

# DIGITAL LITERACY AND ACADEMIC PERFORMANCE OF UNDERGRADUATES IN FEDERAL UNIVERSITIES IN NORTH CENTRAL, NIGERIA

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**Abstract:** The study investigated digital literacy and academic performance of undergraduates in federal universities in North Central, Nigeria. Three research questions guided the study. The population for this study was 1,189 undergraduates. The sample of the study consists of 238 undergraduates. The study covered 100, 200, 300 and 400 LIS undergraduates in federal universities in North Central, Nigeria. The study employed a correlational research design. The population of the study was 1,189 undergraduates, from which a sample of 238 representing 10% was selected employing the proportionate sampling technique. The questionnaire was the only instrument used for the collection of data. A total of 238 copies of the questionnaire were administered to the respondents, while 224 (94%) copies were retrieved and used to carry out the study. The data collected were analysed using descriptive (frequency, percentage and mean) and inferential (Pearson's product moment coefficient). The criterion mean of 2.50 and 0.05 alpha levels were used to answer the research questions. The findings of the study revealed that the majority (82, 36.6%) of the undergraduates in federal universities in North Central Nigeria are in the Second Class Honour Upper Division which implies that their academic performance is good. The extent to which the undergraduates in federal universities in North Central Nigeria possess digital literacy skills for academic performance is high (Agg.  $\bar{x} = 3.94$ , Crit.  $\bar{x} = 3.00$ ). It was equally found in the study that a significant relationship exists between undergraduates' digital literacy and academic performance [( $r = 0.913$ ,  $P = 0.000$ );  $p < 0.05$ ]. The conclusion was drawn that a high level of digital literacy skills possessed among students suggests a robust capability to leverage technology for academic success. The study recommends among other things that given that the majority of undergraduates are achieving good academic performance (Second Class Honours, Upper Division), it is crucial to continue providing robust academic support systems. This includes offering tutoring services, academic advising, and creating an encouraging academic environment to maintain and further improve these performance levels.

**Keywords:** Digital Literacy; Academic Performance; Undergraduates; Programme

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## 1.0 Introduction

The social and economic development of a country is directly linked with undergraduate students' performance. Undergraduates are students of universities and colleges. They are usually students of first degree, who studied at a university or another higher education provider (Dobbs, 2022). These individuals have finished high school or secondary school learning and have been accepted or admitted into a university or college to study a course of their choice. But in Nigeria, a student is expected to take whole-level exams such as WAEC or NECO, after which he or she applies for the JAMB examination to choose a programme, he or she is expected to sit for the JAMB examination and also take the university POST-UTME examinations to accredit such a student for the undergraduate programme. It is a tertiary entrance procedure that confirms an aspiring undergraduate or O-level graduate to become an undergraduate.

Students' performance plays an important role in producing graduates who will become great leaders and manpower for the country, thus, responsible for the country's economic and social development (Ali et al., 2013). Academic performance plays an important role in an individual's placement, be it in academic institutions or job placement. Due to this, many people are concerned with the ways they can enhance their academic performance. The emphasis on academic performance which is also prevalent worldwide has encouraged many studies about the conditions promoting it. The role of academic performance as one of the predictors of one's life success and even in the aspect of educational placement in schools to higher institutions as well as the level of employability

in one's career is inevitable (Hoyle, 2008 as cited in Igba, 2017). Academic performance refers to students' achievement of the minimum academic requirements stipulated by the university to complete a module or year of study, hence, Mushtaq and Nawaz Khan (2012) asserted that schools, colleges and universities have no worth without students. Students are the most essential asset for any educational institution. Academic performance is an apparent phenomenon in many developing countries like Nigeria since it is measured in final examinations where success is measured by academic performance or how well students meet standards set out by the institution itself. Students' performance at the level of secondary school has a strong impact on other levels of higher education.

Academic performance is measured in the form of students' performance across different subjects of academic accomplishment, and the display of learning outcomes which can be accessed through performance, classroom tests, assignments, outputs, and major examinations. Chilca (2017) emphasized that students who are actively engaged in the learning process are observed to have a positive correlation with the cumulative grade point average (CGPA). It is also measured with the examination results, which is one of the primary goals of a school. The establishment of a school aims at instilling knowledge, ideas and skills in students which would result in excellent academic achievement. Academic performance is the outcome of education, the degree to which a student, teacher, or institution achieves educational goals.

Students' academic performance refers to the enhancement of the student's current state of knowledge and skills reflected in their grade point average (GPA) and also in the formulation of their personality and academic growth from lower levels of study to higher levels (Basri *et al.*, 2018). This is commonly measured through external or internal examination as well as continuous assessment in the form of tests, assignments, projects, and debates, practical as well as term papers. Two forms of evaluations are used to assess students' academic performance: formative and summative evaluations. Continuous assessment is a form of formative evaluation of students' academic performance that provides early indications of the performance of students while the summative provides information on students' academic performance at the end of each semester/session. The essence is to provide remedial opportunities for those who did not perform well in the test. Continuous assessment also provides students with information that can be used to improve their academic achievement. The academic performance aims to achieve educational objectives or adequate learning outcomes (Lamas, 2015).

Academic performance is seen as the degree to which a learner benefits from instruction in any area of learning. It is a reflection of the extent to which skills and knowledge have been imparted to the undergraduates. For an undergraduate to progress in the university, there is a need to pass all the examinations that would be conducted. Undergraduates are assessed on their academic performance based on their CGPA. This determines how the undergraduates are performing academically for the period (Plant *et al.*, 2005). Cumulative Grade Point Average (CGPA) is very important to undergraduates because it is among the major factors considered for recruiting fresh graduates. Undergraduates need to put in great effort in their studies to obtain good grades to fulfil the demand. Performance varies according to circumstances, organic and environmental conditions that determine skills and experience (Lamas, 2015). The varying has resulted in the foregoing instigating many research papers on academic performance especially in higher education. The academic performance of students in Nigeria has therefore become a source of concern to parties involved in the delivery of quality education. As a result, practitioners and researchers have concluded that the standard of education is falling in Nigeria (Bamidele, 2013). Low enrolment contributes to an acclaimed fallen standard of education. According to Aina and Adedo (2013), lack of trained school personnel, inadequate instructional materials/resources for teaching as well as textbooks written in a language that is not easily comprehended by students are causes of low enrolment in schools. It should be delivered with instructional materials that explain the concepts to students in a simple and step-by-step presentation. When students cannot link what they are being taught with practical experiences, it brings about low interest in that subject which is manifested in their poor academic performance. When students' interest is captured, learning becomes very easy (Aina & Adedo, 2013).

## **2.0 Statement of the Problem**

The academic performance of students is a crucial determinant of their success and the overall quality of the education system. Academic performance, typically measured by grades, examination scores, and overall GPA, serves as a key indicator of a student's comprehension, skill level, and readiness for future professional and personal challenges. The significance of academic performance extends beyond the individual student, impacting the school system and society at large. For students, strong academic performance opens doors to further educational opportunities, better job prospects, and enhanced personal development. For the school system, high student performance can enhance the institution's reputation, attract better funding, and improve educational standards. Societally, well-educated individuals contribute to economic growth, social stability, and innovation.

Despite the fundamental role of students' academic performance in the school system, to students and the society at large, preliminary investigation by the researcher from literature consulted such as that of Ofole and Okopi (2012), interaction with lecturers and undergraduates revealed that the current state of student performance in Nigerian universities, particularly in the North Central region, presents concerns. Many students struggle with foundational knowledge and skills, which is exacerbated by inadequate teaching methods and learning resources. Additionally, the 2019 report by the National Universities Commission (NUC) highlighted that only a fraction of undergraduates achieved first-class or second-class upper honours, with many falling into lower categories or failing to complete their studies.

More so, studies have revealed that several factors have been identified as contributing to this decline. One prominent issue is the lack of digital literacy among students, which is crucial for accessing educational resources, participating in online learning, and conducting academic research. Studies by Adomi and Kpangban (2010) and Okebukola (2015) reveal that many students in Nigerian universities lack basic digital skills, which hinders their ability to engage with modern educational tools and platforms.

To address this issue, several solutions have been proposed. Improving digital infrastructure in universities is critical. This includes investing in high-speed internet, modern computer labs, and comprehensive ICT support services. Additionally, integrating digital literacy training into the university curriculum can help students develop essential skills. Workshops, seminars, and online courses focusing on digital tools and resources can provide practical knowledge and hands-on experience. It is against this background that this study was set out to investigate digital literacy and academic performance of undergraduates in Federal Universities in North Central, Nigeria.

### **3.0 Research questions.**

The following research questions were raised for the study:

1. What is the academic performance of LIS undergraduates in federal universities in North Central, Nigeria?
2. To what extent do LIS undergraduates possess digital literacy for academic performance?
3. What is the relationship between digital literacy and the academic performance of undergraduates?

### **4.0 Literature Review**

Academic performance plays an important role in an individual's placement, be it in academic institutions or job placement. Due to this, many people are concerned with the ways they can enhance their academic achievement. The emphasis on academic excellence, prevalent worldwide, has generated many studies on the subject. The role of academic performance as one of the predictors of one's life success and even in the aspect of educational placement in schools to higher institutions as well as the level of employability in one's career is inevitable (kyoshaba, 2009). Academic performance, which is measured by the examination results, is one of the primary goals of a school. Hoyle (2008) argued that schools are established to impart knowledge and skills to those who go through them and behind all this is the idea of enhancing excellent academic achievement. Academic achievement or achievement is the outcome of education, the degree to which a student, teacher or institution has achieved their educational goals. Educational attainment is regulated through tests or continuous evaluation, but there is no consensus on the optimal time to do so and the relevant components to test procedural knowledge or declarative learning Hoyle (2008). It appears that home media technology has affected university undergraduates' academic achievement since most of them spend their time in watching television and videos.

As society evolved because of technology, undergraduates must have digital skills to operate and function effectively. Digital literacy comprises a set of competencies needed for participation in the knowledge society of the 21<sup>st</sup> Century (Oalere & Opeyemi, 2022). Digital literacy is the ability to seek, analyse, and appraise the information obtained, as well as the possession of modern information technology for work and life (Kolykhmatov, 2018). It is the skill to communicate and obtain information in a culture where digital technologies like internet platforms, social media, and mobile devices are used more frequently (Western Sydney University, 2022). Digital literacy, according to Okeji *et al.* (2020) has to do with the ability to understand information and perform tasks digitally in a digital environment. It includes skills and knowledge crucial to their daily life within multiple industries, professions and careers in this 21st Century.

In recent years, home media such as television, radio, and computers have been used extensively for various reasons by large user groups. University undergraduates use TV, radio, and computers for entertainment, communication, and education, among others. Over the past few years, due to improvements in technology, television, radio, and computers and other similar technologies have become cheaper and more sophisticated. That is why households are both able and willing to buy TV, radio, and computers for their children. They expect to give them the chance to become advanced television, radio, and computers users Erhan (2011) and Lauman (2010)

stated that not only is the number of computers in education growing exponentially, but also the number of Mobile phones, Smart Phones, Palmtops, Laptops, iPhones, Wikis (online databases), Mass shared storage devices, Lecture CDs DVDs, Flash disks, Wi-Fi SD cards, Portable TV Recorders, Webcams, Handheld projectors, eBook Readers, television, radio, and computers in the home is growing at a rapid rate. Despite the increase in the number of TV, radio, and networks and other related technologies, everyone does not have the same entry to these techniques: Media availability alters depending on such matters as child's age, gender, class/ethnicity, family socioeconomic state, and so forth (Erhan & Okan, 2011). The economic level of the countries might also influence the availability of media for university undergraduates either at school or home.

According to Antoninis and Montoya (2018), digital literacy abilities include the ability to browse, search for information, filter it, create digital content, evaluate it, manage data, communicate with others, and collaborate. These involve interacting and sharing using digital technologies and engaging in citizenship through digital technology. It entails using smartphones, tablets, laptops, and desktop computers effectively for advocacy, cooperation, and communication. Access to digital information in various formats has been made possible by this. Digital literacy is generally defined as the ability to utilise information and communication technologies in learning (Maphosa & Bhebhe, 2019). However, students' access to digital tools and resources revealed poor use of technology during the educational process (Kaeophanuek *et al.*, 2018). Digital literacy means the ability to use technology competently, interpret and understand digital content and assess its credibility, create, research, and communicate with appropriate tools. Fostering digital literacy skills is crucial for ensuring digital inclusion and resolving inequities related to the digital divide (Tate & Warschauer, 2017; Kumpulainen *et al.*, 2020). The ability of people to use digital media for meaningful and responsible social activities is now a key concern in discussions about the digital divide, which are no longer limited to technology or the Internet (Tate & Warschauer, 2017). According to Wikipedia (2015), digital literacy is the knowledge, skills, and behaviours used in a broad range of digital devices such as smartphones, tablets, laptops and desktop PCs, all of which are seen as network rather than computing devices. Digital skill is a person's competence in the application of information technology (I.T), which are divided into general (applied in everyday life, like searching for information on the Internet, using office software, data analyzing and processing software, etc.) and professional (needed to create I.T. services and resources) and complementary, which are a blend of the first two types (like using social network and other digital messengers for work, etc.) (Kolykhmatov, 2018; Gilmanova, 2018). Digital literacy skill is a more contemporary term but is limited to practical abilities in using digital devices (such as laptops and smartphones). Forms of high literacy mastery are the ability to collaborate, critical thinking, creativity and communication skill (Briandana & Dwityas, 2019). Digital literacy necessitates knowledge of how to find and use information as well as critical thinking abilities, according to the American Library Association Literacy Clearing House (2022).

For undergraduates to enjoy the benefit provided by electronic database resources, undergraduates need a composite skill which is referred to as digital literacy skills. This skill will help them to acquire information literacy skill, media literacy skill, and ICT literacy. All these skills will enable them to connecting to library database resources. Digital literacy skill is vital to enhance their confidence in use of electronic databases in the library (Greene *et al.*, 2018). Therefore, digital literacy skill is necessary for retrieval of relevant and up-to-date information for student's work. Undergraduates therefore need skills such as, informational literacy skills, ICT literacy and media literacy skills for speedy retrieval of the exact information needed from electronic resources. Similarly, Kim *et al.* (2019) emphasized that students need strong digital skills to perform academic work and commit to involvement in the context of academic learning in university e-learning environments.

Academic performance of an undergraduate in this century depends on his/her digital literacy skills to identify the credible information on the internet. Information and Communication Technology pervades all sectors of human endeavour (Adeoye & Adeoye, 2017). Students are expected to take advantage of the opportunities that exist in the vicinity of creating their own businesses after graduation as well as a lecture, it is necessary to note the skill of digital literacy of students in participating in entrepreneurship courses so that later they were able to compete and take the benefits of the digital age (Rahmi & Cerya, 2019).

A commonly used definition is the 'confident and critical use of ICT for work, leisure, learning and communication' (European Commission, 2012). The ability to demonstrate digital literacy skills is a key requirement for graduates, Digital literacy skills are particularly important in work-based learning programmes leading to professional qualifications. As learning designers, we need to understand how to engage students in learning materials so that they will meet their qualification requirements sufficient digital literacy skills enrich students to have creative and critical thinking, which in the future they will not be easily ingested by provocative issues, be avoided from victims of hoax or digital-based fraud. Digital literacy skills are not just the ability to locate and manage information, but also dealing with information research and integration (Greene *et al.*, 2018). Digital literacy skills can be seen from the skills and knowledge to use the application of digital media software and hardware; The ability to comprehensively understand digital media content; and most importantly is the ability



to use digital technology creatively to produce works (Nelson *et al.*, 2011). Therefore, in the digital era today, the improvement of digital literacy skills of students should continue to be pursued by diversifying various models and instructional media.

Digital literacy has a positive influence on students' skills that are essential for successful learning. Our environment is surrounded by digital technology. The enormous digital content resources are more easily accessed than traditional, paper-based resources for learning. Modern companies and organizations use computers to replace employees performing routine physical and cognitive tasks. Computers also assist employees who perform non-routine problem-solving tasks. Companies require employees to apply ICT in the workplace for communication, information sharing, and simulation of business processes. Students who do not have strong digital literacy may face poor academic performance and fewer employment opportunities. In Indonesia, the people of Indonesia have not yet achieved digital literacy proficiency. The implementation of comprehension of reading material and the capacity to make positive reading has not been successful (Wardhani, Hesti, & Dwityas, 2019). The challenge that universities face today is to embed digital literacy in the education system. Undergraduates will become workers who acquire not only knowledge but also technology skills to perform their jobs effectively.

### 5.0 Methodology

The research design employed is correlational research, specifically utilizing the survey design method. This approach allows for the examination of associations between two or more variables without attributing the effect of one variable to another (Salkind as cited in Ogbomo, 2012). This design is appropriate for this study as it tends to determine the academic performance of LIS undergraduates and the extent to which LIS undergraduates possess digital literacy for academic performance in federal universities in North Central, Nigeria. The study covered 100, 200, 300 and 400 LIS undergraduates in federal universities in North Central, Nigeria. The population for this study was 1,189 undergraduates. The sample of the study consists of 238 undergraduate students from different federal universities located in the North Central region of Nigeria, employing the proportionate sampling technique. The instrument used in collecting data was a questionnaire. Data generated were analysed using descriptive statistics such as frequency, percentage, mean, and Pearson Product Moment Correlation (PPMC).

### 6.0 Results

**Research question one:** What is the academic performance of LIS undergraduates in federal universities in North Central, Nigeria?

**Table 1: Academic Performance of the Undergraduates**

Academic Performance	Frequency	Percentage
4.50 – 5.00 - 1 <sup>st</sup> (First Class Honour)	74	33.0
3. 50 – 4.49 - 2 <sup>nd</sup> (Second Class Honour Upper division)	82	36.6
2. 40 –3.49 – 2 <sup>nd</sup> (Second Class Honour Lower division)	53	23.7
1.50 –2. 39 –3 <sup>rd</sup> (Third Class Honour)	15	6.7
Total	224	100.0

Table 1 shows that there are 82 (36.6%) of the undergraduates within 3.50–4.49 (Second Class Honour Upper Division), 74 (33.0%) within 4.50-5.00 (First Class Honour), 53 (23.7%) within 2.40–3.49 (Second Class Honour Lower Division), and 15 (6.7%) within 1.50–2.39 (Third Class Honour). This means that the majority of the undergraduates in federal universities in North Central Nigeria who participated in this study are in the “Second Class Honour Upper Division,” which implies that their academic performance is good.

**Research Question Two:** To what extent do LIS undergraduates possess digital literacy for academic performance?

**Table 2: Extent of Undergraduates Possession of Digital Literacy for Academic Performance**

S/N	Statement	VH	H	MH	L	VL	$\bar{x}$	St.d
1	I can scan/skim a web page to get to the key relevant information quickly.	77	83	20	32	12	3.81	1.21
2	I can use computer networks.	108	51	23	30	12	3.95	1.27
3	I possess skills to filter a large number of search result quickly.	90	51	35	36	12	3.76	1.28
4	I know when to change different search strategies.	90	51	31	40	12	3.75	1.30
5	I can engage in online communication.	125	43	25	17	14	4.11	1.24
6	I can share research findings via the Internet.	112	54	20	21	17	4.00	1.29
7	I can manipulate digital media.	99	53	26	29	17	3.84	1.32
8	I can navigate the web to find information.	115	50	21	24	14	4.02	1.27
9	I can easily adapt to new forms of digital technologies.	114	49	21	25	15	3.99	1.29
10	I can interact with colleagues both online and offline.	128	44	22	13	17	4.13	1.26
11	I possess the ability to use ICT to find needed information.	122	45	34	9	14	4.13	1.19
12	I can create digital content with colleagues.	99	54	33	24	14	3.89	1.26
13	I can use Smartphone, Linkedin, slideshare, etc, to collaborate and solve problem.	103	57	25	23	16	3.93	1.28
14	I understand how to create knowledge using devices, tools and platforms.	93	60	18	21	32	3.72	1.44
15	Ability to recognize a need for information resources.	116	51	18	12	27	3.97	1.38
16	Ability to distinguish potentials information resources.	110	54	19	14	28	3.92	1.39
17	I can identify credible information on the internet.	110	58	22	9	25	3.98	1.33
18	Retrieval of relevant and up-to-date information.	113	52	24	11	24	3.98	1.33
19	Ability to construct strategies for locating information	100	63	26	13	22	3.92	1.30
20	Ability to synthesize and build on existing information.	122	47	20	11	24	4.04	1.34
21	Ability to apply and communicate information.	108	55	23	24	14	3.98	1.26
22	Ability to access information resources.	116	45	24	23	16	3.99	1.30
23	Ability to organize information.	109	47	25	26	17	3.92	1.32
24	Ability to evaluate information obtained from different sources.	108	47	21	30	18	3.88	1.35
<b>Grand Mean</b>							<b>3.94</b>	<b>1.27</b>
<b>Criterion Mean</b>							<b>3.00</b>	

From Table 2, with a grand mean of 3.94(Std. = 1.27) which is greater than the criterion mean of 3.00, it can be concluded that the extent to which the undergraduates in federal universities in North Central Nigeria possess digital literacy skills for academic performance is high.

**Research Question Three:** What is the relationship between digital literacy and the academic performance of undergraduates?

**Table 3: Relationship Between Undergraduates' Digital Literacy and Academic Performance**

		Digital Literacy Skills	Academic Performance
Digital Literacy Skills	Pearson Correlation	1	.913**
	Sig. (2-tailed)		.000
	N	224	224
Academic Performance	Pearson Correlation	.913**	1
	Sig. (2-tailed)	.000	
	N	224	224

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From Table 3, the Pearson correlation coefficient (r) yielded 0.913, since the significant value (sig. 2 – tailed) is 0.000 (which is less than 0.05). The null hypothesis is therefore rejected implying that there is a significant relationship between undergraduates' digital literacy and academic performance.

### 7.0 Discussion of Findings

The finding of the study revealed that the majority of the undergraduates in federal universities in North Central Nigeria are in the Second Class Honour Upper Division level which implies that their academic performance is good. This finding is at variance with that of Hoyle (2008, as cited in Igba, Sunday & Chika, 2017) finding which affirmed that academic performance is measured by the examination results which is one of the primary goals of a school. Hoyle argued that schools are established to impart knowledge and skills to those who go through them and behind all this is the idea of enhancing excellent academic achievement. This means that the undergraduates showed the relevant information received during their training which in turn expanded their knowledge. The study on undergraduates in federal universities in North Central Nigeria and Hoyle's (2008 as cited in Igba, Sunday & Chika, 2017) research differ due to various factor grading systems. The North Central Nigeria study may reflect current conditions, while Hoyle's findings may not fully capture subsequent developments.

The finding from research question two revealed that the extent to which the undergraduates in federal universities in North Central Nigeria possess digital literacy skills for academic performance is high. This finding conforms with that of Adeoye and Adeoye (2017) which noted that digital literacy is the 'savviness' that allows students to participate meaningfully and safely as digital technology becomes ever more pervasive in society. They further informed that the ability to recognize the need for information resources and choosing the right tool to find information were rated highly by undergraduate students, who expressed great confidence. The finding is also in line with that of Chan (2017); Kurnianingsih and Ismayati (2017) which indicated that digital literacy skills are the ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, to enable constructive social action; and to reflect upon this process.

The finding from research question three shows that there is a significant relationship between digital literacy and the academic performance of the undergraduates in federal universities in North Central Nigeria, implying that an increase in undergraduates' digital literacy may lead to a corresponding increase in their academic performance and vice versa. This finding supports that of Kim *et al.* (2019) which emphasized that students need strong digital skills to perform academic work and commit to involvement in the context of academic learning in university e-learning environments. No wonder Adeoye and Adeoye (2017) informed that the academic performance of an undergraduate in this century depends on his/her digital literacy skills to identify credible information on the internet. From the foregoing, it can be concluded that should be digitally skilled to enable them to perform well academically.

### 8.0 Conclusion

In conclusion, the study demonstrates that the academic performance of undergraduates in federal universities in North Central Nigeria is commendable, with the majority achieving Second Class Honour Upper Division status. Additionally, the high level of digital literacy skills among these students suggests a robust capability to leverage technology for academic success. Furthermore, the significant relationship identified between digital literacy and academic performance emphasizes the critical role that digital competencies play in enhancing students' academic outcomes. Consequently, initiatives aimed at improving digital literacy among undergraduates are likely to have a positive impact on their academic achievements.

### 9.0 Recommendations

Based on the findings of the study "Digital Literacy and Academic Performance of Undergraduates in Federal Universities in North Central, Nigeria," the following recommendations are made:

1. Given that the majority of undergraduates are achieving good academic performance (Second Class Honours, Upper Division), it is crucial to continue providing robust academic support systems. This includes offering tutoring services, academic advising, and creating an encouraging academic environment to maintain and further improve these performance levels.
2. Since undergraduates possess high digital literacy skills for academic performance, universities should expand and enhance their digital literacy training programs. Regular workshops updated digital literacy curricula, and access to the latest digital tools should be provided to ensure students continue to develop and refine their digital skills.
3. Given the significant relationship between digital literacy and academic performance, universities should integrate digital literacy components into the academic curriculum across all disciplines. This can be achieved by embedding digital literacy objectives in course outlines, encouraging the use of digital tools in coursework, and promoting projects that require digital competencies.

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