participate in conversations in the bulletin board threaded discussion sections at any time and to communicate with classmates and lecturers remotely via chat rooms at any time, which is not possible if it is the traditional mode of learning, where students will have to wait to meet lecturers physically before they ask a question related to what is being taught. Different learning styles are addressed, and learning is facilitated through a variety of activities (Agbele & Oyelade, 2020). The development of computers and the internet abilities that may be applied to various aspects of learners' lives is also assisted. Completing online or computer-based courses increases self-awareness and confidence, as well as encourages students to take responsibility for their learning. Learners might be able to choose learning materials based on their skills and interests.

However, learners who are unmotivated or have bad study habits may fall behind and might not cope well with online learning (Aminu & Rahaman, 2014). Students may feel lonely or lose out on social contact since there is no social interaction among students. Therefore, in this aspect, traditional hands-on classes, for example, might be difficult to duplicate. Some students who are not used to online learning may take some time to adjust to the lack of usual structure and routine. Instructors may not always be accessible on short notice, which may hinder learners' ability to ask questions. Also, slow or unreliable Internet connections can be annoying, and learning software may have a steep learning curve that is hard for people who are just starting out.

## 2.2 Synchronous learning

According to Perveen (2015), synchronous e-learning, on the other hand, refers to learning and teaching that takes place simultaneously via an electronic mode. Synchronous learning systems allow students to communicate in real-time, which can be collaborative such that a lecturer's lecture can be followed by a question-and-answer session. Learners can communicate with the teacher and other participants through synchronous learning (Gang & Takatsuka, 2009; Dhawan, 2020). This is done with software that creates a virtual classroom. Teacher-student and student-student interaction can take place in synchronous voice or text chat rooms. Video conferencing, in addition to chat, enables face-to-face communication. Web conferences can be more interactive than video conferences by using surveys, polls, and question-and-answer sessions (Stanković et al., 2018). In a synchronous virtual classroom, teachers and students communicate and collaborate in real-time. It is similar to a typical classroom in that it uses cameras and class discussion elements, but all participants view it remotely through the Internet.

## 2.3 Asynchronous learning

Asynchronous e-learning is founded on constructivist theory, a learner-centered approach that emphasises the value of peer-to-peer interactions (Shahabadi & Uplane, 2015; Perveen, 2015). Asynchronous learning necessitates the attendance of both students and teachers at the same time, i.e., the students and lecturers have to be present before the asynchronous mode of teaching can take place. Audio and video lectures, handouts, articles, and PowerPoint slides are all easily accessible in asynchronous situations. Asynchronous learning allows students to complete a course at their own speed and in their own time (Chen et al., 2020). Because learners are not timed and can answer at their leisure, asynchronous e-learning is the most widely used approach for online education. Asynchronous e-learning can be difficult since only a well-planned set of methods can keep students engaged and motivated in this type of learning environment to encourage motivation, confidence, involvement, problem-solving, analytical, and higher-order thinking abilities. Furthermore, it is a self-paced system in which students must be self-disciplined to remain engaged.

In addition, there aren't many possibilities for socializing, so students must find methods to network on their own (Perveen, 2015).

## 2.4 Blended learning

Blended learning is an educational strategy that employs a variety of learning modalities. A course, for example, might incorporate eLearning as well as planned sessions for synchronous discussions. Participants, for example, might finish online self-paced classes by a specific date and then meet on-site or online for further learning activities. It broadens the student experience by enabling anytime, anyplace learning and reshapes the instructor's position. Learners benefit more from blended learning because it gives them more ease and flexibility; they can choose their learning pace and learn remotely; and it also gives them a more in-depth understanding of the course content. Also, social learning is encouraged in blended learning because it allows students to engage with lecturers and other students. Blended learning also saves organisations money on face-to-face training expenses like travel, lodging, and printed training materials. Companies can use various eLearning methods, such as webinars, gamification, and so on, to improve learner engagement. It is also simple to keep track of who has and has not completed training.

## 2.5 Hybrid learning

In hybrid learning, students study using a combination of in-person and online activities (Hicks & Patterson, 2017). In-class teaching sessions enable students to learn from one another, whereas online multimedia supplements and encourages classroom conversations. Blended learning and hybrid learning are synonymous. Hybrid learning is most successful before, during, and after class. It is also referred to as web-based learning activities that supplement in-person training. Students are encouraged to spend less time sitting in a classroom listening to lectures and more time exploring online and learning from their classmates. The benefits of hybrid learning include more connections with classmates and teachers, more participation in a course, more flexible scheduling, and an interactive learning environment.

## 2.6 Skills for online learning

Skills are the knowledge or abilities necessary to perform a job or activity (Huang et al., 2019). Having a variety of abilities may help you succeed in many aspects of your life, whether it's school, work, or even a sport or hobby. Skills provide you with confidence and freedom in life, and they are required for success. A talent is an acquired ability to do an activity with predictable consequences and successful execution, often with limited time, energy, or both. Students must have specific skills to learn online successfully (Huang et al., 2019). Some of them are:

- *Persistence*: Students must be able to accept technological issues, seek help when required, work every day in every subject, and persevere through hurdles to be successful

in online learning. When you encounter difficulty, keep trying and asking for assistance. Students must create and stick to a manageable study plan for themselves.

- *Effective time management and communication skills:* **Effective time management and communication skills are required for successful online learning.** Students must be able to manage their time well because lectures are either held in real-time or have no significance, and classrooms have no defined hours. It can also be a disadvantage for a student who spends too much time, is unable to maintain a consistent study plan, or is unable to finish homework without regular reminders.
- *Basic technical skills:* Basic technical abilities, as well as computer skills, are required for online learning. These abilities include the capacity to generate new documents, utilise a word processor, surf the Internet, and download software. School administration must provide orientation for students for online learning to be successful. These generally do not cover the fundamentals of how to utilise the school's learning management system and other online resources. If students lack fundamental computer abilities, they may find an online class challenging.
- *Reading and writing skills:* The capacity to read, comprehend, and interpret written words on a page of an article or other reading material is referred to as a person's reading abilities. When reading, a person with strong reading skills will be able to assimilate a written work in a short length of time. While writing talents are unique qualities that enable authors to convert their thoughts into meaningful words and psychologically connect with the content, the more kids read and write, the more their vocabulary expands and they can communicate concepts properly and effectively with others. In an online class, students can communicate mostly via reading and writing (Huang et al., 2019). Students must also be comfortable reading a large number of papers on a computer screen and be able to write to be successful with online learning.
- *Motivation and independence:* To be successful, an online student must have a strong desire to succeed. Independent learning, personal drive, responsibility, and a certain amount of maturity are all required for online learning. Students' motivation and ability to work on their own will help them be happier with their jobs in the future.

## 2.7 Theoretical framework

The study hinges on constructivism theory. Individuals in social learning situations learn and build knowledge independently by building their own structures depending on the information offered to them (Jones & Brader-Araje, 2002). Constructivists say that learners build knowledge instead of learning new ideas. This means that learning is an activity that happens through learners' experiences and the environment in which they learn (Alanazi, 2016; Dagar & Yadav, 2016; Burhanuddin et al., 2021).

### 3. Methodology

The study employed a descriptive survey research design and primary data was sourced. The population of the study comprised 13,000 undergraduate students from Obafemi Awolowo University. There are thirteen academic faculties in the university, out of which three faculties were selected for the study using a purposive sampling technique. These comprise the faculties of Administration, Science, and Social Sciences. The selected faculties have a total of 17 academic Departments; that is, Administration (4), Science (8), and Social Sciences (5) out of 92 Departments across the Universities, representing an average population of 2,400 undergraduate students. Students in each of the faculties were admitted for courses with a duration of four years each. The target respondents were undergraduate students from 200 level and above who must have completed an academic session prior the pandemic year. This condition was to ensure that respondents had participated both in the traditional face-to-face learning as well as online learning, which was warranted by Covid-19.

A simple random sampling method was adopted for sample selection to provide an equal chance for each of the students in the selected faculties to participate in the survey. This was implemented with the use of an online Google form which was sent to the email of the students in the sampled faculties, and respondents were asked to indicate the faculties they belong to and complete the questionnaire. This platform was used because it enables respondents to complete the questionnaire only once by using their email account. This invariably prevents survey participants from filling out the form twice. A total of 375 respondents completed the questionnaire and submitted it through their student email. This represented about 16% of the student population in the sampled faculties.

Data for the study was gathered through the administration of a structured questionnaire to the respondents. The questionnaires were specifically designed to capture socio-demographic characteristics information of the respondents; to determine the required skills of undergraduate students for online learning; to identify the skills possessed by undergraduates in an online learning environment; and to capture the factors that influence online learning, comprising technology, flexibility, course design, etc., using Likert scale measurement (five-point rating scales). Data was analysed using tables of frequency distribution and the chi-square method.

### 4. Results and Discussion

#### 4.1 Respondents based on their faculties

The survey had a total of 375 responses, with 228 (60.8 percent) from the faculty of administration, 76 (20.3 percent), and 71 (18.9%) from the faculties of Science and Social Science, respectively. As shown in Table 1, 120 respondents are aged 16 to 20, accounting for 32% of total faculty respondents; 194 respondents are aged 21 to 25, accounting for 51.7 percent of total respondents observed; and 57 respondents are aged 26 to 30, accounting for 15.2 percent of total

respondents observed. The respondents are deemed to be mature, and this factor is believed to impact positively on their attitude towards the use of technologies for online learning (Jimoyiannis & Komis, 2007; Eiriemiokhale & Idiedo, 2020).

Table 1. The faculties and the ages of sampled respondents

		Faculty			Total
		<i>Administration</i>	<i>Science</i>	<i>Social science</i>	
Age (years)	Count	67	33	20	120
	16 - 20 % within Age(years)	55.8%	27.5%	16.7%	100.0%
	% within Faculty	29.4%	43.4%	28.2%	32.0%
	Count	123	30	41	194
	21 - 25 % within Age(years)	63.4%	15.5%	21.1%	100.0%
	% within Faculty	53.9%	39.5%	57.7%	51.7%
	Count	36	12	9	57
	26 - 30 % within Age(years)	63.2%	21.1%	15.8%	100.0%
	% within Faculty	15.8%	15.8%	12.7%	15.2%
	Count	2	1	1	4
	Above 30 % within Age(years)	50.0%	25.0%	25.0%	100.0%
	% within Faculty	.9%	1.3%	1.4%	1.1%
Total	Count	228	76	71	375
	% within sampled Faculties	60.8%	20.3%	18.9%	100.0%
	% within Faculty	100.0%	100.0%	100.0%	100.0%

Source: Field Survey, 2022

In addition, four respondents, or 1.1 percent of the total, are over the age of 30. In total, 375 respondents were surveyed for the study. The responders are of legal age at the university, with a minimum age of 16 years, according to the presentation. It also reveals that the majority of the respondents are from the so-called digitally-inclined generation, with those aged 16 to 25 accounting for the majority of the respondents (Stanković et al., 2018). As a result, the first responders have the desire and financial means to learn online.

#### 4.2 Descriptive statistics of the relevance of skills in online learning

Table 2 displays the descriptive statistics of the responses of the respondents in the rating of the relevance of personal and technical skills to online learning. The study employed minimum value, maximum value, the mean, and standard deviation to describe the spread of the responses obtained from the respondents on the mean. The minimum indicates the least option chosen by the respondents from "not relevant," "little relevance," "average relevance," "highly relevant," and "very highly relevant" in that order as indicated in Table 3, while the maximum indicates the highest option obtained on a particular skill from among the available options. The mean value summarised the strength of the responses for each of the skills set out to achieve this objective. The higher the mean

figure to the maximum response scale, the greater the agreement on the relevance of the skill to online learning. Also, the study used a rule of thumb that if the mean value was 2.5 or higher, more people agreed that the skill was important, so it was accepted as important. If the mean value was less than 2.5, more people agreed that the skill was not important, so it was accepted as not important.

The mean and standard deviation, which show the spread of communication skills, were 3.8838 and 0.90259, respectively, with a minimum mark of 1.00 and a maximum mark of 5.00. Many respondents agreed that adaptability to change has huge relevance to online learning, having a mean of 3.9893 and a standard deviation of 0.77037, which shows that the responses were not far from the central value.

The mean and standard deviation on motivation and independence are 4.0027 and 0.84080, respectively, with a minimum mark of 1 and a maximum mark of 5. Time management is a relevant skill with a minimal degree of spread in the responses to it given its average value of 3.98667 and standard deviation of 0.872842 with a minimum response of 2 and a peak of responses of 5. The least relevant response obtained from "learning ability" is that it is relevant a little. However, the responses to it average 4.1760 with a lower degree of spread (0.78486). This shows that the majority of the respondents believed that the best way to learn online is to be able to learn in any situation (Chen et al., 2020).

The analyses further showed that "ability to use word processing" had a mean of 3.9093 and a standard deviation of 0.96311. The results show that it is a skill with average relevance and with a low spread of the percentages of relevance. The responses on the "knowledge of spreadsheet" had a mean of 3.6533 and a standard deviation of 1.08087, with a minimum of 1 and a maximum of 5. This shows that 'knowledge of spreadsheets' is a highly relevant skill but with a strong spread of responses (Dania et al., 2019).

Furthermore, the result shows that the frequency of responses on "knowledge of database management" averages 3.5813 and has a degree of spread of 1.10331. These results show that even though the skill is relevant, the responses are widely scattered around the mean. 'Expertise in email software' was also seen as a relevant skill to online learning, having produced a mean of 3.8453 and a mildly varying degree of responses (0.99870). Lastly, the ability to use the search engine had a mean and standard deviation of 3.9713 and 0.97624, respectively, and had a minimum of 1 and a maximum of 5. This shows that it is a useful skill and that people's opinions about it do not vary much.

Table 2. Descriptive statistics of skills relevant to online learning

	N	Minimum	Maximum	Mean	Std. Deviation
Communication	375	1.00	5.00	3.8880	.91817
Adaptability to change	375	1.00	5.00	3.9893	.77037
Motivation and independence	375	1.00	5.00	4.0027	.84808
Time management	375	1.00	5.00	3.9867	.87284
Learning ability	375	2.00	5.00	4.1760	.78486
Ability to use word processing software	375	1.00	5.00	3.9093	.96311
Knowledge of spreadsheet (MS-Excel)	375	1.00	5.00	3.6533	1.08087
Knowledge of database management (MS-Access and PowerPoint)	375	1.00	5.00	3.5813	1.10331
Expertise in email software (Zoom and Google Classroom)	375	1.00	5.00	3.8453	.99870
Ability to use search engine	375	1.00	5.00	3.9173	.97624
Valid N (listwise)	375				

Source: Field Survey, 2022

Table 3. Relevance of personal and technical skills to online learning

Variables	Not relevant		Little relevance		Average relevance		Highly relevant		Very highly relevant		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Communication	5	1.3	21	5.6	88	23.5	158	42.1	103	27.5	375	100
Adaptability to change	1	0.3	12	3.2	71	18.9	197	52.5	94	25.1	375	100
Motivation and independence	3	0.8	17	4.5	65	17.3	181	48.3	109	29.1	375	100
Time management	1	0.3	19	5.1	82	21.9	155	41.3	118	31.5	375	100
Learning ability	-	-	12	3.2	52	13.9	169	45.1	142	37.9	375	100
Ability to use word processing software	7	1.9	27	7.2	69	18.4	162	43.2	110	29.3	375	100
Knowledge of spreadsheet (MS-Excel)	18	4.8	36	9.6	90	24.0	145	38.7	86	22.9	375	100
Knowledge of database management software (MS-Access and PowerPoint)	19	5.1	41	10.9	102	27.2	129	34.4	84	22.4	375	100
Expertise in email software (Zoom and Google classroom)	9	2.4	30	8.0	76	20.3	155	41.3	105	28.0	375	100
Ability to Use Search Engine	9	2.4	20	5.3	81	21.6	148	39.5	117	31.2	375	100

Source: Field Survey, 2022

### 4.3 Undergraduate students' skills for effective learning

This section examines the skills possessed by undergraduate students. These skills are personal and technical skills relevant for effective online learning. This section also observed the cumulative time (in hours) spent weekly on online learning by the students; assessed their degree of assimilation in an online learning environment; determined the preference of respondents for online learning; and tested the relevant hypothesis. The analysis of the skills possessed is done in Table 4.

It was learned from this table that 219 respondents (58.4%) possessed communication; 217 respondents (57.9%) possessed motivation and independence; 237 respondents (63.2%) were said to be adaptable to change; 205 respondents (54.7%) possessed time management; and 229 respondents (61.1%) also possessed learning ability as their skills. Furthermore, 196 respondents (52.3%) could use Microsoft word processing; 148 respondents (39.5%) had knowledge of spreadsheets (MS-excel); 140 respondents (37.3%) had knowledge of database management software (MS-access and PowerPoint); 196 respondents (52.3%) had expertise in email software and online networking (zoom and Google classroom); and 235 respondents (62.3%) could do well on search engines. These findings show that the respondents possess different technical skills, as noted by Erstad (2010). Not all the students possess the same skills. The demonstration of these skills also serve as proof of their positive disposition towards online learning (Lal, 2015; Besser et al., 2020; Eiriemiokhale & Idiedo, 2020). These findings differ a little from those of Coman et al. (2020) in that, while there could be a host of other inhibiting environmental factors, the Nigerian students under study demonstrated possession of personal skills for online learning, unlike their counterparts in Romanian Universities during the global pandemic.

Table 4. Skills possessed by students

		Responses	
		<i>N</i>	<i>Percent</i>
Personal and technical skills possessed by the undergraduate	Personal Skills		
	Communication	219	58.4
	Motivation and independence	217	57.9
	Adaptability to change	237	63.2
	Time management	205	54.7
	Learning ability	229	61.1
	Technical skills		
	Ability to use Microsoft word processing	196	52.3
	Knowledge of spreadsheet (MS-Excel)	148	39.5
	Knowledge of database management software (MS-Access and PowerPoint)	140	37.3
	Expertise in email software and online networking (zoom and Google classroom)	196	52.3
Ability to use search engine	235	62.3	
<b>Total</b>	<b>375</b>	<b>100.0%</b>	

Source: Field Survey, 2022

#### 4.4 Students' cumulative time spent on online learning

The cumulative number of hours spent weekly by the respondents learning online, either for academic purposes or for self-improvement, is displayed in Table 5. The presentation shows 130 respondents (34.7%) spent less than 7 hours learning online; 175 respondents (46.7%) used between 7 and 14 hours of their time to learn online; 40 respondents (10.7%) devoted 15–24 hours of their time to learning weekly; and 30 respondents (8%) spent over 24 hours weekly. This information reveals that all the respondents who learn online do so at a different time. This is consistent with the findings of Chen et al. (2020) since learners could learn at their convenient time and pace.

Table 5. Cumulative time spent on online learning in a week by respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Below 7 hours	130	34.7	34.7	34.7
7 - 14 hours	175	46.7	46.7	81.3
Valid 15 - 24 hours	40	10.7	10.7	92.0
Above 24 hours	30	8.0	8.0	100.0
Total	375	100.0	100.0	

Source: Field Survey, 2022

#### 4.5 Degree of students' assimilation in an online learning environment

The result of the examination of students' assimilation in online learning presented in Table 6 shows that 188 respondents (50.1%) assimilate better in an online learning environment while 187 respondents (49.9%) do not. This shows that 1 out of every 2 students would retain whatever is taught online rapidly and that 1 out of every 2 might have to grapple with the understanding of the online lessons. This could be indicative of individual preference for modes of learning, as found by Yu (2021) and Olayemi et al. (2021).

Table 6. Assimilation in the online learning environment

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	188	50.1	50.1	50.1
Valid No	187	49.9	49.9	100.0
Total	375	100.0	100.0	

Source: Field Survey, 2022

## 5. Conclusion and Recommendations

Since all the skills under the personal and technical skills set observed by the respondents passed the rule of thumb of a mean of 2.5 to be relevant, all the personal and technical skills sets are therefore relevant to online learning by students, despite their varying degrees of relevance. It can also be concluded that students in the faculties of administration, science, and social science

are more equipped with personal skills than technical skills. Technical skills such as the ability to use Microsoft word processing software, basic knowledge of spreadsheets such as Microsoft Excel, and knowledge of database management software such as PowerPoint are still lagging behind among the set of students' technical skills. Students are convenient with both online and physical learning modes. However, more students prefer the latter.

The study recommends that the university system should implement a hybrid lecture system in which students participate in a blended learning system in which students assimilate equally well in both online and offline learning modes. Also, there should be more orientations, lectures, seminars, or workshops on technical skills to help students improve the technical skills they need for their careers.

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