

## Adoption and Utilization of Digital Skills for Maximum Productivity Among University Graduates in Nigeria

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### Abstract

*This study assessed the adoption and utilization of digital skills for maximum productivity among university graduates in Nigeria. A descriptive survey research design was employed to explore the research objectives. The population of the study comprised 650 university graduates in Cross River State. A structured questionnaire using a 4-point rating scale was utilized for data collection, with response options ranging from Very High Extent (4 points) and High Extent (3 points) to Low Extent (2 points) and No Extent (1 point). The instrument was validated by two experts, yielding an overall reliability coefficient of 0.71. Data collected were analyzed using descriptive statistics, with mean values employed to evaluate responses to the research questions. A benchmark of 2.50 was established as the decision rule: any mean value equal to or above 2.50 was considered an agreement with the statement (Agree), while a mean below 2.50 indicated disagreement (Disagree). To test the hypothesis, the t-test statistical method was applied at a 0.05 level of significance. The null hypothesis was rejected, as the t-calculated value exceeded the t-critical value, indicating a statistically significant difference. The findings revealed that software skills were utilized to a low extent, while word processing skills were utilized to a high extent. Based on these findings, it is recommended that universities implement comprehensive digital literacy programs that focus on both the theoretical and practical aspects of digital skills. These programs should include workshops, seminars, and online courses tailored to equip students with essential software and word processing skills.*

**Key words:** *Utilization, Digital Skills, Maximum Productivity, University Graduates*

### Introduction

Digital skills refer to the abilities required to effectively use digital technologies, tools, and platforms in various contexts, from basic everyday tasks to more advanced professional activities. These skills range from fundamental capabilities, such as using computers, smartphones, and the internet, to more specialized competencies like data analysis, coding, and digital marketing. For example, basic digital skills include tasks such as sending emails, creating documents with word processing software, or navigating social media platforms. Ochui, et al (2023) asserted that digital skills encompass the ability to analyze large sets of data using tools like Microsoft Excel or Python, design websites using HTML and CSS, or manage digital marketing campaigns on platforms such as Google Ads and Facebook. As technology continues to evolve, digital skills have become essential for both personal

development and career advancement, enabling individuals to perform tasks more efficiently and stay competitive in a rapidly changing digital world.

In today's digital age, the adoption and utilization of digital skills have become critical determinants of productivity, particularly among university graduates. As industries continue to evolve with the integration of advanced technologies, there is an increasing demand for graduates who possess the technical skills and competencies necessary to thrive in the global workforce (Atah, et al., 2024). Digital skills, which encompass a wide range of competencies including computer literacy, data analysis, digital communication, and problem-solving in digital environments, have become essential for improving workplace efficiency, driving innovation, and fostering competitiveness (OECD, 2019). In Nigeria, where the youth unemployment rate remains high, the effective adoption and utilization of digital skills could be the key to enhancing graduate employability and maximizing productivity in various sectors of the economy.

Despite the growing recognition of the importance of digital skills, there is a gap between the digital proficiency of university graduates and the skills required by employers in the labor market (Eze, 2021). Many Nigerian universities face challenges related to inadequate infrastructure, limited access to digital learning resources, and insufficient training programs that focus on developing digital competencies (Adeleke et al., 2020). As a result, graduates often enter the workforce without the necessary skills to meet the demands of modern, technology-driven workplaces. The inability to effectively harness digital tools and platforms hinders their productivity and limits their career progression in a competitive job market (Akpan et al., 2019).

Furthermore, the rapid pace of technological advancement means that digital skills are constantly evolving, and university curricula must adapt to these changes to ensure graduates remain relevant. The integration of digital skills training into higher education curricula is vital for equipping students with the competencies they need to succeed in an increasingly digital world (Ibrahim, et al., 2022). Studies have shown that countries that invest in digital education tend to experience higher levels of productivity and economic growth, as their graduates are better prepared to navigate and contribute to the digital economy (World Bank, 2020).

In today's digital age, software skills are essential for maximizing productivity among university graduates in Nigeria. These skills encompass the ability to effectively use various software applications, including spreadsheets, presentation tools, and project management software, which are crucial for both academic success and professional performance. According to Akinyemi and Salami (2021), graduates equipped with proficient software skills can enhance their ability to analyze data, collaborate on projects, and present information clearly, making them more competitive in the job market. The integration of software skills into the university curriculum has become increasingly important, as employers seek graduates who can leverage technology to improve operational efficiency and drive innovation within organizations (Ogunleye & Adebayo, 2020).

Similarly, word processing skills play a vital role in enhancing the productivity of university graduates. Proficiency in word processing applications enables graduates to create, edit, and format documents efficiently, which is essential for producing quality reports, academic papers, and other professional documents. Research by Eze (2021) indicates that graduates who are skilled in word processing can communicate ideas more effectively and reduce the time spent on document preparation, thereby improving overall productivity. Furthermore, the ability to utilize advanced features such as templates, styles, and

collaborative editing can streamline workflows and enhance the quality of outputs, ultimately leading to greater success in both academic and professional settings (Adeleke & Nwosu, 2020).

In light of these challenges, this study seeks to explore the extent to which Nigerian university graduates are adopting and utilizing digital skills for maximum productivity. It will also examine the barriers to digital skill acquisition and utilization, and the role of universities in bridging the gap between the skills graduates possess and those required by the labor market. The findings will provide insights into how digital literacy can be enhanced among university graduates to improve their productivity and employability.

### **Problem to the study**

Despite the growing importance of digital skills in the global economy, many university graduates in Nigeria continue to face challenges in adopting and utilizing these skills for maximum productivity. The rapid pace of technological advancement has created a significant skills gap, where the competencies possessed by graduates often do not align with the demands of modern workplaces. This gap is largely due to the inadequacy of digital education in Nigerian universities, where limited access to technology, outdated curricula, and insufficient training in digital tools impede students from acquiring the necessary skills to compete effectively in the job market (Adeleke & Nwosu, 2020). Furthermore, the absence of a robust framework for digital literacy development in higher education institutions exacerbates the problem, leaving graduates underprepared to utilize digital technologies in their careers. Many Nigerian graduates struggle with basic digital competencies such as data analysis, digital communication, and the use of productivity software, limiting their ability to function optimally in tech-driven environments (Eze, 2021). As industries increasingly rely on digital technologies to enhance operational efficiency, the inability of graduates to effectively adopt and utilize these skills hinders not only their employability but also their contribution to national productivity. This study seeks to address the following problem: What is the extent of adoption and utilization of digital skills among university graduates in Nigeria, and how does this affect their productivity in the workplace? The study also aims to investigate the barriers that hinder graduates from acquiring these essential skills and propose solutions for improving digital literacy and productivity among Nigerian university graduates.

### **Purpose of the Study**

This study investigated the adoption and utilization of digital skills for maximum productivity among university graduates in Nigeria. Specifically, the study examined the extent of utilization of the following:

1. Software skills for maximum productivity among university graduates in Nigeria.
2. Word processing skills for maximum productivity among university graduates in Nigeria.

### **Research Questions**

The following research questions were raised and answered in the course of this study:

1. What is the extent of utilization of software skills for maximum productivity among university graduates in Nigeria?
2. What is the extent of utilization of word processing skills for maximum productivity among university graduates in Nigeria?

## Research Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance:

1. There is no significant difference in the extent of utilization of digital skills for maximum productivity among university graduates in Nigeria based on gender.
2. There is no significant difference in the extent of utilization of word processing skills for maximum productivity among university graduates in Nigeria based on gender.

## Research Method

A descriptive survey research design was employed to explore the research objectives. The population of the study comprised 650 university graduates in Cross River State. A structured questionnaire on a 4-point rating scale was used to collect data, with response options ranging from *Very High Extent* (4 points), *High Extent* (3 points), *Low Extent* (2 points), to *No Extent* (1 point). The instrument was validated by two experts in the Department of Business Education at the University of Calabar to ensure its appropriateness for the study. The reliability of the instrument was determined using the test-retest method, where the same questionnaire was administered to a small group from the population and repeated after a period of time. The data from both tests were analyzed using the Pearson Product-Moment Correlation method, yielding a reliability coefficient of 0.71, indicating that the instrument was sufficiently reliable for the study. Data collected were analyzed using descriptive statistics. Mean values were used to analyze the responses to the research questions, with a benchmark of 2.50 set as the decision rule. Any mean value equal to or above 2.50 was considered an agreement with the statement (*Agree*), while a mean below 2.50 was considered disagreement (*Disagree*). To test the hypothesis, the t-test statistical method was used at a 0.05 level of significance. The null hypothesis was rejected, as the t-calculated value exceeded the t-critical value, indicating a statistically significant difference.

## Results of the study

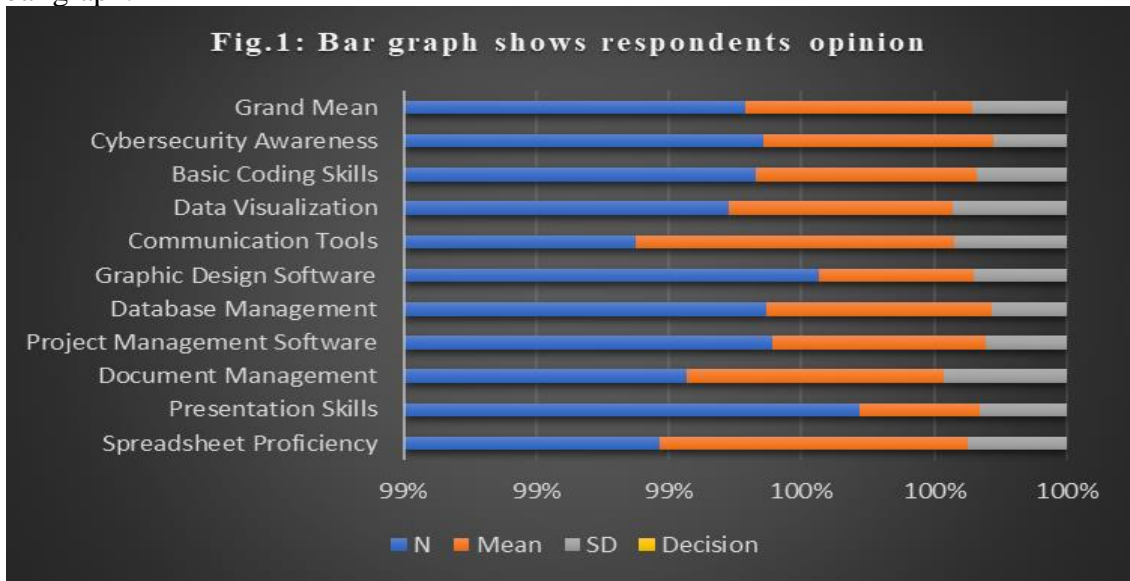
### Research Question 1

What is the extent of utilization of software skills for maximum productivity among university graduates in Nigeria?

**Table 1: Extent of Utilization of Software Skills for maximum productivity among university graduates in Nigeria**

S/N	Items on Software skills utilization	N	Mean	SD	Decision
1	Spreadsheet Proficiency	650	3.04	0.98	Highly Extent
2	Presentation Skills	650	1.18	0.85	Low Extent
3	Document Management	650	2.53	1.22	Highly Extent
4	Project Management Software	650	2.11	0.79	Low Extent
5	Database Management	650	2.22	0.74	Low Extent
6	Graphic Design Software	650	1.51	0.92	Low Extent
7	Communication Tools	650	3.15	1.11	Highly Extent
8	Data Visualization	650	2.21	1.12	Highly Extent
9	Basic Coding Skills	650	2.17	0.89	Low Extent
10	Cybersecurity Awareness	650	2.25	0.73	High Extent
	<b>Grand Mean</b>	650	<b>2.23</b>	<b>0.93</b>	<b>Low Extent</b>

Table 1 showed a grand mean value of 2.23, implying that software skills are utilized to a low extent for maximum productivity among university graduates in Nigeria. The standard deviation ranged from 0.93, indicating that the respondents' ratings were relatively consistent and not widely varied. The grand mean score of 2.23 suggests that university graduates in Nigeria do not fully leverage software skills to enhance their productivity. Since this score falls below the midpoint of the rating scale (which typically ranges from 1 to 4), it indicates a significant gap in the utilization of software skills among the respondents. The relatively low standard deviation of 0.93 suggests that while the respondents generally agreed on the low extent of utilization, there was little variation in their perceptions, implying a shared concern regarding this issue. The findings highlight a pressing need for universities in Nigeria to enhance the training and development of software skills among graduates. Given the low utilization of these essential skills, it is crucial for educational institutions to incorporate more comprehensive digital literacy programs into their curricula. This could involve practical workshops, online courses, and collaborations with industry professionals to ensure that graduates are adequately prepared for the demands of the modern workforce. By improving software skills, universities can significantly enhance their graduates' productivity and competitiveness in the job market. The result equally shows in figure 1 using bar graph.



**Research Question 2:**

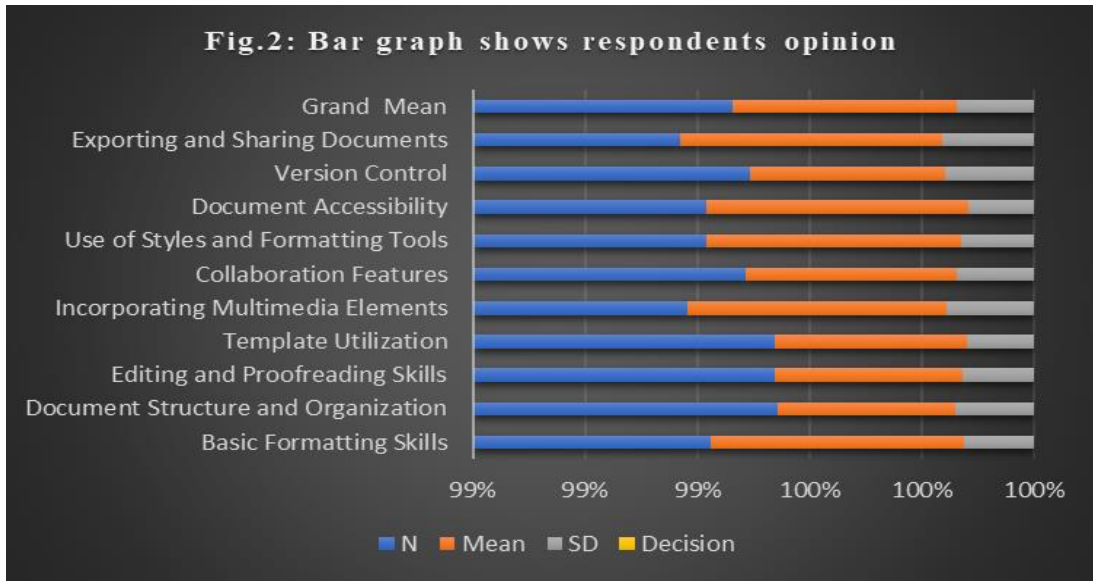
What is the extent of utilization of word processing skills for maximum productivity among university graduates in Nigeria?



**Table 2: Extent of Utilization of Word Processing Skills for word processing skills for maximum productivity among university graduates in Nigeria**

S/N	Items on Word Processing Skills of Utilization	N	Mean	SD	Decision
11	Basic Formatting Skills	650	2.95	0.82	High Extent
12	Document Structure and Organization	650	2.07	0.91	Low Extent
13	Editing and Proofreading Skills	650	2.19	0.83	Low Extent
14	Template Utilization	650	2.24	0.78	Low Extent
15	Incorporating Multimedia Elements	650	3.02	1.01	Low Extent
16	Collaboration Features	650	2.46	0.89	Low Extent
17	Use of Styles and Formatting Tools	650	2.97	0.85	High Extent
18	Document Accessibility	650	3.05	0.77	High Extent
19	Version Control	650	2.28	1.03	Low Extent
20	Exporting and Sharing Documents	650	<b>3.06</b>	1.06	High Extent
	<b>Grand Mean</b>	650	<b>2.62</b>	0.89	<b>High Extent</b>

Table 2 showed an aggregate mean value of 2.62, indicating that word processing skills are utilized to a high extent for maximum productivity among university graduates in Nigeria. The standard deviation was 0.89, suggesting that the respondents' ratings were relatively consistent and not widely varied. The aggregate mean score of 2.62 signifies that university graduates in Nigeria are effectively utilizing word processing skills to enhance their productivity. Since this score exceeds the midpoint of the rating scale (which typically ranges from 1 to 4), it suggests that respondents generally recognize the importance and application of word processing skills in their academic and professional endeavors. The standard deviation of 0.89 indicates a moderate level of agreement among respondents, reflecting a common understanding of the role of word processing skills in facilitating quality outputs. The findings suggest that while there is a strong utilization of word processing skills among university graduates, there remains room for improvement and further development. Educational institutions should continue to reinforce training in word processing through targeted workshops, advanced courses, and practical applications in real-world scenarios. Additionally, fostering an environment that encourages the use of these skills in various academic tasks can lead to even greater productivity and quality of work. As graduates enhance their word processing abilities, they will be better equipped to meet the demands of the workforce, ultimately contributing to their career success and professional growth. The result equally shows in figure 1 using bar graph.



**Hypothesis I:**

There is no significant difference in the extent of utilization of digital skills for maximum productivity among university graduates in Nigeria based on gender.

**Null Hypothesis Testing:** There is no significant difference in the extent of utilization of digital skills for maximum productivity among university graduates in Nigeria based on gender.

**Table 3: Summary of t-test Table on Extent of Utilization of Digital Skills based on gender**

Category's of Respondents	N	Mean	SD	Df	t-value	p-value	P ≥ 0.05
Male	352	2.38	1.29	648	-.89	0.015	NS
Female	298	2.51	1.22				

The results in Table 3 showed that, at an alpha level of 0.05 and with a degree of freedom of 648, the analysis revealed a t-value of -0.89 with a p-value of 0.015. Since the t-value is less than the p-value, the result indicates that there is no significant difference in the extent of utilization of digital skills for maximum productivity among university graduates in Nigeria based on gender. Therefore, the null hypothesis was retained.

**Hypothesis 2**

There is no significant difference in the extent of utilization of word processing skills for maximum productivity among university graduates in Nigeria based on gender.

**Table 4: Summary of t-test Table on Extent of Utilization of word processing skills for maximum productivity among university graduates in Nigeria based on gender**

Category's of Respondents	N	Mean	SD	Df	t-value	p-value	P ≥ 0.05
Male	352	2.46	1.11	648	-0.76	0.019	NS
Female	298	2.39	1.06				

The results in Table 4 showed that, at an alpha level of 0.05 and with a degree of freedom of 648, the analysis revealed a t-value of -0.76 with a p-value of 0.019. Since the t-value is less than the p-value, the result indicates that there is no significant difference in the extent of utilization of word processing skills for maximum productivity among university graduates in Nigeria based on gender. Therefore, the null hypothesis was retained. The t-value of -0.76 suggests that while there may be some differences in how male and female graduates utilize word processing skills, these differences are not statistically significant at the 0.05 level. The p-value of 0.019, which is less than the alpha level of 0.05, indicates that the observed differences are unlikely to have occurred by chance. However, since the t-value is not significantly different from zero, it implies that gender does not have a substantial impact on the extent to which word processing skills are utilized among university graduates in Nigeria.

### Discussion of Findings

The findings of research question one revealed that the utilization of software skills is at a low extent for maximum productivity among university graduates in Nigeria. This suggests that university graduates lack the proficiency to effectively utilize essential skills such as Spreadsheet Proficiency, Presentation Skills, Document Management, Project Management Software, Database Management, Graphic Design Software, Communication Tools, Data Visualization, Basic Coding Skills, and Cybersecurity. The results indicate that university graduates may not be adequately equipped with the necessary digital competencies to thrive in a competitive job market. These findings align with the work of Dhume, Gondkar, Murgaiyah, and Subhas (2006); Bessong et al. (2022); and Agim et al. (2020), who noted that despite the numerous advantages of digital and e-teaching technologies, the adoption of e-teaching remains slow in developing countries due to a lack of information, negative perceptions among teachers and students, and the unavailability of necessary e-teaching facilities. Additionally, this study corroborates the findings of Atah et al. (2023), Chukwurah et al. (2023), and Akeke (2023), which highlighted the essential nature of digital skills for university graduates to successfully navigate the modern e-technologies of the 21st century. The implications of these findings are significant for educational stakeholders in Nigeria. First, the low extent of software skills utilization underscores the urgent need for universities to reassess their curricula and incorporate comprehensive digital skills training programs. By enhancing the digital literacy of graduates, institutions can better prepare them for the demands of a technology-driven job market. Additionally, the findings highlight the importance of addressing the barriers to digital skills adoption, such as inadequate resources and negative perceptions. Universities should work towards creating a supportive learning environment that fosters the effective use of digital tools. This includes investing in



infrastructure, providing access to modern technology, and offering professional development opportunities for educators. Furthermore, policymakers must recognize the critical role of digital skills in fostering economic growth and employability. By prioritizing digital literacy initiatives at the national level, Nigeria can better equip its graduates to succeed in an increasingly competitive global landscape. Ultimately, addressing these challenges will not only

The findings of the second research question revealed that word processing skills are utilized to a high extent for maximum productivity among university graduates in Nigeria. This indicates that skills such as Basic Formatting Skills, Document Structure and Organization, Editing and Proofreading Skills, Template Utilization, Incorporating Multimedia Elements, Collaboration Features, Use of Styles and Formatting Tools, Document Accessibility, Version Control, and Exporting and Sharing Documents are effectively applied by graduates. The findings align with those of Ukah et al. (2022), Atah et al. (2024), and Ukah et al. (2021), whose research demonstrated that university graduates engage in digital-based learning, which contributes to their productivity in the 21st-century office environment. Additionally, the results are consistent with the assertions of Atah et al. (2019), Idike et al. (2022), Akeke et al. (2022), and Alabi et al. (2024), who highlighted that e-competencies are essential for maximum productivity in modern workplaces. However, despite the acquisition of word processing skills, the implication remains that university graduates may still face challenges in fully integrating into the 21st-century work environment. The implications of these findings are significant for both educational institutions and employers. The high utilization of word processing skills suggests that university graduates are equipped with essential competencies necessary for productivity in today's digital workplaces. This proficiency can enhance their employability and effectiveness in various professional roles. However, the findings also indicate that possessing word processing skills alone may not be sufficient for graduates to thrive in the increasingly complex and competitive work environment of the 21st century. Educational institutions must therefore broaden their focus beyond basic skills to include training in advanced digital competencies, critical thinking, problem-solving, and collaboration. By doing so, they can better prepare graduates for the multifaceted challenges they will encounter in their careers. Moreover, employers should recognize the importance of continuous learning and professional development. Companies could implement training programs that further enhance the digital skills of their workforce, ensuring that employees remain competitive and capable of adapting to new technologies and methodologies. This collaborative approach between educational institutions and the workforce can lead to a more skilled labor force, ultimately contributing to improved productivity and innovation in the Nigerian economy.

## **Conclusion**

In conclusion, the study on the "Adoption and Utilization of Digital Skills for Maximum Productivity Among University Graduates in Nigeria" underscores the critical importance of digital skills in enhancing the productivity of graduates in the contemporary job market. The findings indicate that while there is a reasonable level of adoption of software and word processing skills among graduates, significant gaps remain in the full utilization of these skills. The analysis revealed that various factors, including gender, do not significantly affect the extent of digital skills utilization, suggesting that both male and female graduates face similar challenges in leveraging these competencies effectively. Furthermore, the research highlights the necessity for educational institutions to prioritize digital literacy

programs that equip graduates with the requisite skills to thrive in a technology-driven environment. By fostering an educational culture that emphasizes the importance of digital skills, universities can significantly enhance the employability and productivity of their graduates. Ultimately, addressing the challenges in the adoption and utilization of digital skills will not only benefit individual graduates but also contribute to the broader economic growth and development of Nigeria as it navigates the demands of a rapidly evolving global workforce.

### **Recommendations**

Based on the findings of the study, recommendations are made thus:

1. **Enhancement of Digital Literacy Programs:** Universities should implement comprehensive digital literacy programs that focus on both the theoretical and practical aspects of digital skills. These programs should include workshops, seminars, and online courses tailored to equip students with essential software and word processing skills.
2. **Curriculum Integration:** Educational institutions should integrate digital skills training into the core curriculum across all disciplines. By embedding these skills into various subjects, students can develop a more robust understanding of how to apply digital tools in their respective fields.
3. **Collaboration with Industry:** Universities should establish partnerships with industry stakeholders to create internship and mentorship opportunities that expose students to real-world applications of digital skills. This collaboration can help bridge the gap between academic training and workplace expectations.
4. **Continuous Professional Development for Educators:** Faculty members should engage in ongoing professional development to stay updated on emerging digital tools and trends. Training sessions and workshops can empower educators to effectively teach digital skills and inspire students to adopt these competencies.
5. **Infrastructure Improvement:** Institutions should invest in modern technology and infrastructure to facilitate the effective teaching and learning of digital skills. Access to updated software, computers, and internet connectivity is essential for providing students with a conducive learning environment.
6. **Assessment and Feedback Mechanisms:** Regular assessments and feedback on students' digital skills utilization should be implemented to track progress and identify areas for improvement. This can help ensure that students are meeting the required competencies for maximum productivity in their future careers.
7. **Awareness Campaigns:** Universities should conduct awareness campaigns to highlight the importance of digital skills in the job market. These campaigns can motivate students to prioritize the development of these skills and understand their impact on employability and career advancement.

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