Jurnal Pendidikan Progresif

The Impact of the Word Webbing Technique on EFL Students' Descriptive Writing Skills

Nita Ismayanti*, & Muh Shofiyuddin

Department of English Education, Universitas Islam Nahdlatul Ulama Jepara, Indonesia

*Corresponding email: 201320000521@unisnu.ac.id

Abstract: The Impact of the Word Webbing Technique on EFL Students' Descriptive Writing Skills. Writing is among the most demanding skills for English as a Foreign Language (EFL) learners because it requires the integration of vocabulary mastery, grammatical accuracy, idea organization, and developing the idea. Many students struggle to put their thoughts into an organized, written form. This study examined the efficacy of the Word Webbing Technique (WWT) in tackling these obstacles, especially in the composition of descriptive texts. **Objective**: This study aimed to evaluate the effectiveness of the word webbing approach in improving the writing skills of tenth-grade students at an Islamic senior high school. **Methods**: The study employed a quantitative methodology, utilizing a quasi-experimental design with pre-test and post-test non-equivalent groups. There were thirty-five grade ten students in this study: 18 students from the social class, forming the control group, and 17 students from the science class, forming the experimental group. This research employed pre-tests and post-tests to assess students' writing skills, and then utilized SPSS to analyze the data using an independent sample t-test. **Findings**: The experimental group had an average score of 87.06, whereas the control group had an average score of 71.67. The experimental group's scores increased from 61.47 to 87.06, whereas the control group's scores rose from 60.83 to 71.67. The t-test yielded a t-value of 9.227 at a 0.05 significance level (df = 33). These results indicate that WWT can significantly enhance students' writing abilities by facilitating the generation of more ideas, the use of new vocabulary, the application of correct grammar, and the production of more structured and descriptive material. **Conclusion**: The WWT is a highly effective writing method for tenth-grade students learning English as a foreign language, enabling them to enhance their descriptive writing skills. Teachers should utilize this method in the classroom to engage students, encourage them to generate new ideas, and enhance their writing skills.

Keywords: word webbing technique (WWT), learning technique, writing skill, descriptive text, EFL writing.

To cite this article:

■ INTRODUCTION

English, once considered a foreign language in Indonesia, has now gained the status of an international language (Bachtiar, Juhana, & Pratiwi, 2024; Raja, Flora, Putrawan, & Razali, 2022). To enable Indonesians to participate in the global society, it is essential to enhance English education and provide them with opportunities to apply their skills in real-life situations. This is because English proficiency is a crucial sign of the quality of human resources in global competitiveness(Gowon & Yashim, 2022; Sudarwati, Junining, & Indhiarti, 2024). As a result, English is a primary subject in Indonesia's

school curriculum (Jon, Embong, Purnama, & Wadi, 2021). Learning English involves four essential skills: listening, speaking, reading, and writing(Naranjo, Reinoso, & Urrutia, 2024). These are divided into receptive skills (listening, reading) and productive skills (speaking, writing) (Lee, 2025; Pulatova, 2025). Each skill has its own challenges, but this research focuses specifically on writing.

Writing is an individual's ability to convey thoughts, concepts, or images from the human mind in the form of written compositions that can be comprehended and interpreted by others (Fitria, 2024; Wardiah & Kristiawan, 2025). Writing plays a role in the development of high-level thinking, enhances imagination skills, and encourages the collection of ideas. Writing is a crucial part of the school curriculum for language learners' literacy development and a driving force behind both academic and personal growth (Thi & Nikolov, 2022). Therefore, developing writing skills is very important. In writing, several key aspects must be taken into consideration. The aspects that must be considered in writing include content, organization, vocabulary, language use/vocabulary, and mechanics (Mahadini, Setyaningsih, & Sarosa, 2021; Noordin & Khojasteh, 2021; Pongsapan & Patak, 2021). If all these aspects are incorporated into writing, it will result in effective writing. Therefore, writing is a crucial but complex ability among other English language skills (Graham & Alves, 2021; Karakuº, 2025; Wu & Halim, 2024).

Writing activity is not just stringing words into a sentence or paragraph. That is why writing is a difficult skill for many students (Baharudin, Ramli, Habali, Azmi, & Rahmat, 2023; Febriani, 2022). Writing is also more challenging than other skills (Nurdianingsih, Rohmah, Wahyuni, & Izzatisselim, 2025). Several factors contribute to writing difficulties. These factors are language difficulties (grammar, vocabulary, language use, and sentence construction), psychological difficulties (caused by oneself or others, such as lack of interest and explanation from the teacher), and cognitive difficulties (the formal components of writing, such as capitalization, punctuation, spelling, and paragraphing) (Mohamad, Anuar, & Daud, 2022). Based on observation and an interview with one of the English teachers at an Islamic high school, tenth-grade students experience some difficulties with writing. They have difficulty in developing main ideas, developing vocabulary, organizing paragraphs, and composing correct grammar. In addition, they are also less interested in writing because the method used by the teacher when teaching writing is less interesting. The teacher employs the lecture method and assigns tasks. Based on these problems, the researcher used the "Word Webbing Technique" to improve students' writing skills.

In the context of this study, the focus is specifically on descriptive writing skills, emphasizing four key aspects of writing: vocabulary, grammar, content, and paragraph structure or organization. These aspects of writing remain difficulties for learners, particularly in idea generation, content development, grammar improvement, and structural organization of paragraphs for clarity and coherence, rendering it a pertinent domain for assessing the efficacy of instructional methods like WWT.

The word webbing technique, abbreviated as WWT in this document, is a form of concept word map that serves as a word stimulus for a set of words, phrases, and questions written down (Fahada & Hanim, 2023). In this WWT technique, a student records several related ideas and attempts to construct a graph, drawing lines or arrows to symbolize possible graphing relationships. Beyond composing a list of ideas, a student can also construct sentences with proper grammatical arrangement instantly (Satriani, Melani, Reflinda, & Syahrul, 2024). Through this technique, students will be more creative and find it easier to develop ideas and organize them into correct writing. In addition, a study was

conducted by Gowon & Yashim (2022) revealed that the use of concept mapping strategies, which share similarities with WWT, helped students in sentence construction, paragraph organization, and editing, ultimately improving their overall writing achievement.

The word webbing technique not only improves the text structure but also increases students' motivation and creativity. For instance, a research by Feng, Alsager, Azizi, & Sarabani (2023) shown that the webbing technique significantly improved the motivation of EFL learners, their capacity to retain and recall language, and their preparedness for conversation. Additionally, a collaborative idea mapping-based prewriting method that is comparable to WWT had a good effect on the motivation and attitudes of Chinese EFL learners, according to study by Lotfi et al. (2025). Specifically, compared to students who used collaborative fill-in concept maps, students who used collaboratively developed concept maps were more driven and had more positive views. These findings suggest that word mapping enhances writing by making it more engaging and motivating, thereby encouraging students to actively participate in their education. It also aids in the organization and development of concepts. The results indicate that the use of WWT and similar techniques is a positive contribution to motivation and attitudes, particularly when webbing visual-based methods to writing, especially for students who struggle with thinking and idea generation.

Purba & Simamora (2023) found that this method can help junior high school students improve their writing skills. Their findings suggested that students assisted with word webbing exhibited an increase in their writing skills owing to the tool's structured graphic organizer. Similarly, in another study, Raziinta & Wibowo (2022) reported that the WWT in teams enabled the collaborative drafting of descriptive essays offered to eighth graders. Rohmah (2021)

revealed that the instruction of recount texts using the word webbing approach substantially enhanced students' writing abilities, particularly regarding coherence and content development.

Dhananjaya, Karima, & Egar (2024) stated that the approach enabled students to link supporting details to main ideas, thereby improving their writing, along with the primary themes. Moreover, the research by Suryaningsih, Abdul, & Hambali (2021) focused on word webbing in teaching literal reading comprehension which was noted in other contexts, and similarly improved students' reading skills by helping them understand the relationships between ideas in the text. Prior studies suggest that word webbing is a multi-purpose, productive instructional tool that can be used in various areas of language teaching, across different student levels, genres, or skills. Hence, the exploration of how this tool is used in new forms remains worthwhile to further our understanding of the educational aspects of teaching and learning, as well as the instructional processes. Building on these findings, the present researcher examined its effectiveness in an alternative context, concentrating on distinct pupils, at a different time, and in a different educational environment.

Many studies revealed that WWT helps pupils write more effectively, and their findings demonstrate its effectiveness. Most of these lessons were completed in junior high school and focused primarily on how to write better descriptions or memorize. The use of WWT at the senior high school level has not received much attention, especially in Islamic educational institutions where writing instruction is still mostly taught through task assignments and lectures. Moreover, prior research has rarely addressed specific writing components, such as organization, vocabulary usage, and grammatical accuracy, in detail. Therefore, the present study aims to fill this gap by applying the WWT in a new educational context (an Islamic Senior High School and by examining its impact on the specific

dimensions of students' descriptive writing skills. This distinction highlights the novelty of the research and its contribution to expanding pedagogical practices in EFL writing instruction.

The current researcher conducted a study on the effectiveness of the WWT in enhancing the writing skills of tenth-grade students at an Islamic Senior High School in Jepara. Indonesian senior high school students' writing skills still need to improve because they do not use their vocabulary, grammar, topic development, and text organisation well enough (Hamdani & Abid, 2025). This site was chosen because there are few ways to teach writing using visual aids at that level. The study primarily investigates students' proficiency in descriptive writing, as this skill is crucial for enhancing their ability to articulate ideas clearly and vividly. This study investigates essential aspects of writing, such as content generation, vocabulary utilisation, grammatical accuracy, and organisational framework, as these factors are vital for evaluating the overall quality of written communication. The primary objective is to ascertain whether the WWT effectively enhances the writing skills of senior high school pupils learning English as a foreign language. This research seeks to furnish practical advice for educators in similar educational contexts aiming to incorporate creative and student-centered techniques into their writing instructionBased on this background, the present study aims to answer the following research question: "To what extent is the Word Webbing Technique effective in improving the descriptive writing skills of tenth-grade EFL students at an Islamic Senior High School in Jepara?".

■ METHOD
Research Design and Procedures

This quantitative research aims to collect and analyze data, drawing generalized conclusions from a study sample while considering multiple viewpoints (Borgstede & Scholz, 2021;

Sapkota, 2024). The quasi-experimental method was employed for data collection. Quasi-experimental research is a method that cannot carry out random sampling due to constraints in the research environment that make randomization impractical in selecting samples (Habib, 2021). Thus, this research design is very suitable for the object of this research. The research object only has two class groups, so randomization is not possible.

The intervention of this study lasted for four weeks (four sessions in total). Both groups received instruction in writing descriptive texts, but the teaching methods differed. The control group was taught using traditional lecture-based instruction, focusing on explanation, model texts, and guided practice without the use of visual mapping. The experimental group was taught using WWT. To develop and link ideas, the instructor used word webs as brainstorming tools. With an emphasis on four writing components (content development, vocabulary utilization, grammatical accuracy, and organizational structure), students worked together to create word webs centered on chosen subjects. Students created word webs and then used their maps to produce descriptive paragraphs.

Lesson plans were created in advance to ensure treatment fidelity, and the instructor consistently applied the designated approach to every group. This assignment aligns with the senior high school English as a Foreign Language curriculum requirements, which emphasize students' ability to write descriptive pieces with coherent ideas, explicit content, and appropriate language use.

Participants

The WWT is the independent variable in this study, while students' writing proficiency is the dependent variable. The sample selected consisted of 10th-grade students from Zumrotul Wildan Islamic High School, comprising 35

students. The tenth grade is divided into two groups. The science class (17 students) was designated as the experimental group and the social studies class (18 students) as the control group. Students at this Jepara-based private Islamic high school often speak English at a basic to advanced Level. Students mostly rely on classroom education since they are not exposed to English outside of school. To ensure a fair representation of talents and determine if the technique's efficacy can be extrapolated across fields, individuals with diverse academic backgrounds were selected. Additionally, this arrangement made it easier to compare the word webbing technique with the conventional way.

Instruments

A pre-test and A post-test were employed to assess the WWT's efficacy. Students' preliminary writing abilities were assessed via the pretest. Following that, the experimental group received instruction via the WWT, whilst the control group was given conventional lectures.

The writing test employed in this study was based on the Purnamasari, Hidayat, & Kurniawati (2021), which is commonly used to measure students' writing skills. The tool was designed to assess four primary aspects of writing skills: vocabulary, content, organization, and grammar. The four main indicators (vocabulary, content, organization, grammar) were developed into two task instructions. The first task required students to write a paragraph identifying a tourist attraction. The second task required students to write three descriptive paragraphs describing the core of a tourist attraction. The scoring scale for each item ranged from 5 to 25, with 25 representing excellent performance, 20 representing good, 15 representing acceptable, 10 representing needing improvement, and 5 representing poor.

This study employs a writing research rubric with four assessment components (content, organization, grammar, and vocabulary) to carry out a writing evaluation. This assessment rubric has also been used by Viñas (2025).

Table 1. Rubric for writing assessment

Criterion	Excellent (25)	Good (20)	Acceptable (15)	Need Improvement (10)	Poor (5)
Content	Clear and well-developed ideas; strong and relevant arguments	Clear and mostly developed ideas; relevant arguments	Clear ideas but limited development; some relevant arguments.	Unclear ideas; insufficient development; weak or irrelevant arguments.	Confusing ideas; no development; no relevant arguments.
Organization	Logical and coherent structure; excellent use of connectors.	Mostly logical and coherent structure; good use of connectors.	Acceptable structure; adequate use of connectors.	Unclear structure; limited use of connectors.	No clear structure; no use of connectors.
Grammatical	Correct and varied use of grammatical structures; no grammatical errors.	Mostly correct use of grammatical structures; few errors.	Acceptable use of grammatical structures; some errors.	Limited use of grammatical structures; several errors.	Incorrect use of grammatical structures; many errors.

Vocabulary	Wide and precise vocabulary; appropriate use of specific terms.	Adequate and mostly precise vocabulary; correct use of specific terms.	Acceptable vocabulary; some specific terms used correctly.	Limited vocabulary; incorrect use of specific terms.	Very limited vocabulary; no use of specific terms.

The capacity to recognize and describe tourist attractions serves as the foundation for this tool. One instruction is created by combining these two signs. Students are required to write descriptive texts about tourist objects with the following guidelines: they must explain the tourist object's general identification section in the first paragraph and provide a core description of the object.By means of these tools, the researcher could understand each student's starting point and any progress made after the intervention. As is the case with other learning techniques, after the treatment, the students underwent a post-test to evaluate their writing capabilities. To ensure that students' writing progress is reliable and consistent, the pre-test and post-test evaluated students on the same task: writing a descriptive paragraph on a specific tourist attraction. This helps ensure that any variation in performance outcomes is attributed to the method of instruction, rather than to the assignments having different levels of difficulty.

This research instrument has been evaluated and validated by two experts: a senior lecturer in the English Language Teaching course and the English teacher in the school where the research was conducted. Vocabulary, language, and content teaching and learning objectives are the assessing standards. To evaluate this tool, professionals were asked the following questions:

1. Is the language used clear, easy to understand, and concise?
2. Is the instrument aligned with the learning objectives? (The learning objective: students are able to compose descriptive text about "tourist attractions").
3. Is the vocabulary appropriate to the students' ability level (not too difficult/too easy)?
4. Is there any ambiguous or irelevant vocabulary?

The 4 points of the question are assessed into four ranges: score 1 if the assessment result is "not relevant", score 2 is "less relevant", score 3 is "relevant", and score 4 if the assessment result is in the "very relevant" category.

Based on the results of the validity test in Table 2, there is a difference in the assessment of the second instrument indicator point, specifically,

Table 2. Validity test results by experts

Instrument Indicators	Expert 1	Expert 2
Clear language, not wordy	4	4
In accordance with the learning objectives	3	4
Vocabulary appropriate to the level	4	4
No ambiguous/relevant vocabulary	4	4

suitability in relation to learning objectives. Expert 1 scored 3, while Expert 2 scored 4. Both experts awarded the instrument a high validity rating of 93.75% and 100%. This means that the language is simple to understand, the vocabulary is suitable for the students' level, and the instrument items

are in line with the learning objectives (descriptive text). To measure the stability and consistency of this instrument, the Inter-Rater Reliability percentage is calculated by dividing the number of equal scores by two experts by the total number of scores. The reliability test results showed 75% agreement between the two experts, indicating that the instrument was quite reliable. There was just one variation, which was in the "conformity to learning objectives" category (one point). This indicates that there are still slight differences in expert interpretations regarding the achievement of learning objectives.

Data Analysis

The data was analyzed using *SPSS* software by conducting several statistical tests, including the normality test, homogeneity test, and hypothesis test (T-Test), and Cohen's d effect size. These statistical analyses were used to determine whether the data met the requirements for parametric testing and whether the difference in writing performance between the control and experimental groups was statistically significant. This ensured the validity and reliability of the study's conclusions.

■ **RESULT AND DISCUSSION**

To apply the word webbing approach in writing courses, the teacher assigns a primary theme, such as "Tourist Attraction." The teacher puts a keyword in the middle of the board or worksheet and then links it to additional terms that are relevant to it, such place, history, activities, facilities, and impression. Students create a concept map that resembles a spider's web by developing further concepts from these phrases in the form of interwoven branches
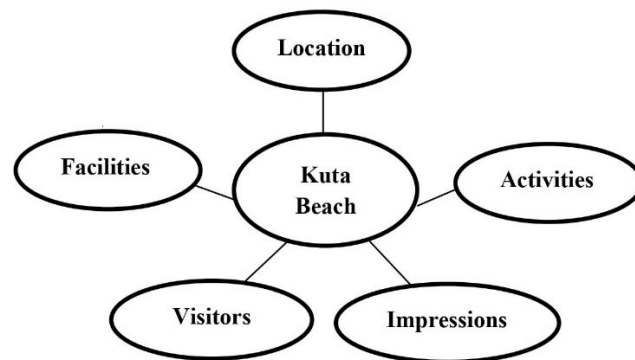
Figure 1. "Example of word webbing technique"

The teacher continually encourages students to add pertinent words and thoughts throughout the process. In this manner, pupils have a comprehensive visual guidance for creating paragraphs rather than concentrating on just one subject. In general, students react favorably to this method. They have a defined structure, which makes it easier for them to generate ideas, organize their thoughts, and refine their writing. The structure of thoughts that emerge in the word webbing and the depiction of terminology enable students who usually struggle to begin writing to feel more confident.

Because it takes the shape of a mind map, some students also claimed that this approach makes writing more fun and less tedious. After the session, a test was administered to determine students' achievement. The average scores from the pretest & the posttest are shown in Table 3.

These formatting conventions ensure clarity, consistency, and readability of the data presentation, which is critical for accurately communicating the research findings to the reader. To assess students' baseline knowledge, a pretest was administered prior to providing any treatment.

Table 3. Means score of experimental and control groups

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experimental	17	50	70	61.47	5.524
Post-Test Experimental	17	80	95	87.06	4.697
Pre-Test Control	18	50	70	60.83	5.216
Post-Test Control	18	60	80	71.67	5.145
Valid N (listwise)	17				

According to Table 3, the experimental group had an average pre-test score of 61.47, whereas the control group had an average score of 60.83. After the therapy, both groups fared better on the post-test. The average score for the experimental group increased to 87.06, whereas the average score for the control group rose to 71.67. These gains suggest that both methods of instruction helped students improve their writing skills. The standard deviation in the experimental group went from 5.52 in the pre-test to 4.70 in the post-test. This suggests that the pupils' scores were more alike after the treatment. This decline suggests that not only did the overall mean score increase significantly, but the disparities among students also decreased. This shows that the group's writing performance was more consistent. In other words, the instructional intervention not only helped each student do better, but it also helped reduce the gaps between them, which led to a more consistent and balanced learning outcome. This pattern indicates the extent to which the therapy was successful in improving things for the better and making them fairer in the experimental class.

The experimental group, conversely, had a more significant improvement in writing compared to the control group. This difference indicates that the WWT may be a more effective method for enhancing students' ability to organize and express their thoughts in writing compared to conventional lecturing strategies.

These findings validate previous research, particularly the study of Purba & Simamora (2023). The control group's initial average score on the pre-test was 46.25, but it went up to 62.58 on the post-test. The experimental group began with a pre-test score of 51.75 and improved to 75.17 on the post-test. These findings further demonstrate that teaching writing through pictures and connections is an effective approach to learning. These findings suggest that organized teaching strategies, such as word webbing, actually help pupils improve their writing skills. Concept mapping and word association are undoubtedly helpful for students in the WWT since they help them organize their ideas. This makes their writing clearer and thoughtful.

Before evaluating the hypothesis, a normality test was conducted to ensure that the pre-test and post-test data were normally distributed. In this study used the Shapiro-Wilk normality test was used because the sample size was limited (fewer than 50 individuals). Table 4 presents the normality test results for both the experimental and control groups to decide the implementation of parametric analysis. Ensuring a normal distribution allows for the accurate interpretation of T-test results, which are used to measure the significance of the treatment's effect.

Table 4 shows that the experimental group had a pretest significance value of 0.168 and the control group had a value of 0.127. Both values are above 0.05, indicating that the scores are normally distributed and that there were no significant differences in the initial writing skills of the two groups. The post-test findings also showed a significant value of 0.052 for the

Table 4. Normality test

	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Students Learning Outcomes	Pre-Test Experiment	0.209	17	0.047	0.923	17	0.168
	Post-Test Experiment	0.205	17	0.056	0.893	17	0.052
	Pre-Test Control	0.23	18	0.013	0.92	18	0.127
	Post-Test Control	0.206	18	0.041	0.914	18	0.1

experimental group and 0.100 for the control group. It was concluded that the post-test scores satisfied the criteria for normal distribution, as both values exceeded the 0.05 threshold. This uniformity in data distribution bolsters the credibility of forthcoming statistical analyses, such as the homogeneity test and the T-test, by affirming compliance with the fundamental principles of parametric testing.

A homogeneity test was conducted to determine whether the experimental and control groups exhibited equivalent variance, following

verification of data normality. The data exhibited homogenous variance when the significance (sig.) value reached 0.05. Testing for homogeneity is essential because it validates the use of an independent sample T-test, which assumes equal variances between groups. Without meeting this assumption, the reliability of the test results could be compromised. The data met the criteria for generating valid assessments of the WWT's efficacy, as evidenced by the results of both normality and homogeneity tests.

Table 5. Homogeneity test

		Levene Statistic	df1	df2	Sig.
Students Learning Outcomes	Based on Mean	0.02	1	33	0.888
	Based on Median	0.003	1	33	0.956
	Based on Median and with adjusted df	0.003	1	32.695	0.956
	Based on the trimmed mean	0.028	1	33	0.867

Table 5 showed a significance value of 0.888, which is higher than the 0.05 threshold. This means that the data is homogeneous or that the statistics for both groups are the same. An independent samples t-test was conducted to determine if the WWT had a statistically significant impact on students' writing performance as measured by this exam by analyzing the mean post-test scores of the experimental and control groups. This stage is the most crucial part of the study's inferential analysis, as it determines the effectiveness of the teaching approach. By comparing the two post-

test means, the influence of the WWT can be determined and demonstrate that it works better than chance or other factors.

The t-test for independent samples' findings in Table 6 demonstrates that the significance level is... (2-tailed) with a value of 0.000, which falls below the 0.05 threshold. Additionally, the computed t-value of 9.227 surpasses the critical value of 2.034 at the 0.05 significance level with 33 degrees of freedom. Based on these findings, it can be concluded that this outcome confirms a statistically significant difference in the learning outcomes of the experimental and control groups.

Table 6. Independent sample test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Students Learning Outcome	Equal variances assumed	0.02	0.888	9.227	33	0	15.392	1.668	11.998	18.786

Thus, the use of the WWT effectively improved the writing abilities of tenth-grade students, especially in crafting descriptive texts. These results support the idea that engaging, visually oriented instructional strategies can yield better results than conventional teaching methods such as lecturing, particularly in developing practical language skills.

Table 7. Post-test score analysis

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	Post-Test Control	18	71.67	5.145	1.213
	Post Test Experimental	17	87.06	4.697	1.139

The efficacy level in this study was also determined through Cohen's d-effect size analysis. Cohen's d is a widely used statistical measure to determine the magnitude of differences between two groups. It quantifies the standardized mean difference between two groups by dividing the difference in their means by the pooled standard deviation (Lv, Ren, & Xie, 2021). A few categories are commonly used to understand the size of an effect: d = 0.2 indicates a minor effect, d = 0.5 indicates a medium effect, and d > 0.8 indicates a large effect (Dikmen, 2022; Wei, 2024). Considering Table 7, Cohen's d calculation yielded a d value of 3.12, indicating a substantial effect size. This means that, compared to the control group, the experimental treatment has resulted in a significant improvement in the students' writing skills.

The focus of the study was the impact of the Word Webbing Technique (WWT) on the descriptive writing skills of tenth-grade students in an Islamic Senior High School in Jepara. The teacher gave a pre-assessment in the form of a writing task to the students to gauge their writing performance before answering the question. While the experimental group was taught using the WWT, the control group was taught using traditional teaching methods, which emphasize more talking. A post-test was administered to evaluate students' writing proficiency after the intervention. Table 1 shows the average scores from both the pre-test and the post-test.

The descriptive analysis revealed that students in the experimental group showed considerable improvement in their descriptive writing compared to the control group. There was an improvement in the organization of the content, the choice of vocabulary, grammatical structures, and the development of ideas. This means that the WWT helps the students to better organize and develop their ideas. This finding is in accordance with earlier studies that Purba, Simamora (2023), Rohmah (2021), Raziinta & Wibowo (2022), Dhananjaya et al (2024), and Suryaningsih et al (2021) found that word weaving makes children's writing better. These

studies additionally highlight the benefits of mind-mapping techniques in enhancing students' creativity and creating substantial conceptual linkages. At the start of the research, the students in the experimental group were unfamiliar with vocabulary, grammar, content organization, and paragraph construction. However, after receiving instruction through the WWT, students began to express ideas more freely and structure their writing more coherently. This technique helped them write paragraphs with correct sentence structure, an organized structure, and content that was relevant, all of which are important parts of producing descriptive language. These results demonstrate how pre-writing tactics can help students remain mentally engaged while learning.

WWT makes thoughts visible and organized, which takes some of the strain off working memory and helps participants generate new ideas. When students physically map out words and ideas, they use what they already know and make connections that make sense. The students in the experimental group initially performed poorly on the writing test, as indicated by their average score of 61.47 on the pre-test. After the WWT intervention, their average score on the post-test increased significantly to 87.06. This significant improvement indicates that the method helped them write more effectively. The difference between the results on the pre-test and the post-test shows that the WWT helped

students improve their writing skills. This sequence illustrates how student-centered teaching methods can help students build upon their existing knowledge and refine writing skills.

The study also noted that language was the area of writing that showed the most improvement. In their final assignment, students used a wider range of words and used them more accurately. This might be considered word weaving is a visual exercise that helps youngsters construct semantic networks and retain words more readily. On the other hand, grammar exhibited the least amount of progress, indicating that this may be an area that requires more targeted education in future usage of the approach. This study suggests that word webbing may help individuals write more effectively. However, it should be used in conjunction with professional grammar training to ensure that writing improves in all aspects.

To compare the writing aspect criteria, it is necessary to calculate the Normalized Gain by dividing the difference between the post-test and pre-test scores by the difference between the ideal/maximum score and the pre-test score. According to Mujiono & Herawati (2021), there are three categories of n-gain calculation results. Scores above 0.7 are categorized as "high," scores between 0.3 and 0.7 are categorized as "medium," and scores below 0.3 are categorized as "low."

Table 8. Results of normalized gain for experimental and control groups

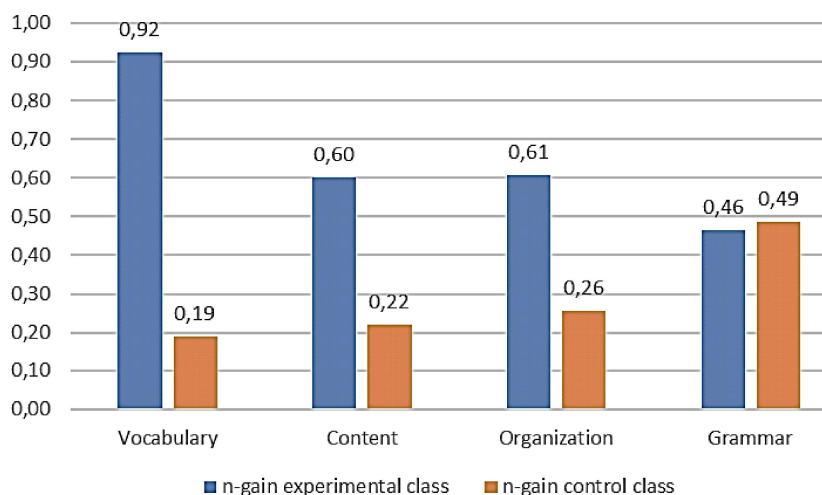| Aspect	Experimental Class				Control Class			
	Pre-Test	Post-Test	n-Gain	Criteria	Pre-Test	Post-Test	n-Gain	Criteria
Vocabulary	13.65	24.12	0.92	high	14.72	16.67	0.19	low
Content	14.71	20.88	0.60	medium	16.11	18.06	0.22	low
Organization	16.76	21.76	0.61	medium	15.28	17.78	0.26	low
Grammar	16.76	20.59	0.46	medium	14.72	19.72	0.49	medium

Based on the results of the n-gain analysis in Table 8, the vocabulary aspect in the experimental class increased significantly from 13.65 in the pre-test to 24.12 in the post-test, achieving an n-gain of 0.92, which is categorized as high. In contrast, the control class achieved

only 0.19, categorized as low. In the content aspect, the experimental class increased from 14.71 to 20.88, with an n-gain of 0.60 (medium), while the control class achieved only 0.22 (low). Similarly, in the organizational aspect, the experimental class increased from 16.76 to 21.76, with an n-gain of 0.61 (medium), while the control class increased slightly to 17.78, with an n-gain of 0.26 (low). However, in contrast to other aspects, the control class showed slightly better performance in the grammar aspect, with an n-gain of 0.49 (medium), compared to 0.46 (medium) in the experimental class.

Figure 2 clearly shows a comparison of vocabulary, content, organization, and grammar improvement scores in the experimental and

Figure 2. Normalized gain of experimental and control class

control groups. Overall, the experimental group showed greater improvement, especially in vocabulary, content, and organization, demonstrating the effectiveness of the WWT treatment. The average grammar score in the experimental group showed only slight improvement compared to other parts of writing. This might be because the WWT focuses more on generating ideas and organizing paragraphs than on teaching grammar directly. Students in the control group performed better on grammar assessments compared to those in the experimental group. The class probably made grammatical rules clearer, which is why this happened. The students in the control group regularly took detailed notes on grammar lectures and asked the instructor questions to make sure they understood verb tenses, sentence structure, and agreement. This helped them improve their grammar.

This research suggests that the WWT could be as effective in helping students improve their grammatical abilities, particularly when used independently of other instructional methods. On the other hand, the control group, which learned via lectures, demonstrated a bigger improvement in grammar. This is likely due to the method's facilitation of repetitive grammar exercises and emphasis on rectifying grammatical errors. The lecture method appears to be more effective in enhancing students' grammatical abilities, as it provides a more structured learning environment, clear examples, and explicit rule-based instruction that facilitate grammar improvement.

Students in the experimental group lightly touched upon the mastering grammar rules while producing ideas and organizing them using word webbing. This suggests that the WWT, while effective in promoting idea generation and vocabulary enhancement, may be less beneficial

for improving grammatical proficiency when utilized in isolation. This method enables students to visually connect and expand their vocabulary. However, these clusters fail to indicate the grammatical linkages between the ideas. Thus, despite the boosted creativity and expressiveness in students' writings, they sorely lacked the systematic, rote practice of grammar rules that the students in the control group received.

In general, it can be concluded from this study that word webbing is an effective technique for improving students' writing skills. The concept of webbing technique is aligned with the constructivist theories of Vygotsky & Piaget, as presented in Huang (2021), in that it enables students to develop ideas and construct knowledge through the graphical representation of interrelated concepts, thereby demonstrating social and reflective knowledge construction. Anderson's Schema Theory, as cited by Li (2024), states that students who come across word webbing have readily available knowledge structures, become better organized in their writing, and gain a deeper understanding of meaning. This means that the theory supports the claim that word webbing improves students' cognition. This strategy helps people feel better and learn better by giving them the confidence and determination to study.

This research provides empirical proof that WWT is a feasible and effective pedagogical technique for EFL courses. The findings underscore its role in improving students' descriptive writing abilities, providing a disciplined methodology that facilitates concept organization, linguistic precision, and cohesive articulation. This study enhances the domain of English language training by offering a reproducible approach to augment visual learning tactics in writing education.

Limitations of This Study

This research has significant limitations that should be discussed. First, the WWT was only utilized in one school, and the sample size was relatively small. This might make it impossible to use the findings in other schools. Second, the intervention was brief; therefore, it may not have been long enough to observe the long-term effects of the WWT on grammar learning. The WWT framework did not contain any supplementary exercises that focused on grammar, which may have helped bridge the gap between generating ideas and using the correct grammar.

■ CONCLUSION

The statistical results showed that the groups differed significantly from one another, indicating that the technique was effective in teaching. Specifically, students who learned the technique had an average score of 87.06, while those who did not got an average score of 71.67. This indicates that the technique helped students write more effective descriptive texts, which were well-organized and coherent, with an improvement of over 15 points. The results suggest that the WWT technique, as described, helps students improve their paragraphing skills, focusing on controlling their content. Hence, English teachers are advised to incorporate this technique into their writing instruction by implementing organized pre-writing tasks, free-writing sessions, and group drafting sessions to enhance students' writing, particularly for those who struggle to organize their thoughts and add depth to their writing.

The study's outcomes should prove useful in research centered around implementing the WWT. This research contributes to the field of teaching methodologies by providing evidence of the strategy's effectiveness, thereby promoting the development of new ideas in teaching practices. Future research may explore the effectiveness of word webbing, along with other cognitive and visual aids, on the understanding and speaking components of other language skills. Its application to various genres of writing, such as reports, narratives, and expository writing, may provide insight into the effectiveness of the

strategy across different writing types. Investigating these issues with students of varying abilities and in different educational settings may provide more information on the effectiveness and flexibility of the strategy. The WWT may also provide new lines of inquiry, particularly in the areas of integrated language teaching and research that support the use of multiple teaching approaches, incorporating more language teaching and learning methods, and teaching modules developed with other educational and digital technologies.

The current research focuses on the significant benefits of the WWT on students' writing, including the provision of WWT together with visualization, connection, and organization of students' ideas. This approach can lead to better writing, improved self-confidence, and higher levels of student engagement.

■ REFERENCES

Bachtiar, Juhana, & Pratiwi, W. R. (2024). Indonesian english language teachers' conceptions of critical thinking: challenge and strategy. *International Journal of Evaluation and Research in Education*, *13*(1), 617–625. doi:10.11591/ijere.v13i1.26467

Baharudin, F., Ramli, N. H. L., Habali, A. H. M., Azmi, A. A., & Rahmat, N. H. (2023). Process of writing: the challenges in writing skill among esl learners. *International Journal of Academic Research in Business and Social Sciences*, *13*(10). doi:10.6007/ijarbss/v13-i10/18649

Borgstede, M., & Scholz, M. (2021). Quantitative and qualitative approaches to generalization and replication a representationalist view. *Frontiers in Psychology*, *12*. doi:10.3389/fpsyg.2021.

Dhananjaya, P. A., Karima, F. H., & Egar, N. (2024). *Improving students' writing skill in writing descriptive text using brainstorming plus webbing techniques.*

Journal of Nusantara Education (Vol. 3). Retrieved from http://journal.unu-jogja.ac.id/fip/index.php/JONED

Dikmen, M. (2022). EFL learners' foreign language learning anxiety and language performance: a meta-analysis study. *International Journal of Contemporary Educational Research*, *8*(3), 206–222. doi:10.33200/ijcer 908048

Fahada, N., & Hanim, S. (2023). The application of word webbing technique in improving students' achievement in vocabulary at mts muhammadiyah 15 medan. *Journal of Classroom Action Research*, *2*(1). doi:10.52622/jcar.v2i1.132

Febriani, T. N. (2022). "Writing is challenging": factors contributing to undergraduate students' difficulties in writing English essays. *Erudita: Journal of English Language Teaching*, *2*(1), 83–93. doi:10.28918/erudita.v2i1.5441

Feng, R., Alsager, H. N., Azizi, Z., & Sarabani, L. (2023). Impact of mind-mapping technique on EFL learners' vocabulary recall and retention, learning motivation, and willingness to communicate. *Heliyon*, *9*(6). doi:10.1016/j.heliyon.2023.e16560

Fitria, T. N. (2024). Creative Writing Skills in English: Developing Students' Potential and Creativity. *EBONY: Journal of English Language Teaching, Linguistics, and Literature*, *4*(1), 1–17. doi:10.37304/ebony.v4i1.10908

Gowon, R. P., & Yashim, H. Y. (2022). Effects of concept mapping strategy on sentence construction, paragraphing, and editing in junior secondary school students' composition writing achievements. *Frontiers in Education*, *7*. doi:10.3389/feduc.2022.973844

Graham, S., & Alves, R. A. (2021, September 1). Research and teaching writing. *Reading and Writing*. Springer Science and Business Media B.V. doi:10.1007/s11145-

021-10188-9

Habib, M. S. (2021). *Qualitative and quantitative research approaches*.

Hamdani, M. H., & Abid, N. (2025). Indonesian EFL students' writing challenges: a qualitative meta-analysis. *Getsempena English Education Journal (GEEJ)*, *12*(1), 14–36. Retrieved from https://ejournal.bbg.ac.id/geej

Huang, Y.-C. (2021). *Comparison and contrast of piaget and vygotsky's theories*.

Jon, R. B., Embong, R., Purnama, B., & Wadi, A. S. (2021). The challenges of english language teaching in indonesia. *International Journal of English and Applied Linguistics*.

Karakuþ, Ý. (2025). International students' experiences on speaking and writing skills in language learning processes in higher education. *PLOS ONE*, *20*(8 August). doi:10.1371/journal.pone.0329331

Lee, S. (2025). The relationship between receptive and productive knowledge of l2 english collocations. *International Journal of Applied Linguistics (United Kingdom)*, *35*(1), 109–133. doi:10.1111/ijal.12605

Li, Y. (2024). The practical application of schema theory in teaching english writing in high schools. *International Journal of Education and Humanities*, *15*(3), 2770–6702. doi:10.27726/d

Lotfi, F. Z., Suwartono, T., Maziane, B., Nurhayati, S., Laajan, Y., & Nachit, B. (2025). Collaborative concept maps in higher education: pedagogical contributions, cognitive challenges, and optimization strategies for interactive visual learning. *Educational Process: International Journal*, *14*. doi:10.22521/edupij.2025.14.85

Lv, X., Ren, W., & Xie, Y. (2021). The effects of online feedback on esl/efl writing: a meta-analysis. *Asia-Pacific Education*

Researcher, *30*(6), 643–653. doi:10.1007/s40299-021-00594-6

Mahadini, M. K., Setyaningsih, E., & Sarosa, T. (2021). Using conventional rubric and coh-metrix to assess efl students' essays. *International Journal of Language Education*, *5*(4), 260–270. doi:10.26858/ijole.v5i4.19105

Mohamad, F., Anuar, N., & Daud, N. S. M. (2022). Factors influencing academic writing behaviour among undergraduates. *International Journal of English Language Education*, *10*(2), 56. doi:10.5296/ijele.v10i2.20453

Mujiono, & Herawati, S. (2021). The effectiveness of e-learning-based sociolinguistic instruction on EFL university students' sociolinguistic competence. *International Journal of Instruction*, *14*(4), 627–642. doi:10.29333/iji.2021.14436a

Naranjo, A. F. N., Reinoso, S. E. C., & Urrutia, E. M. (2024). *Improving english language skills with a technological approach in teaching.* in *lecture notes in networks and systems* (Vol. 933 LNNS, pp. 430–447). Springer Science and Business Media Deutschland GmbH. doi:10.1007/978-3-031-54256-5_41

Noordin, N., & Khojasteh, L. (2021). The effects of electronic feedback on medical university students' writing performance. *International Journal of Higher Education*, *10*(4), 124. doi:10.5430/ijhe.v10n4p124

Nurdianingsih, F. N., Rohmah, I. I. T., Wahyuni, S., & Izzatisselim, Z. N. (2025). The level of writing apprehension on students' efl writing class: a case study. *Jurnal Pendidikan Progresif*, *15*(1), 711–724. doi:10.23960/jpp.v15i1.pp711-724

Pongsapan, N. P., & Patak, A. A. (2021). Improving content, organization, vocabulary, language use, and mechanics

using movie trailer media. *International Journal of Evaluation and Research in Education*, *10*(2), 728–737. doi:10.11591/ijere.v10i2.21162

Pulatova, F. U. (2025). Teaching receptive and productive skills: reading and writing.

Purba, A., & Simamora, R. (2023). The implementation of word webbing technique to improve students' writing ability at seveenth grade of smp swasta gkps 3 pematangsiantar. *Bilingual/ : Jurnal Pendidikan Bahasa Inggris*, *5*(1), 10–17. doi:10.36985/jbl.v5i1.717

Purnamasari, D., Hidayat, D. N., & Kurniawati, L. (2021). An analysis of students' writing skill on english descriptive text (Vol. 14). Retrieved from https://ejournal.radenintan.ac.id/index.php/ENGEDU

Raja, P., Flora, Putrawan, G. E., & Razali, A. B. (2022). English as an international language: perceptions of efl preservice teachers in higher education institutions in indonesia. *Education Research International*, *2022*. doi:10.1155/2022/3234983

Raziinta, W. M., & Wibowo, F. (2022). *The effectiveness of team word-webbing technique in teaching writing descriptiv text at the eighth grade of SMP negeri 5 surakarta in the academic year 2022/2023*

Rohmah, A. (2021). *Teaching writing of recount text through word webbing.*

Sapkota, M. (2024). Implications and critiques of quantitative research: a systematic review. *Journal of Learning Theory and Methodology*, *5*(3), 153–159. doi:10.17309/jltm.2024.5.3.09

Satriani, R., Melani, M., Reflinda, & Syahrul. (2024). The effect of team word-webbing toward students' reading comprehension at tenth grade of man koto baru, dharmasraya. *Fonologi/ : Jurnal Ilmuan Bahasa Dan Sastra Inggris*, *2*(4), 01–10. doi:10.61132/fonologi.v2i4.1061

Sudarwati, E., Junining, E., & Indhiarti, T. R. (2024). Increasing global literacy (GL) competence of university students to support the Indonesian International Student Mobility Awards (IISMA) program: Development of GL instructional framework. *Journal on English as a Foreign Language*, *14*(1), 346–368. doi:10.23971/jefl.v14i1.7568

Suryaningsih, A., Abdul, N. B., & Hambali, U. (2021). The effectiveness of using team word webbing in teaching reading comprehension at the tenth grade of SMA negeri 15 pangkep. english language teaching methodology. *Journal of English Language Teaching Methodology*, *1*(2), 76–81. doi:10.22219/jpbi.vxiy.xxyy

Thi, N. K., & Nikolov, M. (2022). How teacher and grammarly feedback complement one another in myanmar EFL students' writing. *Asia-Pacific Education Researcher*, *31*(6), 767–779. doi:10.1007/s40299-021-00625-2

Viñas, L. F. (2025). *Self-assessment with rubrics as a key tool in the EFL classrm for the new learning paradigms 1. MEXTESOL Journal* (Vol. 49).

Wardiah, D., & Kristiawan, M. (2025). Writing as a means of exploration in students' conceptual understanding: From scribbles to understanding. *International Journal of Innovative Research and Scientific Studies*, *8*(3), 989–997. doi:10.53894/ijirss.v8i3.6670

Wei, L.W. (2024). Assessing the repercussions of dictionary formats on scholarly writing outcomes: undertaking mixed-method approach. *European Journal of English Language Teaching*, *9*(4). doi:10.46827/ejel.v9i4.5542

Wu, L., & Halim, H. B. A. (2024). Task complexity and foreign language writing emotions as predictors of EFL writing performance. *Frontiers in Education*, *9*. doi:10.3389/feduc.2024.1323843