

Online Learning Platforms on Efl Students' Learning Intensity and Frequency



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ABSTRACT: This The present study analyzed the role of online learning schemes in influencing EFL students' learning time and frequency, supporting the assertion that more work on the existing engagement of the learners as well as their outcomes is necessary. Given the level of technology in the current world and the trend of going online, this study adds value by exploring the use of technology as opposed to more conventional techniques. The study utilized a mixed-method research approach combining both quantitative and qualitative research with a quasi-experimental design involving 190 university participants which made up a control group receiving instructional delivery through conventional methods while the experimental group made use of online platforms. Research Instruments include the validated questionnaire and semi-structured interviews in which quantitative data was analyzed using independent sample t-test while qualitative data was analyzed in an iterative manner. The findings show that the experimental group experienced, relative to the control group, a higher level mean score in terms of the learning intensity and the learning frequency (mean = 81.51 vs mean= 64.58) with a *Sig.* (2-tailed) p equal to 0.000. Preferences showed Moodle as the most popular platform used (34.21 %), next YouTube (25.26%), and the main reason for the choice of the platform was ease of use (50.53%) and Completeness of learning materials (23.68%). YouTube was perceived as the best platform for learning (38.95%) followed by Quipper (21.05%) and Podcasts (18.42%) for effective learning. It has been asserted in this study that the introduction of these platforms into the EFL teaching process will result in an improvement of both learning achievements as well as the involvement of the students.

KEYWORDS: EFL students; learning intensity and frequency; online learning platforms

I. INTRODUCTION

The use of online tools in teaching and learning EFL has received interest due to its effectiveness to enhance students' learning density and frequency. The current study investigated the effects of the online learning platforms on the learning intensity and frequency of EFL students to fill in the gap of the role of these platforms in EFL students' learning intensity, autonomy and their resulting learning outcomes. Currently, the adoption of technology has very much influenced the transition towards online learning in EFL owing to flexibility. However, there is lack of literature as to how these platforms influence learning intensity as well as the learning frequency. This research will seek to establish the intervention methods that will improve the online EFL courses, engagement, autonomy and language achievement of students as well as focus English teachers on the best technicalities of integrating online platforms into instruction. A number of studies have given other researchers the impetus to undertake this research endeavor by looking at the effects of online learning platforms in EFL education. For instance, Muslem (2024) did a systematic review in which he observed a positive relationship between the adoption of learning management systems and the self- efficiencies of students learning languages as undergraduates. In the same manner, Suharti et al. (2021) also underscored the increase centric learning engagements of EFL students through online language learning platforms. These studies indicate the possibility of online environments in increasing the students' self-confidence and their participation in the language learning processes. Furthermore, Janah et al. , (2022) noted the benefits of using the social media platforms including the Google Classroom and Zoom in enhancing language learning for EFL learners. On the basis of these insights, this study seeks to further nuance understanding of how particular aspects of online learning platforms impact on EFL students' learning, in terms of both intensity and frequency, as a means of furthering understanding of the roles of technology in language teaching and learning.

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As it is reported by Dalilan (2021), Indonesian EFL students admit that learning online entails self-ownership, motivation, and accountability. Nevertheless, some of the difficulties that learners encounter include internet problems, problems with their assignments as well as little exposure to using technology. This is because virtual classes enhances one's independent learning as seen in the Saudi EFL students (Alharbi, 2022). Classroom applications such as Edmodo and Quipper build the language experience (Tarigan & Lasnumanda, 2020), while other platforms develop the listening and speaking skills among the learners (Wu, 2023). Perfect platforms are useful for students as well as to teachers (Li, 2021) and the inclusion of the conversation rooms particularly enhances the students' interaction skills (Ngo & Ha, 2022). Research conducted in China reveal that an increase in online activity does result in an increase in self efficacy, interactions with professors on the other hand, enhance inter cultural interest, as observed by Chong in 2023. Nonetheless, student have experienced internet and comprehension difficulties (Muslem, 2021,) with increased peer and instructor interaction and a positive view of English improving the assessment outcomes (Alshahrani,, 2017).

From this point of view, the effects of frequency and duration in relation to learning outcome in EFL learning can be examined from different perspectives. Research literature has realized that the need satisfaction opened the motivation pathway that benefits learners' learning performance and their English accomplishment Ping-ying (2016). Also, the incorporation of mobile phones in the learning of vocabularies out of the classroom has been known to greatly improve the EFL learners' general repertoire of highfrequency words as well as the second-language literacy (Rahmani et al. , 2022). Considering the study on teaching quality, and learning time on primary EFL learners receptive proficiency, Wilden and Porsch noted that; longer learning periods enhance higher proficiency level. Also, a study on the effect of instructional quality and learning period on the primary EFL learners' receptive achievement shows that longer learning period leads to better final receptive EFL achievement in the end of primary education. Moreover, the study on the precursors of Chinese EFL students' affective learning also reveals that teacher support and the friendly relationship between the teachers and students can also influence the effect of affective learning. Furthermore, understanding the conceptions of teaching and learning processes appearing in Writing Hub shows that supporting students cooperation and, particularly, instructor-students feedback could improve the EFL students' writing skills (Sheerah & Yadav, 2022).

II. LITERATURE REVIEW

Technology-Assisted Language Learning on Learning Effectiveness

The impact that online communication tools have had on the acquisition of the English language particularly has been quite significant, with such evidence suggesting that materials such as Youtube, Canva , and Wattpad enhance learning (Aprianto, 2023; Rajendran, 2023; Faqih, 2022) . They help improvement of student learning today, thus the growing importance of the professional growth. In the same manner web assessments along with online platforms Also increases the students motivation and adds upon their digital skills (Bulqiyah, 2023). Other strategies such as Social media Microlearning strategies, Mobile learning modules, and Application of game based learning strategies such as Scramword these also help in improving the language and vocabulary skills of an individual (Ning, 2024, Palandi, 2024). Incorporation of such technologies in ELT and students' hobbies that include obsessive online engagement has also offered students more practice opportunities in English leading to better language learning and intercultural communication skills, (Hernández-López, 2024, Lee, 2019) . Interaction face to face, and in the internet have been yet another mode of instructions that has proven productive in the acquisition of English as well as in the listening comprehension of the students (Jiang et al., 2021; Noursi, 2020). In addition, Technology-Implementation Learning has been spotlighted for supporting proactive involvement of the learners socially, emotionally and cognitively with the help of technology to enable effective performance (Yehya, 2020). With regard to Informal Digital Learning of English (IDLE) and selfdirected learning, both of which can be seen from a social context, new and more effective on-line language programs that meet the interests of the students may be developed (Fauziah, 2023).

In the past two decades technology especially online platforms has played an important role in ELT especially in emergency situations and both students and teachers have testified to the value of online platforms (Famularsih, 2020). Several identified applications including: video converging tools, messenger applications, and visual media including Canva means enhance learners' motivation, engagement as well as the collaborative spaces (Khakim, 2024). Research in university context demonstrated the improvement in the students' vocabulary understanding, language proficiency and accomplishment (Amin & Paiman, 2022; Zakarneh, 2018). New technologies like big data, and block chain systems are also used in the English teaching learning processes and experiences which in turn increases the interaction level. Further, through survey findings, there is a positive relationship between the utilization of the online platforms and the level of self-efficacy of the students in English classes (Muslem, 2024). Teachers have sought various approaches to develop effective ICT integration for technology-supported learning environment that enhances motor, interest and engagement (Choi & Chung, 2021). Chris, (2020) notes that various multimedia tools such as video conferencing, online boards, and social network aide in the teaching of English as second language (Yumnam, 2021) while Liang and Jin (2019) reveal that the use of collaborative tools such as Google Collaboration enhances learning efficiency, enthusiasm and active participation among the learners.

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The Roles of Learning Intensity and Durations on EFL Students' Language Outcomes

Several studies have investigated the effects of length, frequency, and intensity of EFL learning on their achievement results; the factors in this regard have included collaborative learning, the blended learning mode and computer assisted learning. Research about collaborative learning affirms that it improves oral communication replace teacher-centered approach with more student-centered one (Abulhassan & Hamid, 2021). It has been proposed that the systems that incorporate both online and face-to-face teaching methods known as blended learning could better the results by means of collaborative and self-paced interactions (Yu & Du, 2019). Moreover, the students prefer shorter class durations as this will enhance the ability of the students to concentrate (Aker et al. , 2021). The implementation of learning strategies in e-learning environment has enhanced teaching and learning with more priority given to learner centered learning for continuity (Suleiman, 2022). In digital EFL learning, the directions of these strategies should fit the digital competence and handling technostress (Niu et al. , 2022). In this regard, Moodle has improvement the language skills through conducting different online activities (Mutambik, 2018). Technology integration to EFL teaching is generally welcome; further educational technology usage is suggested (Al-Qudimi, 2024). Overcoming challenges is vital in determining learner progress is to enhance how the opportunities for learning are handled while supporting the learners' emancipation (Alian & Alhaj, 2023; Zhu, 2023). Teacher support and academic buoyancy also has significant roles in promoting positive learning experiences (Li et al. , 2023).

The extent and frequency of language learning has also been considered in the past and recently the use of technology in the form of chatbots and VR has also been considered by researchers. The fact of learning frequency is also critical to enhancing the learning of language sense , self-enhancement as well as cognitive learning processes concerning memory (Li, 2023). Furthermore, motivational intensity is very important since it compels learners to action and influences the results and accomplishment to a great extent (Zhu & Zhang, 2022). Much attention has been paid to the effect of the affective factors motivation, and learning approaches on English proficiency as a foreign language (Chen, 2023). Intentions, perceptions and motivations toward learning English as well as quality of English courses affected language gains (Cocca & Cocca, 2019). There is HTML fact that students have different preferences for types of learning such as visual, auditory, and feels and such preferences affect language and learning, respectively, (Chen, 2023). Intended self-regulation in second language acquisition is highly encouraged especially in regard to language performance (Cordero, 2023), and the use of technology in teaching and learning especially the use of Chatbot as support, as well as the use of virtual reality in learning has a positive impact on selfregulated learning and language performance among EFL learners (Bahari, 2024). It confirms that an intersection of the theoretical and empirical approach is necessary for the analysis of the dietary technological intervention in language learning (Bahari, 2024).

III. RESEARCH DESIGN

In this section, the researchers explain the methods used in the research, how the research problems were formulated, the respondents used, the instruments used for the research, and the instruments used for data collection and analysis in order to clarify how such aspects are incorporated to improve the understanding of the effects of online English learning platforms on the intensity and the frequency of learning.

Research Methods

This research utilized an mixed-method design, namely the combination of quantitative methods as well as qualitative methods. The quantitative design was done using a quasi-experimental design where the subjects of the study were divided into the experiment group and control group where a pretest and post-test was conducted to determine the effects of online learning platforms on the intensity and frequency of an experiment group exposed to the intervention while the control group received traditional instruction. On the other hands, the qualitative design enabled carrying out investigation on the preferences and the most effective online platforms that influences the learning intensity and frequency of the students by using case study in order to determined the preference and effectiveness of the used online learning platforms.

Research Questions

To fill the gaps mentioned in the introduction, this study was followed by three research questions, as follows:

- 1) Is there a significant difference in the use of online learning platforms affecting students' learning intensity and frequency compared to conventional learning approaches?
- 2) What preferences and the most-effective online platforms do the students use to facilitate their learning intensity and frequency?

Research Subjects

Volume 6This study will investigate how online English learning platforms have an impact on the frequency and intensity of university students studying in Computer Department at Bumigora University as one from only several universities which use Elearning web-based. Simple random sampling was used to select approximately 190 subjects, including the intervention group (95 students who participated online) and control group (95 students using traditional forms). This was a method used to address bias as well as increase the generalizability of the findings. However, where appropriate and as is often the case for practical reasons stratified random sampling does have to be used. The questionnaire collected data on the intensity, frequency of learning and

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motivation to study English among students in addition to their level of English by comparing how effective online platforms relative traditional modes are for these outcomes.

Research Instruments

To measure how learning using online platform affect intensity, and frequency two questionnaires were used in this study. A bit different questionnaire was used for the second group – one is applied in case of experimental participants, and another we use to measure outcomes that their peers send us. To ensure that both questionnaires assess the intended variables and produce reliable results, they were tested for validity as well as internal consistency, respectively. Thus, the ten questionnaire items for the experiment group were declared valid and the reliability showed that the Cronbach's Alpha value was $0.85 > 0.61$. Likewise, the ten questionnaire items for the control group showed valid questionnaire items and the reliability level showed a Cronbach's Alpha value of $0.72 > 0.61$, two high reliabilities. Then to obtain data on the preferences and effectiveness of using online learning platforms, the researcher also used a questionnaire consisting of three underlying questions, namely the most-frequently used platforms, the reasons of using, the effectiveness and/or the most-effective platforms. The questionnaire was validated using a Content Validity Index (CVI); Scale-level Content Validity Index/Average (S-CVI/Ave) is $0.9 > 0.8$ and Scale-level Content Validity Index/Universal Agreement (S-CVI/UA) is $0.7 < 0.8$, therefore the content validity of the instrument is determined by SCVI/Average, a high content validity. Then, its reliability is $0.73 > 0.61$.

The in-depth interview instrument utilized a semi-structured guide to gather detailed information on preferences, reasons for using online platforms, and their effectiveness. The guide featured open-ended questions organized by topics such as platform preferences, specific usage experiences, reasons for platform choice, and comparisons of platform effectiveness. This approach aimed to provide additional context and insights, complementing the survey questionnaire, which lacked detailed explanations for platform choices and effectiveness. The interviews served as a supplementary method to enhance understanding and obtain comprehensive data.

Data Collection Procedures

A field study using a structured survey of 189 respondents, split between two groups: control and experimental. The investigation applied a quantitative research technique where data was obtained via an Likert Rating scale model questionnaire concerning the influence of online lessons on English learning intensity and frequency. Quantitative questions were used to evaluate preferences and efficacy of these platforms. The study used recorded and transcribed in-depth interviews for qualitative data. This data was later pruned to remove the extraneous details, categorized into aspects like why it is used and how good a platform has been on these categories in detail. Lastly, inferential analyses were conducted to understand the factors those influence effectiveness and preferences of students towards platform.

Data Analysis Procedure

Data analysis was performed with the use of independent sample t-test using SPSS. This approach is ideal for investigating two related samples to find out whether their means are significantly different as is the case in measuring the amount and frequency of English learning in control class against that in experimental class. Besides this, the Independent Sample T-Test determines the degree of influence between the two variables. So with these methods, the researcher were able to analyze whether there are any differences in level and frequency of usage of the two groups that employed Internet-based mode of learning. In the case of qualitative data, the Iterative Analysis method involved several repetitive iterations due to the explorational nature of the research. Initially, data from in-depth interviews on preferences, reasons for using online platforms, effectiveness, and preferred platforms are transcribed. The first iteration involves reading transcripts to understand the data and identify initial themes, followed by initial coding based on categories like platform types and usage reasons.

The second iteration organizes these codes into broader themes, such as grouping reasons into ease of use or interaction. Since the other iterations continue to refine the themes and review them for new and integrated facets, previous themes are disproportionate because the key themes are established. This process continues until stabilization can be gained without distortion of data or adjustments of the themes. Toward this end, a narrative emerging targeting student preferences for platforms, reasons for selection of platforms, efficacy appraisals and the best performing platforms are constructed. For the purpose of the analysis of the normality test using the Kolmogorov-Smirnov (K-S) test, numeric data for the test statistic and significance values of each data set can also be provided in the subsequent table as well as its analysis and explanation. This normality test is used to verify if the population has normal data since it is essential for implementing an Independent Sample T-Test at the next step.

Table 1. Results of Classical Assumption Test (Data Normality Test)

Tests of Normality	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Control	0.058	95	0.200*	0.969	95	0.025

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Post-Control	0.099	95	0.021	0.983	95	0.239
Pre-Experimental	0.079	95	0.181	0.971	95	0.035
Post-Experimental	0.087	95	0.075	0.962	95	0.008

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

To interpret and explain the results of the normality test using the two methods of Kolmogorov-Smirnov (K-S) and Shapiro-Wilk, it is needed to look at the statistical value and significance (Sig.) of each test. The results of normality test indicate that, according to Kolmogorov-Smirnov, the Pre-Experimental (Sig. 0.181), Post-Experimental (Sig. 0.075), and Pre-Control (Sig. 0.200) do not extend the data more than normally distributed, with the exception of Post-Control (Sig. 0.021) which fails the test for normality.

IV. RESULTS

The Use of Online Learning Platforms (OLP) Affects Students' Learning Intensity and Frequency

The independent sample t-test's findings provide understanding about how online platform-based learning strategies work in relation to conventional methods. This test compares the control group and the experimental group in order to establish the influence of the online learning media on the students' performance. Most importantly, the evaluation of the research test if the use of the internet improves a student's learning performance compared to traditional ways of teaching. The other form of presenting the results of the analysis of the data is as follows:

Table 2. Mean Scores of the Students

		Group Statistics			
Groups		N	Mean	Std. Deviation	Std. Error Mean
Effectiveness of OLP	Control Group	95	64.58	9.706	0.996
	Experiment Group	95	81.51	7.267	0.746

As stated in the findings, the mean that pertains to the effectiveness of the online platforms in the experimental group 82.51 exceeds the mean of the same in the control group 64.58. The learning outcome standard deviation in control group was 9.706 while it was 7.267 in the experimental group which implies that there was more dispersion of outcome in learning for the control group. The control group had 0.996 standard error of the mean compared to 0.746 in the experimental group implying that the estimate of mean learning outcomes in the experimental group was less skewed. Inferring the descriptive statistical results of independent sample t-test informs about usage of the online platform based learning media and its relative effectiveness in the control group compared to the experimental group. This test is intended to investigate two groups, in order to answer the question of how much difference in learning outcomes, an online learning platform provides. By looking into heads of the two sets, it can be seen enough whether the use of such online learning media will bring positive change to the academic performance of the students than making use of the control group with the traditional method. The results of the analysis are as follows:

Table 3. Significant Differences in the Use of Online Learning Platforms

		Independent Samples Test								
		Levene's Test for Equality of Variances			t-		Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error	95% Confidence Interval of the Difference	
								Lower		Upper
Results of OLP	Equal variances assumed	6.398	0.012	-13.607	188	0.000	-16.926	1.244	-19.380	-14.472
	Equal variances not assumed			-13.607	174.187	0.000	-16.926	1.244	-19.382	-14.471

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Levene's Test of Homogeneity of Variances recorded an F statistic equal to 6.898 and a Sig to be .012 which clearly tells that the equal variances assumption is violated, since Sig. is less than .05. Hence, the results cannot be used for the t-test for 'Equal variances assumed, otherwise they would be sued for the t-Test of 'Equal variances not assumed'. The t- test assumed equal variances and obtained a t of -13.607, 188 df and Sig. 2-tailed has a value of .000. The overall mean difference was -16.926 with a standard error of 1.244 with a 95% confidence interval for the overall mean difference which was between -19.380 and -14.472. Under t- test of unequal equality of variance which also equal to -.6074 with df = 174.187 showing the sign cannot be assigned p = 0.000. The mean difference and the standard error were unchanged (the two were equal) with the 95% confidence limit on these being, between 19.382 and 14.471. The data suggests that there is a difference in the reported learning outcomes especially among the control and experimental groups and the reported differences between groups have significance in that they are not due to random chances disproportional in SD. The learning takes 16.926 points higher in experimental group compared to the control group. However, it is in the sense of control who manage did not do outright better than the Experimental group, which had members who generally did. The mean difference has a 95% confidence interval which goes from -19.380 to -14.472 when equal variance is assumed and linear regression is used. However, while assuming linear regression without equal variance the affected range is 1861 - 19.395-14.508. This shows persuading buys attention as a means in which more uses of and students performance increases.

The Preferences of English Online Learning Platforms

The findings highlighted the variability in online learning system preferences among EFL students. The following explains the usage patterns of the six online English language learning platforms in this particular research. It was indicated in the survey that the students used a variety of platform tools with some emerging to be used more often than others.

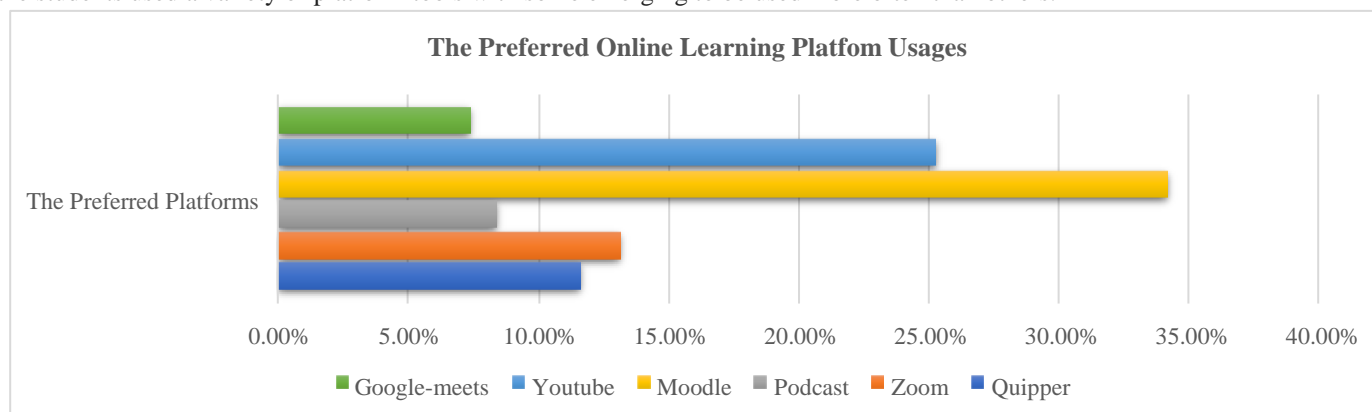


Figure 1. Students' Preferences on Using various Online Learning Platforms

Based on the figure 1, Moodle emerged as the most preferred platform for online learning among EFL learners. 34.21 percent of the users appreciate its ease and functionality, which is proper for the platform. YouTube comes at 25.26% for being easy and plenty of contents offered. Zoom (13.16%) and Quipper (11.58%) are also used though Zoom is focused on synchronous activities and Quipper interactive features. Google Meets 7.37% and Podcasts 8.42% are used for purposes such as group meetings and independent study activities, respectively. All in all, in case of the situation like this, besides animated and specific pedagogical strategies borrowed, users of Moodle gamifying instruments and elements, the most appreciated online among EFL users of the effective and efficient blocks of the learning web space, is prevalent -Youtube.

The Reasons to Use the Six Online Learning Platforms

The graph below shows the main reasons that surge students for the use of online learning platforms. The chart outlines four categories of reasons such as: concentration to learning, communication with instructors, adequate learning materials, and convenience. The scannable map consistent with the horizontal bar states each of the opinions as a percentage. This table specifies the share of respondents who endorse the reasons presented in the chart, clarify what type of attributes students value concerning the use the online learning platforms.

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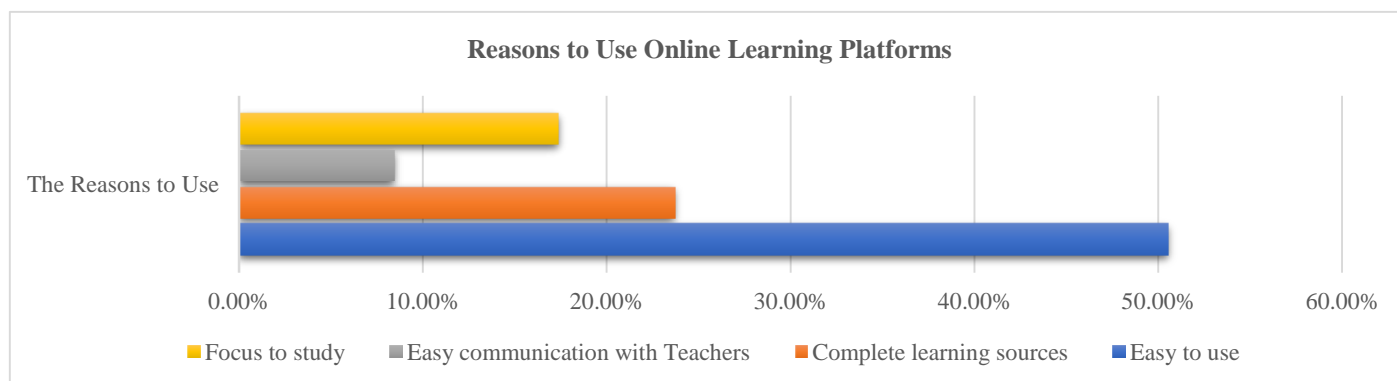


Figure 2. Students' Reasons to Choose the Particular Online Learning Platforms

From the findings obtained, we note significant differences with respect to different elements. Ease of Use leads with 50.53%, thus this is the most salient aspect that facilitates the students' learning by reducing the use of technical facilities and increasing their involvement. Complete Learning Materials come second with 23.68%, which suggests that these are necessary and cuts down the reliance from other sources. While Easy Communication with Teachers/Mentors brings in a score of 8.42% which is relatively low, it however indicates a very key area especially in aiding students balance most challenges by getting help, this aspect management touches on already. Focus on Study, which has a figure of 17.37%, brings out the problem of attention to the work even when all usability and the materials are in place in the actual practice of teaching over the internet.

The Most-Effective Online Learning Platform

In this section, we shall discuss the findings of a review aimed at determining the best online learning platforms which learners prefer. Platforms specifically assessed are Quipper, Zoom, Podcasts, Moodle, YouTube, and Google Meets. The analysis, which derived its data from students' assessment scores, reveals students' preferences and perceptions of those platforms. More information can be found in the subsequent tables and descriptions and in the findings.

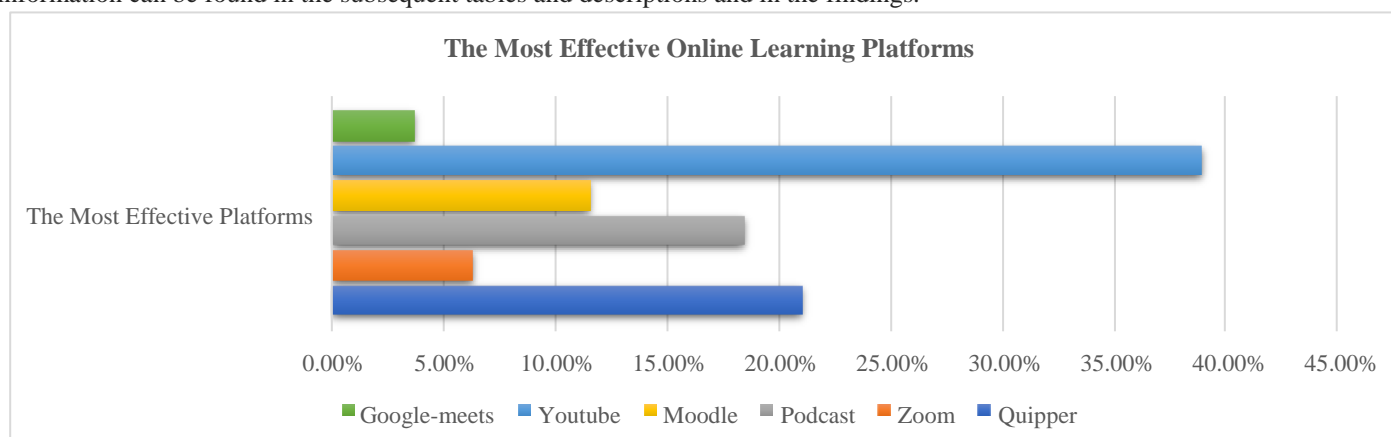


Figure 3. The Effectiveness and the Most Effective Online Learning Platforms

Youtube easily ranks as the best platform with online learning effectiveness percentage score of 38.95%. This implies that several students appreciate that Youtube has adequate learning materials and a diversity of ways in which such materials can be presented. It was indicated that Quipper came under other most learners with a proportion of 21.05%, it follows that this platform also has a good endorsement from the students while studying online. Quipper's strengths may lay in this interactive approach and good quality content. Podcasts took a share of 18.42%, which signifies that, this mode of learning is indeed much appreciated and effective, augmenting the effectiveness of learning without much reliance on the visuals. At the same time, Moodle received 11.58% which indicates that this platform's leaning management system aspect with supportive functions such as Discussion boards as well as submission of assignments can be highly productive. Synchronous learning uses Zoom and accounts for only 6.32% of the percentage. Though not as widely used as sites such as YouTube or Quipper, it is however deemed advantageous for instance in teacher-student interaction. Google Meets had the lowest score of 3.68% over the stated period. It is largely used for holding groups or classes through the internet, but in terms of learning, its efficiency may not compare to other applications which come with abundance of functions. In summary, these results signify students interest in learning on mobile and more engaging platforms such that the most preferred platform in aiding learner online is YouTube.

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V. DISCUSSION

The results show a statistically significant improvement in the learning outcomes of students using an interactive online learning platform as compared to students who were taught through traditional techniques. This shows that there is an improvement in the learning outcomes of students using online platforms. Many studies support this; for example, Dai (2024) wrote that positive communication between the instructor and the student increases satisfaction with online learning; anyu et al. Considering communication and utilizing collaborative electronic learning applications are appropriate, as well as in the study of Abuhassna et al. (2023). Why is there a relationship between learning perceived and satisfaction in online platforms? Such was reported by Yasin et al. Tarazi & Cecilia reported problems where people were unable to perform online activities as prescribed due to disorganization in the tasks presented, which created their problems. Online learning provides more opportunities for learners in terms of accommodating self-paced forms of learning as the studies by Maphalala et al. Statistically, it has been established that online learning platforms do yield better and efficient figures within lesser errors of estimation.

The research finds a noteworthy divergence in the effectiveness of learning as measured via test results between two groups, where one group makes use of online learning platforms (models) and another does not. The lack of this difference in ELL, day and the consequent reliability in terms of sustained and sizable outcomes truly bears testimony to the effects that online learning devices afford in the ELL context. The study by Pichugin and others (2022) is all in support of the use of online platforms in foreign language teaching due to their many advantages. On the other hand, Amin and Paiman (2022) explain the role of teachers' technology pedagogy knowledge in choosing appropriate digital platforms. Khakim (2024) takes the perspective that use of Canva has benefited remote teaching practices. These platforms encourage self-study as well as collaboration, thus elevating the intensity and effectiveness of educational processes. Silaban et al. (2024) illustrate the cases of the use of these platforms for organizing educational courses and monitoring student performance, while Wang et al. (2022) and Xu et al. (2022) point out the central role of learners and access to a variety of resources to enhance learning. The results of the study show that among the online learning platforms when it comes submissive learning, EFL students are likely to be very comfortable with using a Moodle platform. In particular, owing to its interactive elements, organized materials and simple distribution and completion of tasks and quizzes, Moodle manages to meet a wide range of students' needs (Ng, 2021). This observation is a clear indication of the necessity to use a greater variety of tools within a single course to make combining of various methods of learning and sources more effective. It is possible for teachers to create healthy educational conditions where learners focus by creating online tasks that encourage engagement. Also, such trend as the use of Moodle is consistent with the integration of modern information and communication technologies in education and highlights the effect of distance education on the effectiveness of students' learning (Asana et al. 2021). This means that students feel that learning in an integrated environment where their learning needs are adequately catered for is preferable.

A major reason for the popularity of YouTube among students is the fact that it has great convenience and variety in the content and materials, which are linked to the primary resources, and help expand the comprehension beyond the latter (Drozd et al., 2018). Education is more effective with the use of devices such as tablets and smart phones which can accommodate the various learning styles and preferences of the children and use of appropriate educational software can also enhance how information is journalistically presented and how much hope it elicits in the children (Ahmed et al, 2020). Also Ahmad et al. states that YouTube is becoming very important as an educational tool thanks to its live streaming feature. However, despite this drawback, it is judged that the availability of visual materials, rather than specific interactive contents, improves the usability of Youtube as an educational medium. In terms of English learning for the students, the convenience of online learning systems is very important in terms of User Interface (UI) design such as making the elements easy to comprehend, straightforward, and catering to the user requirements. Designing the user interface incorporates glancing comprehension and improving the retention of students (Dinh-Le et al., 2019; Bachmann et al., 2018). UI also changes the commitment of the users for instance tailoring the content to the users (Kocaballı et al., 2019). It has been shown how each part of a well-designed and understandable interface interacts with the user and promotes the learning process (Iannessi et al., 2018; Onishi et al., 2019). This is in view that, these distractions are as a result of the tools used by students to access the content as they do not focus on the learning materials themselves.

Without relevant and complete materials, the educational process is adversely affected as students would be required to go outside the platform in search of the required information (Jowsey et al. 2020) for a more elaborate comprehension. The use of step by step comprehensive volumes optimizes the learning skill sets of the students as the processes are less complicated, thus recruitment and retention levels are improved (Yang et al., 2021; Gaalen et al, 2020). This is most useful in blended educational solutions like the flipped classroom, which must undertake pre-class student preparations for the in-class exercises (Vanka et al 2019). More importantly, comprehensive resources available on a platform also enhance formative feedback as well as peer assessment (Coyne et al., 2021; Han & Klein, 2019). Moreover, interactions with teachers or mentors are also invaluable when implementing study protocols due to the level of support that can be provided in order to help overcome the difficulties encountered by students that are studies in (Zeng et al. 2020; Li 2021). The mentors also assist in the communications themselves in turn empowering the students to be able to speak up for themselves (Nguyen et al., 2020). In addition, it is also sure that in online learning, attention and motivation needs to be elevated in order to yield better results. Goals are achieved with the aid of intrinsic

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motivation, while support from the educator helps students to focus and put out effort (Xu et al., 2021). Some of the approaches that have the potential to achieve and rate the learners' motivation levels and effectuate learning include: the practice of goal-setting, and personalized, and interactive learning (Thammasitboon & Brand 2021; Sayiner & Ergönül 2021).

Students consider YouTube to be the best shoulder of the learning efforts because of its functions, application and various contact of presenting knowledge. Students highly appreciate Quipper and Podcasts, which include other means of engaging more through interaction and through audio, respectively. Moodle garners lower results in this area but still extends the learning experience though less efficiently through forums and submission of assignments. Both Zoom and Google Meets rank lower on the Likert scale but are important for real-time learning, where Zoom enables the learners to engage in teaching while Google meets is a platform for virtual meetings. From these results, it is clear that students wish to have more interactive as well as more available mediums. In assessing possible directions for further studies, we suggest the investigation of implementing customized educational measures and more flexible and adaptive learning technologies. Implementing a combination of online and in-class learning can improve the quality of the education system, offering different learning preferences and styles, and showing the effectiveness of online resources in the education to enhance the English language learning.

CONCLUSIONS

As a final point, the findings pointed out that the students' degree and frequency of learning using online education platform is quite different from that of traditional learning methods. The average student achievement outcome of the experimental group that utilized online learning technologies yielded 81.51, while the control one applying conventional methods comprised an average of 64.58. Apart from these, the independent sample t-test revealed a *Sig.* (2-tailed) of 0.000 which belongs to the null hypothesis hence there is a statistically significant difference between the two groups. Besides that, the F value obtained in Levene's test and reported was 6.398 which in essence means variance equality could not hold. In other words, the effectiveness of the online learning platform in enhancing the learning achievements of the students was better than the effect brought about in conventional methods. On Web-Usability of e-Learning-Carriers: Defining Distinct Categories of E-Learning Platforms Within the Study, distinct results emerged affecting three distinct categories of. Moodle left most students 34.21%, who chose this platform due to the presence of a complete package with course materials organized in an online mode forum help, most students 13.16 %. Zoom and Quipper were used by 11.58% of the students for interactive lessons using video conferencing, while 25.26% of the students used Youtube for its contents. Podcasts and Google Meets were the least participants' choice as the usage rates were in these cases 8.42% and 7.37% respectively. Still, they occupied audio and synchronous learning activity areas all the same. Ease of Use accounted for 50.53% responses as to the reason for using the platforms. This is Beef It Up, which minimizes the technical hindrance and consequently encourages interaction. Complete Learning Materials accounted for 23.68 % explaining the reason for the availability of sufficient materials. Easy Communication with Teachers/Mentors was modeled by 8.42 of the participants, Focus to Study was modeled by 17.37 of the participants, confirming there are some remaining issues concerning steady attention. Conclusively, the grade on effectiveness confirmed that YouTube had the highest grade of 38.95 % due to the diversity of the learning materials and methods of presentation. Quipper was placed second with a grade of 21.05 % for being engaging. The Podcasts received an 18.42 % dynamically supporting audio learning. Moodle received a percentage of 11.58 % regarding its LMS. Zoom and Google Meets are also rated 6.32% and 3.68% respectively with weaker impact but still, have certain function in synchronous and online educational settings.

REFERENCES

- 1) Abuhassna, H., Busalim, A. H., Yahaya, N., Zakaria, M. A. Z. M., & Latif, A. A. (2023). Study from home! the antecedents and consequences of collaborative learning on Malaysian university students. *Journal of Information Technology Education: Research*, 22, 7195. <https://doi.org/10.28945/5074>
- 2) Abulhassan, A. B. A. and Hamid, F. I. A. (2021). A nexus of group learning and collaborative learning facilities in stimulating oral interaction of learners: a case of Saudi Arabia. *International Education Studies*, 14(7), 101-107. doi:10.5539/ies.v14n7p101
- 3) Ahmed, S., Zimba, O., & Gasparyan, A. Y. (2020). Moving towards online rheumatology education in the era of covid-19. *Clinical Rheumatology*, 39(11), 3215-3222.
- 4) Alharbi, N. S. (2022). The effect of virtual classes on promoting Saudi EFL students' autonomous learning. *Journal of Language Teaching and Research*, 13(5), 1115-1124.
- 5) Alian, E. M. I. and Alhaj, A. A. M. (2023). Efl students' perceptions of employing technology tools in learning English at king Khalid university. *International Journal of Linguistics, Literature and Translation*, 6(3), 107-114.
- 6) Al-Qudimi, Y. H. A. and Hameed, S. (2024). Blended learning in efl programs in Yemen. *Journal of English Studies in Arabia Felix*, 3(1), 28-42.
- 7) Amin, M. M. and Paiman, N. (2022). University english language teachers' use of digital platforms for online teaching. *International Journal of Emerging Technologies in Learning (iJET)*, 17(20), 134-148.

Online Learning Platforms on Efl Students' Learning Intensity and Frequency

- 8) Akter, M., Suwartono, S., & Khan, M. H. (2021). Efl student challenges, preferences, and reactions towards Moodle-based online learning under the new normal in Indonesia. *Proceedings of the 1st International Seminar on Teacher Training and Education, ISTED 2021*, 17-18 July 2021, Purwokerto, Indonesia.
- 9) Alshahrani, A. A. (2017). Bring a foreign language and its cultures to Saudi efl university-level classrooms. *International Journal of English Linguistics*, 7(4), 83-94.
- 10) Aprianto, D. (2023). Using YouTube as EFL/ESL tertiary students' self-English language learning strategies. *SALEE: Study of Applied Linguistics and English Education*, 4(2), 503-526.
- 11) Asana, L., Irabor, C., Seppo, S., Jean, C., Ngoma, T., Elzawawy, A. & Ngwa, W. (2021). Using advanced information and communication technologies to advance oncology education in Africa. *E-Cancer Medical Science*, 15. 1-9.
- 12) Bachmann, D., Weichert, F., & Rinkenauer, G. (2018). Review of three-dimensional human-computer interaction with focus on the leap motion controller. *Sensors*, 18(7), 2194.
- 13) Bahari, A. (2024). Examining the impact of chatbot-based language learning support, adaptive learning algorithms, and virtual reality language immersion on EFL learners' language learning proficiency and self-regulated learning skills. *Journal of Research in Educational Sciences*, 15 (1), 17-33.
- 14) Chen, K. (2023). The relationship between learning styles and foreign language learning. *Journal of Education, Humanities and Social Sciences*, 8, 801-806.
- 15) Choi, L. and Chung, S. (2021). Navigating online language teaching in uncertain times: challenges and strategies of efl teachers in creating a sustainable technology-mediated language learning environment. *Sustainability*, 13(14), 2-14.
- 16) Chong, C. M. (2023). The influence of online liberal arts English on college students' intercultural interest. *The Korean Association of General Education*, 17(2), 149-167.
- 17) Cocca, M. and Cocca, A. (2019). Affective variables and motivation as predictors of proficiency in English as a foreign language. *Journal on Efficiency and Responsibility in Education and Science*, 12(3), 75-83.
- 18) Cordero, A. L. and Santos Jr., B. (2023). Relationship and attributive impact of self-regulation, language learning strategies, and second language anxiety to second language learning of grade 11 students. *International Journal of Literacy, Culture, and Language Education*, 4, 4-30.
- 19) Coyne, E., Calleja, P., Forster, E., & Lin, F. (2021). A review of virtual-simulation for assessing healthcare students' clinical competency. *Nurse Education Today*, 96, 1-10.
- 20) Dai, X., Wang, R. r., Huang, X. f., Wang, X. x., Huang, Y. t., Li, Y. & Gao, B. (2024). An analytical model of college students' self-assessed satisfaction with the effectiveness of online learning: a structural equation model integrating lice and SOR models. *Frontiers in Psychology*, 14(1248729), 1-16.
- 21) Dalilan, D. (2021). Indonesian efl students' perceptions on learning autonomy in online learning delivery mode. *PANYONARA: Journal of English Education*, 3(2), 122-134.
- 22) Dinh-Le, C., Chuang, R., Chokshi, S., & Mann, D. (2019). Wearable health technology and electronic health record integration: scoping review and future directions. *JMIR Mhealth and Uhealth*, 7(9), 1-13.
- 23) Drozd, B., Couvillon, E., & Suárez, A. (2018). Medical YouTube videos and methods of evaluation: Literature review. *JMIR Medical Education*, 4(1), 1-6.
- 24) Famularsih, S. (2020). Students' experiences in using online learning applications due to covid-19 in English classroom. *Studies in Learning and Teaching*, 1(2), 112-121.
- 25) Fauziah, F. and Diana, N. (2023). Exploring students' informal digital learning of English(idle) and self-regulated language learning from a sociocultural perspective. *Indonesian TESOL Journal*, 5(2), 197-214.
- 26) Gaalen, A. E. J. V., Brouwer, J., Schönrock-Adema, J., Bouwkamp-Timmer, T., Jaarsma, D., & Georgiadis, J. R. (2020).
- 27) Gamification of health professions education: a systematic review. *Advances in Health Sciences Education*, 26(2), 683-711.
- 28) Han, E. J. and Klein, K. C. (2019). Pre-class learning methods for flipped classrooms. *American Journal of Pharmaceutical Education*, 83(1), 40-49.
- 29) Han, J., Geng, X., & Wang, Q. (2021). Sustainable development of university efl learners' engagement, satisfaction, and self-efficacy in online learning environments: Chinese experiences. *Sustainability*, 13(21), 1-14.
- 30) Hernández-López, E. M. and Urbar-Serrano, F. A. (2024). The impact of online informal learning of English(OILE) through fandom participate on. *Revista Lengua Y Cultura*, 5(10), 92-98.
- 31) Huang, W., Hew, K. F., & Fryer, L. K. (2021). Chatbots for language learning-are they really useful? a systematic review of chatbot-supported language learning. *Journal of Computer Assisted Learning*, 38(1), 237-257.
- 32) Iannessi, A., Marcy, P., Clatz, O., Bertrand, A., & Sugimoto, M. (2018). A review of existing and potential computer user interfaces for modern radiology. *Insights Into Imaging*, 9(4), 599-609.
- 33) Janah, K. E. N., Retnaningdyah, P., & Mustofa, A. (2022). Digital extensive reading in Indonesia: a critical review. *Journal of English Language Teaching and Linguistics*, 7(3), 513.

Online Learning Platforms on Efl Students' Learning Intensity and Frequency

- 34) Jie, X., Liu, Y., Liu, J., & Qu, Z. (2022). Effectiveness of english online learning based on deep learning. *Computational Intelligence and Neuroscience*, 2022, 1-10. <https://doi.org/10.1155/2022/1310194>
- 35) Jowsey, T., Foster, G., Cooper-Ioelu, P., & Jacobs, S. (2020). Blended learning via distance in pre-registration nursing education: a scoping review. *Nurse Education in Practice*, 44, (102775), 1-10.
- 36) Khakim, A. K. A., Wahidah, F. S., & Wirabhakti, A. (2024). A critical review of Canva as a visual media platform for english learning. *Devotion: Journal of Research and Community Service*, 5(5), 581-588.
- 37) Kocaballi, A., Berkovsky, S., Quiroz, J., Laranjo, L., Tong, H., Rezazadegan, D. & Coiera, E. (2019). The personalization of conversational agents in health care: systematic review. *Journal of Medical Internet Research*, 21(11), 1-15.
- 38) Li, R. (2021). The role of teacher-student interpersonal relations in flipped learning on student engagement. *Frontiers in Psychology*, 12.1-4.
- 39) Li, X., Duan, S., & Liu, H. (2023). Unveiling the predictive effect of students' perceived efl teacher support on academic achievement: the mediating role of academic buoyancy. *Sustainability*, 15(13), 1-12.
- 40) Li, Y. (2023). Research on the application of learning frequency in cultivating language sense in second language acquisition. *Frontiers in Educational Research*, 6(22). 105-112.
- 41) Maphalala, M. C., Mkhasibe, R. G., & Mncube, D. W. (2021). Online learning as a catalyst for self-directed learning in universities during the covid-19 pandemic. *Research in Social Sciences and Technology*, 6(2), 233-248.
- 42) Marsofiyati, M., Solihatin, E., & Situmorang, R. (2024). The synergy between workforce, students, and lecturers in collaborative learning. *International Journal of Evaluation and Research in Education (IJERE)*, 13(3), 1391.
- 43) Muslem, A., Kasim, U., Mustafa, F., Fitriani, S. S., & Rahmi, M. (2024). The correlation between the use of online learning platforms and undergraduate students' self-efficacy. *Journal of Language and Education*, 10(1), 83-100.
- 44) Mutambik, I. (2018). The role of e-learning in studying English as a foreign language in Saudi Arabia: students' and teachers' perspectives. *English Language Teaching*, 11(5), 74-83. doi: 10.5539/elt.v11n5p74
- 45) Nafiul Faqih, R., Munir, A., & Anam, S. (2022). Exploring the use of Wattpad as media in language learning strategy: teacher's and student's perspective of writing performance approach. *JET (Journal of English Teaching)*, 8(3), 355-365.
- 46) Ng, C. F. (2021). The physical learning environment of online distance learners in higher education: A conceptual model. *Frontiers in Psychology*, 12. 1-13. <https://doi.org/10.3389/fpsyg.2021.635117>
- 47) Ngo, T. C. T. and Ha, Y. N. (2022). The integration of English conversation rooms and chatting to enhance English communication skills for efl students. *International Journal of TESOL & Education*, 2(5), 34-63.
- 48) Nguyen, L., Jack, S. M., Rezza, B. D., Soper, A. K., & Gorter, J. W. (2020). Understanding the essential components and experiences of youth with autism spectrum disorders in peer mentorship programmes during the transition to adulthood: a qualitative meta-ethnography. *Child: Care, Health and Development*, 46(6), 667-681.
- 49) Niu, L., Wang, X., Wallace, M. P., Pang, H., & Xu, Y. (2022). Digital learning of English as a foreign language among university students: how are approaches to learning linked to digital competence and technostress?. *Journal of Computer Assisted Learning*, 38(5), 1332-1346.
- 50) Palandi, J. F., Pudyastuti, Z. E., & Molewe, K. (2024). Enhancing English vocabulary through game-based learning: a case study of the Scramword application. *International Journal in Information Technology in Governance, Education and Business*, 6(1), 109-121.
- 51) Pichugin, V., Panfilov, A., & Волкова, E. A. (2022). The effectiveness of online learning platforms in foreign language teaching. *World Journal on Educational Technology: Current Issues*, 14(5), 1357-1372.
- 52) Ping-ying, H. (2016). The role of basic need satisfaction in English learning: a case study at a university in China. *Linguistics and Literature Studies*, 4(6), 402-411.
- 53) Onishi, I., Tsuji, H., & Irisa, M. (2019). A tool written in scala for preparation and analysis in md simulation and 3d-rism calculation of biomolecules. *Biophysics and Physicobiology*, 16, 485-489.
- 54) Rahmani, A., Asadi, V., & Xodabande, I. (2022). Using mobile devices for vocabulary learning outside the classroom: Improving the English as foreign language learners' knowledge of high-frequency words. *Frontiers in Psychology*, 13 1-7.
- 55) Rajendran, R., Din, R., & Othman, N. (2023). A critical review on using Canva as a visual media platform for English language learning. *International Journal of Academic Research in Business and Social Sciences*, 13(6). 631-641.
- 56) Sayiner, A. A. and Ergönül, E. (2021). E-learning in clinical microbiology and infectious diseases. *Clinical Microbiology and Infection*, 27(11), 1589-1594.
- 57) Sheerah, H. A. H. and Yadav, M. S. (2022). Autonomous learning as a pedagogical tool: exploring the perceptions of teaching and learning practices at writing hub. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 14(4). 1-26.
- 58) Suharti, D. S., Suherdi, D., & Setyarini, S. (2021). Exploring students' learning engagement in EFL online classroom. *Proceedings of the Thirteenth Conference on Applied Linguistics (CONAPLIN 2020)*.

Online Learning Platforms on Efl Students' Learning Intensity and Frequency

- 59) Suleiman, A. A. (2022). Active learning strategies administration in English language e-learning environments in Saudi universities. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 8(12), 212-220.
- 60) Sun, Y. and Shi, W. (2022). On the role of teacher-student rapport and teacher support as predictors of Chinese EFL students' affective learning. *Frontiers in Psychology*, 13, 1-9. <https://doi.org/10.3389/fpsyg.2022.856430>
- 61) Tarazi, A. and Cecilia, R. R. (2023). Students' perceptions towards the role of online teaching platforms in enhancing online engagement and academic performance levels in Palestinian higher education institutions. *Education Sciences*, 13(5), 449.
- 62) Tarigan, F. N. and Lasnumanda, E. S. (2020). Online English shadow education: efl learners' perspective. *Lexeme : Lexeme: Journal of Linguistics and Applied Linguistics*, 2(2), 70-78.
- 63) Thammasitboon, S. and Brand, P. (2021). The physiology of learning: strategies clinical teachers can adopt to facilitate learning. *European Journal of Pediatrics*, 181(2), 429-433.
- 64) Vanka, A., Vanka, S., & Wali, O. (2019). Flipped classroom in dental education: a scoping review. *European Journal of Dental Education*, 24(2), 213-226.
- 65) Wang, C., Mirzaei, T., Xu, T., & Lin, H. (2022). How learner engagement impacts non-formal online learning outcomes through value cocreation: an empirical analysis. *International Journal of Educational Technology in Higher Education*, 19(1), 1-26.
- 66) <https://doi.org/10.1186/s41239-022-00341-x>
- 67) Wilden, E. and Porsch, R. (2019). The impact of teaching quality and learning time on primary efl learners' receptive proficiency. *AILA Review*, 32, 160-177.
- 68) Wu, J., Zhou, R., & Xia, W. (2023). Improving English listening and speaking abilities in online interactive platforms. *International Journal of Emerging Technologies in Learning (iJET)*, 18(18), 35-49.
- 69) Xu, J., Lio, A., Dhaliwal, H., Andrei, S., Balakrishnan, S., Nagani, U., & Samadder, S. (2021). Psychological interventions of virtual gamification within academic intrinsic motivation: a systematic review. *Journal of Affective Disorders*, 293, 444-465.
- 70) Xu, Z. (2023). Research on English education online learning platform based on big data of education. *Advances in Education, Humanities and Social Science Research*, 3(1), 372.
- 71) Yang, C., Luo, L., Vadillo, M. A., Yu, R., & Shanks, D. R. (2021). Testing (quizzing) boosts classroom learning: a systematic and meta-analytic review. *Psychological Bulletin*, 147(4), 399-435.
- 72) Yasin, A., Al-Tarawneh, L., Elissa, F. B., & Alzoubi, A. (2022). Students' achievement in an online course on technical writing and communication skills. *Interactive Technology and Smart Education*, 19(4), 526-543.
- 73) Yehya, F. M. (2020). Promoting technology- implementation learning paradigm for online learning in secondary education. *Global Journal of Information Technology: Emerging Technologies*, 10(1), 12-21.
- 74) Yu, W. and Du, X. (2019). Implementation of a blended learning model in content- based efl curriculum. *International Journal of Emerging Technologies in Learning (iJET)*, 14(5), 188.
- 75) Yumnam, R. (2021). E-learning: an effective mode of teaching English as a second language. *Journal of Translation and Language Studies*, 2(2), 1-9.
- 76) Zakarneh, B. (2018). Effectiveness of e-learning mode for teaching English language in Arab universities. *International Journal of Applied Linguistics and English Literature*, 7(7), 171.
- 77) Zeng, H. L., Chen, D. X., Li, Q., & Wang, X. Y. (2020). Effects of seminar teaching method versus lecture-based learning in medical education: a meta-analysis of randomized controlled trials. *Medical Teacher*, 42(12), 1343-1349.
- 78) Zhu, H. (2023). A comparative study of managing learning opportunity in efl classroom. *International Journal of English Linguistics*, 13(2), 48.
- 79) Zhu, S. and Zhang, H. (2022). Understanding the importance of motivational intensity in English as a foreign language context: a structural equation modeling analysis. *Frontiers in Psychology*, 13, 1-13. <https://doi.org/10.3389/fpsyg.2022.1020558>



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