

The Effectiveness of Writing Short Story Texts Using E-Modules Based on Electronic Publication for Senior High School

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ABSTRACT

The integration of digital technology into education necessitates innovative learning tools that go beyond traditional textbooks. One such innovation is the use of electronic modules (e-modules), particularly those based on Electronic Publication (EPUB) formats, which offer interactive and accessible learning experiences. This study investigates the effectiveness of EPUB-based e-modules in improving students' ability to write short story texts. This descriptive quantitative study involved 28 grade XI students from a senior high school. The research employed a pretest-posttest design to measure students' performance in writing short story texts before and after using the EPUB-based e-module. Data were collected using a performance-based writing test assessed through a standardized rubric. Statistical analysis included descriptive statistics, normality tests, and a paired sample t-test. The average student score increased from 56.43 (pretest) to 79.43 (posttest) after using the EPUB-based e-module. The results of the paired t-test indicated a statistically significant difference between pretest and posttest scores ($p = 0.000 < 0.05$), confirming the effectiveness of the e-module in enhancing students' writing skills. The findings demonstrate that EPUB-based e-modules are effective teaching tools for improving students' ability to write short stories. Their interactive and flexible design supports better engagement and learning outcomes. This study recommends further development and integration of EPUB-based materials in language learning to promote digital literacy and writing proficiency.

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1. INTRODUCTION

The rapid advancement of digital technology has significantly transformed the educational landscape, compelling educators to continuously adapt their teaching strategies and materials. In response to this shift, the education system must not only provide access to knowledge but also equip students with the competencies required for the 21st century—particularly in digital literacy, creativity,

and self-directed learning (UNESCO, 2022). In this context, teaching materials play a crucial role in shaping meaningful and effective learning experiences.

Traditional teaching materials such as printed textbooks and enrichment books have long served as primary learning resources. However, these resources often lack interactivity and contextual relevance, which can lead to disengagement among students (Primasanti, 2020). A growing number of studies have shown that the static nature of conventional materials may not align with the learning preferences of today's students, who are more inclined toward multimedia-rich and technology-integrated content (Setiawan et al., 2022). As such, there is a growing need for digital teaching materials that support autonomous, engaging, and interactive learning environments.

One promising solution is the use of e-modules—digitally formatted, self-contained learning resources designed to be accessed through various electronic devices. According to Rahayu and Sukardi (2021), e-modules present teaching content in a structured and interactive manner, enabling students to learn independently and at their own pace. E-modules often include multimedia elements such as videos, animations, interactive quizzes, and hyperlinks, which enhance student engagement and comprehension (Fitriasari & Ningsih, 2021). The integration of such technology in teaching has been associated with improvements in student motivation and academic performance (Pratita & Djahir, 2021).

A further innovation within digital learning materials is the Electronic Publication (EPUB) format. EPUB allows for flexible, multimedia-enhanced e-modules that can be accessed across platforms—smartphones, tablets, and computers—offering students ubiquitous access to learning resources (Utami et al., 2020). EPUB-based materials have been found to be particularly effective in language learning contexts due to their support for interactivity and multimedia integration (Cahyono, 2020). EPUB also allows for reflowable content, making it more accessible and user-friendly, especially when embedded with visual and audio elements that aid comprehension (Ratnawati et al., 2022).

Despite these technological advances, the current use of digital teaching materials in many schools remains limited. An initial survey conducted by the researchers at a senior high school revealed that most teachers still rely solely on printed enrichment books published by the Ministry of Education. These materials, while standardized, do not reflect the needs of students in a digitally connected world. The gap between available technology and actual classroom practice indicates a missed opportunity to leverage digital tools for improved learning outcomes.

This gap is particularly evident in the instruction of short story writing, a core component of the Indonesian language curriculum. Previous studies and classroom observations indicate that many students struggle with writing short story texts due to limited guidance and unengaging teaching methods. In a preliminary needs analysis, 87.7% of students reported difficulty in learning how to write short stories. This is consistent with findings by Sariana, Dollah, and Talib (2022), who note that writing fiction requires not only creativity but also an understanding of structure, language use, and narrative coherence.

Short stories, as a literary form, are typically concise—between 1,000 and 2,000 words—and focus on a single incident or theme (Susandi & Rachman, 2019). Effective instruction in short story writing requires materials that can model structure, prompt creativity, and provide opportunities for practice and feedback. Given the nature of the genre and students' reported challenges, the need for innovative, student-centered teaching materials becomes even more urgent.

To address this problem, this study proposes the development and use of an EPUB-based e-module specifically designed to support students in writing short story texts. This approach builds upon previous studies that have demonstrated the feasibility and appeal of EPUB-integrated learning tools (Frimpong, 2021; Himawan & Suyata, 2022). EPUB formats not only offer multimedia integration but also support interactivity, such as embedded quizzes and glossaries, which are valuable for language learning.

Prior research has explored various applications of e-modules in Indonesian language instruction. Fitriani and Indriaturrahmi (2020) developed an e-module for Indonesian language learning at the senior high school level and found that it enhanced student engagement and understanding. However, few studies have focused specifically on writing skills, and even fewer have targeted short story writing using

EPUB-based materials. This study aims to fill that gap by developing an EPUB-format e-module tailored to the needs of grade XI students and evaluating its effectiveness in improving short story writing performance.

Therefore, the research question guiding this study is: How effective is the EPUB-based e-module in improving students' ability to write short story texts? The main objective is to assess the improvement in students' writing scores before and after using the e-module. Practically, the findings of this study are expected to offer insights for teachers seeking to implement more engaging and effective instructional materials in language learning.

By focusing on the intersection of digital innovation and literary skill development, this study contributes to ongoing efforts to modernize Indonesian language instruction and promote student-centered learning. Through the use of EPUB-based e-modules, it is anticipated that students will not only gain improved writing skills but also develop greater motivation and confidence in expressing their ideas creatively.

2. METHODS

This study uses a quantitative descriptive method. In this study, researchers will describe the value of writing short story texts using e-modules based on Electronic Publication (EPUB). Data source for class XI IPA 1 SMA Bina Mandiri Banyuasin. Researchers collaborated and modified several stages in each of the research and development steps of Jolly and Bolitho and Dick, Carey, and Carey. The reason the researcher modified this research model was because the Jolly and Bolitho stages were designed to develop teaching materials in the field of linguistics, while Dick, Carey, and Carey were to help researchers in the e-module testing stage. Furthermore, the e-module resulting from the development of this model is only used on a small scale.

The following is a description of the steps for developing an e-module for short story text material based on an adaptation of the Jolly and Bolitho (Jayanti 2022) development model.

- 1) Identification of need for materials
- 2) Exploration of materials needs
- 3) Contextual realization of materials
- 4) Production of module teaching materials
- 5) Evaluation of teaching materials

The next development step uses the Dick, Carey, and Carey (Fauzi et al. 2021) development model, which is as follows.

- 6) Design and Conduct Formative Evaluation

Formative evaluation consists of three steps, namely as follows.

- a. One To One

Individual trials were carried out on 3 students to test the practicality of the teaching materials developed.

- b. Small Group

This trial involved subjects consisting of 9 students from class XI IPA 1. The results of this small group trial were used to revise the product or design.

- c. Field Group

This trial involved subjects in a larger class, namely 28 students (all students in class XI Science 1 SMA Bina Mandiri Banyuasin). In this step, researchers give a pretest to determine students' initial abilities before treatment. After that, a posttest is carried out, namely students are given treatment or taught using EPUB-based e-modules. From these two tests, researchers obtained a comparison of pretest and posttest scores. The validation results from this step are then used to carry out revisions in the next step.

Data collection techniques include observation, questionnaires, and tests. The research subjects were determined using a purposive sampling technique, where the research subjects were selected

according to the research objectives. In this research, there are 28 students. The standard of data validity in qualitative research refers. Data analysis techniques used include analysis prerequisite tests (normality and homogeneity tests), followed by hypothesis testing using the t-test.

3. FINDINGS AND DISCUSSION

3.1 Results of the Pre-test and Post-test of Short Story Text Writing

3.1.1 Pre-test results

The study involved 28 students from Class XI at SMA Bina Mandiri. The assessment administered was a performance-based test in the form of short story writing. Prior to the test, students were instructed to gather and review various reference materials to support their writing process. They were allotted one week to complete their short stories. The evaluation of students' short story writing was conducted using a rubric that assessed three key aspects: content, structure, and language conventions.

The results of the students' pretest performance in short story writing are presented in Table 1 below.

Table 1. Student Pretest Results in Writing Short Story Texts

No	Information	Mark
1.	Total Overall Score	1580
2.	Average	56.43
3.	The highest score	70
4.	Lowest Value	45

Based on the results of the pretest writing short story texts, the scores obtained by students varied. The highest score is 70, and the lowest score is 40. The total score obtained in the pretest is 1580 with an average of 56.43.

3.1.2 Post-test results

The posttest was administered after students had completed the learning activities included in the e-module. In this study, students engaged in five instructional activities designed to deepen their understanding of short story writing before undertaking the posttest. The assessment administered during the posttest was identical to that of the pretest—a performance-based task requiring students to compose a short story. This approach was intended to facilitate a clear comparison of students' writing abilities before and after the implementation of the e-module, which utilized the electronic publication (EPUB) format.

The posttest was conducted over two days and involved 28 students from Class XI IPA 1 at SMA Bina Mandiri Banyuasin. Prior to the test, students were instructed to consult various reference materials to support their writing. The evaluation of the short story texts was based on an established assessment rubric encompassing three main criteria: content, structure, and language conventions.

The results of the posttest are presented in Table 2 below.

Table 2. Student Posttest Results in Writing Short Story Texts

No	Information	Mark
1.	Total Overall Score	2224
2.	Average	79.43
3.	The highest score	90
4.	Lowest Value	75

Based on the posttest results of writing short story texts, the scores obtained by students varied. The highest score is 90 and the lowest score is 75. The total score obtained in the posttest is 2224 with an average score of 79.43.

3.2 The Effectiveness of Electronic Publication (EPUB) Based E-Modules

After obtaining the pretest and posttest scores, the researcher conducted statistical analyses to determine the differences in students' writing abilities before and after using the e-module for short story writing in the electronic publication (EPUB) format. The statistical procedures included descriptive analysis, normality testing, and a paired sample t-test to assess the significance of the observed differences.

3.2.1 Descriptive Statistical Test Results for Short Story Text Writing

The results of descriptive statistics were used to process data on the value of writing short story texts which were carried out on 28 students in class XI IPA 1 SMA Bina Mandiri Banyuasin. This test was carried out on student scores before and after using the developed e-module. The descriptive statistics can be seen in Table 3 below.

Table 3. Descriptives Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Pretest	28	25	45	70	1580	56.43	7.052
Posttest	28	15	75	90	2224	79.43	5.385
Valid N (listwise)	28						

As shown in Table 3, the pretest group had a standard deviation of 7.052, with scores ranging from a minimum of 45 to a maximum of 70, and a mean score of 56.43. In contrast, the posttest group demonstrated a standard deviation of 5.385, with scores ranging from 75 to 90 and a mean score of 79.43.

3.2.2 Normality Test Results for Writing Short Story Text

After the descriptive statistical test, the normality test was carried out using the one-sample Shapiro-Wilk test. The basis for making a decision on the normality test using the Shapiro-Wilk is if the value of Sig. > Alpha research (0.05) then normal distribution. The following results of the normality test can be seen in Table 4 below.

Table 4. Tests of Nomality

	Kolmogorof-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	28	25	45	70	1580	56.43
Posttest	28	15	75	90	2224	79.43

a. Liliefors Significance Correction

From Table 4 it can be seen that the significance value of the normality test pretest is 0.65 and posttest is 0.77, when compared with a significance value of 0.5% ($\alpha = 0.05$) then both can be declared normal because the pretest significance value is $0.65 > 0.05$ and posttest is $0.77 > 0.05$. Based on these findings, it can be concluded that the pretest and posttest scores on the short story writing test are normally distributed. The visual normality test can also be observed in the PP Plot graphic image, assuming that if the points of spread of values are spread but still centered around the average line, then it can be declared normal.

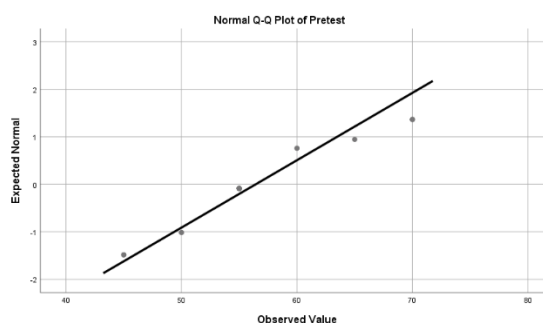


Figure 1. Graph of Pretest Normality Test Results

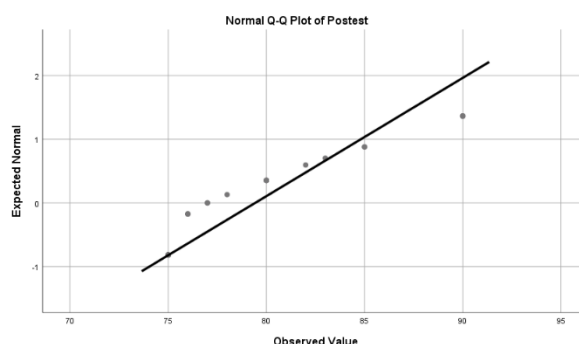


Figure 2. Graph of Posttest Normality Test Results

From the two PP-Plot graphic images, it can be seen clearly that the dots spread around the diagonal line following the direction of the diagonal line (mean line), so the pretest and posttest values are normally distributed.

3.2.3 T-Test Results Writing Short Story Text

The next test is the T-test of writing papers to find out the difference between students' scores before using the e-module (pretest) and after using the e-module (posttest). The results of the T-Test for writing short story text with the Paired Sample T-Test in the pretest and posttest can be seen in Table 5 below.

Table 5. Paired Samples Test

		Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Pretest-Posttest	-23.000	6.383	1.206	-25.475	-20.525	-19.067	27	.000

As shown in Table 5, the combined mean difference between the pretest and posttest scores for students' short story writing was 23.000, with a standard deviation of 6.383. The significance value (2-tailed) obtained from the t-test was 0.000, which is less than the alpha level of 0.05. This indicates a statistically significant difference between the scores before and after the use of the EPUB-based e-module. Therefore, it can be concluded that the developed e-module for short story writing is effective and has contributed to a measurable improvement in students' performance.

Discussion

The development of the EPUB-based e-module for writing short story texts was grounded in a clear needs analysis involving both students and teachers. This analysis revealed a pressing need for engaging, accessible, and curriculum-aligned teaching materials in Indonesian language instruction, particularly in the area of short story writing. In response, the e-module was developed to align with the core and basic competencies outlined in the national curriculum, as well as the expectations of Indonesian language educators.

Structurally, the e-module was systematically organized into three key components: introduction, content, and conclusion. The introductory section includes the front cover, foreword, table of contents, usage instructions, and a concept map. The main content integrates elements such as competency standards, learning objectives, descriptive material, exercises, summaries, tests, and assessment rubrics. The closing section comprises a bibliography and the author's biodata. This systematic arrangement reflects recommendations in digital instructional design, ensuring learners can navigate and internalize content effectively (Rahayu & Sukardi, 2021).

Validation of the e-module was conducted through expert review by specialists in content, language, and graphic design. The validation process confirmed that the content was appropriate, relevant, and in accordance with the learning objectives. As emphasized by Anan and Rustan (2023), such multi-aspect validation is crucial to ensure the pedagogical and technical quality of digital teaching materials. All validators deemed the module to be highly suitable for classroom implementation, supporting its content validity.

The practicality of the e-module was also evaluated through three stages of testing: individual (one-to-one), small group, and field testing. The one-to-one test, involving three students of varied academic abilities, resulted in a practicality score of 87, indicating a high level of usability. The small group test, with nine students from both science and social streams, yielded a slightly higher score of 88. Finally, the field test involving the full class of 28 students produced a score of 86, reinforcing that the e-module was easy to use, well-received, and functional across a range of learners. These findings are in line with those of Rauddin and Ruslan (2022), who noted that practical and interactive e-modules can significantly enhance student engagement in the classroom.

Effectiveness was determined by comparing student performance before and after using the EPUB-based e-module. The pretest results showed an average writing score of 56.43, with scores ranging from 45 to 70 (SD = 7.052). After using the e-module, the posttest average increased markedly to 79.43, with scores ranging from 75 to 90 (SD = 5.385). These results suggest not only an increase in average performance but also a decrease in score variability, indicating more consistent learning outcomes.

Normality testing using the Shapiro-Wilk method confirmed that both pretest ($p = 0.65$) and posttest ($p = 0.77$) scores were normally distributed, satisfying the assumptions for parametric testing. The paired samples t-test revealed a statistically significant improvement in scores ($M = 23.00$, $SD = 6.383$, $p = 0.000$), confirming the effectiveness of the e-module in enhancing students' short story writing abilities. This result is consistent with the findings of Ricu Sidiq and Najuah (2020), who observed that well-designed digital modules can lead to measurable gains in student learning outcomes.

These results collectively support the conclusion that EPUB-based e-modules can serve as effective instructional tools for enhancing writing skills in high school students. The module's multimedia-rich format—allowing the integration of images, audio, and video—likely contributed to the increased motivation and understanding observed among students (Fitriasari & Ningsih, 2021). Moreover, EPUB's compatibility with various digital devices (phones, laptops, tablets) ensured accessibility for all learners (Utami et al., 2020), an important consideration in today's increasingly mobile learning environments.

This study also aligns with broader research on the effectiveness of EPUB in educational contexts. Cahyono (2020) found that EPUB-based modules were not only feasible to implement but also perceived as engaging and innovative by students. Ratnawati et al. (2022) reported improved academic

performance among learners using EPUB-formatted materials, particularly when multimedia elements were strategically embedded to support comprehension.

In summary, the EPUB-based e-module developed in this study demonstrated strong validity, high practicality, and statistically significant effectiveness in improving short story writing skills among senior high school students. The integration of technology in this format aligns well with modern pedagogical approaches and addresses the needs of digitally native learners.

4. CONCLUSION

This study demonstrated that learning to write short stories using e-modules based on Electronic Publication (EPUB) significantly improved students' performance. The average posttest score increased to 79.43 compared with the pretest average of 56.43, and the paired t-test yielded a significance value of 0.000 ($p < 0.05$), indicating a substantial effect of the EPUB-based e-module on students' writing abilities. These findings confirm that EPUB e-modules are not only highly feasible but also attractive and effective learning resources for senior high school students (Cahyono, 2020). However, the study is limited to a single topic—writing short stories in Indonesian language learning—and involved a relatively small sample size, which may restrict the generalizability of the results. Future research should expand the use of EPUB-based e-modules to other subjects and competencies, employ larger and more diverse samples, and incorporate qualitative measures such as student perceptions and engagement levels to gain a deeper understanding of how digital teaching materials influence learning outcomes. Such studies would contribute to developing more innovative and creative digital teaching resources aligned with the evolving needs of students.

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