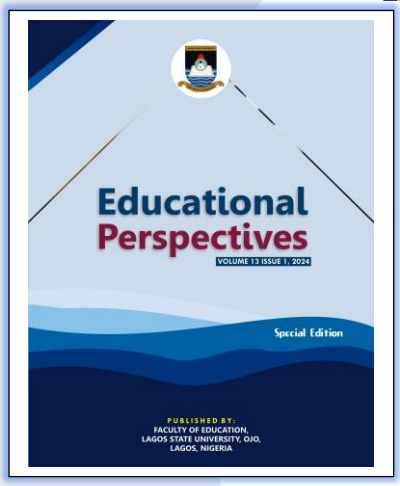

An Assessment of the Computer Literacy Skills Among Secondary School Teachers in Lagos State, Nigeria

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ABSTRACT

The study aims to assess the computer literacy skills among secondary school teachers in Lagos State, Nigeria. The study employed a non- probability sampling research design, involving a survey of 124 secondary school teachers across various schools in Lagos State Educational District VI Mushin zone 2. The research design used for this study was the descriptive research survey. One hundred and twenty-four staff were involved in the study. The Sample technique employed in this study is the Snowball sampling technique. The main procedure used for collection of data for this study was through questionnaire administration. A questionnaire titled Assessment of the Computer Literacy Skills Among Secondary School Teachers in Lagos State, Nigerians Questionnaire (ATCLSSTQ) with reliability of 0.83 was used for data collection. The instrument was face-validated and content-validated by two educational technology experts and 10 secondary school teachers. The research questions were answered using simple percentage, mean and standard deviation while the research hypotheses were tested using independent sample t-test and simple linear regression. Findings revealed that while teachers generally demonstrate familiarity with basic computer software, expertise gaps exist in specific areas. Despite frequent computer use, teachers would benefit from more frequent, targeted training programs to enhance their skills and keep them updated on technological advancements. The study highlights the need for consistent professional development opportunities, equitable access to training resources, and gender-specific interventions to address proficiency gaps.

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Introduction

In an increasingly digital world, computer literacy has become an essential skill for educators, profoundly impacting teaching methods and educational outcomes. For secondary school teachers, particularly in rapidly developing regions such as Lagos State, Nigeria, the ability to effectively utilize computer technology in the classroom is critical for preparing students for the demands of the 21st century. Computer literacy among teachers not only enhances instructional quality but also supports students in developing essential digital skills. Lagos State, being the commercial and educational hub of Nigeria, provides a unique context for examining computer literacy among secondary school teachers. Despite significant investments in educational technology, the extent to which teachers are equipped to integrate these tools into their teaching varies widely. Studies have shown that teacher preparedness in using technology is a crucial factor influencing the success of educational programs and student performance (Adewale, 2020). Moreover, the disparity in computer literacy skills among teachers often mirrors broader socio-economic and infrastructural challenges faced by the region (Ajayi, 2021).

Existing literature suggests that while some teachers in Lagos State possess adequate computer literacy skills, others struggle with basic functions, limiting their ability to leverage technology in educational settings (Oluwafemi & Akinade, 2022). Factors contributing to these discrepancies include varying levels of access to training, the availability of technological resources, and support from educational institutions (Eze & Olajide, 2023). Understanding these factors is essential for developing targeted interventions that can bridge the gap and ensure all teachers can effectively use technology to enhance learning outcomes. The rapid development of Information and Communication Technology (ICT) has significantly transformed the educational landscape worldwide. In Nigeria, particularly in Lagos State, the integration of ICT in education is increasingly recognized as essential for enhancing teaching and learning processes. However, the effective use of ICT in education heavily depends on the computer literacy skills of teachers. This study aims to explore the current state of computer literacy skills among secondary school teachers in Lagos State, the challenges they face, and the implications for educational outcomes.

The integration of Information and Communication Technology (ICT) in education has become a global priority, aiming to enhance teaching and learning processes. In Nigeria, particularly in Lagos State, the push towards embedding ICT into secondary education necessitates an evaluation of teachers' computer literacy skills. This literature review examines existing studies on the computer literacy levels of secondary school teachers, the factors influencing these skills, and the implications for educational practices and policy. Computer literacy among teachers is pivotal for the effective integration of technology in education, significantly influencing their teaching methodologies and boosting student engagement. With digital literacy, educators can harness various educational technologies to create interactive lessons and efficiently manage digital classrooms. This skill set encompasses basic operations, internet use, and advanced tasks such as utilizing educational software and managing online learning environments. Such proficiency supports diverse learning styles and needs, promoting an inclusive and dynamic educational experience. On a global scale, frameworks like the European Commission's DigComp and UNESCO’s Digital Literacy Global Framework underscore the importance of digital competencies for societal inclusion and educational success, highlighting the need for comprehensive digital skills among educators and students alike.
Several studies have assessed the computer literacy levels of teachers in various regions, including Nigeria. To provide a current perspective on the

assessment of ICT use among secondary school teachers in Nigeria, a recent study by Olaniran et al. (2023) highlights the persistent gap between policy expectations and actual practice. The study found that despite increased access to ICT tools, many teachers still lack the necessary skills and support to effectively integrate these technologies into their teaching. The study emphasizes the need for ongoing professional development and better infrastructure to bridge this gap. Many teachers possess basic computer skills but struggle with effectively integrating ICT into their teaching practices. Despite efforts by the Nigerian government to promote computer education in secondary schools, implementation has been inconsistent, with many teachers facing limited access to computers, inadequate training, and insufficient technical support (Eze & Okoye, 2023). Several factors influence the computer literacy skills of secondary school teachers, including age and teaching experience, with younger and less experienced teachers generally being more proficient in using technology (Ifinedo, 2023). Continuous professional development opportunities are crucial for enhancing teachers' ICT skills; however, the availability and quality of such training programs in Lagos State are often lacking (Adeyanju, 2023). Significant challenges impede effective ICT integration in education, such as inadequate infrastructure, insufficient computers, unreliable internet connectivity, and teachers' lack of confidence in using technology due to inadequate training and support (Tella et al., 2023). To address these issues, comprehensive policies should focus on providing regular, targeted training programs, improving infrastructure, and fostering a supportive environment for teachers to experiment with and integrate ICT in their classrooms (Adeyanju et al., 2023).

Adeosun (2010) found that many teachers possess basic computer skills but lack the advanced competencies required for effective ICT integration in the classroom. Similarly, Yusuf and Balogun (2011) reported that while some teachers are proficient in basic applications like word processing and internet browsing, there is a significant gap in using more sophisticated educational technologies. Challenges such as inadequate training, limited access to technology, and insufficient infrastructure hinder teachers' ability to develop and apply computer skills (Adebayo, 2013; Akinsola & Animashaun, 2015). Current research by Eze and Okoye (2023) and Ifinedo (2023) underscores the need for consistent and targeted professional development programs to address these gaps. Adeyanju (2023) and Tella et al. (2023) emphasize the importance of providing robust infrastructure and continuous support to empower teachers to effectively utilize ICT, ultimately leading to enhanced educational performance and student success.

Statement of the Problems

The digital literacy skills of secondary school teachers in Lagos State, Nigeria, are significantly lacking, despite the growing importance of digital literacy in education. This discrepancy hinders the integration of technology in the classroom, which is crucial for modernizing educational practices and improving student outcomes. Despite investments in technology, teachers often struggle with basic computer functions, such as word processing software, presentations, and internet navigation. This skill gap limits their ability to incorporate digital tools into teaching and affects their capacity to model digital literacy for students. The variability in computer literacy skills often reflects socio-economic disparities within Lagos State, with schools in affluent areas having better access to technology and better-trained teachers, while those in less privileged regions face significant barriers. Addressing this issue requires a comprehensive assessment of computer literacy among secondary school teachers, identifying areas for improvement, and understanding factors contributing to their proficiency levels.

Research questions

The following questions are posed to guide this study:

1. What is the level of computer literacy skills among senior secondary school teachers?
2. What is the level of available training on computer literacy skills among senior secondary school teachers?
3. What is the difference in the computer literacy level of Male and Female senior secondary school teachers?

Research hypotheses

H_{O1}: There will be no statistically significant difference between the computer literacy level of male and female senior secondary school teachers.

Methodology

This study adopted the non - probability sampling research design (a combination of purposive sampling ang snowball sampling). The population consisted of teachers from Senior Secondary Schools in Lagos State Educational District VI Mushin Zone 2. One hundred and twenty-four staff (124) were involved in the study. The snowball sampling technique was employed to sample one hundred and twenty-four (124) staff that participated in the study.

The main procedure used for collection of data for this study was through questionnaire administration. An Assessment of the Computer Literacy Skills Among Secondary School Teachers in Lagos State, Nigerians Questionnaire (ATCLSSTQ) was utilized to gather the quantitative data for the study. The instrument had four sections; section A focused on the participants' demographic data, while section B consisted of 5 items on assess the level of computer literacy skills among senior secondary school teachers. The questionnaire used a five-point scale with the rating assuming the formats: “Strongly disagree” (1),” Disagree” (2), “Neutral” (3), “Agree” (4), “Strongly agree” (5). Section C consisted of 5 items, which assess the level of available training on computer literacy skills among senior secondary school teachers. The questionnaire used a five-point scale with the rating assuming the formats: “Strongly disagree” (1),” Disagree” (2), “Neutral” (3), “Agree” (4), “Strongly agree” (5). The instrument was face-validated and content-validated by two educational technology experts and 10 secondary school teachers. The reliability of the instrument was tested using Cronbach’s alpha to ensure consistency in response. The instrument was administered on 20 randomly selected private and public senior secondary school teachers from four different senior secondary schools from the main sample in the Mushin Local Government Areas of Lagos State and a coefficient of 0.83 was gotten. The research questions were answered using simple percentage, mean and standard deviation while the research hypotheses were tested using independent sample t-test and simple linear regression.

Results and Discussions

Demographic Information

Table 1: Age of Respondents

Age	Frequency	Percent
20-30	26	21.0
31-40	39	31.5
41-50	35	28.2
51 and above	24	19.4
Total	124	100.0

Table 2: Gender of Respondents

Gender	Frequency	Percent
Female	79	63.7
Male	45	36.3
Total	124	100.0

Table 3: Respondent's Teaching Experience

Teaching Experience	Frequency	Percent
1-5 years	35	28.2
11-15 years	29	23.4
16 years and above	42	33.9
6-10 years	18	14.5
Total	124	100.0

Table 4: Respondent's Level of Education

Level of Education	Frequency	Percent
Bachelor's Degree	86	69.4
Doctorate	1	.8
Master's Degree	22	17.7
Other	15	12.1
Total	124	100.0

Table 5: Respondent's Type of School

Type of school	Frequency	Percent
Private School	89	71.8
Public School	35	28.2
Total	124	100.0

Research Question 1

What is the level of computer literacy skills among senior secondary school teachers?

Table 6: The level of computer literacy skills among senior secondary school teachers

S/N		SA	A	N	D	SD	MEAN	Std D
1	I can confidently perform basic computer operations (e.g., turning on/off the computer, using the mouse and keyboard, managing files and folders)	45 36.3%	47 37.9%	27 21.8%	4 3.2%	1 0.8%	4.06	.886
2	I am proficient in using the internet for educational purposes (e.g., searching for information, using educational websites, sending and receiving emails)	40 32.3%	50 40.3%	28 22.6%	5 4%	1 0.8%	3.99	.888
3	I am skilled in using word processing software (e.g., Microsoft Word, Google Docs) to create and edit documents	23 18.5%	51 41.1%	41 33.1%	8 6.5%	1 0.8%	3.70	.874
4	I am competent in using presentation software (e.g., Microsoft PowerPoint, Google Slides) to create and deliver presentations	11 8.9%	39 31.5%	43 34.7%	24 19.4%	7 5.6%	3.19	1.031
5	I am confident in using spreadsheet software (e.g., Microsoft Excel, Google Sheets) for tasks such as data entry, creating charts, and performing basic calculations	11 8.9%	26 21.0%	42 33.9%	37 29.8%	8 6.5%	2.96	1.062
	Weighted Average: mean= 3.58, SD= 0.948							

Note: N = 124, Strongly Agree (SA); Agree (A); Disagree (D); Strongly Disagree (SD)

The results from table 6 reveals that majority of the respondents can confidently perform basic computer operations (e.g., turning on/off the computer, using the mouse and keyboard, managing files and folders) (mean = 4.06), majority of the respondents also agreed that they are proficient in using the internet for educational purposes (e.g., searching for information, using educational websites, sending and receiving emails) (mean = 3.99), lastly, the respondents agreed that they are skilled in using word processing software (e.g., Microsoft Word, Google Docs) to create and edit documents (mean=3.70). However, the respondents disagreed with the statement that states that they are competent in using presentation software (e.g., Microsoft PowerPoint, Google Slides) to create and deliver presentations (mean = 3.19), the respondents are also not confident in using spreadsheet software (e.g., Microsoft Excel, Google Sheets) for tasks such as data entry, creating charts, and performing basic calculations (mean = 2.96). Though secondary school teachers are familiar and skilled in utilizing computer software, they lack the skills and knowledge in some areas.

The weighted mean average of 3.58 suggests that, overall, senior secondary school teachers have a moderate to high level of computer literacy skills. Since the response scale likely ranges from 1 (Strongly Disagree) to 5 (Strongly Agree), a mean of 3.58 indicates that, on average, teachers tend to agree that they possess basic computer literacy skills but with some variability across specific areas. The standard deviation (SD = 0.948) shows a moderate level of variation in responses, meaning that while many teachers rate themselves as competent, some have lower self-assessments, particularly in areas like spreadsheet and presentation software use.

Research Question 2

What is the level of available training on computer literacy skills among senior secondary school teachers?

Table 7: The level of available training on computer literacy skills among senior secondary school teachers

S/N		SA	A	N	D	SD	MEAN	Std D
1.	There is accessibility of training programs focused on computer literacy skills at my school	0 0%	85 68.5%	23 18.5%	9 7.3%	7 5.6%	3.50	.860
2.	Computer literacy training sessions are provided for teachers at my school	15 12.1%	28 22.6%	34 27.4%	40 32.3%	7 5.6%	3.03	1.126
3.	There is a relevance in the content of the computer literacy training to my teaching needs	18 14.5%	66 53.2%	30 24.2%	8 6.5%	2 1.6%	3.73	.849
4.	The school administration is supportive in encouraging and facilitating computer literacy training for teachers	15 12.1%	50 40.3%	33 26.6%	20 16.1%	6 4.8%	3.39	1.049
5.	There are opportunities for continuous learning and professional development in computer literacy skills at my school	21 16.9%	57 46.0%	34 27.4%	0 0%	12 9.7%	3.60	1.081
	Weighted Average: mean= 3.45, SD= 0.993							

Note: N = 124, Strongly Agree (SA); Agree (A); Disagree (D); Strongly Disagree (SD)

The results from table 8 reveals that majority of the respondents agreed that there is accessibility of training programs focused on computer literacy skills at their school (mean = 3.50), the respondents also agreed that there is a relevance in the content of the computer literacy training to their teaching needs (mean = 3.73), lastly, the respondents agreed that there are opportunities for continuous learning and professional development in computer literacy skills at their school (mean = 3.60). However, the respondents claimed that computer literacy training sessions are not provided for teachers at their schools (mean = 3.03), lastly, the respondents stated disagreed with the statements that claims that the school administration is supportive in encouraging and facilitating computer literacy training for teachers (mean = 3.39. While there are accessible and relevant training programs and opportunities for continuous professional development, efforts need to be made to ensure regular provision of training sessions and to enhance administrative support for computer literacy training among senior secondary school teachers. Addressing these gaps can lead to more effective integration of computer literacy skills in teaching practices.

The weighted mean average of 3.45 suggests that senior secondary school teachers moderately agree that there is some level of available training on computer literacy skills at their schools. Since the response scale ranges from 1 (Strongly Disagree) to 5 (Strongly Agree), a mean of 3.45 indicates that while training opportunities exist, they may not be fully adequate or accessible to all teachers. The standard deviation (SD = 0.993) shows moderate variation in responses, meaning that while some teachers feel positively about the training opportunities, others may not have the same experience. Notably, computer literacy training relevance (mean = 3.73) is rated higher, suggesting that when training is available, it is considered useful. However, actual provision of training sessions (mean = 3.03) has a lower rating, indicating that training opportunities may not be frequent or widely available.

Research Question 3

What is the difference in the computer literacy level of Male and Female senior secondary school teachers?

Table 8: Mean and standard deviation table showing the difference in the computer literacy level of Male and Female senior secondary school teachers

Gender	Mean	N	Std. Deviation
Female	3.44	79	.82
Male	3.82	45	.68
Total	3.58	124	.79

Male teachers have a higher average computer literacy level (3.82) compared to female teachers (3.44). The lower standard deviation among male teachers suggests their computer literacy levels are more consistent. Female teachers show more variation in their computer literacy levels as indicated by the higher standard deviation. This data suggests that there is a noticeable difference in computer literacy levels between male and female teachers, with males having a higher average literacy level and less variation in their responses.

Hypothesis One

There will be no statistically significant difference between the computer literacy level of male and female senior secondary school teachers.

Table 9: Independent Sample t-test showing the difference between the computer literacy level of male and female senior secondary school teachers

Group	N	T	P(Sig)Level
Female	79	-2.299	0.04
Male	45		

Since the p-value (0.04) is lower than the significance level of 0.05, we have sufficient evidence to reject the null hypothesis. Therefore, there is a statistically significant difference between the computer literacy level of male and female senior secondary school teachers. [t(122)= .0.04; p<.05]. Therefore, the null hypothesis is rejected.

Discussion of findings

The findings of this study revealed several important insights regarding the computer literacy of senior secondary school teachers. Although teachers are familiar and skilled in utilizing computer software, gaps in skills and knowledge still exist in certain areas. This is consistent with previous studies by Lawless and Pellegrino (2024), which emphasize the need for continuous training to address these gaps in teachers' technological capabilities.

The study also showed a high level of usage of computer tools among senior secondary school teachers, driven by their beliefs in and confidence with technology, aligning with the findings of Ertmer et al. (2024). However, despite accessible and relevant training programs for continuous professional development, there is a need for the regular provision of these sessions and greater administrative support to enhance computer literacy, as similarly observed by Hennessy, Ruthven, and Brindley (2024).

The study reported a statistically significant difference in the computer literacy levels between male and female senior secondary school teachers, consistent with Kay's (2024) research, which similarly identified gender disparities in technology skills.

These findings collectively underscore the need for continuous training, enhanced administrative support, and equitable access to resources to improve teachers' computer literacy skills.

Conclusion

The findings of this study indicate that while secondary school teachers are adept at using computer software, they need improvement in certain areas like the presentation software (e.g., Microsoft PowerPoint, Google Slides) and spreadsheet software (e.g., Microsoft Excel, Google Sheets) for tasks such as data entry, creating charts, and performing basic calculations. Senior secondary school teachers demonstrate high usage of computer tools, supported by accessible training programs and resources. However, more regular training sessions and administrative support are necessary. Gender and school type differences were noted, with males and private school teachers showing higher computer literacy levels. These findings highlight the need for equitable training opportunities and support systems to enhance computer literacy skills among all senior secondary school teachers.

Recommendations

The following recommendations were made:

Based on the findings of this study, the following seven recommendations are highlighted:

i. Targeted Training Programs: Schools and government bodies should develop and implement targeted training programs to address the specific areas where secondary school teachers lack skills and knowledge in computer software usage.

ii. Regular Training Sessions: School administrators should ensure the regular provision of training sessions to keep teachers updated with the latest technological advancements and computer literacy skills.

iii. Enhanced Administrative Support: School administrators should strengthen administrative support for computer literacy training to ensure that teachers receive the necessary resources and encouragement to participate in these programs.

iv. Equitable Training Opportunities: Educational bodies should address the disparity in training availability between public and private school teachers by ensuring equitable access to training programs for all senior secondary school teachers.

v. Gender-Specific Interventions: Educational bodies and school administrators should design and implement interventions that specifically address the differences in computer literacy levels between male and female teachers, aiming to bridge the proficiency gap.

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