

APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY TOOLS IN THE ADMINISTRATION OF SECONDARY SCHOOLS BY PRINCIPALS IN OSUN STATE, NIGERIA

Jubril Busuyi Fakokunde
Department of Science, Technology, and
Mathematics Education,
Osun State University, Ipetu Ijesa Campus
jubril.fakokunde@uniosun.edu.ng

Margaret Funke Faremi
Department of Educational Management,
Osun State University, Ipetu Ijesa Campus
margaret.faremi@uniosun.edu.ng
Corresponding Author:
jubril.fakokunde@uniosun.edu.ng

<https://doi.org/10.69713/uoaaj2025v03i01.07>

Abstract

This study investigated secondary school principals' use of ICT tools for administrative purposes within Oriade and Ilesa East Local Government Areas of Osun State. A total of 50 principals were selected from both private and public secondary schools within the study area. A self-developed questionnaire titled "Principals' Use of ICT Tools for School Administration" with a reliability coefficient of 0.76 was used for data collection. Data were analyzed using frequency counts, percentages, t-test, and Analysis of Variance. The study revealed a low level of utilization of ICT tools in school administration by principals. It also reported no significant difference in the utilization on the platform of gender, school ownership, years of experience as teachers and principals. The study therefore recommends that the use of ICT tools for administration should be encouraged by exposing the principals to seminars and workshops that could stimulate the adoption, coupled with the provision of ICT infrastructure in secondary schools.

Keywords: Administration, application, ICT tools, principals, secondary school.

INTRODUCTION

Administration is core to the survival and effectiveness of every organization as it entails the management of both human and non-human resources towards the achievement of the organizational goals. According to Olaniyi (2018), cited in Madu and Yahaya (2021), tasks involved in school administration include curriculum development, instructional supervision, staff and student personnel administration, guidance and counselling, construction and maintenance of school facilities, and special services. In the views of Madu and Yahaya (2021), school administration involves proper manipulation of the available resources to achieve the desired ends in the teaching-learning process. The scholar identified planning, organizing,

directing, motivating, controlling, coordinating, decision making, and reporting as the major aspects of school administration. To Akinwumi, Babalola and Alegbeleye (2021), effective administration in the realm of education entails setting educational standard, developing academic programmes, monitoring students' progress, training and motivating staff, putting up a positive school environment, efficient record keeping, effective communication among the stakeholders coupled with managing systems and processes in a bid to enhance performance. The significance of school administration to the overall progress of the school system requires the adoption of technology rather than the traditional approach to management. The traditional mode of administration rests solely on manual documentation, which is

susceptible to loss of information. Scholars such as Ogunshola and Abiodun (2017), Akpan, Dung and Ibegbulam (2020), Odeniyi and Adeyanju (2020), and Thompson, Chukwuemeka and Nwamaka (2024) attest to the prevalence of manual documentation for administration at the secondary school level in some parts of Nigeria. This method of administration does not allow for easy retrieval of information, security of data against destruction by insects, animals, and mutilation of documents resulting from improper handling and extensive use, easy storage of data, and dissemination of information, thereby justifying the need to adopt ICT tools in school administration.

Premised on the enormous tasks entailed in school administration, there is a need to employ information and communication (ICT) tools to allow for efficiency and effectiveness, since ICT is effective in the area of data gathering, processing, storage, retrieval, and information dissemination. According to Liverpool and Jacinta (2013), personnel administration is multifaceted, involving students, resources, financial and general administration, which may be cumbersome, thereby requiring the use of ICT tools for effectiveness. Madu and Yahaya assert that the prime relevance of ICT in school administration is the ability to automate processes and achieve efficiency and effectiveness in the areas of instructional supervision and management of staff, students, facilities, and community relations, among others. According to Wokocho, Babalola and Appah (2015), the use of ICT in school enhances administration, which was corroborated by Omotayo and Chigbundu (2017) that reveals the efficacy of ICT use in administration, in terms of school management and administrative functions, reduction in administrator's workload, easy access to information, promotion of the image of the school, and fostering of communication between the school and parents.

Despite empirical evidence on the effectiveness of ICT in facilitating school administration, it has not been effectively adopted by school principals, who are the chief

administrators at the secondary school level. This is evident in Wokocho et al (2015), which found poor usage of ICT in school administration despite the acknowledgement of its efficacy in running school affairs. Oyedemi (2015) and Ogunshola and Abiodun (2017) also found moderate utilization of ICT devices in the administration of secondary schools, which has also been attested to by Akinwumi et al (2021). Onuorah and Chukwu (2022) equally revealed a low level of the adoption of ICT in the management of secondary schools. The above findings emanating from research across different states in Nigeria attest to the ineffective use of ICT in the administration of schools by principals.

The low level of utilization of ICT in secondary schools by principals could be attributed to some variables that influence technology adoption, such as gender, age, school ownership, and years of experience, among others. According to Oduor, Ayiro, and Boit (2018), there is no significant difference in the level of utilization of ICT by teachers based on gender. However, it was observed that the mean score of male teachers was higher than that of female teachers, but not significantly. Ogunshola and Abiodun (2017) also lend credence to the lack of significant difference in the use of ICT tools for administration at the secondary school level based on gender.

Aside gender, one of the variables that could influence the adoption of ICT in running the affairs of secondary school by principals is school ownership in terms of private and public since ownership of a school plays significant role in determining how the school will be run since allocation of resources is determined by the private individuals premised on the financial capabilities and other personal variables. Therefore, there is always variation between public and private schools in terms of teachers' recruitment, provision of infrastructural facilities, and general administration of the school, implying that school ownership could play a significant role in the adoption of ICT tools for school

administration. According to Akinwumi et al (2021), ICT tools are moderately used in public secondary school administration in Lagos, Nigeria.

However, Omotayo and Chigbundu (2017) revealed a high level of the use of ICT tools for managerial purposes by private secondary schools in Nigeria, while German, Obiekwe, Ogbo, Mbonu, and Chukwu (2021) found no significant difference in the employment of ICT tools for school administration by both private and public secondary school principals in Ebonyi State, Nigeria. Onuorah and Chukwu (2022) revealed a low level of utilization of ICT tools in school administration in Akwa Educational Zone in Anambra State, Nigeria. Dauda (2019) also showed rare utilization of ICT in school administration in Adamawa State in terms of record keeping and communication. The study conducted by Thankgod and Vulasi (2020) revealed that ICT tools are not used in record keeping, staff salary, admission processing, and disciplinary matters in secondary schools in Rivers State, Nigeria.

Working experience has also been identified as one of the factors that could affect the running of secondary schools in terms of the adoption of ICT tools for administration. Ogunshola and Abiodun (2017) revealed a significant difference in the use of ICT for administration based on principals' years of experience, with the less experienced using ICT tools for administration more than the older ones, which could be due to a generational gap between the less experienced and the more experienced principals.

Statement of the Problem

The use of information and communication technology tools in all facets of life cannot be underestimated based on the versatility in propelling efficiency and effectiveness in all fields of endeavour. Therefore, the educational system cannot be left out in terms of instructional delivery, security measures, and general administration. School documents and communication with stakeholders within the educational realm by administrative heads are

usually conducted through the tradition method which rests on the use of paper and pencil for documentation, physical filing for storage and letter writing for information dissemination which is usually challenged by easy loss of information, problem of storage facility, stress in retrieving information and inefficient information dissemination particularly with surge in student population Joel, Ogi and Ikpe (2019) cited in Madu and Yahaya (2021).

These have warranted advocating the adoption of ICT tools in the administration of schools. However, studies have been carried out on the level of adoption in school administration at the secondary school level in different states in Nigeria, such as Lagos, Abuja, Anambra, and Eboyi, with inconsistent findings, thereby calling for further investigation on the subject matter. The findings of this study will therefore acquaint stakeholders in the realm of education in Osun State with the level of ICT utilization in school management, thereby allowing for proper intervention where the need arises. This study further explored gender, school ownership, and teaching experience as moderator variables.

Research Question: To what extent is information and communication technology used in school administration by principals?

Hypotheses

1. There is no significant difference in principals' use of information and communication technology tools in school administration based on gender.
2. There is no significant difference in principals' use of information and communication technology tools in school administration based on school ownership.
3. There is no significant difference in the utilization of information and communication technology tools in school administration, regardless of the principals' years of experience as teachers.
4. There is no significant difference in the application of information and

University of Arusha Academic Journal, UoAAJ 3(1), 2025
communication technology tools in school administration based on the principals' years of experience as principals.

METHODOLOGY

The study adopted a descriptive survey design. All school principals in both private and public secondary schools in Oriade and Ilesa East Local Government Areas of Osun State constituted the population. 50 principals were randomly selected from 50 randomly selected schools, based on 1 principal per school. The instrument used for data collection was a self-developed questionnaire tagged 'Principals' Use of ICT Tools for School Administration'. The instrument was validated by two lecturers in the field of tests and measurement to ascertain its appropriateness. The reliability of the instrument was ascertained through a test-retest method based on the administration to 20 principals from a local government area that was not part of the study within two weeks. Their responses were analyzed, and a reliability coefficient of 0.76 was obtained. The instrument was personally administered by the researchers when data were analyzed using frequency counts, percentages, t-test, and Analysis of Variance.

RESULTS

This chapter presents the analysis of data and the interpretation of results. The first part presents the demographic distribution of respondents using descriptive statistics involving frequency counts and percentages, while the second part makes use of frequency counts, percentages, t-test, and Analysis of Variance.

Table 1: Distribution of Respondents by Gender (N = 50)

	F	%
Male	22	44.0
Female	28	56.0
Total	50	100.0

Table 1 shows that 44% of the respondents are male, while 56.0% are female.

Table 2: Distribution of Respondents by School Ownership (N = 50)

	F	%
Public	13	74.0
Private	37	26.0
Total	50	100.0

Table 2 presents the school ownership distribution of respondents. It shows that 74.0% of the respondents are from private schools, while 26.0% are from public schools. The higher number of respondents from private schools was premised on the existence of many private schools in the study area.

Table 3: Distribution of Respondents by Years of Teaching Experience (N = 50)

	F	%
0-5	9	18.0
6-10	9	18.0
11-15		18.0
16 and above	23	46.0
Total	50	100.0

Table 3 presents the distribution of respondents by years of teaching experience. It shows that 18.0% is between 0 and 5 years, 18.0% is between 6 and 10 years, 18.0% is between 11 and 15 years, while 46.0% is more than 16 years.

Table 4: Distribution of Respondents by Years of Experience as a Principal (N = 50)

	F	%
0-2	9	18.0
3-5	15	30.0
6-8	14	28.0
9 and above	12	24.0
Total	50	100.0

Table 4 presents the distribution of the respondents by years of experience as principals. It shows that 18.0% is between 0 and 2 years, 30.0% is between 3 and 5 years, 28.0% is between 6 and 8, while 24.0% is more than 9 years.

Analysis of Research Question

Research Question 1: To what extent is the technology in school administration by use of information and communication principals?

Table 5: Analysis of the Extent of the Use of Information and Communication Technology in School Administration by Principals (N = 50)

S/N	Items	Response							
		Always		Often		Rarely		Never	
		F	%	F	%	F	%	F	%
1	Sending text messages to teachers on official matters	31	62	9	18	9	18	1	2
2	Using the WhatsApp platform to pass official information	30	60	13	26	6	12	1	2
3	Engaging in conference calls to discuss official issues	9	18	17	34	14	28	10	20
4	Sending official information to a subordinate through email	10	20	17	34	12	24	11	22
5	Using video conferencing to discuss official matters	6	12	14	28	14	28	16	32
6	Engaging in a Zoom meeting with other teachers to discuss official matters	18	36	9	18	11	22	12	24
7	Using the public address system on the assembly ground during morning devotion	27	54	9	18	7	14	7	14
8	Keeping students' data on a computer system	24	48	14	28	8	16	4	8
9	Using external devices such as a flash drive, external disc, or CD-ROM for keeping official information	25	50	14	28	7	14	4	8
10	Keeping a record of students' results in a soft copy on the computer system	20	40	17	34	5	10	8	16
11	Communicating with parents through text messages	14	28	12	24	6	12	18	36
12	Using the WhatsApp group platform for interaction with parents	11	22	6	12	11	22	22	44
13	Using a WhatsApp group for interaction with students	5	10	7	14	9	18	29	58
14	Sending an electronic copy of the students' results to parents	4	8	7	14	12	24	27	54
15	Using voice calls to disseminate official information to parents	8	16	7	14	12	24	23	46

Table 5 presents the analysis of the extent of the use of information and communication technology in school administration by principals. The table shows that: 62% of the respondents always send text messages to their teachers on official matters, 18% often, 18% rarely while 2% never does that: 60% of the respondents always use WhatsApp platform in passing official information, 26% often, 12% rarely and 2% never engage in such; 18%, 34%, 28% and 20% always, often, rarely and never involve in the use of conference calls to discuss official issues respectively; the use of email to pass information to subordinate was always done by 20%, often by 34% rarely by 24% and never by 22%; 12% of the respondents use video conferencing in discussing official matters, 28% often, 28% rarely and 32% never; engaging in zoom meeting with other teachers to discuss official matters was always done by 36% of the respondents, 18% often, 22% rarely and 24% never; 54% use public address system on assembly ground during morning devotion, 18% often, 14% rarely and 14% never; 48% always keep students' data on computer system, 28% often, 16% rarely and 8% never.

The table further reveals that: 50% of the respondents use external devices such as flash drive, external disc, CD Rom for keeping official information 28% often, 14% rarely and 8% never; 40% Keeps records of students' results in soft copy on computer system, 34% rarely, 10% often and 16% never; 28% of the respondents communicate with parents through text messages, 24 % often, 12% rarely and 36% never; 22% uses WhatsApp platform to interact with parents, 12% often, 22% rarely and 44%; 10% uses WhatsApp platform to interact with students, 14% often, 18% rarely and 58% never; 8% of the respondents sends electronic copy of students' result to parents, 14% often, 24% rarely and 54% never; 16% makes use of voice call to disseminate official information to parents, 14% often, 24 rarely and 46 never. The table reveals that there is a low level of utilization of ICT in school administration by principals. Out of the fifteen items focusing on the utilization of ICT tools in administration, only four items have an aggregate of 50% positive responses from the respondents.

Research Hypotheses

Research Hypothesis 1: There is no significant difference in principals' use of information and communication technology tools in school administration based on gender.

Table 6: Summary of t-test Analysis of Gender Difference in the Use of Information and Communication Technology Tools in School Administration by Principals.

Gender	N	Mean	SD	T	Df	Sig. (2-tailed)	Remarks
Male	22	23.36	7.23	0.016	48	0.987	Not Significant
Female	28	23.39	5.83				

Table 6 presents the analysis of gender differences in the use of information and communication technology in school administration by principals based on gender. The result reveals that there is no significant difference in the use of information and communication technology in school administration by principals based on gender (t = 0.016, df = 48, p > 0.05). This implies that

male principals' use of information and communication technology in school administration does not significantly differ from that of females.

Research Hypothesis 2: There is no significant difference in principals' use of information and communication technology tools in school administration based on school ownership.

Table 7: Summary of t-test Analysis of Difference in the Use of Information and Communication Technology Tools in School Administration by Principals based on School Type

School Type	N	Mean	SD	T	Df	Sig. (2-tailed)	Remark
Public	37	23.67	7.05	0.545	48	0.588	Not Significant
Private	13	22.53	4.23				

Table 7 presents the difference in the use of information and communication technology in school administration by principals based on school type. The result reveals that there is no significant difference in the use of information and communication technology in school administration by principals based on school type (t = 0.545, df = 48, p > 0.05). This implies that public school principals' use of information and communication technology in school administration is not significantly different from that of private schools.

Research Hypothesis 3: There is no significant difference in the utilization of information and communication technology tools in school administration, regardless of the principals' years of experience as teachers.

Table 8: Summary of ANOVA showing the Difference in the Use of Information and Communication Technology in School Administration Based on the Principals' Years of Experience as Teachers

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	303.867	3	101.289	2.715	0.076

Within Groups	1715.913	46	37.302		
Total	2019.780	49			

A one-way ANOVA was conducted to examine if there is a significant difference in the use of information and communication technology in school administration based on the principals' years of experience as teachers. The results revealed that there is no significant difference in the use of information and communication technology in school administration based on the principals' years of experience as teachers. ($F(3, 46) = 2.715, p = 0.076$). Since the p-value is greater than 0.05, it implies that the null hypothesis is rejected. Research Hypothesis 4: There is no significant difference in the application of information and communication technology tools in school administration based on the principals' years of experience as principals.

Table 9: Summary of ANOVA showing the Difference in the Use of Information and Communication Technology Tools in School Administration Based on Principals' Years of Experience as Principals

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	195.416	3	65.139	1.642	0.193
Within Groups	1824.364	46	39.660		
Total	2019.780	49			

A one-way ANOVA was conducted to examine if there is a significant difference in the use of information and communication technology in school administration based on the principals' years of experience as principals. The result reveals that there is no significant difference in the use of information communication technology in school administration based on the principals' years of experience as a principal ($F(3, 46) = 1.642, p = 0.193$). Since the p-value is greater than 0.05, it implies that the null hypothesis is rejected.

DISCUSSION OF FINDINGS

The study reveals a low level of utilization of ICT tools in school administration. The study

shows that up to 50% of the respondents always use text messages and the WhatsApp platform for the dissemination of official information, use the public address system on the assembly ground, and keep a soft copy of official information using external devices. Out of the fifteen items on the level of the utilization of ICT for administrative purposes by school principals, only four items received positive responses, ranging between 50% 62%, thereby reflecting low utilization of ICT tools by principals in both private and public secondary schools in the study area. The result attests to the findings of Wokocho et al. (2018) and, Onuorah and Chukwu (2022) while negating Oyedemi (2015), Ogunshola and Abiodun (2017), Akinwumi et al. (2021) who reveal moderate use of ICT tools in school administration. This result may be attributed to lack of relevant exposure to using ICT tools for administration by the school principals aside personality variables such as gender, age and experience.

The study also reveals a lack of significant difference in the use of ICT tools for administrative purposes by principals based on gender. Though female has a higher mean score than males but the difference is not significant. This is in accord with Ogunshola and Abiodun (2017), Oduor, Ayiro and Boit (2018). This implies that the low utilization of ICT tools for administration may not be attributed to a gender technological gap.

The study further reveals a lack of significant difference in principals' use of ICT tools for administration based on school ownership. That is, both private and public secondary schools do not differ in the application of ICT tools in the administration. This study negates Omotayo and Chigbundu (2017), who found high use of ICT for school administration in private schools, and Akinwumi et al (2021), who found moderate use of ICT tools for administrative purposes in public secondary schools. However, it aligns with German, Obiekwe, Ogbo, Mbonu, and Chukwu (2021) show no significant difference in the employment of ICT tools for school administration by both private and public

secondary school principals. This finding could be attributed to a lack of proper knowledge of the use of ICT in administration on the part of those in public and private schools, despite differences in terms of funding and supervision.

The study also shows no significant difference in the use of ICT tools for administrative purposes based on the years of experience as teachers and as principals. This is contrary to Ogunshola and Abiodun (2017), which reveals a significant difference in the use of ICT for administration based on principals' years of experience, with the less experienced using ICT tools better for administration than the older ones. This implies a lack of generational gap bias in the use of ICT tools for administration.

CONCLUSION

The study investigated the use of ICT tools by principals in the administration of secondary schools in Oriade and Ilesa East Local Government Areas of Osun State, making use of fifty principals selected from both private and public secondary schools as respondents. A self-developed questionnaire was used for data collection. The study reveals a low level of utilization of ICT tools in school administration by principals, and no significant differences exist based on gender, school type, and years of experience.

RECOMMENDATIONS

The study recommends that:

1. Principals should adopt ICT tools in the administration of secondary schools.
2. Seminars and workshops should be organized for principals on how to make use of ICT tools in the administration of secondary schools.
3. Necessary amenities and equipment that are needed for the proper utilization of ICT tools in school administration should be provided in schools.

REFERENCES

- Akinwumi, O. O., Babalola, Y. T. & Alegbeleye, G. O. (2021). Information and communication technology use on the effective administration of public schools, Lagos State, Nigeria. *International Journal of Innovative Research in Education, Technology and Social Strategies*, 8(1), 37-47.
- Akpan, I. T., Dung, E. B. & Ibegbulam, C. A. (2020). Impact of information and communication technology on school administration in Nigeria secondary school. *International Journal of Applied Sciences, Engineering & Technology*, 6(4), 27-46.
- Dauda, H. (2019). Role of ICT in secondary school administration: Evidence from secondary schools in Yola Metropolis, Adamawa State. *Journal of African Sustainable Development*, 17(7), 97-107.
- German, I. O., Obiekwe, K. K., Ogbo, R. N. Mbonu, O. A. & Chukwu, N. R. (2021). Extending e-administration capabilities for safe school management using ICT peripheral devices in secondary schools in Ebonyi State, Nigeria. *European Journal of Education Studies*, 8(5), 334-345.
- Liverpool, E. & Jacinta, A. (2023). Information and communication technologies: A panacea to achieving effective goals in institutional administration. *Mediterranean Journal of Social Sciences*, 4(13), 227-230.
- Madu, C. O. & Yahaya, D. M. (2021). Deployment of ICT for administration in public secondary schools in North-Central Geo-Political Zone, Nigeria. *International Journal on Integrated Education*, 4(11), 150-161.
- Odeniyi, O. A. & Adeyanju, A. S. (2020). Assessment of school record management in secondary schools in the Federal Capital Territory. *Open Journal of Educational Development (OJED)* 1(1), 54-65.
- Oduor, N. H., Ayiro, L. & Boit, J. (2018). Teachers' gender influence in the adoption and use of information and communication technology in public secondary schools in Kenya. *African Journal of Education, Science and Technology*, 4(3), 236-243.

- Ogunshola, R. F. & Abiodun, A. (2017). Principals' personal variables and information and communication technology utilization in Federal Capital Territory senior secondary school, Abuja, Nigeria. *Journal of Education and Practice* 8(15), 130-135.
- Omotayo, F. O. & Chigbundu, M. C. (2017). Use of information and communication technology for the administrative and management of schools in Nigeria. *Journal of System and Information Technology*, 19(3/4), 183-201.
- Onuorah, H. C. & Chukwu, N. R. (2022). Principals' utilization of information and communication technology (ICT) for effective management of secondary schools in Awka Educational Zone, Anambra State. *International Journal of Research Publication and Reviews*, 3(11), 67-72.
- Oyedemi, O. (2015). ICT and effective school management and administration perspective. *Proceedings of World Congress on Engineering*, Volume 1 WCE, July 1-3, London, UK.
- Institutional Leadership, Policy and Management*, 2(2), 401-413.
- Thompson, C. C., Chuckwuemeka, B. I. & Nwamaka, A. M. (2024). Principals' school records management practices for administrative effectiveness in public secondary schools in Njikoka Local Government Area of Anambra State. *Unizik Journal of Educational Management and Policy (UJOEMP)*, 6(4), 175-183.
- Wokocha, K. D-K., Babalola, J. O. & Appah, C. N. (2015). Utilization of information communication technology facilities for the administration of public secondary schools in Rivers State, Nigeria. *International Journal of Innovative Social Science Education Research*, 6(2), 126-133.
- ThankGod, J. N. & Vulasi, B. K. (2020). Utilization of ICT in the administration of public senior secondary schools in Rivers State. *International Journal of*