DEVELOPMENT OF THE INTERACTIVE ENGLISH LEARNING MOBILE APPLICATION (IELMA) TO IMPROVE READING COMPREHENSION SKILLS

Nila Ratna Dewi[1], Afandi[2], Venny Karolina[3]

Universitas Tanjungpura[1,2,3]

mylibre.aspan@gmail.com[1], vennykarolina@fkip.untan.ac.id[2], afandi@fkip.untan.ac.id[3]

Abstract

This research aims to evaluate the effectiveness of the Interactive English Learning Mobile Application (IELMA) in teaching narrative texts at the high school level. The main objective of the study is to compare students' learning outcomes using the IELMA application with those employing conventional methods. The research was conducted at SMA Negeri 1 Mandor, involving Grade X students as the sample. Two experimental classes and two control classes were randomly selected. The experimental classes used the IELMA application, while the control classes followed conventional teaching methods. The study applied the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model to develop and evaluate the learning media. Data were collected through pre-tests and post-tests to assess the improvement in students' abilities to understand and apply narrative texts. Furthermore, questionnaires were administered to gauge students' responses to the use of the IELMA application. The findings indicate that students using IELMA showed a significant improvement in learning outcomes compared to those in the control group. The average post-test scores in the experimental classes were higher than in the control classes. In addition, the students' responses to IELMA were highly positive, showing increased motivation and engagement in learning narrative texts. The study concludes that the IELMA application is effective in enhancing students' comprehension of narrative texts in high school settings. The use of interactive technology like IELMA can serve as an effective alternative to conventional methods, particularly in English language learning.

Keywords: *Interactive Learning Media, IELMA, Narrative Texts, ADDIE, Learning Effectiveness.*

Abstrak

Penelitian ini bertujuan untuk mengevaluasi efektivitas media pembelajaran IELMA (Interactive English Learning Media Application) pada materi teks naratif di tingkat sekolah menengah atas. Fokus utama penelitian ini adalah membandingkan hasil belajar peserta didik yang menggunakan aplikasi IELMA dengan metode konvensional. Penelitian dilakukan di SMA Negeri 1 Mandor dengan melibatkan peserta didik kelas X sebagai sampel. Dua kelas eksperimen dan dua kelas kontrol dipilih secara acak. Kelas eksperimen menggunakan aplikasi IELMA, sementara kelas kontrol menggunakan metode pembelajaran konvensional. Penelitian ini menggunakan pendekatan ADDIE (Analysis, Design, Development, Implementation, Evaluation) dalam pengembangan dan evaluasi media pembelajaran IELMA. Data dikumpulkan melalui pre-test dan post-test untuk mengukur peningkatan kemampuan peserta didik dalam memahami dan mengaplikasikan teks naratif. Selain itu, angket digunakan untuk mengetahui tanggapan peserta didik terhadap penggunaan aplikasi IELMA. Hasil penelitian menunjukkan bahwa terdapat peningkatan signifikan pada hasil belajar peserta didik yang menggunakan aplikasi IELMA dibandingkan dengan metode konvensional. Rata-rata nilai post-test peserta didik di kelas eksperimen lebih tinggi dibandingkan dengan kelas kontrol.

Selain itu, tanggapan peserta didik terhadap penggunaan aplikasi IELMA sangat positif, menunjukkan bahwa mereka merasa lebih termotivasi dan tertarik dalam mempelajari teks naratif. Kesimpulan dari penelitian ini adalah bahwa aplikasi IELMA efektif dalam meningkatkan kemampuan peserta didik dalam memahami dan mengaplikasikan teks naratif di tingkat sekolah menengah atas. Penggunaan teknologi interaktif seperti IELMA dapat menjadi alternatif yang efektif untuk metode pembelajaran konvensional, terutama dalam pembelajaran bahasa Inggris.

Kata Kunci: Media Pembelajaran Interaktif, IELMA, Teks Naratif, ADDIE, Efektivitas Pembelajaran.

A.   INTRODUCTION

Mastering English as a foreign language has become an essential skill in secondary education, particularly in the era of globalization, which increasingly demands foreign language literacy. According to Regulation of the Ministry of Education and Culture No. 7 of 2022 on Content Standards for Early Childhood, Primary, and Secondary Education, English is a mandatory subject at the high school level (SMA). However, many students perceive English as a difficult subject, especially in reading skills. This is consistent with Sundari's (2018) research, which states that differences in spelling systems between English and Indonesian pose a significant challenge in understanding English texts. Nanda (2020) also mentions that low motivation, limited vocabulary, and lack of knowledge make reading comprehension in English a challenge for Indonesian students.

At SMA Negeri 1 Mandor, similar issues arise where students report difficulties in understanding English texts, particularly in identifying main ideas, detailing information, and drawing conclusions from texts. Other factors such as a lack of engaging learning resources and limited interactive teaching methods further exacerbate the situation. A pre- research analysis of students' daily test scores revealed that many students had not met the Minimum Passing Criteria (KKM), indicating an urgent need for more effective teaching methods. Technology can be a solution to these learning challenges (Zahrika, 2023). The use of mobile-based applications has become increasingly relevant due to their accessibility and ability to create an interactive and engaging learning environment. Fitriani's (2019) findings suggest that mobile applications offer convenience to students as they can be accessed anytime and anywhere. Setiadi et al. (2017) further add that interactive applications with gamification features can increase interest and motivation in learning and support a student-centered learning concept (Abdurrochim, 2022). Therefore, this research aims to develop an interactive mobile learning media, the Interactive English Learning Mobile Application (IELMA), to improve

students' reading comprehension, particularly in narrative texts.

IELMA was developed using Kodular, an Android-based application development platform that enables the researcher to design interactive learning media without the need for complex programming codes (Hasanudin, 2022). The application is equipped with engaging features such as images, interactive buttons, hyperlinks, and gamification to motivate students and facilitate their understanding of narrative texts (Yang, 2013). The digital technology utilized in IELMA is expected to address the challenges faced by studentsat SMA Negeri 1 Mandor and improve their comprehension of narrative texts. Narrative text is one of the key materials taught in high school English. According to Arigusman (2018), narrative text is a story involving characters resolving problems with the purpose ofentertaining and conveying a moral message. The structure of this text includes orientation, complication, evaluation, resolution, and coda. In this research, narrative texts were selected due to their relevance to the Grade X English curriculum.

Considering the benefits of technology in learning, this study aims to develop and test the effectiveness of IELMA as an interactive learning media to improve students' reading comprehension of narrative texts. The development of this application is based on the theory of cybernetic learning, which involves technology to facilitate independent, interactive, and student-centered learning. The researcher hopes that this application can become an effective alternative for English learning, particularly in enhancing students' reading skills at SMA Negeri 1 Mandor.

B.   RESEARCH METHOD

This research uses the Research and Development (R&D) method, which aims to create a new product, namely the Interactive English Learning Mobile Application (IELMA), to improve students' narrative text reading skills. The development model used is ADDIE, which consists of five stages: Analyze, Design, Development, Implementation, and Evaluation. In the Analysis stage, the researcher conducted a needs analysis through literature reviews, daily test score analysis, and Focus Group Discussions (FGD) with English teachers (Sudrajat, 2019). The Design stage involved creating storyboards and the user interface design for IELMA, followed by expert validation and revisions based on feedback. In the Development stage, the IELMA application was developed and tested through individual trials and small group trials (Nurahma, 2021). Revisions were made based on trial results and expert validation. In the Implementation stage, the application was tested in two experimental classes using IELMA,

while two control classes employed conventional methods. Testing was conducted through post-tests to measure the application's effectiveness (Sundari, 2018). The final stage, Evaluation, involved data analysis using statistical tests to determine differences in learning outcomes between the experimental and control groups. This evaluation aimed to determine the effectiveness of the IELMA application in improving students' reading comprehension skills (Noge, 2018).

C.   RESULTS AND DISCUSSION

This research aimed to answer three research questions related to the development and effectiveness of the Interactive English Learning Mobile Application (IELMA) in improving students' reading comprehension of narrative texts. These research questions were: (1) What is the design of the IELMA application for teaching English narrative texts? (2) What is the profile of the IELMA application in English learning? and (3) How effective is the IELMA application in enhancing high school students' reading comprehension, particularly in narrative texts?

1.   Design of IELMA Application for English Learning on Narrative Texts

The design of the IELMA application was developed using the ADDIE model, encompassing the stages of Analyze, Design, Development, Implementation, and Evaluation. In the Analysis stage, the learning needs were identified through literature reviews and analysis of students' daily test scores. The analysis revealed that 70.6% of students were below the Minimum Passing Criteria (KKM), indicating the need for more interactive learning methods. Field studies showed that students were less active in comprehending narrative texts, further supported by the results of the FGD with teachers who desired more interactive and curriculum-aligned learning (Istiqomah, 2021).

The Design stage involved creating the IELMA storyboard, which systematically presented narrative text material, from orientation to resolution, along with exercises aligned with basic competencies. The application's user interface was made user-friendly with easily understood icons and intuitive navigation. The application design was validated by experts using evaluation sheets covering aspects such as the application's characteristics, design, usage steps, implementation assumptions, and assessment strategies (Islami, 2020). The average expert validation score indicated that the IELMA application met the standards of effective interactive learning design for English language teaching.

2.   Profile of the IELMA Application in English Learning

The profile of the IELMA application was built based on small group and large group trials conducted to test its functionality, usability, and students' responses to the application. In the small group trial, aspects of the application, content, and language were assessed. The results showed that the application and content aspects received an average score of 3.71, while the language aspect scored 3.83. This indicates that the IELMA application was considered easy to access and understand by students, and the material presented was deemed suitable for learning needs. In the large group trial, involving more students, the application aspect received an average score of 3.30, the content aspect 3.73, and the language aspect 3.73. Although the application aspect scored slightly lower in the large group trial compared to the small group trial, these results still show that overall, the IELMA application was well received in a broader learning context (Husnulwati, 2019). Students reported being helped by the interactive features, which facilitated their understanding of narrative texts, and the material presented was relevant and engaging.

The involvement of experts and students in the development process during the Development stage ensured that the IELMA application met the standards for English language learning (Deswanti, 2023). The final product profile of the IELMA application showcases the interactivity of its interface. The application was designed with an interactive interface to increase student engagement in learning narrative texts (Fajri, 2021). This interface includes a main menu that is intuitive and aligned with the syllabus and the lesson plans, as well as features designed to enhance student interaction with learning materials.

The final product displays a more engaging and interactive layout for explaining narrative text material, helping students become more interested in learning narrative texts.

Figure IELMA Interface

In the narrative story section, the final product offers stories typical of West Kalimantan. At the end of each story, there are questions that hone students' reading skills. Additionally, the use of gamification elements encourages students to actively engage in the learning process, which in turn increases their motivation and comprehension of the material. The final product

includes four interactive games that students can play, and each game gives students the opportunity to learn from their mistakes.
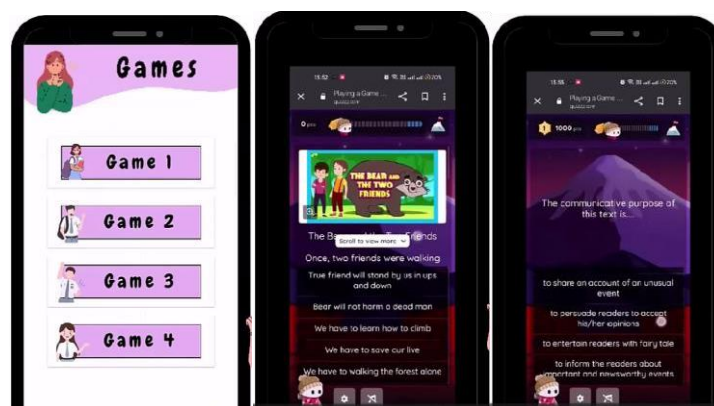

Figure IELMA Games

Moreover, the structure of sentences and the engaging nature of the exercises help maintain students' involvement in learning, particularly in the narrative text material.
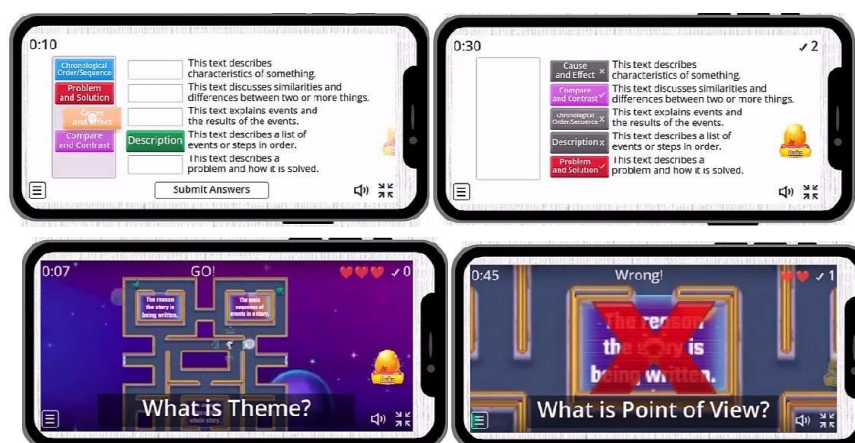

Figure IELMA Games Mode

The application of effective User Experience (UX) principles makes the application easy to use and appealing to users, helping to create a dynamic learning environment that fosters interest. The complete final product can be accessed via the following video link: https://youtu.be/fW-4QKfX3TI?si=qWezW_M6gRjAwr9h.

### 3.   Effectiveness of IELMA in Enhancing Students' Reading Skills in Narrative Texts

The effectiveness of the IELMA application was measured through pre-tests and post-tests conducted on two groups: an experimental group using the IELMA application and a control group using conventional teaching methods. Post-test results indicated a significant difference between the two groups.

Table Statistic Analysis of Students Learning Outcome

Variabel	N	Min.	Max.	Mean	Std. Dev.
Posttest_Eksperimen	36	35	100	92.64	11.740
Posttest_Kontrol	33	10	90	45.61	19.596
Total	69	10	100	70.14	28.491

The experimental group's average post-test score was 92.64 with a standard deviation of 11.74, while the control group's average post-test score was 45.61 with a standard deviation of 19.60. The minimum score in the experimental group was 35, while the maximum reached 100. In contrast, the control group's minimum score was 10, and the maximum was 90. These results show that the use of the IELMA application significantly improved students' reading comprehension compared to conventional teaching methods.

Analysis using the Mann-Whitney test showed a significant difference in learning outcomes between the experimental and control groups, as shown in the graph below:
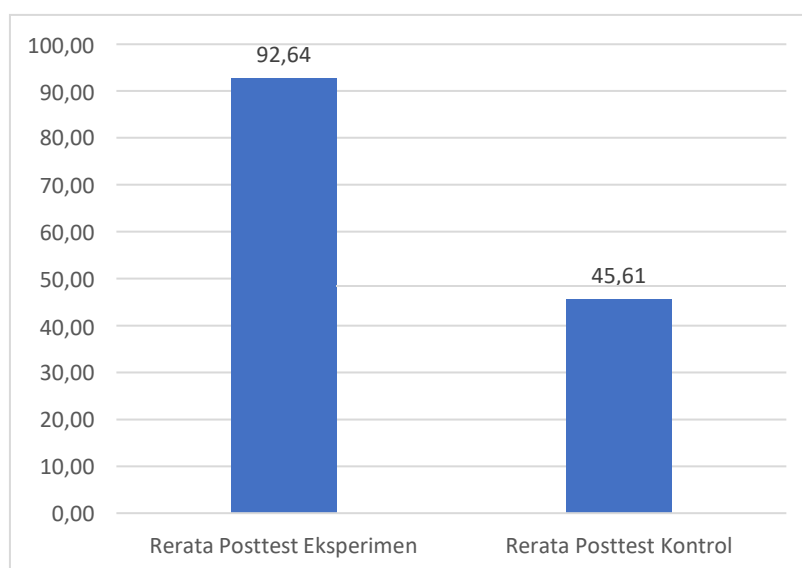
Graph Posttest Experiment and Control Group

The mean rank in the experimental group was 50.64, while in the control group, it was only 17.94, indicating that students in the experimental group scored significantly higher on the post-test. Moreover, the total sum of ranks in the experimental group was 1823.00, while in the control group, it was only 592.00.

Tabel T Test

Test Statistics	Hasil Belajar
Mann-Whitney U	31.000
Wilcoxon W	592.000
Z	-6.811
Asymp. Sig. (2-tailed)	.000

These results confirm that there is a significant difference in students' learning outcomes between the two groups. The use of the IELMA application in narrative text learning at SMA Negeri 1 Mandor offers a clear advantage in improving students' learning outcomes, as reflected in the higher average ranks in the experimental group (Desiriah, 2021). This demonstrates that the IELMA application can be an effective tool in enhancing the efficiency and effectiveness of learning, allowing students to achieve better results in narrative text material.

D.   CONCLUSION

Based on the research conducted, several conclusions can be drawn:

1. The design of the IELMA application follows the ADDIE approach, which consists of analyzing students' needs, designing an interactive interface, and developing supporting features for learning narrative texts, such as audio, video, and interactive exercises.

2. Implementation was carried out through trials in the experimental class, and the evaluation results indicated the effectiveness of the application in supporting learning.

3. IELMA is designed as an interactive learning media focused on narrative texts. Equipped with video materials, explanations, interactive exercises, and quizzes, this application features an intuitive and engaging interface designed to boost students' motivation and interest in learning English.

4. The use of IELMA has proven to be effective in improving students' reading comprehension of narrative texts. Students who used IELMA showed a significant increase in their post-test scores compared to those who used conventional teaching methods.

5. Students' responses were very positive, with many expressing that they felt more motivated and interested in learning through this application compared to traditional methods.

Overall, IELMA is an effective interactive learning media for improving students' reading comprehension skills and can serve as a beneficial alternative to conventional teaching methods.

REFERENCES

Abdurrochim, P. L., Khairunnisa, Y., Nurani, M., & Aeni, A. N. (2022). Pengembangan Aplikasi BEAT (Belajar Asyik Tentang) Pendidikan Agama Islam untuk Meningkatkan Hasil Belajar Pendidikan Agama Islam Peserta didik Sekolah Dasar. Jurnal Basicedu, 6(3), 3972–3981. https://doi.org/10.31004/basicedu.v6i3.2749

Arigusman, M. (2018). Struktur dan Ciri-ciri Teks Naratif dalam Pembelajaran Bahasa Inggris di SMA. Jurnal Bahasa dan Sastra.

Aydin, A., Gürsoy, A., & Karal, H. (2023). Mobile care app development process: using the ADDIE model to manage symptoms after breast cancer surgery (step 1). Discover Oncology, 14(1). https://doi.org/10.1007/s12672-023-00676-5

Chandra, M. F., & Yuhelman, N. (2023). Literatur Review : Pengembangan Media Kahoot sebagai Media Pembelajaran Peserta didik. JIPMuktj:Jurnal Ilmu Pendidikan Muhammadiyah KramatJati,4(1),   42–46.

https://jurnal.pcmkramatjati.or.id/index.php/JIPMUKJT/index

Desiriah, E., & Setyarsih, W. (2021). Tinjauan Literatur Pengembangan Instrumen Penilaian Kemampuan Berpikir Tingkat Tinggi (Hots) Fisika Di Sma. ORBITA: Jurnal Kajian, Inovasi Dan Aplikasi   Pendidikan   Fisika, 7(1), 79.

https://doi.org/10.31764/orbita.v7i1.4436

Deswanti, A. I., Novitasari, D., Asbari, M., & Purwanto, A. (2023). Pengaruh Tingkat Pendidikan dan Pengalaman Kerja terhadap Kinerja Karyawan: Narrative Literature Review. Journal of Information Systems and Management (JISMA), 2(3), 34–40.

Fajri, I., Suryadi, K., Anggraeni, L., Pendidikan, F., Pengetahuan, I., & Indonesia, U. P. (2021). Open Access at : https://ejournal.undiksha.ac.id/index.php/JJPP Pembelajaran Kelas Terbalik Selama Pandemi Covid-19 : Sebuah Tinjauan Sistematis Review Dari Fakultas Pendidikan Ilmu Pengetahuan Sosial , Universitas Pendidikan Indonesia Open Access at : ht. 9(3), 870–880.

Fitriani, N. (2019). Penggunaan Aplikasi Mobile dalam Pembelajaran Bahasa Inggris: Studi Kasus di Sekolah Menengah. International Journal of Educational Technology.

Hasanudin, A. (2022). Pengembangan Aplikasi Pembelajaran Berbasis Android Menggunakan Kodular: Studi Kasus Bahasa Inggris. Jurnal Teknologi Informasi.

Husnulwati, S., Sardana, L., & Suryati, S. (2019). Pengembangan E-Modul Pendidikan Kewarganegaraan Berbasis Aplikasi Android. Indonesian Journal Of Educational Research and Review, 2(3), 252. https://doi.org/10.23887/ijerr.v2i3.21013

Islami, H., & Armiati, A. (2020). Efektivitas Penggunaan Modul Pembelajaran Berbasis Kontekstual Pada Bidang Keahlian Bisnis Dan Manajemen Di Sekolah Menengah Kejuruan (SMK): Literature Review. Jurnal Ecogen, 3(4), 498.

https://doi.org/10.24036/jmpe.v3i4.10502

Istiqomah, Y., & Hasbullah, H. (2021). Pengaruh Penguasaan Kosakata Dan Tata Bahasa Terhadap Kemampuan Menulis Teks Recount Bahasa Inggris. INFERENCE: Journal of English Language Teaching, 4(3), 297. https://doi.org/10.30998/inference.v4i3.6948

Nanda, A. (2020). Motivasi, Kosakata, dan Pengetahuan sebagai Faktor Kendala dalam Membaca Bahasa Inggris di Indonesia. Journal of English Education.

Noge, M. D. (2018). Penerapan model pembelajaran bilingual preview-review berbasis e-flashcard untuk belajar bahasa inggris peserta didik SMP. Journal of Education Technology, 2(1), 13–19.

Nurahma, G. A., & Hendriani, W. (2021). Tinjauan sistematis studi kasus dalam penelitian kualitatif. Mediapsi, 7(2), 119–129. https://doi.org/10.21776/ub.mps.2021.007.02.4

Permendikbudristek Nomor 7 Tahun 2022 tentang Standar Isi pada Pendidikan Anak Usia Dini, Pendidikan Dasar, dan Pendidikan Menengah.

Setiadi, R., et al. (2017). Aplikasi Interaktif dengan Fitur Gamifikasi untuk Meningkatkan Motivasi Belajar Peserta Didik. Jurnal Teknologi Pendidikan.

Sudrajat, D. (2019). Asesmen pembelajaran bahasa inggris: Model dan pengukurannnya. Jurnal Pendidikan Dan Pembelajaran: Intelegensia, 15(2), 1–23. http://intelegensia.web.id/index.php/intelegensia/article/view/27

Sundari, D. (2018). Tantangan dalam Pembelajaran Bahasa Inggris di Indonesia: Perbedaan Sistem Pengejaan dan Pengaruhnya Terhadap Keterampilan Membaca. Jurnal Pendidikan Bahasa.

Sundari, H. (2018). Interaksi Kelas Dalam Pembelajaran Bahasa Inggris Sebagai Bahasa Asing Pada Jenjang SMP (Penelitian Grounded Theory). Universitas Negeri Jakarta.

Yang, H. (2013). The case for being automatic: introducing the automatic linear modeling (LINEAR) procedure in SPSS statistics. Multiple Linear Regression Viewpoints, 39(2), 27–37.

Zahrika, N. A., & Andaryani, E. T. (2023). Kurikulum Berbasis Budaya untuk Sekolah Dasar: Menyelaraskan Pendidikan dengan Identitas Lokal. Pedagogika: Jurnal Ilmu-Ilmu Kependidikan, 3(2), 163–169. https://doi.org/10.57251/ped.v3i2.1124