



## **Bridging the ICT Skills Gap: Assessing Job Readiness of Office Technology Graduates in the Contemporary Workforce**

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### **Abstract**

The rapid advancement of Information and Communication Technology (ICT) has profoundly transformed workplace practices, underscoring the need for graduates to acquire current and practical digital skills. This study investigates the disparity between the ICT competencies imparted to Office Technology graduates in higher institutions and the skill sets demanded by employers. The study population consisted of 300 graduates and 50 employers. A quantitative research design was employed, focusing on two key objectives and related research questions. Data were collected through structured questionnaires administered to a sample size of 100 graduates and 50 employers, with instrument reliability confirmed by a Cronbach's Alpha coefficient of 0.88. Descriptive statistics, including means and standard deviations, were used for analysis. Findings revealed a significant mismatch between academic ICT training and the technological requirements of modern offices, particularly in areas such as digital communication, database management, and office automation systems. Contributing factors include curriculum deficiencies, institutional limitations, and inadequate infrastructure. The study recommends curriculum review, stronger collaboration with industry stakeholders, and continuous professional development initiatives as strategies for equipping graduates with relevant ICT competencies for the dynamic workforce.

**Keywords:** ICT Competency, Employability, Office Technology Education, skills gap, Job readiness, workplace, and Digital literacy

### **Introduction**

Information and Communication Technology (ICT) has emerged as a cornerstone of economic growth and workplace transformation in the 21st century. ICT, defined as the broad range of communication devices, software, services, and applications (Margaret, 2019), has become indispensable across industries, driving productivity, communication, and innovation. The increasing digitalization of work processes has raised expectations for graduates, who must demonstrate proficiency in modern digital tools and problem-solving competencies aligned with organizational demands.

The World Economic Forum (2023) highlights that employability in today's workforce increasingly requires digital fluency, including cloud-based applications, data analytics, and virtual collaboration. Yet, many graduates fall short of these expectations. Nwachukwu and Olayemi (2022) found that only 35% of Office Technology graduates in Nigeria met employers' ICT skill requirements within their first year

of employment. Similarly, Oduro and Adu (2021) reported that polytechnic students in West Africa struggle with enterprise systems and collaborative platforms despite basic computer literacy. Nwosu (2020) attributed these shortcomings to outdated curricula that emphasize obsolete office technologies, compounded by infrastructural deficiencies and weak industry-academia collaboration.

The Nigerian case reflects a broader global concern regarding the mismatch between academic preparation and labor market needs. UNESCO (2018) stressed digital literacy as a core employability skill, while the International Labour Organisation (2021) emphasized that employers increasingly demand a blend of technical and soft skills, including adaptability and teamwork. Unfortunately, many Office Technology programs fail to keep pace with these demands, leaving graduates underprepared for the realities of the digital economy.

In this context, the persistent ICT skills gap poses a two-fold problem: it undermines graduate employability and reduces organizational productivity. Employers consistently identify weaknesses in database management, digital communication, and virtual collaboration skills among graduates, raising questions about curriculum relevance, quality of instruction, and adequacy of experiential learning opportunities. Okafor and Ugwuanyi (2020) observed that Nigerian tertiary institutions remain misaligned with industry needs, while Okwuanaso (2019) directly linked unemployment to inadequate ICT skills in spreadsheet and database applications.

This study, therefore, seeks to bridge this gap by examining the ICT competencies of Office Technology graduates, identifying deficiencies, and analyzing their implications for job readiness. Specifically, it investigates the essential ICT competencies required in contemporary offices and the root causes of observed skill gaps. By situating findings within the existing literature and drawing on empirical evidence from Federal Polytechnic Nasarawa, the study aims to provide actionable recommendations for curriculum reform, institutional development, and industry-academia collaboration.

### Aims and Objectives

The primary aim of this study is to examine ICT skill deficiencies among Office Technology graduates and their implications for job readiness in the modern workplace.

### Specific Objectives:

1. To identify essential ICT competencies required in contemporary office environments.
2. To investigate the root causes of ICT skill gaps among all graduates.

### Methodology

The study adopted a descriptive survey research design to evaluate the ICT competencies of Office Technology graduates and perceptions of employers regarding their job readiness. The population consisted of 300 graduates, from which 100 were selected using stratified sampling while 50 employers were purposively chosen for their supervisory experience. Data were collected using a structured questionnaire divided into two sections: one measuring graduates' ICT competencies and the other assessing employers' perceptions. Responses were rated on a five-point Likert scale. Validity of the instrument was ensured through expert reviews, and a Cronbach's Alpha coefficient of 0.88 confirmed its reliability. The questionnaire were administered in physical yielding a 94.6% responses rate. Data analysis employed descriptive statistics including percentages, means, and standard deviations. A decision rule was applied as follows: for objective one, (Graduates' ICT Competencies): mean scores of 3.0 and above indicate proficiency, while scores below 3.0 denoted non-proficiency. For objective two (Employers' Perceptions): mean scores of 3.0 and above reflected agreement that graduates possessed adequate ICT skills and job readiness, while scores below 3.0 signified disagreement.

### Results

**Table 1: Graduate ICT Skill Proficiency (N = 100)**

ICT Skill	Very Proficient	Proficient	Not Proficient	Mean Score
MS Word	70%	25%	5%	4.4
MS Excel	30%	40%	30%	3.1
PowerPoint	60%	30%	10%	4.0
Email Communication	50%	35%	15%	3.8
Database Management	20%	35%	45%	2.6
Virtual Collaboration Tools	25%	40%	35%	2.9

As presented in Table 1, the findings reveal a clear divide between graduates' mastery of traditional office applications and their competence in advanced or emerging technologies. Skills in MS Word (M= 4.4) and Power Point (M= 4.0) recorded the highest levels of proficiency, with over 90% of respondents rating themselves either very proficient or proficient. This suggest that Office Technology programs have adequately prepared graduates in conventional productivity tools that remain central to clerical and administrative tasks. In proficiency in MS Excel (M= 3.1) and Email Communication (M = 3.8) was moderate. While most respondents reported some competence in these areas, the relatively lower mean scores and higher percentages of students who were not

proficient- particularly in Excel (30%) signal a lack of mastery of advanced spreadsheet functions and professional digital communication practices. The most concerning deficiencies were found in Database Management (M= 2.6) and Virtual Collaboration Tools (M=2.9), where close to half of the graduates indicated they were not proficient. These findings are particularly significant because database systems underpin modern information management, and virtual collaboration platforms. (e.g., Microsoft Teams, Zoom, Slack) have become indispensable in today's remote and hybrid work environments. The low proficiency levels in these areas underscore a mismatch between the graduates training and the digital demands of the workplace.

**Table 2: Factors Contributing to the ICT Skills Gap**

Item	Factor	Mean	SD	Verdict
1	Unqualified lecturers	2.92	0.42	Rejected
2	Lack of motivation by lecturers	2.90	0.41	Rejected
3	Inadequate equipment	3.16	0.61	Accepted
4	Poor equipment condition	3.18	0.60	Accepted
5	Lack of student focus	3.13	0.32	Accepted
6	Poor supervision of lessons	3.63	0.48	Accepted
7	Difficulty adapting to technology	3.24	0.63	Accepted
8	Weak academic background	3.31	0.25	Accepted
9	Poor English proficiency	3.41	0.49	Accepted

The analysis in table 2 provides context to the observed disparities in ICT competence. Factors such as inadequate equipment (M=3.16, SD=0.61), poor equipment condition (M=3.18, SD=0.60), and poor supervision of lessons (M=3.63, SD = 0.48) were strongly accepted as significant contributors to the skills gap. These results suggest that institutional challenges related to infrastructure and instructional oversight are central barriers to effective ICT training. Similarly,

student-related factors- including lack of focus (M=3.13, SD=0.32), difficulty adapting to technology (M= 3.24, SD=0.63), weak academic background (M= 3.31, SD=0.25), and poor English proficiency (M= 3.41, SD=0.49) were also identified as critical. These findings imply that even where facilities are available, student readiness and foundational weakness may hinder ICT learning outcomes. Interestingly, the factors unqualified lecturers (M=2.92, SD= 0.42) and lack of

lecturer motivation ( $M = 2.90$ ,  $SD = 0.41$ ) were rejected, indicating that respondents generally agreed that teaching staff possess adequate qualifications and are sufficiently motivated. This suggests that the ICT skills gap cannot be attributed to faculty quality, but rather to structural challenges (equipment and supervision) and student – related issues. These results confirm that equipment-related challenges, poor supervision, and inadequate student preparation are major contributors to the skills gap, while faculty qualification and motivation were not seen as significant factors.

### Discussion of Findings

The findings highlight a clear divide between basic and advanced ICT competencies. Graduates demonstrated high proficiency in MS Word ( $M = 4.4$ ) and PowerPoint ( $M = 4.0$ ), reflecting adequate preparation in traditional office applications. These results align with Okafor and Ugwuanyi (2020), who reported that Nigerian graduates perform well in basic ICT tasks.

However, moderate proficiency in MS Excel ( $M = 3.1$ ) and Email Communication ( $M = 3.8$ ) and low proficiency in Database Management ( $M = 2.6$ ) and Virtual Collaboration Tools ( $M = 2.9$ ) indicate significant gaps in advanced digital skills. This corroborates Okwuanaso (2019), who identified spreadsheet and database skills as persistent weaknesses among Nigerian graduates. Similarly, Oduro and Adu (2021) found that polytechnic students struggled with collaborative platforms despite strong basic ICT literacy.

Factors contributing to the skills gap, such as inadequate equipment, poor supervision, and weak academic background, confirm Nwosu's (2020) findings that infrastructural and institutional limitations are central barriers to ICT competence. Interestingly, unlike Nwosu, this study found that unqualified lecturers and lack of motivation were not significant factors, suggesting that the problem in this context is structural and student-related rather than faculty-based.

Comparatively, international studies (e.g., Alismail & McGuire, 2015) show that integrating ICT into project-based learning improves graduate readiness. The gap between such global practices and the Nigerian reality underscores the urgent need for reforms to align Office Technology education with workplace expectations.

### Conclusion

The study found that Office Technology graduates are proficient in basic ICT tools like MS Word and PowerPoint but lack skills in database management and virtual collaboration platforms. The main causes of the gap are inadequate facilities, poor supervision, and weak student preparedness, rather than lecturer qualification or motivation. This highlights the need to update curricula and strengthen practical ICT training to improve job readiness.

### Recommendations

- 1. For Policy Makers (NUC, NBTE, Ministry of Education):** Review and modernize the Office Technology curriculum to integrate advanced ICT tools, database systems, cloud applications, and virtual collaboration platforms. Develop national ICT competency standards for graduates to ensure alignment with labor market requirements.
- 2. For Tertiary Institutions (Polytechnics/Universities):** Provide adequate ICT laboratories, ensure regular maintenance, and upgrade obsolete equipment. Strengthen practical learning through workshops, supervised training, bootcamps, and simulation-based activities. Encourage blended learning approaches that integrate theory with hands-on practice.
- 3. For Industry Stakeholders (Employers and ICT Firms):** Partner with academic institutions to align training with workplace requirements. Offer internship placements, mentorship programs, and joint research projects to expose students to real-world ICT applications. Provide feedback mechanisms to inform curriculum development.
- 4. For Students and Graduates:** Engage in continuous professional development by pursuing online certifications in Excel, database management, cloud computing, and virtual collaboration. Develop soft skills such as communication, teamwork, adaptability, and problem-solving to complement technical ICT expertise. Take personal responsibility for digital self-learning to remain competitive in the dynamic workforce.



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