

Computer-related skills needed and possessed by agricultural science teachers for teaching in secondary schools in Rivers State, Nigeria

Uloma G. Ogunu-Ebiye and Salome Emeya

Department of Agricultural Education, Faculty of Vocational and Technical Education, Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria.

Accepted 22 May, 2026

ABSTRACT

The study assessed the computer-related skills needed and possessed by Agricultural Science teachers for effective teaching in secondary schools in Rivers State. Three specific objectives, research questions, and hypotheses guided the study. The study adopted a descriptive survey research design. The population comprised 468 Agricultural Science teachers in public secondary schools across the three senatorial districts of Rivers State. A sample of 234 teachers, representing 50% of the population, was drawn using a stratified random sampling technique. The instrument for data collection was a structured questionnaire titled "Computer-Related Skills Needed and Possessed by Agricultural Science Teachers Questionnaire (CRSNPASTQ)," which contained 20 items covering computer operation, internet utilization, and software presentation skills. The instrument was validated by three experts in the Department of Agricultural Education and Measurement and Evaluation, and its reliability coefficient of 0.86 was obtained using Cronbach Alpha. Mean and Standard Deviation were used to answer the research questions, while a z-test was used to test the hypotheses at a 0.05 level of significance. Findings showed that Agricultural Science teachers to a high extent needed computer operation, internet utilization, and software presentation skills for effective teaching. The study also found no significant difference in the mean responses of male and female teachers across all variables. It was recommended that regular ICT training, workshops, and conferences should be organized for Agricultural Science teachers to sustain and improve their computer-related competencies for effective instructional delivery.

Keywords: Computer-related skills, teaching, agricultural science teachers, secondary schools.

*Corresponding author. Email: Salo_gee@yahoo.com. Tel: 08032938062, 08036723436.

INTRODUCTION

Assessment is a crucial process that provides a systematic means of measuring knowledge, skills, and competencies. According to Olatunji (2021), assessment helps in determining the extent to which specific objectives have been achieved and identifies areas of strength and weakness among learners or professionals. Assessment plays a vital role in evaluating the adequacy of the knowledge and skills teachers possess to meet teaching standards. Olaitan and Ali (2019) opined that proper assessment helps educational planners understand gaps in teachers' professional competencies, which in turn guide training, retraining, and curriculum improvement.

Therefore, assessing computer-related skills among Agricultural Science teachers is a necessary step towards improving instructional quality and educational outcomes in the digital age.

Computer-related skills refer to the ability to use technological tools and digital resources effectively for teaching and learning. In Agricultural Science, computer-based technologies are useful for simulating agricultural processes, analyzing data, preparing instructional materials, and demonstrating farm management practices. With the advancement of information and communication technology (ICT), teachers are expected to possess

operational skills such as using spreadsheets for data analysis, PowerPoint for classroom presentation, and internet-based resources for agricultural research (Orikoha, 2024).

Needed and possessed skills represent the actual competencies that teachers already have and can demonstrate during instruction. For Agricultural Science teachers, the possession of adequate computer-related skills ensures that they can effectively integrate technology into their teaching process. When the Agricultural Science teachers are well equipped with such skills, they can guide students in exploring online agricultural databases, analyzing soil and crop data using computer tools, and adopting precision agriculture techniques, which are vital for sustainable agricultural education (Odjegba, Kachukwu and Odjegba, 2021).

Agricultural Science teachers are professional educators who specialize in teaching agricultural concepts and practices at various educational levels. According to Okocha and Eze (2022), Agricultural Science teachers are trained to impart both theoretical and practical knowledge in areas such as crop production, animal husbandry, soil science, and agricultural economics. They are responsible for developing learners' understanding of agriculture as a science, business, and means of livelihood. Thus, Agricultural Science teachers must be adequately trained and motivated to apply computer-related skills in teaching (Ugwuoke et al., 2023).

Teaching involves systematic instruction, guidance, and evaluation of learners to achieve desired educational goals. Nwachukwu (2021) noted that effective teaching in the 21st century demands the use of technology to enhance learners' engagement and comprehension.

Secondary schools serve as the foundational level for students to acquire both academic knowledge and practical skills. According to Obanya (2020), secondary education prepares learners for higher education, vocational training, and self-reliance. The use of computers in teaching at this level makes lessons more engaging and broadens students' understanding of modern agricultural techniques. Odu and Chukwuma (2021) emphasized that when secondary school teachers incorporate computer-related skills in agricultural instruction, it enhances students' motivation, participation, and retention of concepts.

There is therefore a need to assess the computer-related skills such as computer operation skills, internet utilization skills, and software presentation skills needed and possessed by Agricultural Science teachers for effective teaching in secondary schools in Rivers State.

Computer operation skills needed and possessed by agricultural science teachers for teaching in secondary schools

Computer operation skills refer to the abilities required to

effectively use computer systems for performing instruction, administrative, and research-related tasks. According to Okonkwo and Umeh (2020), the acquisition of computer operation skills has become a fundamental requirement for teachers in the 21st century as education increasingly depends on technology-based learning tools. In Agricultural Science, these skills are indispensable because they enable teachers to prepare lesson plans, design instructional materials, and store students' assessment records electronically. As observed by Adeoye and James (2021), teachers who possess basic computer operational competence are more efficient in classroom management and can integrate digital resources into their teaching practice with confidence.

Hence, assessing and strengthening computer operation skills among Agricultural Science teachers in secondary schools is vital for achieving sustainable educational transformation in Nigeria.

Internet utilization skills needed and possessed by agricultural science teachers for accessing agricultural information in secondary schools

Internet utilization skills refer to the ability to effectively access, evaluate, and apply information obtained from the internet for professional and instructional purposes. According to Eze and Onyekachi (2022), internet utilization involves using online platforms, databases, and communication tools to search for, retrieve, and share relevant educational resources. In the teaching of Agricultural Science, these skills are indispensable because the internet serves as a global repository of agricultural innovations, research findings, and extension information. Olatunji and Adebayo (2021) explained that teachers who are proficient in internet utilization can easily update their knowledge about modern agricultural practices, thereby enriching classroom instruction and improving students' understanding. Hence, internet utilization skills are essential for Agricultural Science teachers to remain relevant in the fast-changing digital environment.

Thus, the need to assess the internet utilization skills needed and possessed by Agricultural Science teachers cannot be overemphasized.

Software presentation skills needed and possessed by agricultural science teachers for classroom instruction in secondary schools

Software presentation skills refer to the ability to create, organize, and deliver instructional content using digital presentation tools such as Microsoft PowerPoint, Google Slides, and Canva. According to Okechukwu and Alabi (2022), software presentation skills enhance the teaching and learning process by providing visual support, which

makes complex concepts easier to understand. In Agricultural Science, where lessons often involve diagrams, charts, and practical demonstrations, software presentation skills help teachers display information more clearly and attractively.

According to Eze and Opara (2021), effective classroom instruction now depends on teachers' ability to use digital tools that foster active learning and participation. Software presentation skills such as Microsoft PowerPoint allow teachers to organize their lessons systematically, highlight key points, and maintain students' attention throughout the class.

Statement of the problem

The acquisition and utilization of computer-related skills by Agricultural Science teachers remain a major concern in secondary schools in Rivers State. Despite the importance of computer skills in improving teaching effectiveness for promoting digital literacy, many teachers still find it difficult to integrate technology into their classroom practices. This challenge could be attributed to inadequate computer training, lack of exposure to modern instructional technologies, and limited access to ICT facilities (Eneh and Okoli, 2023). This situation not only affects the quality of Agricultural Science instruction but also limits students' access to modern agricultural information and practices. The question then is, to what extent do Agricultural Science teachers possess the computer-related skills needed for effective teaching in secondary schools in Rivers State? In order to address this question, among others, the present study was undertaken.

Objective of the study

The main aim of this study is to assess the computer-related skills needed and possessed by Agricultural Science teachers for effective teaching in secondary schools in Rivers State. With a view to fulfill the following specific objectives:

- i. Identify the computer operation skills needed and possessed by Agricultural Science teachers for teaching in secondary schools in Rivers State.
- ii. Ascertain the internet utilization skills needed and possessed by Agricultural Science teachers for accessing agricultural information in secondary schools in Rivers State
- iii. Assess the software presentation skills needed and possessed by Agricultural Science teachers for classroom instruction in secondary schools in Rivers State.

Research questions

The following research questions guided the study:

1. What are the computer operation skills needed and possessed by Agricultural Science teachers for teaching in secondary schools in Rivers State?
2. What are the internet utilization skills needed and possessed by Agricultural Science teachers for accessing agricultural information in secondary schools in Rivers State?
3. What are the software presentation skills needed and possessed by Agricultural Science teachers for classroom instruction in secondary schools in Rivers State?

Hypotheses

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

1. There is no significant difference in the mean responses of male and female Agricultural Science teachers on the computer operation skills needed and possessed for teaching in secondary schools in Rivers State.
2. There is no significant difference in the mean responses of male and female Agricultural Science teachers on the internet utilization skills needed and possessed for accessing agricultural information in secondary schools in Rivers State.
3. There is no significant difference in the mean responses of male and female Agricultural Science teachers on the software presentation skills needed and possessed for classroom instruction in secondary schools in Rivers State.

METHODOLOGY

The study adopted a descriptive survey research design. The population of the study comprised all 468 Agricultural Science teachers in public senior secondary schools across the three senatorial districts of Rivers State, namely: Rivers East, Rivers West, and Rivers South-East. The population distribution indicated that Rivers East had 186 teachers, Rivers West had 142 teachers, and Rivers South-East had 140 teachers (Rivers State Ministry of Education, 2024/2025 Academic Year). Given that the population was large, a sample size of 234 teachers, representing 50% of the total population, was drawn for the study. The sample was selected using a stratified random sampling technique to ensure fair representation of male and female Agricultural Science teachers from each senatorial district.

The instrument for data collection was a structured questionnaire titled "Computer-Related Skills Needed and Possessed by Agricultural Science Teachers Questionnaire" (CRSNPASTQ). The instrument consisted of two parts. Part-A contained demographic information of respondents, while Part-B contained 30 items structured to elicit information on the three areas of computer-related

skills: computer operation skills, internet utilization skills, and software presentation skills. Each item was arranged in a paired format to determine both the extent to which a skill was needed and possessed. Responses were based on a 4-point Likert-type scale as follows: Very Highly Needed/Possessed (VHN/VHP = 4), Highly Needed/Possessed (HN/HP = 3), Lowly Needed/Possessed (LN/LP = 2), and Very Lowly Needed/Possessed (VLN/VLP = 1). The instrument was validated by three experts, two from the Department of Agricultural Education and one from the Department of Measurement and Evaluation, both at Ignatius Ajuru University of Education, Port Harcourt. The reliability of the instrument was determined using the Cronbach Alpha

method, yielding a coefficient of 0.86, indicating that the instrument was reliable for data collection. Data obtained from the respondents were analyzed using Mean and Standard Deviation to answer the three research questions, while the null hypotheses were tested using a z-test at a 0.05 level of significance. The decision rule was that any item with a mean value of 2.50 and above was regarded as "Highly Needed/Possessed," while any item with a mean below 2.50 was regarded as "Lowly Needed/Possessed." For hypotheses, any z-calculated value less than the z-critical value of 1.96 is considered accepted, whereas any value greater than 1.96 was rejected.

Table 1. Population distribution of agricultural science teachers in Rivers State.

Senatorial District	Total Agric Sci Teachers	Total LGA	Total pub sec sch	Male	Female	Sample (50%)
Rivers East	186	8	112	98	88	93
Rivers West	142	8	72	72	70	71
Rivers South-East	140	7	64	69	71	70
Total	468	23	254	239	229	234

Source: Rivers State Ministry of Education, 2024/2025 Academic Session.

RESULTS

The following results were presented according to each research question. The researcher distributed 234 copies of the questionnaire to the respondents; however, only 200 were properly completed and retrieved, which were used for the analysis.

Research question 1

What are the computer operation skills needed and possessed by Agricultural Science teachers for teaching in secondary schools in Rivers State?

Table 2. Mean and standard deviation responses on the computer operation skills needed and possessed by Agricultural Science teachers for teaching in secondary schools in Rivers State.

S/N	Items	Male Teachers (N = 110)			Female Teachers (N = 90)		
		\bar{X}_1	SD	RMKS	\bar{X}_1	SD	RMKS
1	Using the keyboard and mouse effectively for instructional purposes	3.18	0.74	HN	3.11	0.82	HN
2	Operating desktop and laptop computers efficiently	3.27	0.68	HN	3.09	0.89	HN
3	Managing computer files and folders for lesson preparation	3.14	0.91	HN	2.94	0.77	HN
4	Installing and uninstalling educational software	2.87	0.84	HN	2.63	0.96	HN
5	Typing lesson notes and instructional materials using word processing software	3.42	0.71	HN	3.21	0.84	HN
6	Operating printers, scanners, and projectors for classroom use	3.25	0.93	HN	3.07	0.90	HN
7	Managing students' records using spreadsheet applications	2.96	0.79	HN	2.88	0.83	HN
8	Applying basic troubleshooting techniques on school computers	2.81	0.97	HN	2.64	0.88	HN
9	Backing up instructional materials using external drives or cloud storage	3.06	0.83	HN	2.89	0.91	HN
10	Using multimedia devices to enhance classroom teaching	3.12	0.88	HN	3.03	0.96	HN
	Total Mean/SD	3.11	0.83		2.95	0.87	

Source: Field Report, 2025.

Table 2 shows that both male and female Agricultural Science teachers shows high extent to which computer operation skills are needed and possessed for effective teaching in secondary schools in Rivers State. The respondents agreed to a high extent that using the keyboard and mouse effectively, operating desktop and laptop computers, managing files and folders, typing lesson notes, and operating printers and projectors are needed skills. The analysis showed a grand mean of 3.11 for males and 2.95 for females with corresponding standard deviations of 0.83 and 0.87, respectively,

indicating a great extent of need and possession. This implies that Agricultural Science teachers in Rivers State secondary schools, to a great extent, needed to possess computer operation skills required for effective instructional delivery.

Research question 2: What are the internet utilization skills needed and possessed by Agricultural Science teachers for accessing agricultural information in secondary schools in Rivers State?

Table 3. Mean and standard deviation responses on the internet utilization skills needed and possessed by Agricultural Science teachers for accessing agricultural information in secondary schools in Rivers State.

S/N	Items	Male teachers (N = 110)			Female teachers (N = 90)		
		\bar{X}_1	SD	RMKS	\bar{X}_1	SD	RMKS
1	Using internet browsers to search for agricultural teaching materials	3.36	0.71	HN	3.18	0.84	HN
2	Downloading and uploading agricultural documents and multimedia files	3.22	0.76	HN	3.03	0.79	HN
3	Using email to communicate with colleagues and agricultural experts	3.04	0.89	HN	2.87	0.91	HN
4	Accessing online agricultural databases and journals	2.97	0.92	HN	2.78	0.94	HN
5	Participating in online agricultural discussion forums and webinars	3.09	0.81	HN	2.91	0.83	HN
6	Using social media platforms for agricultural networking and updates	3.24	0.88	HN	3.06	0.87	HN
7	Utilizing search engines for agricultural innovations and teaching aids	3.41	0.69	HN	3.19	0.78	HN
8	Evaluating reliability of online agricultural information sources	2.95	0.85	HN	2.81	0.92	HN
9	Storing and retrieving online data using cloud storage services	3.08	0.79	HN	2.96	0.88	HN
10	Integrating internet-based information into lesson plans	3.17	0.83	HN	3.01	0.91	HN
Total Mean/SD		3.15	0.83		2.98	0.87	

Source: Field Report, 2025.

Table 3 shows that the respondents indicated the extent to which internet utilization skills are needed and possessed by Agricultural Science teachers for accessing agricultural information in secondary schools in Rivers State. The respondents agreed that searching with browsers, downloading/uploading files, emailing agricultural experts, and participating in online agricultural discussions are essential needed skills. The analysis showed a grand mean of 3.15 for males and 2.98 for females with corresponding standard deviations of 0.83 and 0.87, respectively. This shows that the teachers, to a great extent, needed to possess internet utilization skills for accessing agricultural information for instructional purposes.

Research question 3: What are the software presentation

skills needed and possessed by Agricultural Science teachers for classroom instruction in secondary schools in Rivers State?

Table 4 shows that the respondents indicated the extent to which software presentation skills are needed by Agricultural Science teachers for classroom instruction in secondary schools in Rivers State. The respondents agreed that creating slides with PowerPoint, inserting media, using charts, and operating projectors are very important for effective lesson delivery. The analysis showed a grand mean of 3.15 for male and 2.97 for female with standard deviations of 0.85 and 0.88, respectively. This shows that Agricultural Science teachers, to a great extent, needed to possess software presentation skills necessary for effective instructional delivery in secondary schools across Rivers State.

Table 4. Mean and standard deviation responses on the software presentation skills needed and possessed by Agricultural Science teachers for classroom instruction in secondary schools in Rivers State.

S/N	Items	Male teachers (N = 110)			Female teachers (N = 90)		
		\bar{X}_1	SD	RMKS	\bar{X}_1	SD	RMKS
1	Creating slides using Microsoft PowerPoint for teaching	3.42	0.76	HN	3.18	0.82	HN
2	Inserting pictures, videos, and animations into presentations	3.28	0.79	HN	3.05	0.85	HN
3	Designing visually appealing slide templates for lessons	3.09	0.88	HN	2.87	0.93	HN
4	Using charts and graphs to present agricultural data	3.15	0.81	HN	2.97	0.84	HN
5	Integrating sounds and transitions for interactive lessons	2.98	0.90	HN	2.81	0.96	HN
6	Using presentation remote controls and projectors effectively	3.24	0.83	HN	3.09	0.89	HN
7	Saving and exporting presentation slides in multiple formats	3.17	0.85	HN	2.95	0.91	HN
8	Using Google Slides and Canva for online teaching	2.91	0.94	HN	2.79	0.93	HN
9	Collaborating with colleagues through shared presentations	3.08	0.87	HN	2.92	0.86	HN
10	Updating and editing existing presentation files for new lessons	3.20	0.82	HN	3.04	0.84	HN
Total Mean/SD		3.15	0.85		2.97	0.88	

Source: Field Report, 2025.

Test of hypotheses

HO₁: There is no significant difference in the mean responses of male and female Agricultural Science teachers on the computer operation skills needed and possessed for teaching in secondary schools in Rivers State.

Table 5 shows that at 198 degrees of freedom, the calculated z-value of 0.41 is less than the critical value of 1.96 at a 0.05 level of significance. Therefore, the null hypothesis is accepted. This implies that there is no significant difference in the mean responses of male and female Agricultural Science teachers on the computer operation skills needed and possessed for teaching in secondary schools in Rivers State.

Table 5. Z-test analysis on difference in the mean responses of male and female Agricultural Science teachers on the computer operation skills needed and possessed for teaching in secondary schools in Rivers State.

Variables	N	Mean	SD	Df	Sig	z-cal	z-crit	Decision
Male teachers	110	3.12	0.84	198	0.05	0.41	1.96	Accepted
Female teachers	90	2.97	0.89					

Source: Field Report, 2025.

HO₂: There is no significant difference in the mean responses of male and female Agricultural Science teachers on the internet utilization skills needed and possessed for accessing agricultural information in secondary schools in Rivers State.

1.96 at 0.05 level of significance. Therefore, the null hypothesis is accepted. This means that there was no significant difference in the mean responses of male and female Agricultural Science teachers on the internet utilization skills needed and possessed for accessing agricultural information in secondary schools in Rivers State.

Table 6 shows that at 198 degrees of freedom, the calculated z-value of 0.52 is less than the critical value of

Table 6. Z-test analysis on the mean response of male and female Agricultural Science teachers on the internet utilization skills needed and possessed for accessing agricultural information in secondary schools in Rivers State.

Variables	N	Mean	SD	Df	Sig	z-cal	z-crit	Decision
Male teachers	110	3.15	0.83	198	0.05	0.52	1.96	Accepted
Female teachers	90	2.98	0.87					

Source: Field Report, 2025.

HO₃: There is no significant difference in the mean responses of male and female Agricultural Science teachers on the presentation software skills needed and possessed for classroom instruction in secondary schools in Rivers State.

Table 7 shows that at 198 degrees of freedom, the

calculated z-value of 0.37 is less than the critical value of 1.96 at a 0.05 level of significance. Therefore, the null hypothesis is accepted. This indicates that there was no significant difference in the mean responses of male and female Agricultural Science teachers on the presentation software skills needed and possessed for classroom instruction in secondary schools in Rivers State.

Table 7. Z-test analysis on the mean responses of male and female Agricultural Science teachers on the presentation software skills needed and possessed for classroom instruction in secondary schools in Rivers State.

Variables	N	Mean	SD	Df	Sig	z-cal	z-crit	Decision
Male teachers	110	3.15	0.85	198	0.05	0.37	1.96	Accepted
Female teachers	90	2.97	0.88					

Source: Field Report, 2025.

DISCUSSION

The discussion of the findings is presented according to the three research questions that guided the study.

Findings from research question 1 showed that both male and female Agricultural Science teachers, to a great extent, needed computer operation skills such as using the keyboard and mouse, operating laptops and desktops, typing lesson notes, managing files and folders, and operating printers and projectors for classroom use. This implies that Agricultural Science teachers in Rivers State needed to be competent in the use of basic computer applications required for effective teaching. The result of the hypothesis indicated that there was no significant difference between the mean responses of male and female teachers on the extent to which these skills are needed and possessed. These findings are in agreement with Okonkwo and Umeh (2020), who emphasized that acquisition of computer operational skills has become indispensable for teachers in the 21st century because it enhances lesson preparation, storage of teaching materials, and classroom management. The finding also agreed with Adeoye and James (2021) that teachers who possess fundamental computer operational competence are more efficient in instructional delivery and can effectively integrate digital tools into classroom teaching.

Findings from research question 2 showed that Agricultural Science teachers, to a great extent, need internet utilization skills such as browsing for agricultural materials, downloading and uploading files, communicating via email with agricultural experts, and participating in online agricultural forums. The result implies that Agricultural Science teachers in Rivers State secondary schools recognize the importance of internet use in accessing agricultural information and need to develop basic competence in utilizing online platforms for instructional purposes. The result of the hypothesis tested also showed no significant difference in the mean responses of male and female teachers on the extent to

which internet utilization skills are needed and possessed. These findings align with Eze and Onyekachi (2022), who stated that internet utilization skills enable teachers to access global agricultural innovations and integrate up-to-date information into classroom instruction. It also corroborates the view of Olatunji and Adebayo (2021) that teachers proficient in internet utilization are better equipped to enhance teaching effectiveness, access professional development resources, and guide students toward research-based learning.

Findings from research question 3 showed that Agricultural Science teachers, to a great extent, needed software presentation skills such as creating slides with Microsoft PowerPoint, inserting multimedia content, using charts and graphs, and operating projectors effectively for lesson delivery. This indicates that Agricultural Science teachers appreciate the instructional value of digital presentation tools and need to apply them to make lessons more interactive and visually engaging. The result of hypothesis testing showed no significant difference between male and female teachers on the extent to which these skills are needed and possessed. These findings agree with Okechukwu and Alabi (2022), who observed that presentation software enhances instructional effectiveness by allowing teachers to organize and present complex information clearly using visual aids. The finding is also in agreement with Eze and Opara (2021), who opined that teachers who possess software presentation skills can foster student-centered learning through multimedia-enhanced teaching, leading to improved learner engagement and performance.

Conclusion

Based on the findings of the study, it was concluded that Agricultural Science teachers in Rivers State, to a great extent, needed computer operation, internet utilization, and software presentation skills for effective instructional

delivery in secondary schools. These competencies, when possessed, will collectively enhance teachers' efficiency, improve students' learning experiences, and promote digital integration in Agricultural Science education in the study area.

RECOMMENDATIONS

Based on the findings and conclusion of the study, the following recommendations were made:

1. The Ministry of Education should organize regular ICT-based training, workshops, and conferences to further strengthen Agricultural Science teachers' computer operation and internet utilization skills.
2. All the public secondary schools in Rivers State should be provided with adequate ICT facilities by the State Government to enhance teachers' application of technology in instructional delivery.
3. Agricultural Science teachers should be encouraged to update their software presentation skills continually through online courses and professional development programmes to improve classroom instruction quality.

REFERENCES

- Adeoye, I., & James, C. (2021). ICT competencies for effective teaching in science education. *African Journal of Teacher Education*, 10(1), 67–79.
- Eneh, A., & Okoli, D. (2023). Enhancing Agricultural Science instruction through digital competence. *International Journal of Science and Education*, 11(1), 55–68.
- Eneh, A., & Udo, E. (2023). Effective internet utilization and innovative teaching practices in Agricultural Science. *International Journal of Agricultural Education and Extension*, 8(3), 112–126.
- Eze, J., & Onyekachi, C. (2022). Internet skills and teaching performance among Agricultural Science teachers. *Nigerian Journal of Digital Education*, 3(2), 28–40.
- Eze, J., & Opara, N. (2021). Technology-driven classroom instruction and student-centered learning in secondary education. *African Journal of Pedagogical Studies*, 7(4), 55–69.
- Nwachukwu, C. (2021). Teaching effectiveness and technological adaptation in 21st-century classrooms. *Journal of Education and Pedagogical Studies*, 6(2), 60–74.
- Obanya, P. (2020). The role of secondary education in skill acquisition and national development. *International Journal of Secondary Education*, 12(1), 15–28.
- Obi, E., & Chukwu, U. (2022). Multimedia-enhanced teaching and knowledge retention in Agricultural Science education. *African Journal of Curriculum and Instruction*, 9(3), 44–58.
- Odjegba, G. O., Kachukwu, E. S. J., & Odjegba, K. L. (2021). The use of instructional media on effective instructional delivery system in schools. *Journal of Education and Training Technology*, 8(1), 79–85.
- Odu, B., & Chukwuma, N. (2021). Integration of computer-related skills and student engagement in secondary school Agricultural Science. *Journal of Science and Technology Education*, 7(1), 62–76.
- Okechukwu, O., & Alabi, R. (2022). Impact of software presentation skills on teaching and learning processes in Agricultural Science. *Journal of Digital Pedagogy*, 4(4), 90–104.
- Okocha, J., & Eze, C. (2022). Agricultural Science teachers and integration of ICT in Nigerian secondary schools. *Educational Innovations Review*, 9(2), 40–55.
- Okonkwo, I., & Umeh, J. (2020). Essential computer operation skills for 21st-century teaching in secondary schools. *International Journal of Educational Technology*, 3(1), 56–70.
- Olaitan, S., & Ali, A. (2019). Assessment and curriculum planning in vocational and technical education. *Journal of Technical Education*, 5(2), 21–35.
- Olatunji, M. (2021). Assessment as a tool for improving teachers' performance. *Journal of Educational Measurement and Evaluation*, 13(1), 33–48.
- Olatunji, M., & Adebayo, T. (2021). Internet proficiency and knowledge updating among Agricultural Science educators. *Journal of Online Learning and Agricultural Extension*, 5(3), 78–92.
- Opara, E., & Ezeani, C. (2021). Challenges of ICT integration in secondary school Agricultural Science. *Nigerian Journal of Science and Education*, 8(1), 64–78.
- Orikoha, E. (2024). Effect of mobile learning apps on students' academic achievement in mechanical engineering craft practice in Technical Colleges in Rivers State. *African Journal of Information, Economics and Management Research*, 2(3), 15–26.
- Ugwuoke, C. U., Babajide, E. A., Ekenta, L. U., Eze, G. E., Nwankwo, C. U., Ifeanyieze, F. O., Nwachukwu, C. U., Odoh, V. O., & Isiwu, E. C. (2023). Effects of multimedia application on students' academic achievement in Agricultural Science. *Journal of Baltic Science Education*, 22(6), 1074–1088. <https://doi.org/10.33225/jbse/23.22.1074>

Citation: Ogunu-Ebiye, U. G., and Emeya, S. (2026). Computer-related skills needed and possessed by agricultural science teachers for teaching in secondary schools in Rivers State, Nigeria. *African Educational Research Journal*, 14(2), 445-452.
