



Applying Quizziz Application to Improve the Reading Comprehension in Narrative Text of 10th Grade Students

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ABSTRAK

Keterampilan membaca adalah keterampilan yang dapat mengeksplorasi dunia pengetahuan dan informasi yang luas. Salah satu metode untuk mengembangkan pemahaman membaca siswa yang dapat diambil adalah menggunakan aplikasi online berbasis media. Tujuan dari penelitian ini adalah untuk menganalisis efektivitas aplikasi Quizziz dalam mengajar bahasa Inggris kepada siswa. Penulis menggunakan desain eksperimental semu, dan sampel diambil dari dua kelas, X IPA2 dan X IPA 4. Peneliti melaporkan skor pre-test dan post-test siswa untuk kelas eksperimental dan kontrol di bagian ini. Peneliti menggunakan komponen ANCOVA dari perangkat lunak SPSS 25 untuk menganalisis data. Temuan menunjukkan bahwa nilai signifikan kelas adalah 0,646 yang lebih tinggi dari 0,05. Oleh karena itu, hipotesis nol diterima, dan hipotesis alternatif ditolak berdasarkan hasil di atas. Ini berarti bahwa siswa yang diajarkan oleh aplikasi Quizziz tidak memiliki prestasi yang lebih baik daripada siswa yang diajarkan menggunakan buku teks. Reseason yang tidak efektif adalah karena sinyal mereka dalam kondisi buruk, beberapa dari mereka tidak dapat menggunakan Quizziz dengan benar, dan mereka mengatakan bahwa menggunakan Quizziz membuat studi ini lebih kompleks dan rumit, mungkin ada beberapa alasan mengapa mengajar pemahaman membaca menggunakan Quizziz tidak efektif.

ABSTRACT

Reading skills is skill that can explore the vast world of knowledge and information. One method to develop students' reading comprehension that can be taken is to use media-based learning online application. The purpose of this study was to analyze the effectiveness of the Quizziz application in teaching English language to students. The writer employed a quasi-experimental design, and the sample was taken from two classes, X IPA2 and X IPA 4. The researcher reported the students' pre-test and post-test scores for the experimental and control classes in this section. The researcher used the ANCOVA component of the SPSS 25 software to analyze the data. The findings show that the significant value of the class is 0.646 which is higher than 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis is rejected based on the result above. It means that students who are taught by Quizziz Application doesn't have better achievement than students who are taught using Textbook. The reason of not effective is because their signal is in the bad condition, some of them can not use Quizziz properly, and they said that using Quizziz make the study more complex and complicated, maybe there are some reasons why Teaching reading comprehension using Quizziz doesn't effective.

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1. INTRODUCTION

In learning English there are four skills or skills that we must master, namely listening, speaking, reading, and writing (Afzal, 2019; Keezhatta & Omar, 2019; Kurniasih, 2011). The four main skills that must be mastered in language learning, namely listening, speaking, reading and writing, are an important foundation for effective communication. Listening skills allow a person to understand verbal information well, honing the ability to interpret the meaning of words and nuances in conversations (Cole & Feng, 2015; Cooper & Sánchez, 2016). Meanwhile, speaking ability allows a person to express thoughts and ideas clearly, build two-way communication, and develop confidence in speaking in front of other people (Faruq et al., 2021; Herbein et al., 2018). Furthermore, reading skills play an important role in understanding written texts, expanding vocabulary, and improving understanding of various topics (Koch & Spörer, 2017; Son et al., 2020). By mastering reading skills, a person can explore the vast world of knowledge and information. On the other hand, writing skills enable a person to articulate ideas in writing, organize thoughts clearly, and convey information effectively. Mastering writing skills can also enrich self-expression and build critical thinking skills (Haidari et al., 2020; Singh et al., 2020).

There are two important components that support the four skills, namely reading comprehension or words and grammar or sentence structure. In the early stages of learning English, we will be introduced to reading comprehension (Islam et al., 2022; Karuniasih, 2022). Learning reading comprehension is a very important part

of learning a language. The more words that are known, the greater the ability to understand what is heard and read and the higher the ability to be able to say what you want to say or write. Learning reading comprehension is a process in which a person develops the ability to understand and interpret the text they read (Gilakjani et al., 2016; Mokshein et al., 2019; Zhang, 2012). It involves a series of cognitive and linguistic skills that enable readers to construct meaning from the information presented in a text. This process involves understanding words and phrases, recognizing sentence structures, and the ability to relate the information found to existing knowledge (Bobkina & Stefanova, 2016; Lestari & Nirmala, 2020). It is important to note that learning reading comprehension is not just about reading words mechanically, but also involves a deep understanding of the context and purpose of the text. This includes the ability to identify main ideas, determine relationships between ideas, recognize patterns of argument, and draw conclusions based on the information discovered.

One method to develop students' reading comprehension that can be taken is to use media-based learning Online application or with the use of game-based learning methods. The material provided by the teacher will be more easily understood by students with the help of appropriate learning media Like some applications used by teachers in carrying out the learning process are: Google Classroom, Email, Youtube, Zoom, Jitsi, Google Meet, Quizizz, Schoology, Kahoot, and more (Cai et al., 2017; Haka et al., 2020; Zarrinfard et al., 2021). Learning approach using this game can provide a new learning experience for students. Students become more active, the learning atmosphere is more dynamic and additional learning experiences in general are some of the benefits that can be obtained from the use of game-based applications (Alhebshi & Gamlo, 2022; Jannah & Syafryadin, 2022; Pratiwi et al., 2021). This is also supported by the literature in previous research which states that the use of learning media technology-based systems are generally considered better than traditional systems (Istri Aryani & Rahayuni, 2016).

One of the applications that are commonly used in doing quizzes, namely: Quizizz. This learning application is different from other applications. On app In this way, students can answer quizzes or questions with an attractive appearance (Anggraini et al., 2020; Priyanti et al., 2019). With the limitation of time, it will make students more challenged to solve it. Some of the advantages possessed by Quizizz application compared to other applications, including the presence of a board, a leaderboard that allows quiz participants to find out quiz participants' scores and ratings compared to other participants (Rasyid et al., 2021; Santosa & Priyanti, 2021). The purpose of this study was to analyze students' perceptions of the effectiveness of using the Quizizz application in the language subject English. It is necessary to find gaps, advantages and disadvantages from previous research. Based on the explanation above, the author is interested in analyzing the effectiveness of using the application Quizizz in learning English. This is done to encourage other authors to analyze this topic specifically.

2. METHOD

The writer uses quasi-experimental design. Quasi-experiments are sometimes called natural experiments because membership in the treatment level is determined by conditions beyond the control of the experimenter (subjects are already in the box) (Rogers & Revesz, 2019; Thyer, 2012). Experiments that that advantages of natural occurrences are quasi-experiments, for example, comparing achievement level of first-born children with that of later-born children; or comparing student performance at two schools, one of which has a lower student-teacher ratio. The experimenter is unable to assign subjects to treatment level - the subjects are already in pre-existing groups. The researcher reported the students' pre-test and post-test scores for the experimental and control classes in this section. The pre-test results were collected before the therapy was administered, while the post-test results were collected after the medication had been administered. The researcher used the ANCOVA component of the SPSS 25 software to analyze the data to determine whether or not students who are taught by Quizizz Application have better achievement than students who are taught using Textbook.

3. RESULT AND DISCUSSION

Result

Analysis of Pre-Requisite Test

As the basic word, normality test is carried out to find out whether the data follows a normal distribution or not. The normality test is part of the statistical analysis requirements test or the basic assumption test analysis. The basic assumption test is a condition that must be met before the existing data is tested with a real statistical test. This test usually uses data on an ordinal, interval or ratio scale. If the data is not normally distributed and or the number of samples is small and the type of data is nominal or ordinal, then the method used is non-parametric statistics. The normality test of the sample can be carried out with the help of the Shapiro-Wilk, Kolmogrov-Smirnov and Liliefors tests as well as normal Probability Plots images.

Table 1. The Result Normality Pre-Test of Experimental and Control Class

	Class	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Pretest	Experimental	0.154	28	0.085
	Control	0.165	26	0.067

Based on [Table 1](#), it can be seen that Pre Test data in the experimental and control classes is normally distributed. The data is normally distributed if significant (sig.). Kolmogorov-Smirnov significant value is 0.085 (Sig > a) for pre-test experimental, 0.067 (Sig > a) for pre-test control. According to the table above, the distribution data of Pre Test was normal. It can be proven by the result of the *Kolmogorov-Smirnov test*, which showed that the significant value is higher than 0.05. The homogeneity test was aimed to determine whether the variant of the sample is homogenous or not. Homogeneity test of the data in the experimental class and control class is with Lavene test in SPSS 26 for windows program. The result homogeneity pre-test of experimental and control class is show in [Table 2](#).

Table 2. The Result Homogeneity Pre-Test of Experimental and Control Class

		Levene Statistic	df1	df2	Sig.
Pretest	Based on Mean	0.049	1	52	0.825
	Based on Median	0.004	1	52	0.953
	Based on Median and with adjusted df	0.004	1	50.594	0.953
	Based on trimmed mean	0.043	1	52	0.837
	Based on Mean	1.094	1	52	0.300
Posttest	Based on Median	1.193	1	52	0.280
	Based on Median and with adjusted df	1.193	1	49.146	0.280
	Based on trimmed Mean	1.064	1	52	0.307

Based on [Table 2](#), it can be seen that the data of the learning interaction experimental class and control class have homogeneity variants because the result of the *Lavene* test is homogenous if the significant value > 0.05. the significant value is 0.825, indicating that the experimental and control classes' variance is equally homogenous across the class.

Data Analysis of Post-Test

The normality test is part of the statistical analysis requirements test or the basic assumption test analysis. The result normality post-test of experimental and control class is show in [Table 3](#).

Table 3. The Result Normality Post-Test of Experimental and Control Class

	Class	Kolmogorov-Smirnov ^a		
		Statistic	df	Sig.
Posttest	Experimental	0.120	28	0.200*
	Control	0.150	26	0.138

Based on [Table 3](#), it can be seen that Pre Test data in the experimental and control classes is normally distributed. The data is normally distributed if significant (sig.).Kolmogorov-Smirnov significant value is 0.200 (Sig > a) for post-test experimental, 0.067(Sig > a) for post-test control. According to the table above, the distribution data of Post Test was normal. It can be proven by the result of the *Kolmogorov-Smirnov test*, which showed that the significant value is higher than 0.05. The result homogeneity post-test of experimental and control class is show in [Table 4](#).

Table 4. The Result Homogeneity Post-Test of Experimental and Control Class

		Levene Statistic	df1	df2	Sig.
Pretest	Based on Mean	0.049	1	52	0.825
	Based on Median	0.004	1	52	0.953
	Based on Median and with adjusted df	0.004	1	50.594	0.953
	Based on trimmed mean	0.043	1	52	0.837
Posttest	Based on Mean	1.094	1	52	0.300
	Based on Median	1.193	1	52	0.280

	Levene Statistic	df1	df2	Sig.
Based on Median and with adjusted df	1.193	1	49.146	0.280
Based on trimmed mean	1.064	1	52	0.307

Based on Table 4, it can be seen that the data of the learning interaction experimental class and control class have homogeneity variants because the result of the *Lavene* test is homogenous if the significant value > 0.05. the significant value is 0.837, indicating that the experimental and control classes' variance is equally homogenous across the class.

Hypothesis Test (ANCOVA)

After the data obtain the data analyze using hypothesis testing using Ancova. The result of ancova is show in Table 5.

Table 5. The Result Hypothesis Test (ANCOVA)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	13.561 ^a	2	6.780	0.112	0.894
Intercept	20325.728	1	20325.728	336.062	0.000
Pretest	5.866	1	5.866	0.097	0.757
Class	12.877	1	12.877	0.213	0.646
Error	3084.587	51	60.482		
Total	35030.000	54			
Corrected Total	3098.148	53			

Table 5 showed that the significant value of the class is .646 which is higher than 0.05. The null hypothesis is accepted, and the alternative hypothesis is rejected based on the result above. It means that students who are taught by Quizziz Application doesn't have better achievement than students who are taught using Textbook. The researcher asked the students about their experiences for learning using Quizziz. The students said that their signal is in the bad condition, some of them can not use Quizziz properly.

Discussion

Based on the data collected, using Quizziz to teach Reading showed that students enjoyed and very interested. It was supported by the result of student's score of pre-test and post-test (Pratiwi et al., 2021; Santosa & Priyanti, 2021). The students' score who was taught Reading by using Quizziz was better than before the treatment (Alhebshi & Gamlo, 2022; Hadi et al., 2020). Previous study state that Quizziz gives contributes in teaching Reading and help the students to enhance more vocabulary (Puspita & Ganefri, 2020). Other study conducted experiment test and found that Quizziz can improve students' English reading skills (Irwansyah & Izzati, 2021).

Based on the finding result, the fifth X IPA 2 and X IPA 4 students' score mean before used Quizziz was 55.36 for experimental class and 42.12 for control class. After giving treatments, the students score mean in post-test both experimental and control class have differences. It was opposite by the research finding which was conducted by previous study stated that Quizziz is perceived as having positive impact on students' engagement and learning outcomes (Handayani & Wulandari, 2021). In this research, The mean score of post test experimental class was 79.82 which were lower than the result of control class was 80.58. even though mean of post test experimental is lower than control class. The students showed great attention and interaction during the lesson (Hadi et al., 2020; Jannah & Syafryadin, 2022). It can be seen on average score of experimental class in pre test and post test. Based on the result of calculation of Hypothesis test, showed that the significant value of the class is 0.646 which is higher than 0.05. The null hypothesis is accepted, and the alternative hypothesis is rejected based on the result above. It means that students who are taught by Quizziz Application doesn't have better achievement than students who are taught using Textbook (Anggraini et al., 2020; Sembiring, 2021).

The teachers must be more creative to create interesting and innovative teaching-learning media. It means the teacher can choose various media that appropriate in teaching Reading in other to increase student's Reading comprehension (Gheytsi et al., 2015; Gilakjani et al., 2016). Then for students must have motivation in learning English, as we know English is not our national language so we need an extra effort to learn it. A medium such as Quizziz may be not one of the alternative way in teaching. Using Quizziz students can not do the exercise by themself and the teacher can do monitoring the students' work. This result of this research is excepted that can encourage other researchers to conduct further study dealing with using Quizziz in other skills and material of English.

4. CONCLUSION

Based on the result of this study at the 10th grade of SMAN 1 Wates it can be concluded that Quizizz is not effective in teaching reading comprehension. It is proved by the result of ANCOVA. The result of the calculation using ANCOVA showed that significant value of the class. The null hypothesis is accepted, and the alternative hypothesis is rejected based on the result above. The mean score of post test experimental class were lower than the result of control class. It means that the control class is better in score than the experimental class. It can be concluded that using Quizizz in teaching Reading is not effective for primary students.

5. REFERENCES

- Afzal, N. (2019). A Study on Vocabulary-Learning Problems Encountered by BA English Majors at the University Level of Education. *Arab World English Journal*, 10(3), 81–98. <https://doi.org/10.24093/awej/vol10no3.6>.
- Alhebshi, A. A., & Gamlo, N. (2022). The Effects of Mobile Game-Based Learning on Saudi EFL Foundation Year Students' Vocabulary Acquisition. *AWEJ: Arab World English Journal*, 13(1), 408–425. <https://doi.org/10.24093/awej/vol13no1.27>.
- Anggraini, W., Utami, A., Santi, P., & Gery, M. I. (2020). Pemanfaatan Aplikasi Quizizz untuk Tematik dalam Pembelajaran Jarak Jauh Kelas III Di SDN Kebayoran Lama Utara 07 Pagi. *Prosiding Seminar Nasional Penelitian LPPM UMJ*, 7, 1–10. <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/8839>.
- Bobkina, J., & Stefanova, S. (2016). Literature and critical literacy pedagogy in the EFL classroom: Towards a model of teaching critical thinking skills. *Studies in Second Language Learning and Teaching*, 6(4), 677–696. <https://doi.org/10.14746/ssllt.2016.6.4.6>.
- Cai, Z., Fan, X., & Du, J. (2017). Gender and attitudes toward technology use: A meta-analysis. *Computers & Education*, 105, 1–13. <https://doi.org/10.1016/j.compedu.2016.11.003>.
- Cole, J., & Feng, J. (2015). Effective strategies for improving writing skills of elementary English language learners. *Chinese American Educational Research and Development Association Annual Conference*, 1–25. <https://eric.ed.gov/?id=ED556123>.
- Cooper, A. C., & Sánchez, B. (2016). The roles of racial discrimination, cultural mistrust, and gender in Latina/o youth's school attitudes and academic achievement. *Journal of Research on Adolescence*, 26(4), 1036–1047. <https://doi.org/10.1111/jora.12263>.
- Faruq, Sabani, N., Sukarno, A., & Purwandari, E. (2021). Systematic Literature Review: Psychological Concepts Of Learning In Handling Speaking Delay In Early Children. *Jurnal Penelitian Humaniora*, 23(1), 45–54. <https://doi.org/10.23917/humaniora.v23i1.19126>.
- Gheytasi, M., Azizifar, A., & Gowhary, H. (2015). The Effect of Smartphone on the Reading Comprehension Proficiency of Iranian EFL Learners. *Procedia - Social and Behavioral Sciences*, 199, 225–230. <https://doi.org/10.1016/j.sbspro.2015.07.510>.
- Gilakjani, A. P., Sabouri, N. B., Pourhosein, A., & Branch, L. (2016). Learners' Listening Comprehension Difficulties in English Language Learning: A Literature Review. *English Language Teaching*, 9(6), 123–133. <https://doi.org/10.5539/elt.v9n6p123>.
- Hadi, M. S., Iswan, & Athallah, N. (2020). Efektifitas Gamifikasi dalam Mengajar Bahasa Inggris Secara Daring di Era pandemic. *Semnaslit (Seminar Nasional Penelitian)*, 7(3), 2–9. <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/8877>.
- Haidari, M., Katawazai, R., & Yusof, S. M. (2020). The use of social media and wikis in teaching writing skills. *International Journal of Interactive Mobile Technologies*, 14(16), 168–179. <https://doi.org/10.3991/ijim.v14i16.15531>.
- Haka, N. B., Makrupah, S., & Anggoro, B. S. (2020). Pengembangan website online berbasis blended learning untuk meningkatkan penguasaan konsep mata pelajaran IPA. *Jurnal Bioterdidik: Wahana Ekspresi Ilmiah*, 8(1), 66–76. <http://jurnal.fkip.unila.ac.id/index.php/JBT/article/view/20782>.
- Handayani, R., & Wulandari, D. (2021). Modern Assessment dalam Menyongsong Pembelajaran Abad 21 dan Hambatan di Negara Berkembang. *Jurnal Pendidikan Edutama*, 8(1), 13. <https://doi.org/10.30734/jpe.v8i1.1363>.
- Herbein, E., Golle, J., Tibus, M., Schiefer, J., Trautwein, U., & Zettler, I. (2018). Fostering elementary school children's public speaking skills: A randomized controlled trial. *Learning and Instruction*, 55(October 2017), 158–168. <https://doi.org/10.1016/j.learninstruc.2017.10.008>.
- Irwansyah, R., & Izzati, M. (2021). Implementing Quizizz as Game Based Learning and Assessment in the English Classroom. *TEFLA Journal*, 3(1), 13–18. <https://journal.umbjm.ac.id/index.php/TEFLA/article/view/756>.
- Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-Learning and Digital Media*, 19(1), 36–54.

- <https://doi.org/10.1177/20427530211027721>.
- Istri Aryani, I. G. A., & Rahayuni, N. K. S. (2016). Innovation of Teaching and Learning English Applied to Animal Sciences' Student with the Combination of Computer Media and Audio Visual. *International Journal of Linguistics, Literature and Culture*, 2(1). <https://doi.org/10.21744/ijllc.v2i1.5>.
- Jannah, M., & Syafriyadin, S. (2022). EFL Students' Perspectives on the Use of Wordwall.net as Vocabulary Learning Media. *ELT Forum: Journal of English Language Teaching*, 11(2), 115–124. <https://doi.org/10.15294/elt.v11i2.57120>.
- Karuniasih, N. L. A. G. (2022). Exploring Readiness of Teachers Toward English Remote Teaching. *Journal of Educational Study*, 1(3), 134–149. <https://doi.org/10.36663/joes.v1i3.204>.
- Keezhatta, M. S., & Omar, A. (2019). Enhancing Reading Skills for Saudi Secondary School Students through Mobile Assisted Language Learning (MALL): An Experimental Study. *International Journal of English Linguistics*, 9(1), 437. <https://doi.org/10.5539/ijel.v9n1p437>.
- Koch, H., & Spörer, N. (2017). Students Improve in Reading Comprehension by Learning How to Teach Reading Strategies. An Evidence-based Approach for Teacher Education. *Psychology Learning and Teaching*, 16(2), 197–211. <https://doi.org/10.1177/1475725717700525>.
- Kurniasih, E. (2011). Teaching the Four Language Skills in Primary EFL Classroom. *JET (Journal of English Teaching)*, 1(1), 70–81. <https://doi.org/10.33541/jet.v1i1.53>.
- Lestari, R. P., & Nirmala, D. (2020). Digital storytelling of English advertisement in ESP teaching in Indonesia. *EduLite: Journal of English Education, Literature and Culture*, 5(1). <https://doi.org/10.30659/e.5.1>.
- Mokshain, S. E., Ishak, H., & Ahmad, H. (2019). the Use of Rasch Measurement Model in English Testing. *Jurnal Cakrawala Pendidikan*, 38(1), 16–32. <https://doi.org/10.21831/cp.v38i1.22750>.
- Pratiwi, D. I., Atmaja, D. S., & Prasetya, H. W. (2021). Multiple E-Learning technologies on practicing TOEFL structure and written expression. *JEEES (Journal of English Educators Society)*, 6(1), 105–115. <https://doi.org/10.21070/jees.v6i1.1194>.
- Priyanti, N. W. I., Santosa, M. H., & Dewi, K. S. (2019). Effect of Quizizz Towards the Eleventh-Grade English Students' Reading Comprehension in Mobile Learning Context. *Language and Education Journal Undiksha*, 2(2), 71–80. <https://doi.org/10.23887/leju.v2i2.20323>.
- Puspita, T. Y., & Ganefri. (2020). Development of Quizizz-based Learning Media on Basic Computer and Network Subjects. *Indonesian Journal of Educational Research and Review*, 3(3), 106–112. <https://doi.org/10.23887/ijerr.v3i3.30949>.
- Rasyid, M. J., Ampa, A. T., & Jumiati, A. A. (2021). Improving Students' Reading Skill Through Quizizz Application of the Tenth Grade Students of Sma Negeri 1 Pangkep. *English Language Teaching Methodology*, 1(3), 233–241. <https://jurnal.fkip.unismuh.ac.id/index.php/eltm/article/view/55>.
- Rogers, J., & Revesz, A. (2019). Experimental and quasi-experimental designs. <https://www.researchgate.net/publication/334250281>, 113.
- Santosa, M. H., & Priyanti, N. W. I. (2021). The effect of mobile-assisted language learning “Quizizz” on High School students' reading comprehension in the English learning context. In F. A. Hamied (Ed.), *Literacies, Culture, and Society towards Industrial Revolution 4.0: Reviewing Policies, Expanding Research, Enriching Practices in Asia* (1st ed.). Nova Science Publishers.
- Sembiring, R. J. B. (2021). Pemanfaatan Variasi Teknologi Guna Meningkatkan Motivasi Belajar Dalam Pembelajaran Daring Bahasa Indonesia. *MARDIBASA: Jurnal Pembelajaran Bahasa Dan Sastra Indonesia*, 1(2), 368–384. <https://doi.org/10.21274/jpbsi.2021.1.2.368-384>.
- Singh, C. K. S., Gopal, R., Ong, E. T., Singh, T. S. M., Mostafa, N. A., & Singh, R. K. A. (2020). Esl Teachers' Strategies To Foster Higher-Order Thinking Skills To Teach Writing. *Malaysian Journal of Learning and Instruction*, 17(2), 195–226. <https://doi.org/10.32890/mjli2020.17.2.7>.
- Son, S. C., Butcher, K. R., & Liang, L. A. (2020). The Influence of Interactive Features in Storybook Apps on Children's Reading Comprehension and Story Enjoyment. *The Elementary School Journal*, 120(3), 422–454. <https://doi.org/https://doi.org/10.1086/707009>.
- Thyer, B. A. (2012). *Quasi-Experimental Research Design*. Oxford University Press, Inc.
- Zarrinfard, S., Rahimi, M., & Mohseny, A. (2021). Flipping an on-campus general English course: A focus on technology complexity of instruction and learners' levels of impulsivity. *International Journal of Educational Technology in Higher Education*, 18(1), 1–25. <https://doi.org/10.1186/s41239-021-00280-z>.
- Zhang, D. (2012). Vocabulary and grammar knowledge in second language reading comprehension: A structural equation modeling study. *The Modern Language Journal*, 96(4), 558–575. <https://doi.org/10.1111/j.1540-4781.2012.01398.x>.