

**Teachers' Attitude to the Use of Information and Communication Technology
in Teaching English Language in Secondary Schools, Ibadan South East, Oyo
State**

¹*Esther Alaba OWOMOYELA*
Lead City University, Ibadan, Nigeria.
estherajireloja@gmail.com
+234 7037504052

&

²*Clement Olusegun KOLAWOLE*
Trinity University, Yaba, Lagos
Nigeria. kocycool57@yahoo.com
+234 8033340402

Abstract

This study examined teachers' attitude to the use of Information and Communication Technology in the teaching of English Language in selected secondary schools in Ibadan South East, and applied Technology Acceptance Model. A descriptive survey research design was adopted. The population of the study comprises of 482 English Language teachers. Multistage sampling procedure was used to select 40 English Language teachers in junior secondary schools and 40 English Language teachers in senior secondary schools making it a total of 80 English Language teachers. The instrument used for data collection was structured questionnaire. Cronbach's alpha was used to measure the questionnaire's internal consistency reliability (coefficient= 0.76). Descriptive and inferential statistical tools were used to analyze the data collected. Results revealed that the respondents had the highest level of proficiency in the use of 'internet facilities' (mean=3.08). Results further revealed that majority (92.5%) of the respondents had favourable attitude towards the use of ICT tools. Results of Analysis of Variance (ANOVA) show that at $P \leq 0.05$, there was a significant relationship between the gender of respondents and their attitude towards the use of ICT tools ($F = 6.261$, $P\text{-value} = 0.014$). The study found that while teachers in the study area have a positive attitude towards using ICT tools for teaching English Language, most of them lack proficiency in using them. It was recommended that secondary schools with ICT tools should make use of them in teaching English language, and in-service training should be conducted for teachers to effectively integrate technology into their lessons.

Keywords: Teachers' attitude, ICT (Information and Communication Technology), English Language teaching.

Word Count: 249

Introduction

Information and Communication Technology (ICT) has become a key tool with a revolutionary impact on how the world is seen and how people live in it. ICTs have gained great relevance in our environment. They have a wide catalogue of application in various sectors such as entertainment, administration, education and all kinds of companies. Information and communication technological (ICT) tools are essential in teaching and learning (Molla & Seyoum, 2022). Therefore, effective integration of ICT tools at different levels of education can enable educational stakeholders to create an interactive learning environment and increase student learning engagement (Toma et al., 2023).

Information and Communication Technology is a term that means different things to different people. As defined by Kharel (2018), "Information and Communication Technology (ICT) refers to the broad range of hardware, software, network infrastructure and media that enable the processing, storage and sharing of information and communication both among humans and computers, locally and globally." Ntongieh (2016) sees ICT as any product which will store, retrieve, manipulate, transmit or receive information electronically in a digital form. ICT is very useful in addressing some challenges that are currently being faced in the education sector.

The world in which people live in is moving fast and frequent changes are occurring in all sectors- including the education sector. The biggest instance is the corona virus pandemic. Covid-19 has changed the whole world, and taught a lot of people new lessons on how to overcome unexpected challenges. Due to lockdown, most people are working online from home, and in fact, teachers and educators are all working hard so that learning continues. The pandemic has brought a new model of learning (that is, online learning) to people. Today, from morning till evening, people are surrounded by media like newspapers, radio, television, and computers.

Also, every aspect of life is related to science and technology and the flow of information is emerging in all fields throughout the world. In 1998, UNESCO World Education report stated that teachers and students must have sufficient access to improved digital technology and the internet in their classrooms, schools and teacher educational institutions. Teachers must have the knowledge and skills to use new digital tools to help all students achieve high academic standard.

Given the utility of ICT in enhancing teaching and learning, its benefits have not been entirely harnessed. The research findings of Stallard (2006) & Ikwuka (2017) suggested that the main problem of teachers in implementing ICT appropriately and effectively is attitudinal, although provision of infrastructure in schools are badly affected by public sector and corruption in Nigeria (Ezeh & Etodike, 2016). This is because teachers do not even take cognizance of the roles and benefits of ICT facilities in enhancing teaching and learning meanwhile both the teachers and students are central to successfully integrating ICT tools in secondary schools. Their attitude and use of these tools influence the effectiveness of their integration (Istiningsih, 2022). The research shows that teachers with positive attitude towards the use of ICT in education behave differently than their colleagues with less positive attitude. It is revealed that majority of teachers are afraid of the computer, unaware of the resources

available and unwilling to expand the extra effort in planning to use it in a presentation or make arrangements for the set-up and operation of the necessary equipment.

Furthermore, schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. In some contexts, ICT has also become integral to the teaching-learning interaction through such approaches as replacing chalkboards with interactive digital whiteboards, using students-own smartphones or other devices for learning during class time, and the flipped classroom model where students watch lectures at home on the computer and use classroom time for more interactive exercises. When teachers are digitally literate or trained to use ICT, it can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in the school and society at large.

Additionally, recent years have witnessed a global spread and acceptance of ICT tools in education, and the ability to use ICT tools in the classroom has become a necessary skill for educators (Dzinoreva & Mavunga, 2022).

The information age is moving and rapidly progressing; therefore, teachers would have to prepare and equip themselves with the relevant knowledge and skills in the information technology-related areas. Most teachers today have access to computers and are beginning to recognize it as a useful tool in the teaching and learning process. Teachers can now interact with their friends (chatting), communicate with international teachers, do class teaching, give assignments, prepare for examinations, update their knowledge through research, and read the latest news, with the help of ICTs. Teachers are the front-runners for classroom ICT integration. They are responsible for adopting a positive mindset, changing their beliefs, and altering their teaching practices to integrate ICT effectively. Additionally, teachers provide support and facilitate meaningful professional development opportunities, creating a supportive and innovative educational environment (Mohd et al., 2014; Tang, 2021; Zeng, 2022).

Attitude refers to one's perception and inclined behaviour regarding an experience whether favourable or unfavourable (Zhang & Aikman, 2007). In the views of Beri and Sharma (2019), attitude is an inclination to respond positively or negatively towards a certain idea, object or situation. In psychology, attitude is a set of emotion, beliefs and behaviours towards a particular object, person, thing or event. Semerci and Aydin (2018) define attitude as an element that guides the behaviour of an individual in coherence with their feelings and thoughts. From the views of these authors, attitude is the state of mind of an individual at any given time and situation. While in the context of this study, attitude is the behavioural and psychological setting, disposition of a teacher towards utilization of ICT in teaching and learning process.

For greater effectiveness, English language teachers are expected to apply the most proper methods to take care of learners' needs. Depending on the most suitable techniques, a well-prepared language teacher is expected to adopt an approach that will address learners' specific objectives and needs. At this technology age, many readily available instructional materials can be used in the classroom to enhance teaching and learning. Smart phones, for example, have become a part of modern life. Both teachers and learners can be creative

with the use of smart phones. For instance, smart phones provide many useful tools, such as a dictionary, translator, and grammar reference apps for students. Much like computers, students need to understand that phones are not for play, but to be used as learning tools. Aside from translations, word reference is an app that has a thesaurus, an English dictionary, and a forum where other users can comment on difficult words or expressions. Learners can be asked to browse through websites to find the information they need to write essays or complete some write-ups. Students can also use their devices to access free online exercises that reinforce language and skills experienced in class. Other uses can involve students recording their activities for the purpose of proper evaluation.

Statement of the Problem

The development of ICT and education in Nigeria is faced with a variety of problems, some of which may be due to unfavourable government policy or inadequate government financial support for educational institutions. It may also be through parents, teachers or students themselves. Problems of quality and lack of resources are surrounded by the new realities faced by secondary schools struggling to cope with every increasing number of students.

However, challenges and gaps exist, such as uncoordinated planning and implementation, shortages of trained staff to cope with the diversity of responsibilities and tasks, resistance from staff and reluctance to be retrained, the need to recognize and utilize the appropriate technology and tools, and the need to engage staff with proper knowledge and skills, among others.

Several studies have been conducted on the integration of Information and Communication Technology (ICT) among English language teachers. For example, Aniah (2018) examined the impact of Computer Assisted Instruction (CAI) on pupils' retention of English word-formation and discovered that students taught using CAI demonstrated better retention compared to those taught through traditional lecture methods. Similarly, Abubakar (2025) assessed the availability, utilization, and impact of ICT in teaching English as a second language in secondary schools, and revealed that there was shortage of ICT tools and extremely low level of utilization among English teachers. Furthermore, Obadare *et al.*, (2024) explored ICT usage in secondary schools within Ikere Local Government Area, Ekiti State, Nigeria, finding that ICT significantly improved English language teaching, with no notable gender differences in access or utilization among teachers.

Although these studies provide valuable insights, research specifically addressing the attitudes of English language teachers toward ICT use remains scarce, especially in Ibadan South East Local Government Area of Oyo State. This study therefore seeks to fill this gap by examining the attitudes of English language teachers toward ICT use in selected secondary schools.

Aim and Objectives of the Study

The main aim of this study is to examine teachers' attitude to the use of Information and Communication Technology in teaching English Language in secondary schools in Ibadan South East.

The objectives of the study are to:

1. examine the proficiency of respondents in the use of ICT tools;
2. analyze the attitude of respondents towards the use of ICT for teaching English Language; and
3. investigate the relationship between teachers' demographic variables (age, gender, educational qualification and teaching experience) and their attitude towards the use of ICT.

Research Questions

The following research questions are raised to guide the study:

1. How proficient are the respondents in the use of ICT?
2. What is the attitude of respondents towards the use of ICT for teaching English Language?
3. What is the relationship between teachers' age, gender, educational qualification, teaching experience and their attitude to the use of ICT?

Methodology

This study adopted a descriptive survey research design which involves quantitative data. This research design is appropriate because it helps the researcher to gain a more complete picture as it integrates the benefits of the method. The study seeks to assess the teachers' attitudes to the use of ICT in teaching English Language in selected secondary schools in Ibadan South East Local Government Area of Oyo State, Nigeria. The study was carried out in twenty secondary schools within Ibadan South East Local Government Area of Oyo State, out of a total of 97 secondary schools in the local government.

The population of the study comprises of 482 English Language teachers in all junior and senior secondary schools in Ibadan South East, Oyo State, Nigeria. Multistage Sampling procedure was used to select 80 English Language teachers as the sample for the study. At the first stage, schools owned by Oyo State government were purposefully selected due to the fact that they are public schools. At the second stage, schools that have presented candidates for Senior and Junior Secondary School Certificate examinations for at least five years were selected. At the third stage, twenty (20) schools that have qualified English Language teachers at the Junior and Senior Secondary School levels were selected. And at the fourth Stage, two (2) teachers who teach English language in junior school level, and also two (2) English language teachers in senior school level were selected from each of the twenty selected secondary schools, to make a total of four selected teachers per school. Therefore, the samples for the study were eighty (80) English Language teachers.

The instrument of this research is structured questionnaire. The questionnaire was designed to gather the information needed on teachers' attitude to the use of ICT in the teaching of English Language in secondary schools in all its manifestation.

The validity of the instrument was determined by experts in the same field for counsel and necessary corrections to ascertain whether the instrument actually measured what it was

supposed to measure. The reliability of the instrument was determined using the Cronbach's alpha reliability method and a correlation coefficient of 0.76 was obtained indicating that the instrument was reliable and consistent for the study.

Ethical approval was obtained from the relevant **institutional review board** and the **Osun State Ministry of Education**. Formal letters was also sent to participating school principals to secure permission and schedule suitable dates for administering the instruments. On the agreed dates, the researcher personally administered the questionnaires to teachers during school hours.

Quantitative data collected in this study were analyzed through the use of descriptive statistics (such as frequency count, percentages, and means) and inferential statistics, such as Analysis of Variance (ANOVA).

Results

Research Question 1: How proficient are the respondents in the use of ICT?

Table 1: Distribution of respondents by their proficiency in the use of ICT tools (n=80)

ICT Tools	Very proficient	Averagely proficient	Fairly proficient	Not Proficient	Mean
1 Computer	42 (52.5)	14 (17.5)	9 (11.3)	15 (18.8)	3.04
2 Projector	18 (22.5)	23 (28.8)	10 (12.5)	29 (36.3)	2.38
3 Internet facilities	44 (55.0)	12 (15.0)	10 (12.5)	14 (17.5)	3.08
4 Digital Camera	17 (21.3)	21 (26.3)	11 (13.8)	31 (38.8)	2.30
5 Video Camera/ Camcoder	16 (20.0)	20 (25.0)	14 (17.5)	30 (37.5)	2.28
6 Electronic books/ Ebooks	22 (27.5)	19 (23.8)	12 (15.0)	27 (33.8)	2.45
7 Video tutorials	18 (22.5)	19 (23.8)	14 (17.5)	29 (36.3)	2.33
8 Educational software	21 (26.3)	21 (26.3)	11 (13.8)	27 (33.8)	2.45

*Values in parenthesis are percentages (%)

Source: Field Survey, 2023.

Table 1 show that the respondents had the highest level of proficiency in the use of 'internet facilities' (mean = 3.08) of which 55 percent of the respondents were very proficient, 15 percent were averagely proficient, 12.5 percent were fairly proficient, and 17.5 percent were not proficient. The ICT tool that ranked second in terms of respondents' proficiency was 'computer' (mean = 3.04) of which 52.5 percent of the respondents were very proficient, 17.5 percent were averagely proficient, 11.25 percent were fairly proficient and 18.75 percent

were not proficient. Moreover, video camera/camcoder and education software ranked 3rd, projector ranked 5th, video tutorial ranked 6th, and digital camera ranked 7th.

Furthermore, the ICT tools that the respondents had the lowest proficiency in its use was video camera/camcoder (mean = 2.28) of which 20 percent of the respondents were very proficient, 25 percent were averagely proficient, 17.5 percent were fairly proficient and 37.5 percent were not proficient.

Research Question 2: What is the attitude of respondents towards the use of ICT in teaching English Language?

Table 2: Distribution of the respondents by their attitude towards the use of ICT (n=80)

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Rank
ICT provides better learning and teaching experiences for me in my subject area	45 (56.3)	32 (40.0)	3 (3.8)	0 (0.0)	3.53	1 st
The use of ICT helps me to work harder	36 (45.0)	37 (46.8)	7 (8.8)	0 (0.0)	3.36	4 th
I teach more using ICT (such as ebooks) than I do from hardcopy of books directly	28 (35.0)	36 (45.0)	15 (18.8)	1 (1.3)	3.14	9 th
ICT is useful in dissemination of information to learners	37 (46.3)	39 (48.8)	4 (5.0)	0 (0.0)	3.41	2 nd
ICT makes teaching subject more interesting	33 (41.3)	41 (51.3)	5 (6.3)	1 (1.3)	3.33	5 th
ICT skill is not worthwhile	13 (16.3)	12 (15.0)	33 (41.3)	22 (27.5)	2.20	13 th
ICT provides opportunity to easily keep students' records	36 (45.0)	39 (48.8)	5 (6.3)	0 (0.0)	3.39	3 rd
Using ICT tools such as computer and projector make me to accomplish teaching tasks more quickly	30 (37.5)	40 (50.0)	9 (11.3)	1 (1.3)	3.24	7 th

Lead City University Postgraduate Multidisciplinary Serial, (Series 5)

I am more engaged in teaching with the help of ICT tools	23 (28.8)	37 (46.3)	19 (23.8)	1 (1.3)	3.03	11 th
ICT does not address all the needs of my school system	29 (36.3)	29 (36.3)	16 (20.0)	6 (7.5)	3.01	12 th
The use of computer and other ICT tools make it easier to prepare lesson notes	27 (33.8)	37 (46.3)	15 (18.8)	1 (1.3)	3.13	10 th
Use of ICT tools enhance students' understanding of the lessons	32 (40.0)	37 (46.3)	11 (13.8)	0 (0.0)	3.26	6 th
ICT does not give room for improvement	12 (15.0)	15 (18.8)	30 (37.5)	23 (28.8)	2.20	13 th
ICT cannot promote effective teaching	12 (15.0)	14 (17.5)	30 (37.5)	24 (30.0)	2.18	15 th
The use of ICT is expensive	32 (40.0)	34 (42.5)	10 (12.5)	4 (5.0)	3.18	8 th

Source: Field Survey, 2023.

Table 2 shows that, among the statements that deal with the attitude of respondents towards the use of Information and Communication Technology, the statement that ranked first was "ICT provides better learning and teaching experiences for me in my subject area" (mean = 3.53), followed by the statement "ICT is useful in dissemination of information to learners" (mean = 3.41), and then, the statement "ICT provides opportunity to easily keep students' records" (mean = 3.39). However, the statement that ranked lowest (15th) was "ICT cannot promote effective teaching" (mean = 2.18).

Overall attitude towards the use of ICT tools

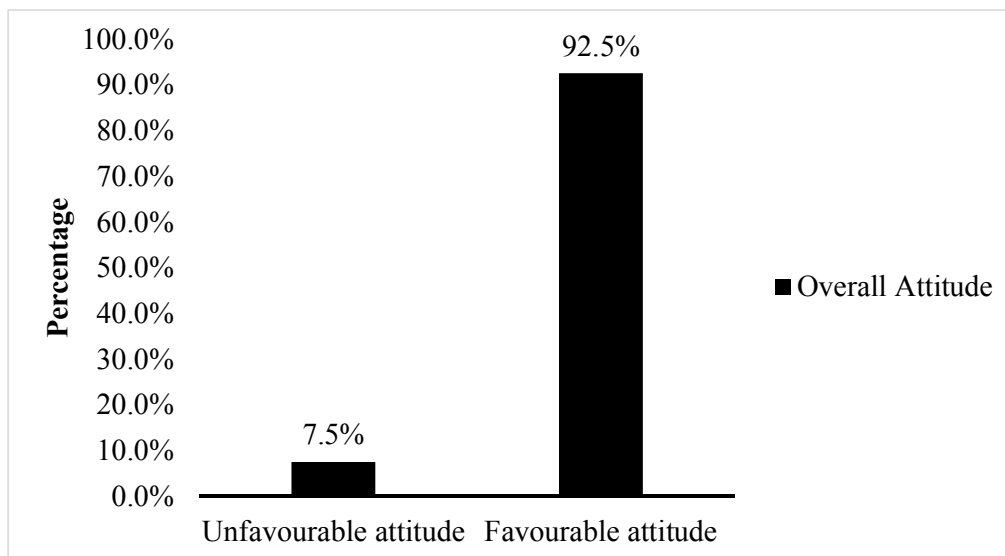


Figure 1:

Distribution of respondents according to their overall attitude towards the use of ICT tools.

Source: Field Survey, 2023.

Results in Figure 1 shows that majority (92.5%) of the respondents had favourable attitude towards the use of ICT tools while only 7.5 percent had unfavourable attitude.

Research Question 3: What is the relationship between teachers’ age, gender, educational qualification, teaching experience and their attitude to the use of ICT?

Table 3: ANOVA result for the test of the relationship between personal characteristics (gender, age, educational qualification and teaching experience) of respondents and their attitude towards the use of ICT tools

Variable	Df	SS	MS	F-cal	P-value	Decision
Gender	1	294.811	294.811	6.261	0.014	S
Age categories	5	222.777	44.555	0.880	0.499	NS
Educational qualification	5	450.498	90.100	1.896	0.105	NS
Teaching experience	2	219.841	109.920	2.258	0.111	NS

df= degree of freedom; SS = Sum of Squares; MS = Mean Square; S= Significant; NS = Not Significant

Source: Computed from field survey data, 2023.

Table 3 reveal that at $P \leq 0.05$, there was a significant relationship between the gender of respondents and their attitude towards the use of ICT tools ($F= 6.261$, $P\text{-value} = 0.014$). This

implies that there was a statistically significant difference in the attitude of male teachers compared to the attitude of female teachers. The table also shows that there was no significant relationship between the age ($F= 0.880$, $P\text{-value} = 0.499$), educational qualifications ($F= 1.896$, $P\text{-value} = 0.105$) and teaching experience ($F= 2.258$, $P\text{-value} = 0.111$), and their attitude towards the use of ICT tools.

Discussion of Findings

Findings from research question one indicates that majority of the teachers had a low level of proficiency in the use of ICT tools in the study area. This finding is in agreement with Tayo and Adedayo (2018), which indicated that most teachers in secondary schools do not have the required competence in the use of Information and Communication Technology.

Findings from research question two reveals that majority of the English language teachers had favourable attitude towards the use of ICT tools while very few had unfavourable attitude. This implies that a high number of teachers in the study area had good disposition to ICT tools usage. This positive attitude could be leveraged on to achieve more level of ICT usage, if the ICT tools are made more accessible to the teachers and also, if the teachers could be enlightened on how to effectively make use of the tools in their teaching processes. This result is in agreement with the findings of Ikwuka, *et al.* (2020) which indicated that teachers in Secondary Schools have positive attitude towards the use of ICT tools in teaching for quality instructional delivery. Furthermore, this finding also corroborates with that of Obiegbu (2016) that teachers have positive attitude to the use of ICT in teaching English language in Secondary School.

According Toma *et al.* (2023) their study conducted in Norway revealed that limited access to ICT-related professional development among teachers negatively impacted their capacity to effectively integrate technology into pedagogy.

While findings in research question 3 indicates that the age category of the teachers, their highest educational qualification and the number of years of their teaching experience had no significant influence on their attitude towards the use of ICT tools in the study area.

Conclusion

The study concluded that most of the teachers are not very proficient in the use of ICT tools; however, majority of them have positive or favourable attitude towards the use of ICT tools in the teaching of English language. In addition, the gender of the teachers has statistically significant relationship with their attitude towards the use of ICT tools. Meanwhile, educational qualification, teaching experience and age do not have significant relationship with the attitude of the teachers towards the use of ICT tools.

Recommendations

- i. Considering the fact that most of the English teachers were not very proficient in the use of some of the ICT tools, in-service training should be conducted for

- teachers on how to make good use of the tools and appropriately apply them in the teaching of their subjects. This will go a long way in helping the teacher to be more effective in performing their duties, and also help the students to learn better.
- ii. Given the generally favourable attitude of English language teachers toward the use of ICT, it is recommended that education authorities and school administrators leverage this positive disposition by providing adequate ICT facilities, reliable internet access, and continuous professional development programmes. At the same time, targeted orientation and hands-on training should be organized to address the unfavourable attitudes held by a few teachers by demonstrating the effectiveness, relevance, and practical classroom applications of ICT. This approach will help strengthen positive attitudes, correct misconceptions, and promote the effective and sustained integration of ICT tools in the teaching of English Language.
 - iii. School administrators should ensure equal access to ICT facilities and continuous support for all teachers, regardless of gender, in order to minimize attitudinal differences and enhance effective ICT utilization in secondary schools.

References

- Abubakar, M. (2025). The availability, utilisation and impacts of information and communication technology (ICT) in teaching and learning English as a second language in secondary schools in Borno State. *GAS Journal of Arts Humanities and Social Sciences GASJAHSS*, 3(10):15-21.
- Aniah, A. (2018). Effects of computer assisted instruction on pupils' retention in word-formation in English Language in Niger State, Nigeria. *Journal of Science & Technology / FUT Minna*, 14:1.
- Beri, N., & Sharma, L. (2019). Teachers' attitude towards integrating ICT in teacher education. *International Journal of Innovative Technology and Exploring Engineering*, 8(8), 285-294.
- Dzinoreva T., & Mavunga G., (2022) Integrating ICTs into the Zimbabwean secondary school pre-service teachers' curriculum *Journal of Education*, 88 (2022), pp. 53-68, 10.17159/2520-9868/i88a04
- Ezeh, L. N., & Etodike, C. E. (2016). Corruption in Nigeria organizations: Theories & implications. *Proceedings of Annual Scientific Conference of Nigeria Psychological Association (NPA)*, held at Nnamdi Azikiwe University Awka, Nigeria, 11th – 14th Oct. 2016
- Ikwuka, O. I., Obumneke-Okeke, I. M., Okeke, C. C., & Adigwe, J. E. H. (2017). Assessment of Teachers' literacy of instructional value and use of ICT in secondary schools in Nnewi education zone. *Journal of Emerging Trends in Educational Research and Policy Studies*, 3(2), 104-113.
- Ikwuka, O. I., Onyali, L. C., Olugbemi, O. P., Etodike, C. E., Igbokwe, I. C., & Adigwe, E. J. (2020). Teachers' Attitude towards the Use of ICT for Quality Instructional Delivery in Onitsha North Secondary Schools, Anambra State, Nigeria. *International Journal of Academic Research in Progressive Education & Development*. 9(3), 1-11.

- Istiningsih, I., (2022) Impact of ICT integration on the development of vocational high school teacher TPACK in the digital age 4.0 World Journal on Educational Technology: Current Issues, 14 (1) , pp. 103-116, 10.18844/wjet.v14i1.6642
- Kharel, S. (2018). Information and Communication Technology for the rural development in Nepal. *Tribhuvan University Journal*, 32(2):177-190
- Mohd Ayub F., R.A. Tarmizi R., A., Abu Bakar K., Luan W., S., (2014) Adoption of WxMaxima software in the classroom: Effect on students' motivation and learning of mathematics. *Malaysian Journal of Mathematical Sciences*, 8 (2) (2014), pp. 311-323
- Molla S., & Seyoum Y., (2022) Status of ICT integration in secondary schools: Dire dawa city administration in focus. *Education Research International*, 10.1155/2022/8752809
- Ntongieh, N. E. (2016). ICT and English language teaching and learning in Cameroonian secondary schools. *Global journal of Human-Social Science: G Linguistics and Education*, 16(6), 2-8.
- Obadare, F. T., & Alonge, S. G. (2024). ICT in Education: An Effective Tool for Teaching English Language in Secondary Schools in Ikere Local Government Area of Ekiti State, Nigeria. *International Journal of Research and Innovation in Social Science (IJRISS)*, 8(3): 4896-4904. DOI: 10.47772/IJRISS.
- Obiegbo, I. R. (2016). Attitude of Students/Teachers to the Use of Information Communication Technology (ICT) in the teaching of English Language in Senior Secondary Schools in Awka, Nigeria. *International Journal of Advanced Research*, 4(8):1639-1649
- Stallard, C. (2006). Factors that influence the integration of technology into the curriculum. <http://ed.info.apple.com/education/tech/learn/adapt/adaptfactors.html>.
- Semerci, A. & Aydin, M. K. (2018). Examining high school teachers' attitudes towards ICT use in education. *International Journal Progress education*, 14, 93-105.
- Tang Y., (2021) Does information and communication technology (ICT) empower teacher innovativeness: A multilevel, multisite analysis. *Educational Technology Research & Development*, 69 (6) (2021), pp. 3009-3028, 10.1007/s11423-021-10052-1
- Tayo, O. & Adedayo, T. Q. (2018). Perceived Competence of Nigerian Secondary Schools Teachers in the Use of Information and Communication Technology (ICT). *Journal of Education and Practice*, 4(10):157-164
- Toma F., Ardelean, A., Grădinaru C. Nedelea, A., D.C. & Diaconu D., C., (2023) Effects of ICT integration in teaching using learning activities. *Sustainability*, 15 (8) (2023), 10.3390/su15086885
- UNESCO. (2002). Information and Communication Technology in Education. A curriculum for schools & programme for Teacher Development. Paris: UNESCO
- UNESCO. (2007). ICT in Education program, UNESCO Bangkok, Ed, Ellie M. United Nations Educational, scientific and cultural organization (UNESCO) P.O Box L967 Prakanong post office Bangkok 10110, Thailand.
- Zeng Y., (2022) Analysing teacher knowledge for technology use among secondary teachers teaching Chinese as a foreign language (CFL) in Australia *Journal of Curriculum and Teaching*, 11 (2) (2022), pp. 15-28, 10.5430/jct.v11n2p1
- Zhang, P., & Aikman, S. (2007). Attitudes in ICT acceptance and use. In Jacko, J (eds.) Human computer interactions. Interaction design and usability, Berlin: Springer.