DIGITAL TOOLS AS DETERMINANTS OF STUDENTS' PERFORMANCE IN USE OF ENGLISH AMONG POLYTECHNIC STUDENTS IN KEBBI STATE, NIGERIA

Auta Ibrahim Kanya[1], Mubarak Ahmed[2], Samaila Shehu Kalgo[3]

[1,2,3]Department of General Studies, Kebbi State Polytechnic, Dakingari.

DOI: https://www.doi.org/10.58257/IJPREMS44231

ABSTRACT

This study investigated the efficacy of digital tools on students' performance in use of English among polytechnic students in Kebbi state. The main objective of the study is to find out whether teaching polytechnic students use of English through the use of digital tools such as, instructional videos and multimedia projector as oppose to the conventional methods could enhance performance in the learning of use of English among polytechnic students in Kebbi state. Year two (ND II) students of the institutions in Kebbi state made up the study population. The study adopted a quasi-experimental design, specifically, a pretest-posttest design. This implies that intact class settings were used in the study, where pretest, treatment and posttest were carried out to determine the difference in performance between students that were taught use of English via instructional videos and multimedia projector; and those that were taught the same aspect using the conventional methods. Statistical procedures of mean, standard deviation and t-test were used to answer the research questions and test the null hypotheses generated for the study at a 0.05 level of significance. The findings of the study indicated that students that learnt use of English through digital tools performed better than those who learnt it through the conventional method. The study recommended that language teachers should adopt the use of digital tools as the modern and best instructional technique in teaching use of English at all levels of education in Kebbi state and Nigeria in general

Keywords: Digital Tools, English Language, Use of English, Language Teaching.

1. INTRODUCTION

The teaching and learning of English as second language (ESL) have been deeply enshrined in the national curriculum at all levels of education in Nigeria. In the polytechnics, English is taught under the general studies departments as use of English I & II and communication in English I & II. The fundamental objective of the course as stipulated by the National Board for Technical Education (NBTE), is to enable students acquire proficiency in the use of English for effective communication.

Technology has always been the reason in improving the teaching and learning process in the classroom. In the context of English as second language (ESL) classrooms, the use of technology allows students to quickly master new language skills through exposure to a variety of new methods; and brings with it the excitement of a new medium that could motivate the students for an extended period of time (Diallo, 2022). Digital tools are tools on a computer or other devices, often connected to the internet, that enable students to create compositions and publish them to an authentic audience (McKee, 2020). Digital tools include any software, application, technology, extensions, add-ons or websites that are designed to assist writers, authors, students and professionals in various aspects of the academic activity (Dahlstrom, 2018). These tools comprise types of software applications and platforms designed to enhance various aspects of teaching and learning. Exploring the influence of digital tools on teaching and learning is an essential preliminary action in enhancing pedagogical practices and student learning outcomes in the classrooms (Kusuma & Sasithida, 2024).

The rapid increase in technological tools and globalization of English language demands for a teaching methodology that requires students to learn and review learning materials outside the classroom. One of these methods could be the use of digital tools like, instructional videos and multimedia projector. Alaku (2020) states that teachers' effectiveness depends largely on their ability to use appropriate instructional strategies and audiovisual aids. Appropriate instructional strategies demonstrate good teaching techniques and successful learning. They assist students to enjoy and understand lessons easily especially when they are attached with appropriate methodology. Videos are very important example of such instructional materials.

Oguntuase (2018) defines videos as a record on any medium through which a moving image may by any means be produced. They are derivative works which are usually based on original literacy, dramatic, musical and artistic works. Fakunle (2018) confirms the positive effect of videos on teaching and learning process when he states that people generally remember 10% of what they read, 20% of what they hear, 30% of what they see, 70% of what they hear and

see (audio-visual). Hence, this study investigates digital tools as determinants of students' performance in use of English among polytechnic students in Kebbi state, Nigeria

2. STATEMENT OF THE PROBLEM

Polytechnic students should have good command of English and use it proficiently. This is because components on use of English are being taught to prepare students for effective study and proper use of the language. In spite of the effort put forth by the language teachers, many polytechnic students in Kebbi state cannot perfectly use English language to introduce themselves, ask for permission, express their opinion or lay a complaint. This problem is certainly not unconnected with the students' learning difficulties which occur as a result of the choice of appropriate methodology in the teaching and learning of use of English in the polytechnics.

To solve these problems therefore, modern instructional techniques such as, application of digital tools need to be explored and adopted in teaching use of English. This will no doubt provide avenues for students to learn language skills in an interactive manner. It is on this backdrop therefore, that this study seeks to investigate efficacy of digital tools on students' performance in use of English among polytechnic students in Kebbi state, with the view to providing a lasting solution to the teaching and learning of use of English at the polytechnic level in Kebbi state and Nigeria in general.

3. OBJECTIVES OF THE STUDY

The main objective of this study is to find out whether teaching polytechnic students use of English through digital tools such as, instructional videos and multimedia projector could enhance their performance. Specifically, the study examines the following:

(i) Difference in the performance of experimental groups taught note-taking and note-making using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state.

(ii) Difference in the performance of experimental groups taught subject/verb agreement using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state.

(iii) Difference in the performance of experimental groups taught phrases using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state.

4. RESEARCH QUESTIONS

(i) What is the difference in the performance of experimental groups taught note-taking and note-making using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

(ii) What is the difference in the performance of experimental groups taught subject/verb agreement using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

(iii) What is the difference in the performance of experimental groups taught phrases using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

5. RESEARCH HYPOTHESES

(i) There is no significant difference in the performance of experimental groups taught note-taking and note-making using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

(ii) There is no significant difference in the performance of experimental groups taught subject/verb agreement using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

(iii) There is no significant difference in the performance of experimental groups taught phrases using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

6. REVIEW OF RELATED LITERATURE

Theoretical Foundation

The socio-cultural and constructivist learning theorists support the use of digital media in language instruction. Some scholars submit that digital social networking platforms can facilitate collaborative learning, encourage students to engage in more beneficial learning activities and facilitate information sharing, group work, feedback and teacher interactions (Reza & Sima, 2025). Vygotsky's social learning theory argues that knowledge is created cooperatively within social contexts and views learning as a process in which students create their own meanings from the materials and content that is presented to them, rather than trying to memorise the information (Vygotsky, 1978). The idea that learning could be built and created to be more functional within the confines of social processes in cognition groups is

also the foundation of the socio-cultural theory. Furthermore, learning occurs more effectively when it incorporates social viewpoints into positive and productive activities, as knowledge is a continuous process that requires development over time (Brown et al., 1989). According to the socio-cultural theory, instruction and learning should focus on using content to strengthen comprehension tools. In addition, the socio-cultural theory maintains that contemporary technological tools can be used to gather data on social interactions, personal activities and information (Golub, 1988).

Digital Tools

Digital tools refer to software, social platforms and technologies that can be used to perform various tasks, improve productivity and facilitate learning. This include Productivity Tools like, Microsoft office, Google Workspace, and so on; Communication Tools such as, Email, Video Conferencing, Slack, WhatsApp, and so on; Collaboration Tools such as, Google Docs, Microsoft Teams, Wiki and so on; Learning Management Systems like, Moodle, Blackboard, Canvas, and so on (Reza & Sima, 2025). Hence, digital tools are computers, software applications and telecommunication equipment that can be used in the process of collecting, organizing, analyzing, storing, retrieving and dissemination of information for improved research and learning performance.

Digital Tools and the Teaching of English Language

English language is one of the most important languages which have played important role in the process of globalization and knowledge expansion. It is the most common means of communication throughout the globe; it is known as link language. English is the Lingua Franca and language of instruction in many countries of the world (Kenjabayev, 2020). In the whole, the use of English language has become necessary for better learning and understanding of all school subjects.

The integration of digital tools in teaching and learning English language is one of the systematic processes of enhancing and perfecting the educational process, enriching methodological tools and techniques, allowing for diversification of the forms of work and making classroom interaction interesting and memorable for students. (Kenjabayev, 2020). Hence, a way forward to effective teaching and quality education today is by integrating teaching and learning with the use of advanced technologies.

7. RELATED EMPIRICAL STUDIES

Quite a number of studies have been conducted within and outside Nigeria on the use of digital technology and its effects on students' learning outcomes and making leaning more accessible and simple. Some of these studies are examined below:

Sylvanus and Ejiyamenmen (2019) investigated teachers' awareness and utilization of digital tools for enhancing senior secondary school students' writing skills in Delta state. The study used a descriptive survey design. The population comprises 844 English language teachers in public secondary schools in Delta State. Samples of 186 teachers were selected using a simple random sampling technique. The instrument for data collection was a questionnaire titled Teachers' Awareness and Utilization of Digital Tools for Developing Writing Skills in English Language. The findings, among others, revealed that many English language teachers are not knowledgeable in using digital tools to improve writing skills and many English language teachers are not aware of grammar check websites and Apps that enhance students' writing.

In the same vein, Kim and Kim (2021) assessed how students' language and cultural diversity is enhanced through YouTube. The results showed that students' language proficiency and understanding are significantly improved through YouTube. The result also indicated that students who received instruction using YouTube are likely to pursue academic endeavors and social advancement.

Zhao et al. (2022) investigated the effects of utilizing Telegram on the motivation, anxiety and attitude toward studying of Iranian EFL learners in foreign languages. 60 intermediate-level Iranian EFL students were used with experimental and control groups. Participants in the experimental group were treated by using the Telegram app, while the ones in the control group received traditional instruction. At the end of the treatment, both groups were administered a post-test. The post-test results indicated that the experimental groups who received treatment via the telegram application out-performed the control groups.

Al-Obaydi et al. (2022) investigated the effect of information and communication technology (ICT) in the context of class-home connection. The study examined how ICT necessitates an interactive dialogue between educators and parents; and improve students' academic performance in the English language classroom. Thirty EFL secondary school students and their parents made up the study's sample. Two methods were employed to gather information: a structured interview with parents, observation checklists to gauge students' anxiety and an assessment of students'

academic performance to gauge their English proficiency. The findings demonstrate that parents are generally in favour of employing communication technologies to improve the home-school connection. There has also been a significant improvement in the students' academic performance in the English language.

Zhao and Yang (2023) conducted a research on the effects of flipped course on the writing performance and anxiety of Chinese EFL learners. The study adopted a pretest-posttest non-equivalent group quasi-experimental approach. The findings of the study revealed that the experimental group that received instruction through flipped writing instruction performed significantly better in writing proficiency.

In another study by Auta and Afolabi (2023), they explored the effectiveness of multimedia instructional techniques on learning of English grammar among tertiary institution students in Kebbi state. The study adopted a quasi experimental design of pretest, posttest. Findings of the study indicated that tertiary institution students taught aspects of English grammar using the multimedia instructional techniques performed better than those taught the same aspects using the traditional techniques.

Based on the reviewed empirical studies, it is clear that studies have been conducted on the influence of modern technology on students' achievement in several aspects of language. However, most of the studies were conducted outside the present study's locale and none of the studies reviewed, attempted to examine the efficacy of digital tools in developing polytechnic students' performance in use of English. Hence, this has created a gap as part of which this study attempts to fill by assessing digital tools as determinants of students' performance in use of English among polytechnic students in Kebbi state, Nigeria.

8. METHODOLOGY

The research methodology is summarised under the following sub-headings: Research design, population of the study, instrument for data collection, validity and reliability of instrument, procedure for data collection and data analysis techniques.

Research Design

This research adopted quasi-experimental pretest-posttest design. Intact class settings were used in the study. The justification for using this design is that it allows for random assignment of treatment to different groups while the individuals in the groups receiving various treatments could be compared afterwards (Fraenkel and Wallen, 2019).

Population of the Study

All the polytechnic students in Kebbi state forms the population of the study. The polytechnics include Waziri Umaru Fedaral Polytechnic (WUFPOLY), Birnin-Kebbi and Kebbi State Polytechnic (KESPODAK), Dakingari. 102 second year (ND II) students from the 2 polytechnics cutting across arts and science disciplines were selected as the target population Table 1 shows the target population of the Study. Table 1 below illustrates the target population.

Table 1: Target Population of the Study

S/No	Institution	Location of Institution	Group	Sample Selected
1	WUFPOLY	Birnin-Kebbi	Experimental	52
2	KESPODAK	Dakingari	Control	50
TOTAL	**2**			**102**

Source: Researchers' Field survey (2025)

Instrument for Data Collection

Use of English Performance Test (UEPT) was used as the instrument to collect data for the study. The instrument was divided into three parts: part 'A' (note-taking and note-making); part 'B' (subject/verb agreement); and part 'C' (phrases). The test items were adapted from series of use of English test items to ensure standardization and were modified to suit the students' level of education. The instrument consisted of 30 objective question, 10 questions from each part. Each correctly answered question was scored 1 mark. Hence, students were expected to score 30 marks in the test.

Validity of Instrument

The UEPT was subjected to content and face validation. The instrument was validated by colleagues in Kebbi State Polytechnic Dakingari; experts in the department of English and Literary Studies; and department of Educational Foundations, Usmanu Danfodiyo University Sokoto. Experts' inputs were considered in modifying the instrument.

Reliability of Instrument

To ascertain the reliability of the instrument, pilot test was conducted using one intact class of 35 science students at College of Nursing Science Birni-Kebbi. The selected institution is totally out of the study population. Test retest method was adopted in administering the pilot test. The data were analysed using Pearson Product Moment Correlation Co-efficient (PPMCC) and a reliability index of 0.85 was obtained.

Procedure for Data Collection

The data were collected through the following steps:

Pre-test: the researchers, with the help of research assistants administered pre-test to both the experimental and control groups one week before commencement of the treatment sessions. This was done in order to determine the entry behavior and ensure homogeneity of the subjects.

Treatment: treatment was carried out on the experimental group and placebo for control group for six consecutive weeks. During this period, experimental groups were taught note-taking/note-making, subject/verb agreement and phrases through digital tools such as instructional videos and multimedia projectors while the control groups were taught the same aspects through the conventional method of teaching.

Posttest: at the end of the six weeks continuous treatment, both the experimental and control groups were administered posttest to determine the effect of digital tools on polytechnic students' performance in use of English in Kebbi state, Nigeria.

Data Analysis Techniques

The data collected will be analysed using descriptive statistics of mean and standard deviation to answer the research questions and inferential statistics of t-test will be used to test the null hypotheses generated for the study at a 0.05 level of significance.

9. RESULT

The data collected from the subjects were presented in this section. All the hypotheses were tested at a 0.05 level of significance. Hence, the research questions were answered followed by the testing of the null hypotheses.

Research Question One: What is the difference in the performance of experimental groups taught note-taking and note-making using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

Table 2: Posttest Mean Scores of Experimental and Control Groups in note-taking and note-making

Variables	N	Mean	SD	MD
EG 1	52	19.73	4.68	7.33
CG 1	50	12.40	2.68	

Source: SPSS Result and Researchers' Fieldwork (2025)

The analysis in Table 2 indicated that the total number of subjects that took part in the posttest from both experimental and control groups in note-taking and note-making was 102. Fifty-two (52) subjects participated in the experimental group whereas fifty (50) subjects were involved in the control group. The mean score of the experimental group was 19.73 and the standard deviation was 4.68. Subjects in the control group scored a mean of 12.40 and a standard deviation of 2.68. The result showed a mean difference of 7.33 in favour of the experimental group that was taught using digital tools.

Research Question Two: What is the difference in the performance of experimental groups taught subject/verb agreement using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

Table 3: Posttest Mean Scores of Experimental and Control Groups subject/verb agreement

Variables	N	Mean	SD	MD
EG 2	52	19.69	4.80	5.01
CG 2	50	14.68	3.14	

Source: SPSS Result and Researchers' Fieldwork (2025)

The result in table 3 revealed that the total number of subjects that took part in the posttest from both experimental and control groups in subject/verb agreement was 102. Fifty-two (52) subjects in the experimental group whereas fifty (50) subjects were involved in the control group. The mean score of the experimental group was 19.69 and the standard deviation was 4.80. Subjects in the control group scored a mean of 14.68 and a standard deviation of 3.14. The result showed a mean difference of 5.01 in favour of the experimental group that was taught using digital tools.

Research Question Three: What is the difference in the performance of experimental groups taught phrases using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state?

Table 4: Posttest Mean Scores of Experimental and Control Groups in phrases

Variables	N	Mean	SD	MD
EG 3	52	17.76	3.30	5.80
CG 3	50	11.96	2.04	

Source: SPSS Result and Researchers' Fieldwork (2025)

The analysis in table 4 demonstrated that the total number of subjects that took part in the posttest from both experimental and control groups in phrases was 102. Fifty-two (52) subjects in the experimental group whereas fifty (50) subjects were participated in the control group. The mean score of the experimental group was 17.76 and the standard deviation was 3.30. Subjects in the control group scored a mean of 11.96 and a standard deviation of 2.04. The result indicated a mean difference of 5.80 in favour of the experimental group that was taught using digital tools

Null Hypothesis One (Ho$_1$): There is no significant difference in the performance of experimental groups taught note-taking and note-making using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state

Table 5: Analysis of significance difference between posttest performance of experimental and control groups in note-taking and note-making.

Variables	N	Mean	SD	DF	t-cal	p-value	Decision
EG 1	52	19.73	4.68	100	9.64	.000	Rejected
CG 1	50	12.40	2.68				

Source: SPSS Result and Researchers' Fieldwork (2025)   α=0.05

The t-test result in Table 5 indicated that the degree of freedom was 100, the t-calculated was 9.64 and the p-value was .000. This showed that the difference in performance was significant (p = .000 and p< 0.05).. Therefore, the null hypothesis one (Ho$_1$) was rejected

Null Hypothesis Two (Ho$_2$): There is no significant difference in the performance of experimental groups taught subject/verb agreement using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state

Table 6: Analysis of significance difference between posttest performance of experimental and control groups in subject/verb agreement

Variables	N	Mean	SD	DF	t-cal	p-value	Decision
EG 2	52	19.69	4.80	100	6.20	.003	Rejected
CG 2	50	14.68	3.14				

Source: SPSS Result and Researcher's Fieldwork (2025)   α=0.05

The t-test result in Table 6 revealed that the degree of freedom was 100, the t-calculated was 6.20 and the p-value was .003. This showed that the difference in performance was significant (p = .000 and p< 0.05).. Therefore, the null hypothesis two (Ho$_2$) was rejected

Null Hypothesis Three (Ho$_3$): There is no significant difference in the performance of experimental groups taught phrases using digital tools and control groups taught the same aspect using conventional method among polytechnic students in Kebbi state

Table 7: Analysis of significance difference between posttest performance of experimental and control groups in phrases

Variables	N	Mean	SD	DF	t-cal	p-value	Decision
EG 3	52	17.76	3.30	100	10.63	.003	Rejected
CG 3	50	11.96	2.04				

Source: SPSS Result and Researcher's Fieldwork (2025) $\alpha=0.05$

The t-test result in Table 7 revealed that the degree of freedom was 100, the t-calculated was 1063 and the p-value was .003. This demonstrated that the difference in performance was significant (p = .000 and p< 0.05).. Therefore, the null hypothesis two (Ho$_3$) was rejected

10. DISCUSSION OF FINDINGS

Generally, the findings of this study indicated that digital tools had a significant effect on polytechnic students' performance in use of English. Specifically, the following are the summary of the major findings:

i) Use of digital tools was effective in improving students' abilities in note-taking and note-making. The analysis showed that Students who learnt note-taking and note-making through digital tools statistically performed significantly better than those who learnt the same aspect using the conventional method.

ii) Students' abilities in subject/verb agreement was significant stimulated through the use of digital tools. The result demonstrated that students who were taught subject/verb agreement through digital tools statistically performed significantly better than those who were taught the same aspect using the conventional method.

iii) Digital tools had a profound effect on students' performance in phrases. Hence, the analysis revealed that students who learnt phrases through digital tools out-performed their counter parts that learnt the same aspect through the conventional method.

11. CONCLUSION

Based on the result of the study, it is crystal clear that the teaching and learning of use of English through digital tools is effective in stimulating polytechnic student's performance. Hence, the study confirmed a significant difference in the students' performance, between students taught note-taking and note-making, subject/verb agreement and phrases through digital tools and those taught the same aspects through conventional method.

The study demonstrated that teaching use of English at senior secondary school level of education requires modern technology to enable students to access learning freely and process learning materials for maximum comprehension. Using digital tools in teaching and learning therefore, could go a long way in ameliorating some of the problems of classroom instructions at the polytechnic level of education.

(i) English language lecturers should explore different digital tools used in teaching different aspect of language.

(ii) Language teachers should embrace the use of modern technology in teaching and minimize the use of conventional method of chalk and talk. This will give the student learning autonomy.

(iii) The use of digital tools requires training. Language teachers should be trained and retrained to practically apply the strategies in a typical classroom situation.

ACKNOWLEDGEMENT

12. REFERENCES

[1] Alaku, P. O. (2020). Instructional strategies and audio-visual aids for teachers Effectiveness, Bichi Journal of Education 2(1), 114-117.

[2] Al-Obaydi, L. H., Jawad, Z. A., & Rahman, F. (2022). Class-home Connection using communication technology and its impact on anxiety reduction and academic performance. Al-Adab Journal, 141, 53-66.

[3] Auta, I. K. & Ibrahim, M. A. (2023) Effectiveness of multimedia instructional techniques on learning of English grammar among tertiary institution students in Kebbi state. International Advanced Research Journal in Science, Engineering and Technology, 10(10), 81-90.

[4] Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning, Educational Researcher, 18(1), 32-42.

[5] Dahlström, H. (2018). Digital writing tools from the student perspective: Access, affordances, and agency.

Education and Information Technologies, 24, 1563-1581. https://doi.org/10.1007/s10639-018-9844

[6] Diallo, A. (2022). The use of technology to enhance the learning experience of ESL students: M.Ed. Dissertation, Concordia University. Retrieved from https://eric.ed.gov/?id=ED545461

[7] Fakunle, I. (2018). Enhancing the Teaching and Learning of Mathematics through Effective Utilization of Instructional Materials. Journal of Teacher Education 9(1), 102-111.

[8] Fraenkel, J. R. & Wallen, N. E. (2019). How to Design and Evaluate Research in Education (4th Ed.): Mc Graw-Hill, Boston.

[9] Golub, J. (1988). Focus on collaborative learning. National council of teachers of English.

[10] Kenjabayev, J. (2020). The role of information and communication technology in teaching English language skills among the learners in teacher education: Scientific Research Results in Pandemic Conditions (COVID-19), 26-31.

[11] Kusuma, P. & Sasithida, S. (2024). Exploring the effectiveness of digital writing tools on Thai EFL students' writing. Contemporary Educational Technology, 16(3), 1-17.

[12] Kim, S., & Kim, H. C. (2021). The benefits of YouTube in learning English as a second language: a qualitative investigation of Korean freshman students' experiences and perspectives in the US. Sustainability, 13(13), 7365.

[13] McKee, S. (2020). Using digital writing tools in supporting student writing: A published PhD Theses, University of Northern Iowa

[14] Oguntuase, F. Z. (2018). Implication of copyright provision for literacy work in films and video for libraries. Nigeria School Library Journal, 7, 87-99.

[15] Reza, G. & Sima, S. (2025). Effect of using digital media for language learning on reduction of anxiety and boost of proficiency among immigrating students: A case study. Journal of Education and Literary Studies, 13(1), 279-293.

[16] Sylvanus, U. O. & Ejiyamenmen, P. I. (2019) Teachers' awareness and utilization of digital tools for enhancing senior secondary school students' writing skills in English language in public secondary schools in Delta state. University of Delta Journal of Contemporary Studies in Education, 2(2), 155-166.

[17] Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

[18] Zhao, Z., Wang, X., Ismail, S. M., Hasan, M. K., & Hashemifardnia, A. (2022). Social media and academic success: Impacts of using telegram on foreign language motivation, foreign language anxiety, and attitude toward learning among EFL learners. Frontiers in psychology, 13, 996577.

[19] Zhao, X., & Yang, Y. (2023). Impact of social media-supported flipped classroom on English as a foreign language learners' writing performance and anxiety. Frontiers in Psychology, 13, 1052737.