

**IMPROVING SENIOR HIGH SCHOOL STUDENTS' WRITING SKILLS  
THROUGH AI-ASSISTED FEEDBACK USING DEEPSEEK AT SMAN 1  
SIDOMULYO**

**(Undergraduate Thesis)**

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**FACULTY OF TEACHER TRAINING AND EDUCATION**

**LAMPUNG UNIVERSITY**

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## ABSTRACT

### IMPROVING SENIOR HIGH SCHOOL STUDENTS' WRITING SKILLS THROUGH AI-ASSISTED FEEDBACK USING DEEPSEEK AT SMAN 1 SIDOMULYO

By

**Agnes Larasaty AW**

This study investigates the use of AI-assisted feedback through DeepSeek to improve students' narrative writing skills. Writing is considered one of the most challenging productive skills for EFL students, particularly in composing narrative texts, because students are required to generate ideas, organize events coherently, and apply appropriate language features. Many students still experience difficulties in developing well-structured narratives, therefore the use of innovative teaching tools is needed. In this research, DeepSeek was utilized as an AI-assisted feedback tool to help students revise and improve their writing through immediate feedback. The research employed a quantitative method using a one-group pre-test and post-test design involving 35 twelfth-grade students of SMA Negeri 1 Sidomulyo selected through cluster sampling. The findings revealed a noticeable improvement in students' narrative writing skills after the implementation of DeepSeek-assisted feedback, with the mean score increasing from 54.26 in the pre-test to 78.20 in the post-test. This improvement indicates that AI-assisted feedback using DeepSeek had a positive effect on students' narrative writing performance. Therefore, DeepSeek can be considered an effective tool for teaching narrative writing in EFL classrooms.

**Keywords:** *Narrative Writing, Writing Skills, AI-Assisted Feedback, DeepSeek*

## ABSTRAK

### **PENINGKATAN KETERAMPILAN MENULIS SISWA SEKOLAH MENENGAH ATAS MELALUI UMPAN BALIK BERBANTUAN KECERDASAN BUATAN (AI) MENGGUNAKAN DEEPSEEK DI SMAN 1 SIDOMULYO**

Oleh

**Agnes Larasaty AW**

Penelitian ini mengkaji penggunaan umpan balik berbantuan AI melalui DeepSeek untuk meningkatkan keterampilan menulis naratif siswa. Menulis dianggap sebagai salah satu keterampilan produktif yang paling menantang bagi siswa EFL, khususnya dalam menyusun teks naratif, karena siswa dituntut untuk menghasilkan ide, mengorganisasi peristiwa secara koheren, dan menerapkan unsur kebahasaan yang tepat. Banyak siswa masih mengalami kesulitan dalam mengembangkan narasi yang terstruktur dengan baik, sehingga penggunaan alat pembelajaran yang inovatif diperlukan. Dalam penelitian ini, DeepSeek digunakan sebagai alat umpan balik berbantuan AI untuk membantu siswa merevisi dan meningkatkan tulisan mereka melalui umpan balik langsung. Penelitian ini menggunakan metode kuantitatif dengan desain one-group pre-test dan post-test yang melibatkan 35 siswa kelas XII SMA Negeri 1 Sidomulyo yang dipilih melalui teknik cluster sampling. Hasil penelitian menunjukkan adanya peningkatan yang signifikan dalam keterampilan menulis naratif siswa setelah penerapan umpan balik berbantuan DeepSeek, dengan nilai rata-rata meningkat dari 54,26 pada pre-test menjadi 78,20 pada post-test. Peningkatan ini menunjukkan bahwa umpan balik berbantuan AI menggunakan DeepSeek memberikan pengaruh positif terhadap kemampuan menulis naratif siswa. Oleh karena itu, DeepSeek dapat dianggap sebagai alat yang efektif untuk pembelajaran menulis naratif di kelas EFL.

**Kata kunci:** *Penulisan Naratif, Keterampilan Menulis, Umpan Balik Berbantuan AI, DeepSeek*

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**By**

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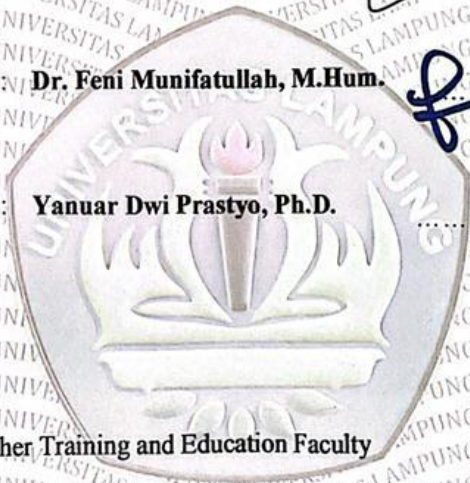
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Menyatakan bahwa skripsi ini adalah karya dari pelaksanaan penelitian saya sendiri. Sepanjang pengetahuan saya, karya ini tidak berisi materi yang ditulis orang lain, kecuali bagian-bagian tertentu yang saya gunakan sebagai acuan. Apabila ternyata terbukti bahwa pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab saya.

Bandar Lampung, 27 Februari 2026

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## **CURRICULUM VITAE**

Agnes Larasaty AW, the second child of three siblings of Agus Wiyono and Evasari Wahyuni, was born on June 8, 2003, in Tangerang. She has an elder brother, Giant Case, S.T., and a younger brother, Putra Affan Rabbani.

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During her study at the University of Lampung, she participated in student activities within the Society of English Education Department Students (SEEDS). She completed her Community Service Program (KKN) in Tulang Bawang Regency and carried out her Teaching Practice Program (PLP) at SDN 01 Bumi Sari, Tulang Bawang, where she gained teaching experience in elementary school classrooms. At present, she is also teaching at SDN 5 Sidorejo, further developing her teaching skills and professional experience in primary education.

## MOTTO

“Actually, there is nothing to worry about. Allah never promised that your life would always be easy. But Allah promises twice that”

"fa inna ma'al'usri yusroo, inna ma'al 'usri yusroo"

(Q.S. Al Insyirah:5-6)

“I have never asked for a life without difficulties, but I ask that in every difficulty, Allah grant me the strength to overcome it.”

“IT WILL PASS”

(Agnes Larasaty AW)

"Semua jatuh bangunmu hal yang biasa, angan dan pertanyaan waktu yang menjawabnya, berikan tenggat waktu bersedihlah secukupnya, rayakan perasaanmu sebagai manusia"

“Di tanganmu, kuasa atas ceritamu, sekarang juga. Besok atau hari ini. Kau yang pegang kendali”

(Baskara Putra - Hindia)

“Penuh ganggu di dalam jiwanya, sambil penuh cinta, diam-diam berusaha”

"Perang telah usai, aku bisa pulang, kubaringkan panah dan berteriak MENANG”

(Nadin Amizah)

“Merenungi alam semesta, merintah ke langit, di sumbu bumi yang sesak, jiwaku dipeluk”

(Melangitkanmu - Ghea Indrawari)

## **DEDICATION**

This thesis is proudly dedicated to:

### **My dearest grandparents**

The late H. Nurhasan Ali and the late Hj. Wasilah

The late Madenin AZ and the late Rosdiah

### **My dearest parents**

Agus Wiyono and Evasari Wahyuni

### **My dearest brothers**

Giant Case, S.T. and Putra Affan Rabbani

### **My beloved partner**

Gilang Putra Erlangga

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Bandar Lampung, Februari 2026  
The Writer,

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## I. INTRODUCTION

This chapter provides a brief description of entire contents of the research including background, research question, objective of the research, the use of the research, scope of the research, and definition of terms.

### 1.1. Background

In Indonesia, English is taught as a foreign language from junior high school to senior high school. Students are expected to learn four main language skills: listening, speaking, reading, and writing. The most difficult of them is writing. Years of practice have not helped many of us to express ourselves properly in writing. OECD (2019) states that the literacy of Indonesian students in reading and writing is one of the lowest, which makes it an urgent necessity to intensify the use of writing in school. The Ministry of Education and Culture (2020) even advocated the use of technology in the English classroom to improve our literacy.

Students face various challenges in learning English writing. There are those who become trapped in grammar and those who simply cannot set their ideas in order, choose the correct vocabulary, or maintain the flow of their writing. It is not only about writing proper sentences; it is also about planning, organizing and explaining ideas in a proper manner, as Harmer (2004) reminds us. According to Hyland (2003), to write well, one must be logical, clear, and understandable. Then, students indeed require regular practice and coaching to build the major components of writing: content, organization, vocabulary, language use and mechanics.

Narrative writing is among the core types of text taught in senior high school based on the schedule of the English syllabus in Grade XII. It is quite an important way to develop our creativity, imagination, and the capability of recounting events in a chronological sequence. According to Anderson and Anderson (1997), narrative

texts make us practice organizing ideas in the beginning, middle, and end, and experiment with the language features such as past tense, action verbs and the use of time. This is a particularly good genre to train us to write meaningful and interesting stories.

Several previous studies have discussed students' difficulties in writing and how AI-assisted feedback can help improve writing performance. A study by Dilshad et al. (2025) used a comparative method to explore how high school students and teachers evaluated different AI writing tools in social science writing. The study found that many students had difficulty organizing ideas and using proper grammar and vocabulary, which affected the quality of their writing. While DeepSeek was mentioned in the study, the main focus was on writing challenges.

Another study was conducted by Albuhairey & Algaraady (2025), who used an experimental method to compare the effectiveness of DeepSeek and ChatGPT in identifying grammar errors among adult ESL learners. The study focused on common mistakes such as verb tense, sentence structure, and grammar accuracy. The results showed that DeepSeek gave more accurate feedback than ChatGPT, showing its potential in helping students improve their grammar in writing.

A literature review by Demiröz & Tıkız Ertürk (2025) explored how students used conversational AI tools to support academic writing. Their results indicated that AI was employed by students to fix grammar, sentence flow, and paraphrasing issues. Nevertheless, they were unable to arrange their thoughts and find the right words. This implies that AI will assist them with certain parts of writing, but they still require instructor assistance.

Other research has experimented with ways to assist them in writing better. As an example, Qazi et al. (2025) applied a self-regulated learning strategy in such a way that college students would be able to plan, arrange, and revise their writing independently. They observed that they improved in terms of the organization of idea and even more in grammar, but some of them still needed teachers to implement the strategies completely.

Over the past few years, AI has found its application in education, particularly in language learning. The advantage of AI is that it is capable of providing personalised and fast feedback. In writing classes, we usually have to wait until the teacher identifies the mistakes in our drafts, whereas AI allows us to get feedback instantly. A number of studies show that AI tools are used to sharpen our writing. Ulimaz et al. (2025) discovered that DeepSeek assisted them in removing flaws in the sentence structure and grammar through straightforward feedback, and it also enhanced their writing organization process.

Wang (2024) investigated the use of AI-based tools to improve writing by Indonesian high-school learners by examining the way these students were learning to organize their ideas and enhance coherence. The findings revealed that AI feedback offered them an opportunity to select words better, and it reduced sentence confusion. Although they still required a teacher, the AI tools caused them to be more autonomous during the revision of their work.

Kartika S (2024) conducted a quasi-experiment with students at the university to determine whether AI-assisted feedback could help improve grammar, structure and vocabulary abilities. The results showed that students improved in using correct tenses, connectors, vocabulary, and sentence structures after receiving AI-assisted feedback.

Although several studies have investigated the use of AI-assisted feedback in EFL writing instruction, most of them focused on general writing improvement or academic writing at the university level. Few of them, such as Wang (2024) and Kartika S (2024), addressed the assistance that AI can offer in managing ideas or grammar, but none of them narrowed the scope to narrative text with senior high-school students. Also, though DeepSeek has potential in sentence structure and coherence, the application of DeepSeek in narrative tasks in the Indonesian EFL classroom has not been well-researched.

Most existing studies focus on general writing improvement or academic writing, with minimal attention to narrative texts. Research on DeepSeek is still in its early stages, and its application in narrative writing tasks at the high school level remains

underexplored. This study aims to address this gap by investigating whether AI-assisted feedback using DeepSeek can enhance students' narrative writing skills, focusing on five aspects of writing: content, organization, vocabulary, language use, and mechanics.

## **1.2. Research Question**

Based on the background above, this study is intended to state the problem as follow: Is there any significant improvement in senior high school students' narrative writing skills after receiving AI-assisted feedback using DeepSeek?

## **1.3. Objective of The Research**

According to the following research question above, the objective of the study is to find out whether there is a significant improvement in senior high school students' narrative writing skills after receiving AI-assisted feedback using DeepSeek.

## **1.4. The Use of the Research**

The findings of this study is expected to be beneficial both theoretically and practically:

1. Theoretically, this research is expected to provide insight into the use of AI-assisted feedback through DeepSeek as a learning tool in teaching narrative writing. It may also support the development of teaching strategies that combine AI and writing instruction and strengthen existing theories in language learning, especially in improving various aspects of writing among EFL high school students.
2. Practically, the findings of this research can be useful for English teachers, students, and future researchers.
  - For English teachers, this study is expected to help English teachers as a reference to apply AI-assisted feedback in teaching narrative writing. It can help teachers build a more effective approach in developing students' writing skills, including content, organization, vocabulary, language use, and mechanics.

- For students, AI-assisted feedback may help them revise their narrative writing more systematically and increase their awareness of writing components.
- For future researchers, this study can serve as a reference for further research about AI tools in writing, and open opportunities to explore more innovative methods in English language teaching and learning.

### **1.5. Scope of The Research**

This research is a quantitative study that aims to examine the effectiveness of AI-assisted feedback using DeepSeek in improving students' narrative writing skills. The study focuses on five aspects of writing: content, organization, vocabulary, language use, and mechanics Jacobs et al. (1981). The subject of the research is twelfth-grade students at SMA Negeri 1 Sidomulyo in the 2024/2025 academic year. The type of text used in this study is narrative text, which follows the structure of orientation, complication, and resolution as stated in the senior high school English curriculum.

### **1.6. Definition of Terms**

In this research several terms need to be clearly defined to avoid misunderstandings and provide a more focused understanding. The following are definitions of some terms.

#### **1. Writing**

Writing involves generating a text by planning what to say, structuring the ideas, and refining them, as noted by Harmer (2004). Here, writing is understood as the students' capacity to craft narrative texts while meeting criteria related to content, organization, vocabulary, grammatical accuracy, and mechanics.

#### **2. Generative AI**

Generative AI is a technology that assists users in content creation, including writing, photographs, or music (Nartey 2025). It uses a multitude of examples to learn and produces new content that is similar to the work of a human.

Generative AI is a tool that is applied in this study to assist them in revising their narrative writing, since it provides them with suggestions on how to improve their grammar, composition, vocabulary, and sentence structure.

### 3. DeepSeek

Menglong and Fellow (2025) note that DeepSeek is not only a search engine but also an AI-based system that enables people to explore and design information. DeepSeek was used in this study as an aid to help learners structure their ideas, improving grammar, and making their narrative texts easier to understand.

## II. LITERATURE REVIEW

This chapter discusses theories and literature relevant to the research problem. It includes concepts of writing and narrative text, teaching of English narrative writing, DeepSeek and AI-assisted feedback, teaching writing through AI-assisted feedback, procedures of teaching narrative writing through DeepSeek as AI-assisted feedback, advantages and disadvantages of AI-assisted feedback, theoretical assumptions, and hypothesis.

### 2.1. Writing

Writing is a complex art requiring the ability to apply an orderly arrangement and the power to express thoughts concisely and comprehensively using written words. Harmer (2004) goes on to state that writing is much more than producing grammatically correct sentences; it is about exploring ideas in depth, communicating ideas clearly, and building a two-way conversation with the readers through well-organized discourse. Effective writing is supported by a combination of several interconnected procedures, such as planning, drafting, revising, and editing, all of which work together to provide clarity of expression and purposeful communication. The following sections explain the definition, process, and aspects of writing based on expert theories and literature.

#### 2.1.1 *Definition of Writing*

Some researchers have provided definitions of writing which have emphasized the complexity and importance of writing. Harmer (2004) argues that writing is a form of communication through idea transmission and interpersonal communication that is obtained by way of linguistic expression of thoughts. He also insists that the fact that writing is not only about the grammatical accuracy and the selection of words but also about the way ideas are arranged in a system to make them clear to the reader. Compared to speaking, written expression requires more time and careful

work because, unlike speaking, writers are forced to think through and repeat the process. Harmer further adds that writing plays important functions in self-expression, sharing information, and conservation of intellectual material. Considering that the writing process is difficult, it is therefore necessary that learners practice it over a long period of time to perfect their expertise.

Raimes (1983), in her book *Techniques in Teaching Writing*, also explains writing as a skill that involves not only grammar and vocabulary but also thinking and creativity. She explains that writing is a chronological process where the author comes up with ideas, organizes them rationally, and expresses them clearly. Writing, in contrast to speaking, provides writers with more time to think and revise, which increases linguistic accuracy. Additionally, Raimes claims that writing is an effective tool for language learners because it allows them to apply their grammatical and lexical knowledge in meaningful ways. She also asserts that writing helps develop critical thinking since students are required to plan and support their arguments in a thoughtful way. Therefore, she considers writing to be a part of language acquisition.

While Raimes focuses on the connection between writing and thinking, Hyland (2003) takes a broader view by looking at writing in social and academic contexts. He explains that writing is not only a personal skill but also a social practice that reflects the values and expectations of certain groups, such as academic or professional fields. Good writing requires an understanding of the audience, the purpose, and the rules for different genres. For example, an academic essay follows different rules from a business email. Hyland also emphasizes that writers should engage with their readers by anticipating their needs and responses. This shows that writing is more than just correct language; it's also a way to participate in meaningful communication within specific social groups.

Hedge (2005), in her book *Writing*, gives a clear explanation about writing in English as a foreign language. She outlines writing as a process which includes planning, writing, proofreading, and polishing. Hedge suggests that teachers should focus on the final product and the process of writing. She argues that effective writing relies on the writer's awareness of the reader. As an illustration, a casual

email addressed to a friend is significantly different from a school essay. Hedge also notes that students have the advantage of learning the various genres such as narratives, and letters, all of which possess particular stylistic rules. Moreover, she suggests that cooperative learning and positive teacher feedback contribute to improved learning. This perspective explains that writing is both linguistically accurate and a form of meaningful communication.

In conclusion, these experts agree that writing is a complex but essential skill in language learning. Harmer defines writing as sharing ideas through words. Raimes emphasizes its link with thinking and creativity. Hyland focuses on how writing depends on social context and audience expectations. Hedge presents a practical approach to teaching writing that balances process and product while encouraging student independence. These perspectives explain that good writing requires grammar, vocabulary, clear organization, an understanding of purpose, and continuous practice.

### ***2.2.2. Process of Writing***

In English as a Foreign Language (EFL) learning, understanding the process of writing is crucial as it guides students step by step in developing their writing skills. According to Harmer (2004), the writing process consists of four main stages: planning, drafting, revising, and editing.

#### **1. Planning**

The first stage, when students decide on the purpose of their writing, identify the audience, and come up with relevant ideas. According to Harmer (2004), planning enables the students to concentrate on the key message they wish to convey through the use of brainstorming, outlining or mind mapping.

#### **2. Drafting**

The next stage in the writing process is drafting, in which students begin to write their ideas into sentences and paragraphs. According to Harmer (2004), this step aims to articulate ideas without worrying much about grammatical correctness. The primary task is to convert ideas into written form and prepare for further improvement.

### 3. Revising

After drafting, students move to the revising stage, where they review their work and refine the organization, clarity, and completeness of ideas. This involves adding new information, rearranging paragraphs, or removing irrelevant content. Revising helps students to look at their writing from the reader's perspective.

### 4. Editing

Editing is the last phase in the writing process, as it involves correcting grammar, punctuation, spelling, and other language mechanics. This step is used to confirm that the end product of the writing is correct and refined. It can also entail formatting the writing so that it is ready to be published or presented, and this gives students a sense of accomplishment and audience recognition.

In summary, Harmer's (2004) writing process emphasizes the importance of planning and continuous revision to help learners develop their ideas clearly and accurately.

### ***2.2.3. Aspects of Writing***

Jacobs et al. (1981) identifies five key aspects of writing: content, organization, vocabulary, language use, and mechanics. These aspects are important to evaluate the quality of students' writing performance. The explanation of each aspect is as follows:

#### 1. Content

The content of writing refers to the relevance and development of ideas. Good writing contains meaningful, well-developed, and effective ideas that are suitable for the topic and audience.

#### 2. Organization

Organization is about the logical way in which ideas are arranged in the text. It includes a clear introduction, body, and conclusion, as well as the effective use of transitions to connect ideas.

#### 3. Vocabulary

Vocabulary entails the appropriateness and range of word choice. When

vocabulary is well mastered, the writer can convey ideas and avoid redundancy and vagueness.

#### 4. Language Use

Language use is concerned with grammar and sentence structure. This involves verb-tense consistency, subject-verb agreement, proper word order, and the correct use of clauses and phrases.

#### 5. Mechanics

Mechanics refers to punctuation, spelling, capitalization, and paragraphing. These aspects might not be very significant; however, they are key to clarity and professionalism in writing.

In conclusion, these five elements provide a detailed framework for assessing students' writing. By attending to these elements, teachers and students will be able to identify strengths and areas that require improvement during the writing process.

#### ***2.2.4. Assessing of Writing***

Assessing writing is an important part of the English learning process as it helps teachers evaluate how well students express their thoughts, organize ideas, use correct grammar, choose appropriate vocabulary, and apply writing rules such as punctuation and spelling. Assessment also involves giving students feedback on which they can utilize to do better writing in future.

The ESL Composition Profile by Jacobs et al. (1981) which uses analytic scoring, is one of the models commonly used in the evaluation of ESL writing. This model involves the assessment of each aspect of writing individually to provide a clearer overview of students' strengths and weaknesses. According to Jacobs et al. (1981), writing can be evaluated based on five elements: content, organization, vocabulary, language use, and mechanics, and each of these elements makes a significant contribution to the overall writing quality.

Each component focuses on a different skill:

- Content refers to the quality and development of ideas in the writing.
- Organization refers to how well ideas are arranged and connected logically.
- Vocabulary evaluates how appropriate and varied the word choices are.
- Language use looks at grammar and sentence structure.
- Mechanics includes punctuation, capitalization, and spelling.

Originally, Jacobs et al. (1981) assigned different point values for each component: content (30), organization (20), vocabulary (20), language use (25), and mechanics

(5). In this study, the score distribution is adapted to suit the current writing context of senior high school students, giving more balanced attention to mechanics, which is important in digital and formal writing. The adapted scoring is as follows: content (25), organization (20), vocabulary (20), language use (25), and mechanics (10).

In the study, a modified version of the rubric by Jacobs et al. (1981) is applied to guide the scoring process. This rubric presents descriptions of various score levels like Excellent, Good, Fair, and Poor, and the assessment process will be clear and simple for students.

This modified form of analytic scoring is a more detailed and objective way of assessing writing. It is also useful in helping teachers detect particular areas in which students require improvement, as well as assisting students in becoming more conscious of their writing abilities. The model also aligns with the theme of this research, as it is essential to assess student's narrative writing in terms of content, organization, vocabulary, language use, and mechanics with the aid of AI- assisted feedback.

### **2.3. Narrative Text**

Narrative writing is a compulsory genre in the Indonesian senior high curriculum. It not only builds on the students' creativity but also instills in them the ability to organize events in a logical way. Nevertheless, numerous students are not proficient

in coherence, tense consistency, and character development, so narrative writing is an appropriate genre for investigating the role of AI-assisted feedback. Carroll and Wilson (1993) state the narratives are a blend of creativity and clear organization, which makes them easier to follow and deeper in meaning. To justify the use of narrative text in English language learning, the definition of narrative text and its aspects will be explained in the following sections.

### ***2.3.1. Definition of Narrative Text***

Narrative writing is a form of writing that narrates a story and does so by presenting a sequence of related events, true or imaginary. Anderson and Anderson (1997) explain narrative text as a type of writing developed to either entertain or inform readers by describing a series of related events. They also stress that the plot of narratives is usually organized and presented in the sequence of orientation, complication, and resolution. The introduction of characters and setting, the conflict or challenge, and the resolution are presented in the orientation, complication, and resolution stages respectively. This arrangement makes the story more comprehensible and readable for the reader.

Also, Trahar (2011) elaborates that narratives do not simply aim at entertaining but also at exploring human experiences. By telling stories, authors can create and convey different aspects of life and cultural perspectives, so that readers can perceive the world through a range of viewpoints. Narratives are sequential in nature and are mostly composed using language elements like action verbs and time conjunctions to make them understandable and help them flow coherently.

Furthermore, Edling & Löfström (2021) argue that narrative texts can also reflect real-life experiences, such as the lives of teachers. Their book shows that fictional and real-life stories use elaborate descriptions, fascinating characters, and purposeful conflicts to create narratives that are not only entertaining but also motivating and instructive. These characteristics demonstrate that reading narrative texts is not only enjoyable but also a chance to develop empathy and convey significant messages.

In conclusion, as described by Anderson and Anderson (1997), Trahar (2011), and

Edling and L fstr m (2021), narratives texts entail the arrangement of organized events, character growth, and meaningful messages in order to captivate the audience in a narrative text. Narrative texts, whether in the classroom or in any other environment, enable writers to share experiences, invite readers to learn more about others, and foster the cultivation of critical thinking.

### ***2.3.2. Aspects of Narrative Text***

Narrative texts have a number of aspects that lead writers to create and structure their stories systematically. Anderson and Anderson (1997) state that these aspects encompass the social role, the generic structure, and the linguistic features of the narrative texts. Moreover, Knapp and Watkins (2005) provide emphasize elements such as content, character, setting, plot, and theme, which aid in creating meaningful stories. These aspects are explained in the following sections to provide a clearer picture of narrative texts in the context of English language learning.

#### **1. Social Function**

The social function of a narrative text is to entertain, engage, and sometimes provide moral lessons to the readers through storytelling. As Anderson and Anderson (1997) describe, a narrative is written in a way that engages readers by presenting a series of events that usually involve conflicts and resolutions. With this social role in mind, writers should be able to concentrate on writing meaningful and enjoyable stories for the audience.

#### **2. Generic Structure**

Narrative texts have a generic structure that helps writers put their stories in a coherent and understandable order. As Anderson and Anderson (1997) suggest, narrative texts typically have three primary components: orientation, complication, and resolution. The setting and characters are introduced in the orientation, offering background about the characters and setting to the audience. The complication is an issue or a crisis that the characters encounter, and this makes the story interesting. The resolution demonstrates how the conflict is solved and how the story concludes. Learning about this structure helps students understand how to write a narrative with a definite beginning, middle and end.

### 3. Language Features

There are also certain aspects of language that help to promote clarity and coherence in the narration of a story. According to Anderson and Anderson (1997), narratives are usually written in past tense to explain the events that happened and use action verbs to demonstrate what the characters did. There are also time conjunctions like then, after, before, in addition to the use of direct and indirect speech, through which narrative texts can connect events in a logical sequence and include conversations between characters. These language features allow student to write grammatically correct narratives that are more readable.

### 4. Content Elements

Besides structure and language components, the content components are very important in the growth of the narrative texts. According to Knapp and Watkins (2005), these aspects are characters, setting, plot, and theme. The characters are the people or animals of the story, and the setting is the place and the time in which the story is taking place. The plot is the course of events in the story that entails the conflict and the resolution of the conflict, so that there is a logical flow of the story. Lastly, the theme is the main point or message that the author wants to bring out in the story. These are the factors that assist writers in creating stories that are interesting and significant to the readers.

In conclusion, it is possible to use the knowledge on the aspects of narrative texts, such as social role, the generic structure, language features, and the content elements to help students create properly structured and coherent narratives. These areas act as a guideline toward the organization of ideas, the plotting of a story, as well as employing language-wise in storytelling in the EFL classroom.

## **2.4. Teaching of English Narrative Writing**

Teaching narrative writing in an EFL classroom requires careful attention to both the writing process and the specific features of the narrative genre. According to Carroll and Wilson (1993), teaching narrative writing begins by assisting students in knowing the structure of a story. They assert that the most important sections of

a narrative, including orientation, complication, and resolution, need to be introduced to the students. Educators may also use good narrative texts as an example in order to demonstrate how authors build characters, describe settings, and manage events in an organized manner. These models can help students analyze the way they can plan and structure their own stories. This strategy implies that instruction in narrative writing should start by developing students' knowledge of the organization of stories.

According to Harmer (2004), the teaching of writing must be conducted in stages through the writing process, where a plan is drafted, written, revised, and edited. In narrative writing, visual aids can be used to assist students in organizing their thoughts prior to writing, like story maps or graphic organizers. Another aspect that is emphasized by Harmer is the factor of peer feedback in which students can complete their work with classmates and get constructive feedback to help them make their work better. This strategy aids in developing a positive atmosphere, in which students feel secure to share their thoughts, paying attention to the contents, the structure, and the linguistic elements of the narratives, such as characters, chronology, and the past tense form.

Hyland (2003) also stresses that writing is a process that is social and meaningful, and that learners must be made aware of the role and form of various types of texts. Genre-based teaching in narrative writing enables students to identify the way in which the narrative is structured and the reason behind the writing of the narrative. Through reading diverse narrative texts, students get to learn how language is employed to generate meaning, express feelings, as well as narrate stories in an effective manner. Educators can lead students in discovering such features of the language as descriptive words, time expressions, and personal voice in storytelling. This approach is a good way to enhance the writing of students as well as to make them realize the communicative purpose of narratives.

Hyland (2016) claims that the combination of digital means and collaborative writing tools can help to enhance student engagement and assist students in developing writing skills in the relevant environments. These aids stimulate students to be creative in their opinions and ideas, and to remain focused on the

structure and language of the narratives.

In conclusion, the narrative writing taught in the EFL classroom needs a mixture of various yet mutually complementary strategies. Carroll and Wilson (1993), Harmer (2004), Hyland (2003), and Hyland (2016) are experts who give instructions regarding process-based teaching, genre-based teaching, and implementation of technology to facilitate learning. Through these strategies, teachers are able to assist students to enhance their ability to write stories in a gradual manner, as well as to make the learning experience more entertaining and significant. These strategies are also in line with the emphasis on assessing narrative writing in the light of content, organization, use of vocabulary, use of language, and mechanics in the EFL classroom.

## **2.5. AI-assissted Feedback**

Feedback is an essential part of writing instruction. It refers to information given to students about their performance in order to help them improve and achieve the expected learning goals (Brookhart, 2008). In writing classes, feedback helps students understand their strengths and weaknesses and provides suggestions for improvement. Through feedback, students are able to revise their work and gradually develop better writing skills.

Feedback in second language writing serves different functions depending on its purpose. One important function is to provide positive feedback, which gives specific information about aspects of students' performance that meet the expected criteria, helping them understand what they have done correctly and why it is appropriate (Brookhart, 2008). This type of feedback supports students in maintaining effective writing practices and developing confidence in their work. Another important function is corrective feedback, which involves identifying linguistic errors and providing information that helps learners modify their incorrect forms in order to achieve greater accuracy (Bitchener & Ferris, 2012). This feedback is particularly important in second language writing as it directs learners' attention to problematic language forms and supports their grammatical development.

Furthermore, corrective feedback can be delivered in different forms, particularly direct and indirect corrective feedback. Direct corrective feedback involves providing the correct linguistic form by explicitly indicating the error and supplying the appropriate correction, which is especially helpful for learners with limited knowledge of language rules. In contrast, indirect corrective feedback indicates the presence of an error without providing the correct form, encouraging learners to identify and correct their own mistakes. This approach promotes greater learner engagement and supports the development of independent writing skills..

Based on previous studies, feedback may come from teachers, peers, or automated systems. In many EFL classrooms, teacher feedback plays a significant role. However, providing detailed feedback for many students requires considerable time and effort. Therefore, technological developments have introduced the use of Artificial Intelligence (AI) to support the feedback process.

Artificial Intelligence refers to computer systems designed to perform tasks that usually require human intelligence, such as understanding language and recognizing patterns (Russell & Norvig, 2020). AI can generally be categorized into rule-based AI and machine learning-based AI. Rule-based AI operates based on programmed rules, while machine learning-based AI learns from large amounts of data to generate responses. One advanced form of machine learning is generative AI, which is able to produce new content, including written texts.

In writing instruction, AI-assisted feedback refers to the use of artificial intelligence technologies to analyze students' written texts and provide automatic feedback, including corrections and suggestions for improvement (Holmes et al., 2019). These systems typically operate through Natural Language Processing (NLP), which allows AI to identify grammatical errors and assist in evaluating aspects of writing such as coherence and clarity. The feedback is usually provided instantly, allowing students to revise their texts in real time. Therefore, AI-assisted feedback can support students in revising their writing more effectively, while teachers still play an important role in guiding the learning process.

The role of AI in education has also been highlighted by Holmes et al. (2019), who

argue that AI systems are able to provide feedback according to the level and needs of each student. These tools assist students in learning step by step and improving their writing skills. They also help students reflect on their learning, including their goals and progress. However, AI is not intended to replace teachers, but rather to support them. While AI can handle repetitive tasks, teachers can focus on providing deeper instructional guidance. This suggests that AI-assisted feedback can function as an effective supplement to writing instruction.

In conclusion, AI-assisted feedback can be considered a valuable tool in supporting students' writing development. Based on the perspectives of Holmes et al. (2019), AI-assisted feedback has the potential to make writing instruction more effective, engaging, and learner-centered. It provides students with immediate suggestions and continuous opportunities to improve their writing. At the same time, it supports teachers in delivering more efficient and meaningful instruction. Therefore, AI-assisted feedback is increasingly becoming an important component in modern writing pedagogy.

## **2.6. DeepSeek**

DeepSeek is a contemporary artificial intelligence (AI) application that helps in language learning and enhances writing abilities. DeepSeek was built on an open-source large language model called DeepSeek R1, which can analyze and synthesize human-like text with high accuracy (Menglong and Fellow 2025). This feature enables DeepSeek to be an effective tool in offering real-time feedback on grammar, coherence, and writing style, enabling students to check and improve their writing in a short period of time. The section provides a description of what DeepSeek is capable of and how the feedback provided by AI can help EFL students practice writing.

### ***2.6.1. Definition of DeepSeek***

Matthew Ward (2023) claims that DeepSeek AI is a new artificial intelligence platform that assists people in acquiring, interpreting, and utilizing information in a more efficient way. It is a mixture of machine learning and natural language processing to deliver reliable and valuable information, which is easier to

understand. Ward points out that DeepSeek can meet the demands of users and can build a more personal experience the more one uses the product. Education is one of the areas where these capabilities are most useful since they enable students and teachers to get credible information that helps them improve their learning results, such as writing-related activities.

Yash Jain (2023) claims that DeepSeek AI is not a regular search tool but an entire system that is designed using intelligent prompt engineering, rapid processing, and real-time decision-making. When fed with its main brain, DeepThink R1, it is capable of doing complex reasoning, aiding AI coding, and providing precise output immediately. Jain also describes how DeepSeek is efficient at processing data and generating contextually aware responses, which make it very valuable in solving problems in the academic classroom. These capabilities facilitate activities that rely on feedback, such as assessing the writing of students and making specific recommendations to them.

Nagy Malak (2023) notes that DeepSeek is a highly developed AI framework that aims to comprehend complicated queries and process huge datasets quickly and accurately. It focuses on precision, flexibility and situational sensitivity, which contributes to its great efficiency in different areas, such as research and education. Malak notes that DeepSeek has advanced algorithms and good data analysis capabilities, which can assist teachers and students in coping with difficult tasks. Such technology may be used in writing to find out the mistakes in the language, to make the text more coherent, and to develop critical thinking during the revision.

DeepSeek is an artificial intelligence system that is created to aid in learning and solving problems, especially in language learning. According to Menglong et al. (2025), DeepSeek is able to process and produce human-like text, which can be used in education such as providing instant feedback in relation to students' writing. It is possible to get feedback on grammar, coherence, and writing style and make the students identify the mistakes and refine their writing. DeepSeek can be trained to work with different types of data, and this makes it more efficient to work with teachers and students in the process of language development.

Another integration of AI technology and effective teaching practice is found in DeepSeek. According to Devlin (2025), DeepSeek uses strategies including scaffolding and personal feedback that are significant in teaching writing. As an illustration, DeepSeek may mark the problems of student writing such as tense anomaly or vague pronouns and provide recommendations on how these problems can be corrected. This is useful in helping students correct their writing as they enhance their knowledge of grammar. Devlin (2025) also emphasizes the fact that AI tools, such as DeepSeek, are most effective in cases of teacher guidance since AI represents a factor in the learning process and does not substitute a teacher in the classroom.

In conclusion, DeepSeek is an advanced AI platform that combines technology with education to improve writing instruction. It offers intelligent features such as personalized feedback, real-time processing, and context-aware analysis, as highlighted by Ward (2023), Jain (2023), and Malak (2023). Menglong and Fellow (2025) note that it can provide immediate feedback on grammar, coherence, and writing style, whereas Devlin (2025) states that it is most effective when combined with teacher instructions. These strengths demonstrate that DeepSeek may become an effective tool for improving EFL writing lessons and helping students develop better writing skills.

### ***2.6.2. AI-Assisted Feedback Using DeepSeek***

DeepSeek is an advanced AI-assisted feedback tool that uses natural language processing to support students in improving their writing. The DeepSeek model, DeepSeek R1, according to Menglong and Fellow (2025), has the ability to check grammar, coherence, and writing style in students' writing and provide corrections and suggestions that a teacher or tutor would give.

The line with the principles outlined by Devlin (2025), who states that effective AI feedback tools must not be limited to language accuracy only, but encourage the learning process. DeepSeek checks the students' paper with references to the main points like the proper use of verb tenses, clear usage of pronouns, correct use of connecting words. By doing so, DeepSeek makes writing instructions more

interactive and adaptive to the learners.

In addition to the identification of errors, DeepSeek can be used in the learning process as it offers suggestions and examples that are applicable to the writing context. According to Holmes et al. (2019), the most effective AI-assisted feedback is the one that provides students with actionable feedback and not corrections alone. For example, DeepSeek may propose clarity of sentence constructions, repetitive words use, and clarification of grammatical rules in easy words so that students learn the patterns of language better. Devlin (2025) also states that such specific tools as DeepSeek are the most effective when a step-by-step learning process is used, so that the students can gradually advance in the sphere of writing, and in this case, it is the EFL students who find it difficult to revise the writing process by themselves.

Using DeepSeek in writing lessons allows teachers to create a more active and supportive learning environment. DeepSeek does not require a lot of time to give feedback, and students can update their work immediately. This technique is called iterative revision, and it is relevant for enhancing writing skills as Manchón and Polio (2021) emphasize. Moreover, DeepSeek might be used at any time encouraging students to write outside class and develop the habit of independent study. Nonetheless, Holmes et al. (2019) also note that such AI tools as DeepSeek are not meant to substitute teachers but to assist them. In the case of the collaboration between teachers and AI tools, DeepSeek will enable students to be more self-assured and precise in writing and language learning will be more engaging and connected to everyday communication.

### **2.7. Teaching writing through AI-Assisted Feedback**

The application of artificial intelligence (AI) to teaching writing has brought new possibilities to enable students to enhance their writing proficiency in the classroom in the English as a Foreign Language (EFL) classroom. DeepSeek is an example of AI-assisted feedback, where users can receive real-time, personalized feedback on their writing by using natural language processing to improve their writing like grammar, coherence, and writing style (Maryam et al., 2024; Qazi et al., 2025).

It has been shown that AI-assisted feedback may help students recognize their mistakes and correct them so that they could edit their work more efficiently and with ease (Azmi and Fithriani, 2025). The use of AI in writing education also enables educators to help students generate ideas and outline their writing, whereas AI applications facilitate work with the technical features such as sentence structure and language use (Zhang and Ilisko, 2025).

Nevertheless, research points to the significance of teacher interference to make sure that students do not depend on AI-assisted feedback too much without developing their skills in structuring ideas and improving the quality of their writing (Khairani Zakaria et al., (2025). Thus, it is possible to enhance the effectiveness of AI-assisted feedback in developing students' writing skills through a combination of teacher guidance and reflective writing activities.

Even though research has extensively investigated the advantages of AI-assisted feedback in general writing courses, studies that specifically address the application of AI- assisted feedback in narrative writing in EFL classrooms are few. This paper is an attempt to explore how AI-assisted feedback using DeepSeek can be used to guide students in enhancing narrative writing with specific reference to five areas: content, organization, vocabulary, language use, and mechanics.

## **2.8. Procedures of Teaching Narrative Writing through DeepSeek as AI-assisted Feedback**

In this research, narrative writing is taught by integrating AI-assisted feedback using DeepSeek to support students in improving their narrative writing skills. This method is designed to help students identify common errors in narrative writing and revise their texts based on the five aspects of writing: content, organization, vocabulary, language use, and mechanics. The procedure consists of three main stages: pre-activity, while-activity, and post-activity.

### **Pre-Activity**

#### **1. Introduction to Narrative Text**

The teacher begins the lesson by greeting the students and introducing the topic of narrative writing. The teacher explains the definition, social function, and

generic structure of narrative text, including orientation, complication, and resolution. In addition, the teacher introduces the five aspects of writing: content, organization, vocabulary, language use, and mechanics, which will be used as the basis for writing and revision.

## 2. Introduction to AI-Assisted Feedback Tool

The teacher introduces DeepSeek as an AI-assisted feedback tool. Since students are not familiar with the tool, the teacher explains its function and demonstrates how it works. For example, the teacher shows how to input a text into the tool, how prompts can be used to generate feedback, and how students can revise their writing based on the feedback provided.

## 3. Setting Writing Goals

The teacher explains the learning objectives. Students are expected to be able to write and revise a narrative text by identifying and improving errors in terms of content, organization, vocabulary, language use, and mechanics with the support of AI-assisted feedback and teacher guidance.

### While Activity

#### 1. Planning Stage

Before writing, students are guided to generate and organize their ideas by responding to several prompts through the AI-assisted feedback tool. Students input their ideas into DeepSeek and use prompts to support idea generation and organization.

Examples of prompts include:

*“How can I generate an interesting idea for a narrative story?”*

*“Who are the characters and where does the story take place?”*

*“How should I organize my story from beginning to ending?”*

Students review the AI-generated responses and use them to develop their ideas into a logical sequence.

#### 2. Drafting Stage

(Developing Narrative Content)

Students write the first draft of their narrative text based on their planned ideas.

During this stage, students interact with the AI-assisted tool by submitting parts of their writing or ideas and using prompts that reflect the characteristics of narrative texts.

Examples of prompts include:

*“Is my introduction interesting enough to attract readers?”*

*“Does my story clearly present the conflict?”*

*“How can I develop my characters more clearly?”*

*“Does my story include a clear resolution?”*

*“What moral value does my story convey?”*

*“Does my story invite readers to continue reading?”*

Students use the feedback generated by the AI to develop and improve the content and organization of their narrative text.

Language and Style Development

In addition to content development, students improve the language quality of their writing by interacting with the AI-assisted tool using prompts related to vocabulary and grammar.

Examples of prompts include:

*“Have I used the correct past tense in my story?”*

*“Is my vocabulary appropriate for a narrative text?”*

*“How can I make my sentences more descriptive?”*

Students revise their sentences based on the AI-generated feedback.

### 3. Revising Stage

After completing the draft, students submit their full writing to the AI-assisted feedback tool (either by typing their text or uploading a photo of their handwritten draft). They review the feedback provided and identify areas that need improvement, particularly in terms of vocabulary, grammar, and mechanics.

To support the revision process, students use prompts such as:

*“Are there any grammatical errors in my writing?”*

*“How can I improve my word choice?”*

*“Are there any mistakes in punctuation and mechanics?”*

Students revise their writing based on the feedback.

#### 4. Finalizing

After completing the revision process, students produce the final version of their narrative text. At this stage, no additional prompts are provided, as the writing is considered complete. Students are expected to present a clear, coherent, and well-organized narrative text that reflects the improvements made during the previous stages.

The use of prompts in this procedure is integrated with the AI-assisted feedback tool, where students actively interact with the tool at each stage of writing. This process allows students to receive immediate feedback and supports them in developing their writing skills progressively across stages, including idea generation, content development, language improvement, and revision.

#### Post-Activity

##### 1. Sharing and Reflection

After revising their texts, students reflect on the changes they have made and how the feedback helped improve their writing. The teacher encourages students to share their experiences and discuss the benefits of revising their work using prompts and AI-assisted feedback.

##### 2. Class Discussion and Peer Feedback

The teacher leads a class discussion to reflect on the writing process. Students are encouraged to provide peer feedback on each other’s work, focusing on story ideas, organization, and language use. This activity helps students develop critical thinking and awareness of the five aspects of writing.

The three stages of the lesson help students understand narrative writing through a structured process, including planning, drafting, revising, and finalizing. The integration of prompts and AI-assisted feedback supports students in improving their writing skills and developing greater independence in the revision process.

It should be noted that the use of prompts in this procedure was refined after the initial implementation. Initially, the prompts were limited in number and did not fully support all stages of the writing process. Based on reflection and evaluation, prompts were integrated more systematically with the AI-assisted feedback tool to support idea generation, organization, content development, and language accuracy. This refinement indicates a limitation in the initial design and highlights the importance of structured prompt integration in AI-assisted writing activities.

## **2.9. Advantages and Disadvantages of AI-assisted Feedback**

When it comes to teaching narrative writing, teachers are still seeking effective means through which they can assist students in improving their writing. The advancement of artificial intelligence (AI) has created new possibilities to assist writing instructions, as AI-assisted feedback can be used to help students write better in a more efficient and personalized manner. Nevertheless, certain drawbacks also need to be mentioned regarding the application of AI to writing classroom. This part describes the advantages and disadvantages of applying AI-assisted feedback in the teaching of narrative writing with reference to the existing research.

Among the benefits of AI-assisted feedback, it is possible to note the possibility of quick and high-quality feedback. Qazi et al. (2025) state that AI tools can analyze the writing of the students in real time and give immediate feedback about the different aspects of their writing, including content, organization, vocabulary, language use, and mechanics. This instant feedback enables students to correct their mistakes as they write them while the changes are still in their mind, allowing them to revise better. According to Maryam et al. (2024), timely feedback provided by AI can also promote motivation to write better in students.

Another advantage is the personalized feedback that AI tools can provide. According to Albuhairey and Algaraady (2025), AI-assisted feedback may be modified based on the writing requirements and language level of the student. When applied to narrative writing, this can be translated to mean that the students will get specific feedback on the aspects that they should work on, such as coming up with clear storylines, using the right vocabulary and sentence structure. Individualize

feedback contributes to differentiated instruction in the classroom, where the students possess varied writing skills.

Students will also be motivated to rewrite their writing on their own with the help of AI-assisted feedback. Azmi and Fithriani (2025) state that AI devices providing students with clear feedback concerning their writing can make them notice the patterns in their mistakes and learn to correct their work independently. This process will assist the students in acquiring self-contained learning and confidence in their writing skills over time, which are critical in narrative writing.

Moreover, applying AI in writing instruction can help teachers handle writing activities in the classroom. According to Zhang and Ilisko (2025), AI technologies can help check technical elements of writing, such as grammar and spelling, and teachers can pay more attention to helping students build ideas, create stories, and enhance the creative components of narrative writing. Teacher feedback can be supplemented with AI-assisted feedback making the writing process more effective.

In spite of these benefits, there are also drawbacks of using AI-assisted feedback in teaching narrative writing. A weakness is that AI tools cannot necessarily discern the level of creativity and emotion in narrative writing. Mohammed et al (2025) clarify that although AI can assist in enhancing grammar and sentence structure, it might not bring out the intended tone, cultural setting, and emotional richness in the stories shared by students, which are essential in narrative writing.

Another drawback is that there is a possibility that students will become excessively reliant on AI-assisted feedback. Khairani Zakaria et al. (2025) note that students who have a high dependence on AI tools can tend to accept suggestions without seriously thinking or reflecting on them, which restricts their capacity to assess their writing and how to become better at it on their own. It can limit the students in developing critical thinking and self-editing skills, which form an essential part of writing development.

There are also technical issues with the use of AI-assisted feedback. Ulimaz et al. (2025) emphasize that the implementation of AI tools in the classroom presupposes

the presence of a stable internet connection and an appropriate device that is not always accessible in every learning environment. Also, AI might not be able to recognize creative narrative patterns or local language expressions, which can have an impact on the quality of the feedback given to students.

Another issue to take into account in AI application in writing instruction is data privacy and ethical issues. It is crucial for Huang (2025) that the information from the writing of students remains safe and is used in a positive way. Schools and educators should guarantee that AI environments meet data protection requirements in order to preserve the privacy of students.

In conclusion, the application of AI-assisted feedback in teaching narrative writing has a number of benefits, such as the possibility to give quick and individual feedback, assist students in developing a self-directed learning process, and assist the teacher in organizing teaching writing. Nonetheless, its drawbacks, including limitations in comprehending creativity, the danger of excessive dependence, technical challenges, and privacy concerns, should be taken into account as well. The application of AI-assisted feedback through DeepSeek in narrative writing is employed in this research to facilitate students in developing their narrative writing skills in the five aspects of writing, with the teacher guiding them in an effective manner to ensure that students keeps on enhancing their writing skills effectively.

## **2.10. Theoretical Assumptions**

According to the literature analysis conducted in the sections above, it is assumed that the application of AI-assisted feedback in the form of DeepSeek can help students learn narrative writing in a more efficient way. The feedback provided with the help of AI gives students clear and instant feedback, and they can make changes to their work when the ideas are still fresh. This process helps students understand and apply writing principles as they improve their writing step by step.

When DeepSeek is used as an AI-assisted feedback tool, students receive support not only in correcting grammar but also in developing better control over how their ideas are organized and connected. The feedback provided by DeepSeek focuses on

five aspects of writing: content, organization, vocabulary, language use and mechanics. Through this process, students are guided to recognize their mistakes, build coherent sentences and paragraphs, and express their ideas more clearly.

It is also assumed that the use of DeepSeek may make students more confident and motivated to write. Narrative writing poses many difficulties for many students in developing and organizing ideas. It is possible that by receiving clear feedback and easy-to-understand feedback, students can be more confident that they can revise their work on their own and enhance the quality of their narrative texts. That is why it is assumed that the application of AI-assisted feedback with DeepSeek will assist students in creating more accurate and clearer narrative writing and contribute positively to the learning process in the classroom.

### **2.11. Hypothesis**

Based on the theoretical assumptions and previous related studies, the hypotheses of this research are formulated as follows:

H<sub>0</sub>:

There is no significant improvement in the narrative writing skills of senior high school students at SMAN 1 Sidomulyo after receiving AI-assisted feedback through DeepSeek.

H<sub>1</sub>:

There is a significant improvement in the narrative writing skills of senior high school students at SMAN 1 Sidomulyo after receiving AI-assisted feedback through DeepSeek.

### III. METHODS

This chapter covers the design of the research, variables of the research, data sources, research instruments, data collection, data analysis, data treatment, and hypothesis testing.

#### 3.1. Research Design

This research used a quantitative approach with a pre-experimental one-group pre-test and post-test design (Sugiyono, 2012). A pre-experimental design is a research design that involves a single group which is given a pre-test before the treatment and a post-test after the treatment to measure the effect of the treatment. It aims to investigate whether there is a significant improvement in students' narrative writing skills after receiving AI- assisted feedback using DeepSeek.

In this design, the pre-test is administered to students in order to obtain their initial narrative writing skills. After that, they are shown how to edit their narrative drafts with DeepSeek. Students are subjected to a post-test without AI- assisted suggestions of any kind after undergoing three writing and revision sessions with DeepSeek to identify their writing progress when writing on their own. The design is represented in the following way:



Notes:

T1 (Pre-test): Students write a narrative text before the treatment began.

X (Treatment): Students write a narrative text without using DeepSeek to measure their improvement in writing skills after the treatment. The comparison between the pre-test (T1) and post-test (T2) scores is conducted using SPSS analysis.

T2 (Post-test): Students write a narrative text without using DeepSeek to measure

their improvement in writing skills compared to the pretest (T1).

This design is implemented to determine whether the use of AI-assisted feedback through Deepseek significantly improves student's writing ability.

### **3.2. Research Variabels**

In this research, there were two main variables involved: the independent variable and the dependent variable.

This study involves two types of variables:

- **Independent Variable:** AI-assisted feedback using DeepSeek in teaching narrative writing. DeepSeek provided instant feedback focusing on five aspects of writing: content, organization, vocabulary, language use, and mechanics.
- **Dependent Variable:** Students' narrative writing skills, which were evaluated based on the five aspects mentioned above. Improvements in these areas indicate the effect of the treatment.

### **3.3. Population And Sample**

The study population refers to twelfth-grade students of SMA Negeri 1 Sidomulyo, Lampung Selatan, for the 2024/2025 academic year. The sample includes 35 students (11 male and 24 female) belonging to one twelfth-grade. Cluster random sampling is utilized in choosing the class; one complete class is selected and no individual student is selected. This approach is adopted to preserve the natural classroom environment and to make sure that the process of teaching adheres to the school curriculum. The primary data are the pre-test and post-test narrative writing scores of the students, which were evaluated using a scoring rubric based on content, organization, vocabulary, and language use, mechanics, and narrative elements.

### **3.4. Research Instrument**

The primary data-gathering tool of the research was a writing test that was administered twice, a pre-test and a post-test, to assess the narrative writing skills

of students in the pre-test and post-test conditions, that is, after receiving AI-assisted feedback with the help of DeepSeek. This test involved students in writing a narrative text on the topic provided, and their writings were scored using an analytical scoring rubric based on Jacobs et al. (1981), which contained five aspects, namely: content, organization, vocabulary, language use, and mechanics.

The tool has been validated and tested for reliability to measure the students' writing performance, as it is an appropriate and consistent instrument.

#### ***3.4.1. Validity of The Instrument***

Validity is a method of stating how good a test is at measuring what it is supposed to measure (Brown, 2004). As part of this study, the writing test was designed because the ability of the students to write narratives was evaluated based on the curriculum and research objectives. Three types of validity were used, namely content validity, construct validity, and face validity, to ensure the accuracy and appropriateness of the instrument.

Content validity is the extent to which the test contains the material taught and the learning objectives that have been stated in the curriculum (Hughes, 2003). In this case, content validity was ensured since the writing test had direct relation to the content taught in the learning process, which is narrative text.

The topic of narrative writing was included in the English lessons of Indonesian senior high school curricula where students are supposed to learn and create their own narrative texts. To make sure that the test was comparable to the actual learning scenario, the content validity was verified with the syllabus of the school at the SMA Negeri 1 Sidomulyo, Lampung Selatan, Indonesia, as well as through observation and discussion with the English teacher. This process of validation assisted in aligning the test to those real topics and writing abilities of students in the school.

According to Hatch & Farhady (1982), content validity is achieved when the test items reflect the instructional objectives and the skills taught. Therefore, the test was aligned with the teaching materials, the expected learning outcomes, and the students' real learning context in the school.

Construct validity raises the question of whether the test measures what it is hypothesized to measure (Brown, 2004). The construct used in this research was narrative writing capability of students which constitutes a number of components which include idea development, organization, grammar, vocabulary, and mechanics. The analytical scoring rubric used to measure the test was an adaptation of Jacobs et al. (1981), which has five major features: content, organization, vocabulary, language use, and mechanics. These elements are the fundamental components of writing performance and are commonly used in writing assessment. The test was able to measure the performance and skills required in narrative writing by gauging the performance of students through these aspects. The table of specification used in this study and is as follows:

**Table 3. 1. Specification of Construct Validit**

<b>Aspect</b>	<b>Description</b>	<b>Precentage</b>
Content	Focuses on the relevance and development of ideas in the narrative writing.	25%
Organization	Focuses on the logical sequencing and cohesion of the narrative structure.	20%
Vocabulary	Focuses on the range and appropriateness of vocabulary used in the narrative.	20%
Language use	Focuses on the use of grammar and sentence structures in the narrative.	25%
Mechanics	Focuses on spelling, punctuation, and capitalization accuracy.	10%

#### ***3.4.2. Reliability of The Instrument***

Reliability can be defined as the consistency of the test to obtain what it claims to measure, no matter when, how, or by whom the test is administered and graded (Brown, 2004). A valid instrument must generate similar and consistent scores

when used in a similar context. Reliability is a concern in the assessment of writing as the rating is subjective and depends on the interpretation of the rater. As such, SPSS version 27 was used to analyze inter-rater reliability as a way of making the scoring procedure of this study accurate and fair.

Inter-rater reliability is the extent to which two or more raters can assign similar scores to an identical writing task. Inter-rater reliability also ensures that there is consistency in the scoring of the students' writing, which reduces the subjectivity among raters. Two raters, including the researcher and an English teacher of the school, scored the writing tests in this study. The scoring rubric used by both raters was the one developed by Jacobs et al. (1981) so that there would be consistency and fairness in the scoring criteria. In order to examine the extent of the agreement between two raters, Spearman rank correlation formula was implemented as follows.

$$\rho = 1 - \frac{6\sum d^2}{n(n^2 - 1)}$$

Notes:

$\rho$  = Spearman's Rank Correlation Coefficient

$d$  = the difference between the ranks given by the two raters for each student's score

$n$  = the total number of scores ranked

According to Arikunto (1998), the reliability interpretation is as follows:

**Table 3. 2. Interpretation of Reliability Coefficients**

Reliability Coefficient	Interpretation
a) 0.800 – 1.000	Very High Reliability
b) 0.600 – 0.799	High Reliability
c) 0.400 – 0.599	Moderate Reliability
d) 0.200 – 0.399	Low Reliability
e) 0.00 – 0.199	Very Low Reliability

The table above was used as a reference to interpret the inter-rater reliability coefficients obtained in this study. The results of the inter-rater reliability analysis are presented and discussed in Chapter IV.

### ***3.4.3. Instrument Try-Out***

To test the quality of an instrument, a try-out is normally done prior to the use of a test in research. Trying a test out before it is actually administered, according to Hughes (2003), enables the researcher to ensure that the instructions are clear, the tasks are the right level for the students, and the scoring process is effective.

However, in this research, a separate try-out was not done due to the fact that the writing test and scoring rubric had already been tested by two English teachers as expert validators. The two validators were English teachers at the SMA Negeri 1 Sidomulyo, where the study was conducted. They checked the instructions in the test, the topic and the scoring rubric to make sure that everything was at an appropriate level for the students and align with the curriculum.

Based on the teachers' feedback, the instrument was considered valid and appropriate for measuring students' writing ability. Therefore, the test was directly used in the pre-test and post-test during the actual data collection.

## **3.5. Data Collection**

Data collection is a methodological procedure for the collection of information in order to answer the research question and objectives of the study. Sugiyono (2012) asserts that there should be clear procedures to be followed in data collection to make sure that the collected data are valid, reliable and in accordance with the research design.

In this study, data collection was conducted through the following steps:

### **1. Pre-Test Administration**

Before the treatment, a pre-test was administered to the students. The students were requested to write a narrative text within a time frame of approximately 90 minutes without the use of any AI tools. The theme of the narrative text

corresponded to the English curriculum of twelfth-grade students. This pre-test was used as baseline data to determine the students' writing performance before they were provided with AI-assisted feedback through DeepSeek.

## 2. Treatment Using AI-Assisted Feedback (DeepSeek)

The treatment was conducted in three meetings ( $3 \times 90$  minutes) and was designed based on the instructional procedure described in Section 2.8, consisting of pre-activity, while-activity, and post-activity, with the integration of guiding prompts and AI-assisted feedback.

- Meeting 2: The teacher introduced narrative texts, including their definition, social function, and generic structure (orientation, complication, and resolution). The five aspects of writing were also explained as the basis for writing and assessment.

Furthermore, the teacher introduced DeepSeek as an AI-assisted feedback tool and demonstrated how to use it properly. Students were also introduced to guiding prompts that would support idea generation, organization, and writing development. This session aimed to build students' understanding of narrative writing and prepare them to use AI critically and responsibly.

- Meeting 3: Students engaged in the writing process through several stages supported by guiding prompts, including planning, drafting, revising, and finalizing.

During the revision process, students revised their writing independently based on the feedback provided by the AI. The teacher did not directly revise students' texts but facilitated the learning process by monitoring students' participation activity, clarifying feedback-related questions, and guiding students to align the AI feedback with the scoring rubric.

- Planning Stage:

Students generated and organized their ideas by responding to guiding prompts related to idea generation and organization, such as generating story ideas, identifying characters and setting, and organizing the story from beginning to ending.

- Drafting Stage (Developing Narrative Content and Language):

Students wrote the first draft of their narrative text based on their planned ideas. In this stage, students focused on developing narrative content and organization based on the generic structure (orientation, complication, and resolution), as well as developing elements of narrative texts such as conflict, character development, and moral value.

In addition, students improved the language quality of their writing by focusing on vocabulary and grammar, especially the use of past tense forms. This reflects that language and style development is conceptually part of the drafting process.

- Revising Stage (AI-Assisted Feedback):

After completing the draft, students used DeepSeek to obtain AI-assisted feedback. They reviewed the feedback provided, identified areas that need improvement, particularly in terms of vocabulary, grammar, and mechanics, and revised their writing accordingly. This process was supported by guiding prompts focusing on grammatical accuracy, word choice, and punctuation.

- Finalizing Stage:

After completing the revision process, students produced the final version of their narrative text without additional prompts.

The teacher acted as a facilitator by guiding students in interpreting the feedback and ensuring it aligned with the writing criteria

- Meeting 4: Students wrote a new narrative text and repeated the writing process independently using guiding prompts and AI-assisted feedback.

- Planning Stage:

Students generated and organized their ideas using guiding prompts focusing on idea development and organization.

- Drafting Stage (Developing Narrative Content and Language):

Students wrote their narrative text independently, focusing on developing content and organization as well as improving language use, including

vocabulary and grammar.

- Revising Stage:

Students used DeepSeek to obtain feedback and revised their writing independently, focusing on vocabulary, grammar, and mechanics, supported by guiding prompts related to grammatical accuracy, word choice, and punctuation.

- Finalizing Stage:

Students produced the final version of their narrative text without additional prompts.

After revising, students participated in reflection and discussion activities. They shared their experiences, discussed the benefits of AI-assisted feedback, and provided peer feedback focusing on the five aspects of writing. This process helped reinforce their understanding of narrative writing and revision strategies.

Through these treatment sessions, the integration of structured prompts and AI-assisted feedback supported students in developing their writing skills, particularly in revising their work independently and systematically

### 3. Post-Test Administration

The post-test was administered to the same group of students after the treatment sessions to determine their improvement in writing narrative texts. The students were asked to compose a narrative text on a different topic from the pre-test, but within the same genre, in the same 90-minute time limit and without the use of DeepSeek or any other AI-based program.

The use of a different topic was intended to reduce the potential testing effect and maintain the internal validity of the study. The post-test results were then compared with the pre-test results to measure the improvement in students' narrative writing ability after receiving AI-assisted feedback during the treatment sessions.

### 4. Scoring Students' Writing

The pre-test and post-test writings were scored by using the analytical scoring rubric modified by Jacobs et al. (1981), which has five aspects of writing that include content, organization, vocabulary, language use, and mechanics. Two raters the researcher and an English teacher participated in the scoring process to ensure inter-rater reliability and in fairness in the scoring. The analysis of obtained results was performed with SPSS software that enabled to assess the reliability of the instrument and the statistical significance of the improvement.

#### 5. Data Recording and Organization

All pre-test and post-test scores were tabulated and analyzed in a data table. SPSS version 27 was used to analyze the data to find out whether there was significant enhancement in the narrative writing ability of the students after receiving AI- assisted feedback on DeepSeek.

These steps made the data collection process in this study sound, because the data obtained were correct, systematic and consistent with quantitative research design which was used in this study.

### **3.6. Data Treatment**

Data treatment was one of the key processes in this quantitative study to analyze the data collected and draw some significant conclusions. It involved the process of organizing, examination, and evaluating numerical data to demonstrate the hypothesis and determine the efficacy of the treatment. According to Setiyadi (2018), an experimental study requires data treatment in order to determine whether the differences between the outcomes of the tests are statistically significant. Data analysis, in this case, was processed with the assistance of SPSS 27 to compare the comparison of post-test and pre-test results to comprehend whether the narrative writing skills of the students had significantly increased following the procedure of getting AI-assisted feedback through DeepSeek. As per the guidelines of Setiyadi (2018), the data treatment procedures were carried out in the following way:

#### 1. Data Screening and Verification

The initial phase was to check the writing scores of each student in the pre-test

and post- test and determine whether there were any data gaps, scoring mistakes, and discrepancies. This was done to make sure that all answers were filled in and well documented using the scoring rubric. As Setiyadi (2018) would put it, it is also important to screen data prior to analysis and ensure that technical errors do not interfere with the validity of the outcomes.

## 2. Normality Check for Paired t-Test Assumptions

It was also necessary to ensure that the data were normally distributed before using paired samples of t-test. Normality test in this study was done by the use of the Shapiro-Wilk test in SPSS version 27. These findings revealed that the significance level of the pre-test ( $p = 0.262$ ) and the post-test ( $p = 0.105$ ) was greater than 0.05, meaning that the data were normally distributed. Thus, the assumption required for the paired samples t-test was satisfied by the data.

## 3. Data Entry for Paired Analysis

The scores of both pre-test and post-test were entered into the SPSS to be compared. This score indicated the amount of improvement in the performance of each student in terms of narrative writing after the treatment. This was calculated automatically in SPSS when paired samples t-test was conducted to evaluate the difference in the mean of the two tests.

## 4. Calculation of Improvement Scores

To simplify the t-test process, the improvement score for each student was calculated by subtracting the pre-test score from the post-test score. This score represented the level of improvement in each student's narrative writing performance after the treatment. The calculation was automatically generated in SPSS during the paired samples t-test to measure the difference in means between the two tests.

## 5. Significance Level Setting

The level of significance used in this research was 0.05 ( $p < 0.05$ ). A paired samples t-test was conducted to compare the difference in the mean scores on the pre-test and post-test. The findings revealed that the significance value (Sig. 2- tailed) was below 0.001, which means that there was statistically significant difference between the pre-test and post-test scores of the students. It can

therefore be concluded, that AI-assisted feedback with the use of DeepSeek had a substantial impact on the narrative writing proficiency of the students.

These methods of data treatment helped this study to make sure that the findings of the statistical analysis were credible, true, and aligned with the methodological requirements of Setiyadi (2018).

### ***3.6.1. Data Analysis***

Data analysis was an exercise that was performed to systematize, interpret, and present sense of the data gathered in this study. Sugiyono (2012) argues that in quantitative research, data analysis entails the calculation of numerical data and interpretation of the findings to provide the answers to the research questions or test the research hypotheses. The data of this research were examined with SPSS version 27 to determine whether there was any significant impact of the AI-assisted feedback provided by DeepSeek on the writing of a narrative by the students.

Narrative writings that were made by the students were graded by using an analytical scoring rubric that had been developed on the basis of Jacobs et al. (1981). The rubric consists of five elements, namely, content, organization, vocabulary, language use, and mechanics. All the components scored were assigned a particular score and the total score was the overall writing achievement of the student. The procedure was used in both the pre-test and post-test using the same scoring to determine the performance of the students before and after the treatment.

The data were analyzed under descriptive and inferential statistics after the collection of all the scores. The overall performance of the students in terms of their writing before and after the treatment was described using descriptive statistics, whereby the mean, standard deviation, and gain score were calculated. The difference between the pre-test and post-test scores was tested with the help of inferential statistics with the help of the paired samples t-test to state whether the difference was significant or not.

Even though the following formulas are provided in order to demonstrate the theoretical background of the calculations, all the statistical calculations of the

paper were performed automatically using SPSS version 27.

The mean was taken to calculate the average score of writing performance of the students. It was calculated by the formula below:

$$\bar{X} = \frac{\sum X}{N}$$

(Sugiyono, 2012, p. 49)

Notes:

$\bar{X}$  = Mean score

$\sum X$  = Total score of all students

$N$  = Number of students

The standard deviation was used to describe how far the students' scores spread from the mean. It was calculated using the following formula:

$$SD = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

(Ary et al., 2010, p. 108)

Notes:

$SD$  = Standard deviation

$X$  = Each individual score

$\bar{X}$  = Mean score

$N$  = Number of students

In addition, the gain score was used to measure the improvement in students' writing ability after the treatment. It was calculated using the formula:

$$\text{Gain Score} = \text{Post-test Score} - \text{Pre-test Score}$$

(Sugiyono, 2012, p. 173)

This formula represents the difference between the students' post-test and pre-test scores, indicating the level of improvement after receiving AI-assisted feedback using DeepSeek.

Sugiyono (2012) and Ary et al. (2010) argue that the calculation of descriptive statistics is a significant process that helps to summarize the data and determine patterns first, and only then proceed to the further analysis. All computations in this research were done in SPSS version 27 that automatically returned descriptive statistics (mean, standard deviation, and gain score) and the outcomes of the inferential test (paired samples t-test). The statistical findings allowed the researcher to conclude that the students' narrative writing had significantly improved after they were received with AI-assisted feedback using DeepSeek.

### 3.7. Hypothesis Testing

The testing of hypotheses was done to conclude whether the findings of this study were in line with the assumption that the treatment had a significant influence on the dependent variable. The hypothesis in this study was formulated to ascertain the significance that the narrative writing ability of students indeed improves when they are provided with AI-assisted feedback through DeepSeek.

The statistical test used in this research was the paired samples t-test which was used to compare the mean scores of the pre-test and the post-test of the students. SPSS version 27 was used to test whether the difference in the performance of the students on writing was significant.

The statistical hypotheses tested in this study were formulated as follows:

$$\mathbf{H_0 = Sig. > 0.05 \quad H_1 = Sig. < 0.05}$$

H0: There is no significant improvement in students' narrative writing after receiving AI-assisted feedback using DeepSeek.

H1: There is a significant improvement in students' narrative writing after receiving AI-assisted feedback using DeepSeek Setiyadi (2018) claims that the level of significance (0.05) is usually employed in education research. The level of significance used to test the hypothesis in this study was 0.05 so that the conclusion drawn would be found to be statistically dependable.

The SPSS paired samples t-test provided the results which indicated that the value of the significance (Sig. (2-tailed) =  $< 0.001$ ) was less than 0.05. Thus, hypothesis  $H_0$  was rejected, and the alternative hypothesis  $H_1$  was accepted. It also implies that the ability to write a narrative by students statistically increased after receiving AI-assisted feedback through DeepSeek.

In summary, this chapter has outlined the research design, research variables, population and sample, research instruments, data collection procedures, data analysis and testing the hypothesis. All these elements were systematically organized to study the efficiency of AI-assisted feedback with DeepSeek to enhance the ability of students to write narratives.

## V. CONCLUSION AND SUGGESTION

This chapter presents the conclusions and suggestions based on the results and discussion from the previous chapters. The conclusions summarize the main findings of the study regarding the effectiveness of using AI-assisted feedback through DeepSeek in improving students' writing skills. The recommendations are addressed to teachers, students, and future researchers, with the aim of ensuring that the findings of this study can be applied and further developed to enhance writing instruction in the future.

### 5.1. Conclusions

According to the findings of the data analysis and discussion, one can conclude that the introduction of the AI-assisted feedback with the help of the DeepSeek application has significant influence on the improvement of the writing skills of twelfth-grade high school students.

The mean writing score during the pre -test was 54.26 and the mean writing score in the post-test was 78.20 and the difference between the pre-test and the post test was 23.94. The paired sample t-test outcomes showed that  $t(34) = 24.753$  and Sig. (2-tailed) =  $<.001$ , which implies that the difference between the pre-test and post-test outcome was very significant.

Although the revisions were mainly guided by AI-assisted feedback through DeepSeek, the teacher remained an essential part of the learning process. The teacher played a role as a facilitator and classroom manager by giving instructions, guiding the learning procedures, monitoring students' engagement, and ensuring that students understood how to interpret the AI-generated feedback appropriately. This supervision helped maintain meaningful learning while supporting students' autonomy during the revision process.

The result of this research also confirm the process approach to writing as discussed by Harmer (2004), that writing can be refined through drafting and revision and in tandem with Hyland (2003), who further mentions that writing is created through feedback and revision. These results indicate that AI-assisted feedback can be used to assist students in improving their accuracy, vocabulary, and structure in their writing.

## **5.2. Implications of the Research**

This section discusses the implications of the research findings in terms of teaching practice and theoretical contribution. The implications are drawn based on the results discussed in the previous sections. They cover the pedagogical, theoretical, and reflective aspects of the study and provide insights for teachers, students, and researchers in the field of English as a Foreign Language (EFL) writing instruction.

### ***5.2.1. Pedagogical Implications***

The results of this research have a number of significant implications for English teachers, students, and overall teaching of writing. The greatest implication is that AI-assisted feedback using DeepSeek may be used as a useful resource to aid teaching and learning of writing. DeepSeek offers instant and textual feedback on grammar, vocabulary, and structure to enable students to realize when they are making errors and correct them to a better degree. It can assist the teacher in controlling the feedback more effectively and bring more interaction in the learning process.

DeepSeek can be a useful feedback tool that can be integrated by teachers in writing classes as a supplement. Teachers can suggest DeepSeek as an aid during the drafting phase instead of spending a lot of time by marking all grammatical mistakes. Teachers can then focus on guiding learning activities, managing classroom processes, and supporting students' understanding of writing concepts, while AI-assisted feedback supports students during the revision stage. This will allow teacher workload to be balanced and students will have a greater role in their own writing.

In the case of students, DeepSeek helps facilitate independent learning. The feedback enables them to keep track of their progress, weaknesses and make independent revisions. Consequently, students get more conscious of the writing process and have skills in self-regulation. Moreover, the fast and tailored feedback may add more motivation and confidence to students and make the writing process not so scary and more interesting.

For schools and curriculum designers, applying AI technology to EFL writing by incorporating DeepSeek that can introduce a new look at the technology-based learning. This assists in complementing classroom learning with independent learning where students get a chance to write more and better both in and out of classroom.

### ***5.2.2. Theoretical Implications***

The findings of this study also add to and reinforce the theoretical views of Chapter II. First, the enhancement of writing ability of students confirms the process approach of writing by Harmer (2004), which states that writing involves undergoing various stages of development such as drafting, revising and editing. DeepSeek helped to support these stages as feedback was provided continuously and in a structured way, which helped students to work on the revision.

Second, the findings correspond to those of Holmes et al. (2019), who state that automated feedback helps the learners recognize weaknesses in their language use and correct their accuracy by revising and reflecting. DeepSeek allowed students to recognize what they lacked in linguistic knowledge and to adjust their sentences respectively to it. This process of pointing out and correcting errors enhanced their grammatical correctness and language consciousness.

Third, the study confirms the analytic scoring system by Jacobs et al. (1981) who emphasize that writing skill is multi-dimensional and includes content, organization, vocabulary, language use and mechanics. All these aspects improved in the post-test, which means that DeepSeek feedback was found to be effective not only in improving surface-level errors but also in enhancing overall writing quality of students.

Finally, the study reinforces Nartey's (2025) argument that AI technology can promote learner autonomy. DeepSeek allowed students to learn without the constant assistance of the teacher through immediate and personal feedback. The discovery confirms that AI-assisted feedback may be used as a corrective and formative tool in the teaching of EFL writing.

### ***5.2.3. General Reflection on the Findings***

The general results of the research prove that the implementation of AI-assisted feedback and DeepSeek resulted in significant gains in the narrative writing capacity of the students. Students not only score better in the course of learning, but also learned to be more reflective and confident in their writing. They became more independent in revising their drafts based on automated feedback, which made writing more engaging and learner-centered.

DeepSeek feedback was applied to make students feel that writing is a process and not a one-time activity. They were taught how to identify areas of weakness, revise them, and evaluate improvement between the pre-test and post-test. This observation corroborates the fact that writing can be improved by drafting and refining as opined by Harmer (2004). The availability of a steady stream of feedback provided by DeepSeek made the process more viable and accessible to learners.

In addition, the results indicate that DeepSeek assisted in developing autonomous learning among the students. The fact that revisions were carried out without direct written teacher feedback encouraged students to develop self-assessment skills, while the teacher continued to support the learning process through guidance and classroom management. This scenario is consistent with the idea presented by Nartey (2025) that AI tools may facilitate autonomy in learning by providing individualized feedback.

The increase in all five aspects of writing including content, organization, vocabulary, language use, and mechanics also suggests that DeepSeek was supportive of the higher-order and lower-order writing abilities. Not only did students learn to be more correct in grammar and mechanics, they also learned to

be more competent in the development and structuring of ideas. Such a balance between form and meaning supports Jacobs et al. (1981) view that effective writing inevitably presupposes the balance between language accuracy and ideas elaboration.

These considerations demonstrate that not only did DeepSeek feedback was not only an error-correction tool, but also a means to build the students' writing consciousness and autonomy of students. The use of AI technology can be a supplement to teacher instruction, improve the learning process, and make students more accountable for their writing development when used properly.

### **5.3. Suggestions**

On the basis of the findings and the discussions made in the foregoing chapters, the researcher gives some recommendations that may act as an input to those concerned with the English writing instruction. The research results of this paper show that writing skills of students can be substantially enhanced through the utilization of AI-assisted feedback through DeepSeek application. This is made possible by the fact that students are given timely, accurate, and consistent automatic feedback, and thus they can independently revise their writing without being corrected by the teacher. These results indicate that the alternative to improve the quality of writing instruction at schools is the use of technology-based learning.

Besides recording good outcomes in enhancing writing competencies, the application of AI-assisted feedback also offers more significant learning experiences to students. DeepSeek allows students to be more active, independent and reflective in correcting their mistakes. The independent revision process is not only useful in them correcting grammatical or structural errors but they are also able to identify patterns of errors, but it also enables them to identify patterns of errors in their writing. This helps to build on critical thinking skills and metacognitive awareness of the students on writing.

Pedagogically, these results demonstrate that technology based on artificial intelligence can become a beneficial ally of teachers who may need to give faster

and more objective feedback. Educators do not have to go through the process of correcting the writing of individual students but can now concentrate on tracking the achievements of students and provide conceptual advice. Thus, it is possible to note that the use of AI in classroom writing education not only increases the effectiveness of learning among the students but also decreases the number of jobs the teacher has to perform and increases the efficiency of the very teaching process.

Based on these findings, the researcher reckons that the paper has practical implications that can be used by various stakeholders. AI-based tools like DeepSeek can be used by teachers to enable students to achieve efficient and objective feedback throughout the writing process. This system also enables students to practice writing outside the classrooms during independent study time, thus their writing skills can continuously improve. Additionally, the outcomes of the current study can be utilized by future scholars to conduct more comprehensive studies on the topic of using artificial intelligence in language learning

Based on these considerations, the following are several recommendations for English teachers, students, and future researchers to ensure that the findings of this study can be utilized optimally.

### ***5.3.1. Suggestion for English Teacher***

Teachers play an important role in guiding the use of learning technology in the classroom. Therefore, the following suggestions are addressed to English teachers to help them optimize the use of DeepSeek as a supporting tool in teaching writing skills:

1. English teachers are encouraged to integrate DeepSeek as a supporting tool in writing activities. This application can assist students in obtaining quick and accurate automatic feedback without increasing the teacher's workload in providing corrections.
2. Teachers should serve as facilitators who help students understand and apply the suggestions provided by the AI system. In this way, students can learn to correct their mistakes independently and become more reflective about the writing process.

3. Teachers are expected to give explicit instructions on how to use DeepSeek effectively, including how to interpret the feedback accurately so that students do not misinterpret the suggested improvements.
4. Teachers should make use of students' revised texts based on DeepSeek feedback as materials for classroom discussion to strengthen collective understanding of common writing errors and appropriate correction strategies.

### ***5.3.2. Suggestion for Students***

As the primary users of learning technology, students are expected to gain maximum benefit from using DeepSeek. The following suggestions are provided to help students use this system effectively to develop their writing skills:

1. Students are encouraged to use DeepSeek not only to correct technical errors but also to understand the nature of their mistakes, so that they can improve their writing performance in the future.
2. Students should carefully review each suggestion provided by the system and think critically before applying it. This ensures that their writing continues to reflect their own ideas and style rather than relying entirely on the AI system.
3. In addition to classroom use, DeepSeek can also be used independently outside class hours as a tool for continuous writing practice. Regular use of the system can help students enhance their academic writing skills and build greater confidence in writing English.

### ***5.3.3. Suggestion for Further Researchers***

This study has several limitations, particularly in its use of a one-group pretest–posttest design without a control group. Therefore, future researchers are encouraged to expand this study using different approaches and focuses to enrich the exploration of AI use in English language learning.

1. Future researchers are advised to adopt a more comprehensive research design, such as a quasi-experimental design with a control group, so that the research findings can be compared more objectively and yield stronger conclusions.

2. Future studies could expand their focus to other aspects of English language learning, such as learning motivation, critical thinking, or self-regulated learning, to examine the impact of AI-assisted feedback from multiple perspectives.
3. Future research can also investigate the implementation of AI-assisted feedback in other language skills, such as speaking or reading, to determine the extent to which this technology supports language learning as a whole.
4. Its also recommended that future studies examine teachers' and students' perceptions of AI use in learning, to provide a more comprehensive understanding of the acceptance, benefits, and challenges associated with the application of this technology in educational settings.

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