EFL STUDENTS' PERCEPTION OF WORDWALL.NET USED AS MEDIA FOR LEARNING ENGLISH GRAMMAR

Laily Wahyuni Ilahi

lailywhyni4748@gmail.com University of Muhammadiyah Prof. Dr. Hamka, Indonesia

Cahya Komara, S.Pd., M.Hum.

cahya.komara@uhamka.ac.id University of Muhammadiyah Prof. Dr. Hamka, Indonesia

Yusuf Ismail, S.Pd.

yusufismail91@yahoo.co.id SMAS Kartika VIII-1, Indonesia

ABSTRACT

Recently, technology utilization is remarkably vital in 21st century learning. Many EFL teachers integrate technology in their teaching and learning process for gaining not only their students' competence but also their students' engagement. This technology is commonly known by learning media, and it is used either in the offline or online learning situation. Wordwall.net is one of it; a learning media that can be applied in EFL learning context. This study aimed to investigate EFL students' perception of Wordwall.net used particularly in learning English grammar. The research was conducted in a form of quantitative approach by using survey design with sample of 129 respondents from one private Senior High School in Jakarta. The data was collected through a close-ended questionnaire with the Likert scale and analyzed by using SPSS Version 25. The findings showed that the use of Wordwall.net was convincingly positive for the EFL students on the aspects of feeling (89.6%), attitude (67.3%), and engagement (77.4%).

Keywords: EFL Students, Grammar, Perception

INTRODUCTION

The twenty-first century is also recognized as "digital age". It is distinguished by the acceleration of digital transformation (DT) over technological innovations (Tekic & Koroteev, 2019). The innovations have led human civilization to change at an ever-increasing rate in a variety of domains (Bilyalova et al., 2020). In industrial field, DT is considered as an innovation in creating problem-solving strategies, finding new target markets, and developing business values (Jackson, 2019; Young & Rogers, 2019). The same thing also occurs in the healthcare sector where DT is used to address health-related issues (Kraus et al., 2021). Kane (2019) stated that the cultural changes generated by implementing DT in the mindset of

company stakeholders will render them adaptive, dynamic, and critical. Public services have been delivered online using social media as a new means of communicating with users and increasing engagement since the COVID-19 epidemic (Agostino et al., 2020). Because of the DT, it is becoming simpler for people to interact and carry out numerous activities via digital media.

Korkmaz and Toraman (2020) explained that DT has encouraged educational institutions to begin using digital technology to innovate in systems and tools. Since the lockdown, the remote learning system had been widely used, and many schools were integrating it through online learning. In fact, some institutions have incorporated it as their system on their own. Distance learning, according to Cardullo et al. (2021), Shim and Lee (2020), offers for flexibility, personalized learning, and self-regulated learning. With the adoption of this system, educators will have the chance to expand their professional competence, both technically and pedagogically (Dhawan, 2020; Dutta, 2020; Khan et al., 2022). The technical ability of teachers include how they can apply elements of digital technology in learning (Starkey, 2020). Huang et al. (2019) and Rosydiyah et al (2022) argued that technology and current generation are inseparable unit. For these reasons, teaching with integrated technology has become a trend and an issue that has become a challenge for educational practitioners in recent years.

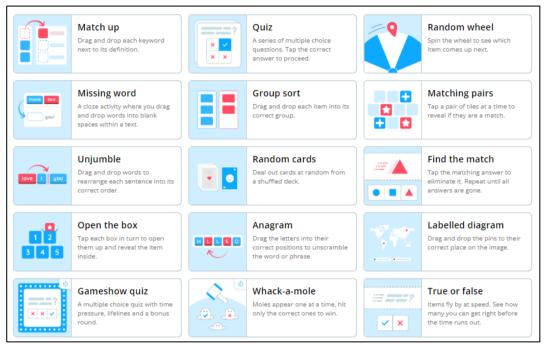
On the other hand, digital integration in learning also has a wide range of positive effects in the classroom. Lots of research had demonstrated this, notably in EFL context. Boroughani et al (2023), whose study analyzed EFL students' vocabulary acquisition by performing trials using digital flashcard application put on their mobile phones, discovered substantial variations in interest, self-regulated learning, and engagement following the intervention. This was in line with Nikolopoulou et al. (2019), who investigated young learners' experiences in using ICT to develop reading abilities. Another study came from Namaziandost and Nasri (2019) who conducted a survey on the use of social media (Whatsapp, Telegram, and Skype) in improving the speaking skills of EFL students. The results showed that most students were willing to utilize this tool in class on a regular basis to prevent learning boredom and to stimulate them to participate in speaking activities. It was also supported by Basuki and Hidayati (2019) which disclosed that students were thrilled when ICT was used in the classroom.

Despite the evidence mentioned above, there are many significant components of English to master, one of which is grammar. Indeed, Lim et al. (2021) believed that all other language skills (speaking, writing, reading, and listening) were always tied to grammar, because it played a critical role in communication, both verbally and nonverbally. In most cases, this aspect has been regarded as one of the most complicated issues to investigate. Several factors contribute to this. Students felt unmotivated and overwhelmed because of the large number of substances that needed to be learned, and the material's delivery was uninteresting or monotonous (Komara & Tiarsiwi, 2021). Alternatively, instructors need to create simple and enjoyable approaches to teach grammar (Rosydiyah et al., 2022).

Many EFL teachers have attempted to integrate digital learning tools in their instructional purposes. The tools used in the classroom is seen as learning medium. There are several educational applications and websites available. Wordwall.net is one such example. It enables the use of gadgets in teaching and learning activities. Also, it offers a variety of games (e.g., Match up, Quiz, Open the Box, Unjumble, Random Wheel, Anagram, etc.) that are simple to access with the users (see on Figure 1). Teachers able to utilize and modify any templates

based on the content to be taught. They also can adjust the game to be a live activity or an assignment. The developed activity may be played on any device (mobile phone or computer or tablet) jointly by using a shared link.

Figure 1.
Templates Menu on Wordwall.net



Many studies have demonstrated the benefits of utilizing Wordwall.net in the classroom with different environment. For example, Mazelin et al. (2022) found that students became more involved in online class discussions and more eager to study after the Wordwall.net session. Students were interested and more engaged in learning new vocabularies because of this technique (Arsini et al., 2022; Jannah et al., 2017; Pradini & Adnyayanti, 2022). More specifically, the large number of vocabularies displayed could improve their writing skills (Mohinakhon & Teacher, 2022). Arliani and Agustina (2019), in their research, found that the teacher had a unique method that allowed students to express their thoughts into writing form. Besides, Rahmawati and Wijayanti (2022), in their documentary research, stated that this medium was extremely useful for teachers in transferring learning content to pupils so that they might better comprehend the context of the text. According to Fakhruddin et al. (2021), Grace et al (2022), Kariyati and Kusumaningrum, (2023), and Kostova, (2021), this software was also used in learning other languages (e.g., Arabic, Mandarin, Bulgarian, and Malay).

In terms of grammar class, Segaran and Hashim (2022) unfolded that students' post-test results in the course "Singular and Plural Nouns" increased dramatically after utilizing Wordwall.net in class. It was also told that they preferred studying grammar through technology rather than books due to the appealing images and diverse features. Their mixmethod study aimed to discuss about the effectiveness of ESL grammar learning via three different apps (Kahoot, Quizziz, and Wordwall.net), and the students' perspectives on it. The findings of previous research were also promoted by Rosydiyah et al (2022) whose research focused on ESL students' grammar quality, the effectiveness of Wordwall.net, and ESL students' perception. The result showed that student's achievement had grown significantly with the implementation of this learning aid.

All in all, underlying the current trends and issues that had been arisen in English grammar learning, the authors chose this as the setting for the research. Wordwall.net was picked as the research variable because it was seen as having the potential to enhance the quality of grammar learning. The point of reference was the many research findings related to this focus which showed a beneficial impact following the intervention. Nonetheless, the researchers found a gap in the previous study related to grammar learning using this software. The research focused more on the students' performance rather than their perception. The students' perceptions explored do not have any specific constructs to be addressed. Furthermore, the number of participants was limited, so that it needed to be enlarged. Hence, the current research was conducted with the aim of describing EFL students' perception of Wordwall.net used in English grammar learning with reference to three aspects. The research question formulated was written as "What do EFL students perceive of using Wordwall.net in learning English grammar?"

METHOD

The current study was carried out in a private Senior High School in Jakarta, namely SMAS Kartika VIII-1. It was intended to figure out EFL students' perception towards Wordwall.net application in learning English grammar. To obtain the objective of the study, a descriptive quantitative approach was applied by using survey design. A survey can be employed to gather data in terms of describing the nature of existing phenomenon and perspective of the population involved in it (Creswell & Creswell, 2018). The phenomenon investigated was retrieved in the 2022/2023 academic year while reported speech material was being taught. At the time, Wordwall.net was operated as a tool specifically for drilling the students' memory and brief assessment in the class.

In this research, the instrument was adapted from Basuki and Hidayati (2019) which consisted of 15 items classified to three constructs: feeling, attitude, and engagement. Each item contained five points representing some measurement levels. Those were 5 = Strongly Agree (SA), 4 = Agree (A), 3 = Neutral (N), 2 = Disagree (D), and 1 = Strongly Disagree (SD). The respondents were requested to complete the form detailing how much they agreed or disagreed with each statement in the questionnaire. They were determined through convenience sampling due to their accessibility and exposure to Wordwall.net.

As the initial step of data-collection practicalities, the researchers directly distributed a closed-ended questionnaire with the Likert scale to 129 pupils as participants. They were in range between 15-18 years old with distinct classes. In this case, the authors only served as the data collector and data analyst. For more details, frequency distribution table of the respondents in this study has been provided below:

Table 1. Respondents Demographics

| Demography | Category | Frequency | Total |
|------------|----------|-----------|-------|
| Gender | Male | 65 | |
| | Female | 64 | |
| Age | 15 Years | 3 | 129 |
| | 16 Years | 46 | _ |
| | 17 Years | 70 | _ |
| | 18 Years | 10 | - |

Next, the data were tabulated as numeric in Microsoft Excel and recapitulated in SPSS version 25. The reliability measurement was conducted through Cronbach's analysis before computing descriptive statistics (see on Table 2). This test measured the reliability of the questionnaire by correlating each item with the total value of the items (Cohen et al., 2018). The result indicated that the instrument was in highly reliable score (Cronbach $\alpha > .80$ - 0.90). Last, the result of the data was interpreted and analyzed to get a comprehensive understanding.

Table 2. Reliability Statistics

| Cronbach's Alpha | N of Items | | | |
|---------------------|------------|--|--|--|
| .879 | 15 | | | |

FINDINGS AND DISCUSSION

A summary of the research data was displayed on the following table. It laid out how many points were obtained on each questionnaire item, both cumulatively and per item. Furthermore, the mean score and percentage of the total were also discovered.

Table 3.
The Closed-ended Questionnaire

| | Statements | \overline{X} | SA | A | N | D | SD |
|-----|---|----------------|--------------|-------|-------------|----------|----------|
| 1 | | 4.35 | 41.09 | 52.71 | 6.20 | <u> </u> | <u> </u> |
| 1. | I find Wordwall.net exciting, interesting, motivating & fun to learn English grammar. | 4.55 | 41.09 | 32.71 | 0.20 | U | U |
| 2. | I feel positive when playing Wordwall.net for studying | 4.23 | 34.11 | 55.04 | 10.85 | 0 | 0 |
| 4. | reported speech material. | 4.23 | 34.11 | 33.04 | 10.65 | U | U |
| 3. | | 4.24 | 38.76 | 46.51 | 14.73 | 0 | 0 |
| 3. | I like the collaboration and competitiveness in grammar | 4.24 | 38.70 | 40.51 | 14.73 | U | U |
| | sessions using Wordwall.net. | 1.26 | 41.06 | 44.06 | 10.05 | 2.22 | |
| 4. | I am motivated to win all these grammar sessions using | 4.26 | 41.86 | 44.96 | 10.85 | 2.33 | 0 |
| | Wordwall.net. | 1 12 | 71.04 | 41.00 | 5.42 | 1.55 | |
| 5. | Wordwall.net used for learning English grammar creates | 4.43 | 51.94 | 41.09 | 5.43 | 1.55 | 0 |
| | an energetic classroom atmosphere. | 2.00 | 25.50 | 27.00 | 25.66 | 0.70 | |
| 6. | I look forward to playing grammar games with | 3.88 | 25.58 | 37.98 | 35.66 | 0.78 | 0 |
| | Wordwall.net. | 2.05 | 24.01 | 1106 | 20.22 | | |
| 7. | I am eager to learn any tenses via Wordwall.net. | 3.95 | 24.81 | 44.96 | 30.23 | 0 | 0 |
| 8. | I prepare better to win in the grammar sessions that use | 4.00 | 27.13 | 46.51 | 25.58 | 0.78 | 0 |
| | Wordwall.net. | | | | | | |
| 9. | I don't want to miss any grammar sessions that use | 3.91 | 24.81 | 44.19 | 29.46 | 0.78 | 0.78 |
| | Wordwall.net. | | | | | | |
| 10. | Wordwall.net must be used in the daily learning process, | 3.83 | 24.81 | 35.66 | 37.21 | 2.33 | 0 |
| | particularly in learning English grammar. | | | | | | |
| 11. | I focus on the questions in each grammar learning session | 3.98 | 23.26 | 53.49 | 21.71 | 1.55 | 0 |
| | using Wordwall.net. | | | | | | |
| 12. | I respond to each question in each Wordwall.net session | 4.02 | 20.93 | 61.24 | 17.05 | 0.78 | 0 |
| | while studying reported speech material. | | | | | | |
| 13. | I respond as quickly as possible to each question in each | 3.88 | 20.93 | 49.61 | 26.36 | 2.33 | 0.78 |
| | Wordwall.net session while studying reported speech | | | | | | |
| | material. | | | | | | |
| 14. | I respond as accurately as possible to each question in each | 4.07 | 27.91 | 52.71 | 17.83 | 1.55 | 0 |
| | Wordwall.net session while studying reported speech | | | | | | |
| | material. | | | | | | |

| 15. | I pay more attention during lectures because I hope to win | 4.14 | 37.21 | 39.53 | 23.26 | 0 | 0 |
|-------------------------|--|------|-------|-------|-------|------|------|
| | in the Wordwall.net sessions while studying reported | | | | | | |
| | speech material. | | | | | | |
| Total Danconto de (120) | | 4.08 | 31.01 | 47.08 | 20.8 | 0.98 | 0.10 |
| | Total Percentage (129) | | 78.1 | | • | 1.1 | |

From 129 respondents, most of them perceived that the use of Wordwall.net in learning English grammar was convincingly positive. It was revealed by the number of students who predominantly responded, "Strongly Agree = 31.01" and "Agree = 47.08", with the average score 78.01. The calculated score occupied more than half of all existing responses. The statement "Neutral" took the next position with an average of 20.8. The rest, "Disagree = 0.98" and "Strongly Disagree = 0.10" gained the least score, with an average of 1.1.

Meanwhile, a recap of the three indicators was constructed to corroborate overall elaboration of the data comprehensively (see on table 4). In general, the percentage of all constructs showed that the highest scores were on the choices (SA) and (A), with amounts of 89.6% for feeling, 67.3% for attitude, and 77.4% for engagement.

Table 4.

Recapitulation of Closed-ended Questionnaire

| Classification | Numbers | Percentage (%) | | |
|--------------------------------|--------------------|----------------|------|--------|
| | | SA + A | N | D + SD |
| Students' Perceived Feeling | 1, 2, 3, 4, 5 | 89.6 | 9.6 | 0.8 |
| Students' Perceived Attitude | 6, 7, 8, 9, 10 | 67.3 | 31.6 | 1.1 |
| Students' Perceived Engagement | 11, 12, 13, 14, 15 | 77.4 | 21.2 | 1.4 |
| Total | 15 Items | | | |

EFL learners relatively perceived Wordwall.net as a learning medium that may boost their motivation and interest for studying English grammar. However, many scholars have validated the impact of this tool in terms of enhancing students' motivation in different ways of conducting research. Based on their observation, Mazelin et al (2022) concluded that ESL students were more motivated to participate the online classroom as they became more open and comfortable to express their thought. It also encouraged them to learn the material while using the application. Similarly, Pradini and Adnyayanti (2022) in their experimental research defined that Wordwall.net is a flexible learning media can be used in both learning environment (F2F and online). More specifically, the games or activities on the Wordwall.net, including audio music and full-color templates, increased students' motivation and created a joyful atmosphere in the classroom (Rahmawati & Wijayanti, 2022). Hence, gamification technology in learning may result in much higher levels of motivation than non-use (Yu et al., 2021).

In the meantime, Komara and Tiarsiwi (2021) argued on their paper that many learners anticipated interactive media, notably new online technologies, implemented inside or outside the classroom. Darliani & Agustina (2019) stated that teaching strategies using Wordwall.net can assist students in how they write a text in a good manner (vocabulary selection and grammar). Then, an experimental investigation managed by Rosydiyah et al (2022) indicated that students' grammatical competency became better after utilizing Wordwall.net in the learning. It was inferred from Castillo-Cuesta (2020) that the use of digital games assisted learners in enhancing their grammar and vocabulary expertise.

Above all, Segaran and Hashim (2022) explained that online quiz tools (e.g., Kahoot, Quizizz, and Wordwall.net) were effective for encouraging students to study English grammar

precisely in an interesting and engaging setting. As well, it inspired their motivation (intrinsically and extrinsically) to compete with peers for higher scores and ranks. In fact, they put more focus on the learning in hopes of winning the learning sessions using Wordwall.net (Jannah et al., 2017). In other words, they desired to win in the games because of their burning motivation and high competitiveness. Arce, Patrick, et al (2020) conformed that gamification and competition are both key considerations when using approaches integrated digital technologies to enhance learning of certain topics.

CONCLUSIONS

There has been a lot of scientific evidence that has examined Wordwall.net in different EFL learning contexts. However, based on EFL learners' perspectives, the tool was viewed as a powerful tool for them in all aspects reviewed in this study. This media, both online and offline, can boost student enthusiasm and involvement in class. It may also be utilized as a trigger for students to promote learning, especially in English grammar context. The plethora of intriguing templates and engaging audio music can encourage students to interact in class, resulting in a dynamic and entertaining learning environment. The scoring and ranking system might also make pupils more competitive in their study.

Regardless, this study still has limitations that can be improved in the future. In practice, there were only 129 samples from a population involved in the survey. It can be concluded that the research findings were considered lacking in terms of generalization and representation of wider population. To delve deeper into the students' perception, semi-structured interviews with open-ended questions are suggested. Also, replication of the study with a larger sample size and different concentration in other EFL learning context is verily offered. Last, it is advisable for next studies to discuss the extent to which teachers implement Wordwall.net in grammar learning with reference to the levels of Bloom's Taxonomy and the SAMR model.

REFERENCES

- Agostino, D., Arnaboldi, M., & Lema, M. D. (2020). New development: Covid-19 as an accelerator of digital transformation in public service delivery. *Public Money and Management*, 1–4. https://doi.org/10.1080/09540962.2020.1764206
- Arce, H., Patrick, N., Valdivia, C., & Maria, A. (2020). Adapting competitiveness and gamification to a digital platform for foreign language learning. *International Journal of Emerging Technologies in Learning*, 15(20), 194–209. https://doi.org/10.3991/ijet.v15i20.16135
- Arsini, N. N., Santosa, M. H., & Marsakawati, N. P. E. (2022). Hospitality school students' perception on the use of wordwall to enrich students' work-ready vocabulary mastery. *Elsya: Journal of English Language Studies*, *4*(2), 124–130. https://doi.org/10.31849/elsya.v4i2.8732
- Basuki, Y., & Hidayati, Y. (2019). *Kahoot! or quizizz: the students' perspectives*. https://doi.org/10.4108/eai.27-4-2019.2285331
- Bilyalova, A. A., Salimova, D. A., & Zelenina, T. I. (2020). Digital Transformation in Education. In *Lecture Notes in Networks and Systems* (Vol. 78, pp. 265–276). Springer. https://doi.org/10.1007/978-3-030-22493-6_24
- Boroughani, T., Xodabande, I., & Karimpour, S. (2023). Self-regulated learning with mobile devices for university students: Exploring the impacts on academic vocabulary development. *Discover Education*, 2(1), 5. https://doi.org/10.1007/s44217-023-00028-z

- Cardullo, V., Wang, C. hsuan, Burton, M., & Dong, J. (2021). K-12 teachers' remote teaching self-efficacy during the pandemic. *Journal of Research in Innovative Teaching and Learning*, 14(1), 32–45. https://doi.org/10.1108/JRIT-10-2020-0055
- Castillo-Cuesta, L. (2020). Using digital games for enhancing eff grammar and vocabulary in higher education. *International Journal of Emerging Technologies in Learning*, *15*(20), 116–129. https://doi.org/10.3991/ijet.v15i20.16159
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (Eighth Edition). Routledge.
- Creswell, J. W., & Creswell, D. J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Fifth Edition). SAGE Publications, Inc.
- Darliani, Y., & Agustina, C. F. (2019). The implementation of word wall strategy in teaching writing descriptive text. *The Journal of English Language Teaching*, 1(2).
- Dhawan, S. (2020). Online learning: A panacea in the time of covid-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. https://doi.org/10.1177/0047239520934018
- Dutta, D. A. (2020). Impact of digital social media on indian higher education: Alternative approaches of online learning during covid-19 pandemic crisis. *International Journal of Scientific and Research Publications* (*IJSRP*), 10(05), 604–611. https://doi.org/10.29322/ijsrp.10.05.2020.p10169
- Fakhruddin, A. A., Firdaus, M., & Mauludiyah, L. (2021). Wordwall application as a media to improve arabic vocabulary mastery of junior high school students. *Arabiyatuna : Jurnal Bahasa Arab*, 5(2), 217. https://doi.org/10.29240/jba.v5i2.2773
- Grace, D., Matt, F., Banseng, S., Gerry, D., & Handrianto, C. (2022). Effect of wordwall in teaching malay literature component amongst form one student. *Technology and Science*, 2(3), 279–287. https://orcid.org/0000-0000-0000-0000
- Huang, R., Spector, J. M., & Yang, J. (2019). *Educational Technology: A Primer for the 21st Century*. Springer. https://doi.org/https://doi.org/10.1007/978-981-13-6643-7
- Jackson, N. C. (2019). Managing for competency with innovation change in higher education: Examining the pitfalls and pivots of digital transformation. *Business Horizons*, 62(6), 761–772. https://doi.org/10.1016/j.bushor.2019.08.002
- Jannah, M., Supratman, J. W., Limun, K., & Muara Bangka Hulu, K. (2017). Efl students' perspectives on the use of wordwall.net as vocabulary learning media. *Journal of English Language Teaching*, 6(1). http://journal.unnes.ac.id/sju/index.php/elt
- Kane, G. (2019). The technology fallacy: People are the real key to digital transformation. *Research Technology Management*, 62(6), 44–49. https://doi.org/10.1080/08956308.2019.1661079
- Kariyati, A., & Kusumaningrum, I. (2023). Development of the wordwall game for learning mandarin vocabulary for grade VI elementary school. *Central Asian Journal of Theoretical and Applied Sciences*. https://cajotas.centralasianstudies.org
- Khan, S., Kambris, M. E. K., & Alfalahi, H. (2022). Perspectives of university students and faculty on remote education experiences during covid-19: A qualitative study. *Education and Information Technologies*, 27(3), 4141–4169. https://doi.org/10.1007/s10639-021-10784-w
- Komara, C., & Tiarsiwi, F. (2021). Exploring indonesian eff learners' perception of english learning grammar. *Journal of English Language Teaching and Linguistics*, 6(2), 459. https://doi.org/10.21462/jeltl.v6i2.564

- Korkmaz, G., & Toraman, Ç. (2020). Are we ready for the post-covid-19 educational practice? an investigation into what educators think as to online learning. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 293–309. www.ijtes.net
- Kostova, K. (2021). Interactive exercises in teaching bulgarian as a foreign language. *Е- Списание в Областта На Хуманитаристиката*, 20, 2021.
- Kraus, S., Schiavone, F., Pluzhnikova, A., & Invernizzi, A. C. (2021). Digital transformation in healthcare: Analyzing the current state-of-research. *Journal of Business Research*, *123*, 557–567. https://doi.org/10.1016/j.jbusres.2020.10.030
- Lim, T. M., Lee Sze, D. W., Raki, D., Lim, L. M., Sani, S., & Hashim, H. (2021). Year 6 pupils' language learning strategies in learning english grammar. *International Journal of Academic Research in Business and Social Sciences*, 11(4). https://doi.org/10.6007/ijarbss/v11-i4/9690
- Mazelin, N., Maniam, M., Jeyaraja, S. S. B., Ng, M. M., Xiaoqi, Z., & Jingjing, Z. (2022). Using wordwall to improve students' engagement in esl classroom. *International Journal of Asian Social Science*, *12*(8), 273–280. https://doi.org/10.55493/5007.v12i8.4558
- Mohinakhon, K., & Teacher, S. (2022). Effective ways of using word wall in primary education. *Web of Scientist :International Scientific Research Journal*, *3*(5), 2776–0979.
- Namaziandost, E., & Nasri, M. (2019). The impact of social media on efl learners' speaking skill: A survey study involving efl teachers and students instructional effectiveness of computer-assisted techniques in improving reading comprehension and vocabulary growth of iranian intermediate efl learners view project task-based language teaching and speaking skill view project. https://www.researchgate.net/publication/334823964
- Nikolopoulou, K., Akriotou, D., & Gialamas, V. (2019). Early reading skills in english as a foreign language via ict in greece: Early childhood student teachers' perceptions. *Early Childhood Education Journal*, 47(5), 597–606. https://doi.org/10.1007/s10643-019-00950-8
- Pradini, P. C., & Adnyayanti, N. L. P. E. (2022). Teaching english vocabulary to young learners with wordwall application: An experimental study. *Journal of Educational Study*, 2(2), 187–196. https://doi.org/10.36663/joes.v2i2.351
- Rahmawati, A. P., & Wijayanti, P. R. (2022). Implementing joyful learning strategy using wordwall in order to improve reading comprehension skills. *Proceedings Series on Physical & Formal Sciences*, *3*, 32–35. https://doi.org/10.30595/pspfs.v3i.261
- Rosydiyah, A., Asari, S., & Maruf, N. (2022). The effectiveness of wordwall online games as technology-based learning on grammar quality among junior high students. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *Volume 5*(No 3). https://doi.org/10.33258/birci.v5i3.6818
- Segaran, V. C., & Hashim, H. (2022). 'More online quizzes, please!' the effectiveness of online quiz tools in enhancing the learning of grammar among esl learners. *International Journal of Academic Research in Business and Social Sciences*, 12(1). https://doi.org/10.6007/ijarbss/v12-i1/12064
- Shim, T. E., & Lee, S. Y. (2020). College students' experience of emergency remote teaching due to covid-19. *Children and Youth Services Review*, 119. https://doi.org/10.1016/j.childyouth.2020.105578
- Starkey, L. (2020). A review of research exploring teacher preparation for the digital age. *Cambridge Journal of Education*, 50(1), 37–56. https://doi.org/10.1080/0305764X.2019.1625867

UHAMKA International Conference on ELT and CALL (UICELL) Jakarta, 22-23 December 2022

- Tekic, Z., & Koroteev, D. (2019). From disruptively digital to proudly analog: A holistic typology of digital transformation strategies. *Business Horizons*, 62(6), 683–693. https://doi.org/10.1016/j.bushor.2019.07.002
- Young, A., & Rogers, P. (2019). A review of digital transformation in mining. *Mining, Metallurgy and Exploration*, 36(4), 683–699. https://doi.org/10.1007/s42461-019-00103-w
- Yu, Z., Gao, M., & Wang, L. (2021). The effect of educational games on learning outcomes, student motivation, engagement and satisfaction. *Journal of Educational Computing Research*, 59(3), 522–546. https://doi.org/10.1177/0735633120969214