Abstract: This study investigated the effectiveness of the Herringbone technique in improving reading comprehension skills among class XI students. The research followed a quasi-experimental design, with an experimental group receiving instruction using the Herringbone technique and a control group receiving traditional instruction. Pre-test and post-test assessments were conducted to measure the participants' reading comprehension abilities. The results indicated a significant improvement in the reading comprehension scores of the experimental group compared to the control group. These findings suggest that the Herringbone technique is more effective than traditional methods in enhancing reading comprehension skills. The implications of this study emphasize the importance of incorporating interactive and collaborative instructional approaches in English language teaching to foster critical thinking and deeper understanding of texts. Future research should explore the long-term effects and applicability of the Herringbone technique in diverse educational contexts. Overall, the Herringbone technique shows promise as an effective approach to enhance reading comprehension instruction and support language development among students.

Keywords: Herringbone Technique; Reading; Teaching.


Kata Kunci: Teknik Herringbone; Membaca; Mengajar.
INTRODUCTION

Language plays a crucial role in human life as it is utilized in all aspects. As social beings, we utilize language to communicate with one another. Language is used to express our inner thoughts and emotions, comprehend complex and abstract ideas, develop social skills, fulfill our wants and needs, and establish and maintain culture. It is employed to convey messages or ideas between speakers and listeners, writers and readers, and in interactions with the environment (Sitorus, 2022). Without language, it would be impossible for people to participate in everyday interactions or learn new things, and human activities cannot function smoothly.

At MA Sirojut Tholibin, the English subject is only taught once a week, with a total duration of 90 minutes per session. The school follows the 2013 Curriculum (K13) and includes English as a compulsory subject, which covers speaking, listening, writing, and reading skills. Among these skills, reading is an essential aspect. Based on the genre-based approach, students are required to master several types of texts, including descriptive, narrative, procedural, news items, recounts, and anecdotes. The researcher focuses on the narrative text, utilizing a genre-based approach that involves mastering the social function, generic structure, and language features of the text.

As stated in the 2013 curriculum, students do not only involve reading a text, but they also require to comprehend what they read. Reading comprehension, as defined by Grabe & Stoller (2019), is the ability to understand the information in a text and interpret it correctly. They also noted that reading without comprehension is meaningless, indicating that the two cannot be separated (Guo, at.al., 2023). This implies that reading comprehension is an essential activity for extracting meaning from the text.

Moreover, senior high school students in Indonesia are asked to be capable to comprehend and produce short functional texts consisting of narrative, recount, report, descriptive, procedure, analytical exposition, and explanation. In line with curriculum 2013, the senior high school's syllabus allows students to comprehend a narrative text. It requires students to understand a narrative text in some aspects. They are the function, structures, and linguistic features in both spoken and written. Based on the 2013 curriculum, the Ministry of Education states at core component that 3.8 “Membedakan fungsi sosial, struktur teks, dan unsur kebahasaan beberapa teks naratif lisan dan tulis dengan memberi dan meminta informasi terkait Legenda rakyat, sederhana, sesuai dengan konteks penggunaanya and 4.9 menangkap makna secara kontekstual terkait fungsi sosial, struktur teks, dan unsur kebahasaan teks naratif, lisan dan tulis sederhana terkait Legenda rakyat”. The narrative text aims to entertain by recounting a story to the reader, including the development of events such as conflicts and conclusions to make the story more captivating. However, according to the 2013 curriculum, learning narrative text is not as easy as the researcher initially thought, as some problems are frequently encountered when learning this type of text.
However, students encounter several challenges in learning narrative text. For instance, when reading the text, they may struggle to understand the meaning of some words due to insufficient cultural background knowledge about the narrative text, making it difficult for them to comprehend the text. According to Ibrahim and Sabatin's research, many students fail to comprehend narrative text because they lack the necessary cultural background knowledge (Sabatin & Ibrahim, 2013).

Through initial observations and interviews with English teachers at MA Sirojut Tholibin, the researchers discovered that Class X students faced difficulties in learning English, particularly in reading comprehension. These issues were related to identifying the main ideas of the text, recognizing detailed information in narrative text, comprehending the specific meanings of narrative text words, and making references and inferences in narrative text. These problems may be due to several factors, such as a lack of vocabulary and ineffective teaching techniques or strategies when explaining the reading material. In the reading class, the teacher relies solely on the textbook to explain the material without utilizing any strategy or technique. Therefore, the teacher explains the material, asks students to read the text, answers questions, asks students to write material in their notebooks, and assigns homework. This monotonous teaching strategy bores and demotivates the students, leading them to view reading as a tedious activity.

In this situation, the teacher can adapt their teaching methods, particularly when it comes to teaching reading, by not solely relying on the reading texts from student textbooks. Instead, teachers can utilize various techniques to simplify the texts for students. There are many effective teaching techniques that teachers can use to improve reading comprehension. The field of education constantly seeks innovative approaches to enhance students' reading comprehension skills. In recent years, the Herringbone technique has gained attention as a promising method to improve English reading learning. This technique involves a strategic instructional approach that aims to engage students actively in the reading process, foster critical thinking, and enhance comprehension.

As per Thaler (2009) explanation, the herringbone method is a specific approach that assists English language learners in identifying the central concept in a paragraph or passage. The technique involves utilizing a brief support diagram. Additionally, Bouchard (2005) characterizes the herringbone method as a visual tool that bolsters understanding of written material by providing a structure for organizing the questions of “who, what, when, why, where, and how” in relation to the main ideas. In this research, the herringbone method refers to the teacher's use of the technique to gauge its impact on students' reading comprehension abilities in narrative writing.

Furthermore, Thaler, as cited in (Apriasih, 2014), defined the Herringbone technique, named for its resemblance to a fish skeleton, as a useful technique for analyzing a single idea or text. The Herringbone Technique is a concrete way to assist English learners in
finding the main idea in a paragraph or passage. It consists of a short graphic organizer, with students responding to the Fishbone graphic organizer's questions. As a result, all the information is synthesized into a single freshly produced sentence, which becomes the main idea statement. Additionally, Thaler, as quoted by (Apriasih, 2014), stated that the Herringbone technique is a simple graphic organizer and a practical way to help language learners find the full meaning in a paragraph or expression.

Besides, the Herringbone technique has been found to bring positive results on students' reading comprehension, specifically in their ability to generate ideas (Felly et al., 2019). The researchers stated that students performed better in generating ideas because the Herringbone technique encourages them to find specific details by constructing a diagram. This technique helps develop reading comprehension by requiring students to formulate questions, which is an activity that comes after reading. Formulating questions can help students organize ideas into logical pieces of information for faster retrieval. The researchers also mentioned that one example of formulating questions is using the "WH" questions, which is an activity that can further develop reading comprehension of the text.

Research studies, such as those conducted by Habibah (2020), Nurlinda (2018), and Yusuf et al. (2016), have investigated the effectiveness of the Herringbone technique in various educational contexts. These studies have shown positive results, suggesting that the Herringbone technique has the potential to significantly improve students' reading comprehension abilities. Furthermore, Brassell & Rasinski (2008) emphasize the importance of utilizing comprehension strategies to go beyond surface-level understanding and develop deep comprehension skills.

Based on the problems described, this study was designed to apply the herringbone technique in teaching reading to improve students' reading comprehension skills. The positive impact of this research can help students learn English and improve their reading comprehension. Students also enjoy the teaching process as the herringbone technique makes identifying key and supporting concepts easier for them. In addition, students will increase their knowledge and comprehension of reading. This research is useful for English teachers as it helps them determine the best techniques to make English classes interesting and active, especially in reading texts. Teachers can also motivate students to learn English by using innovative approaches that value and comfort students in the learning process, rather than traditional teaching techniques. By providing the herringbone chart technique, teachers can have a positive impact on their competence in teaching.

METHOD

This study employed a quasi-experimental research design with a quantitative approach to investigate the effectiveness of the Herringbone technique in enhancing English reading skills among class XI students at MA Sirojut Tholibin. Quasi-experimental designs
allow for the examination of causal relationships by manipulating variables in the experimental group and comparing the outcomes with a control group (Azwar, 2012).

The research was conducted over a period of six meetings, with each meeting lasting 2 x 45 minutes. The study included two types of variables: the independent variable (X), which was the utilization of the Herringbone technique, and the dependent variable (Y), which was the students' English reading skills. The population for this study consisted of class XI students at MA Sirojut Tholibin who had been receiving English lessons since class X. The purposive sampling technique was employed to select the sample. Purposive sampling is a non-random sampling process that selects samples with specific characteristics suitable for the study's objectives. In this study, the researcher sought recommendations from English teachers to select the classes that would become participants in the experimental and control groups. Class XI-1 was chosen as the experimental group, where the Herringbone technique was implemented, while class XI-2 served as the control group, which did not receive any intervention. Each class comprised 25 students, resulting in a total sample size of 50 participants.

Data were collected using a pre-test and a post-test. The pre-test was administered to assess the participants' initial English reading abilities before any intervention took place. After the treatment, a post-test was conducted to measure the students' reading skills. The data analysis technique employed was the t-test formula, which allowed for the comparison of the post-test scores between the experimental and control groups to determine the effectiveness of the Herringbone technique on the students' reading abilities.

In summary, this study utilized a quasi-experimental design with a quantitative approach. The sample consisted of class XI students at MA Sirojut Tholibin, with class XI-1 as the experimental group and class XI-2 as the control group. Data were collected through pre-tests and post-tests, and the t-test formula was used to analyze the data. These methodological choices aimed to investigate the effectiveness of the Herringbone technique in improving English reading skills among the participating students.

RESULT AND DISCUSSION

In this study, data were obtained on the English reading skills of class XI students of MA Sirojut Tholibin who were taught using the Herringbone technique and conventional methods. Students in class XI MA Sirojut Tholibin who were respondents in this study were divided into class XI 1 as the experimental group (taught using the Herringbone technique) and class XI 2 as the control group (taught using conventional methods).

1. Descriptive Statistics
Table 1 displays the descriptive statistics for the pre-test scores of the experimental and control groups. The mean pre-test score for the experimental group was $M = 72.2$, with a standard deviation of $SD = 4.6$. On the other hand, the control group had a mean pre-test score of $M = 72.8$, with a standard deviation of $SD = 3.9$. These statistics provide an overview of the participants' initial reading abilities before any intervention.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>75.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Control</td>
<td>72.8</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Descriptive statistics were employed to provide a detailed summary and analysis of the data collected in this study. This section presents the findings related to the participants' English reading skills, both before and after the implementation of the Herringbone technique.

Table 2: Descriptive Statistics for Post-test Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>85.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Control</td>
<td>77.6</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Table 2 presents the descriptive statistics for the post-test scores of the experimental and control groups. The mean post-test score for the experimental group was $M = 85.3$, with a standard deviation of $SD = 5.2$. In contrast, the control group had a mean post-test score of $M = 77.6$, with a standard deviation of $SD = 4.1$. These statistics indicate the participants' reading abilities after the implementation of the Herringbone technique.

The descriptive statistics reveal important information about the central tendency and variability of the participants' reading scores. The means provide insights into the average performance, while the standard deviations indicate the extent of dispersion within each group. Comparing the pre-test and post-test scores allows us to evaluate the effectiveness of the Herringbone technique in improving the participants' English reading skills. Additionally, inferential statistical analysis, such as the t-test, was conducted to examine the significance of the differences between the experimental and control groups. This analysis will be presented in detail in the subsequent sections.

In conclusion, descriptive statistics were employed to summarize the participants' pre-test and post-test scores, providing insights into their initial reading abilities and their performance after the implementation of the Herringbone technique. These statistics serve as a foundation for further analysis and interpretation of the results.
2. Comparison of Reading Comprehension Scores: Herringbone Technique vs. Traditional Methods

This section presents a detailed analysis of the comparison between the reading comprehension scores of students who received instruction using the Herringbone technique and those who were taught using traditional methods. The mean pre-test score for the experimental group, which received instruction using the Herringbone technique, was $M = 75.2$, with a standard deviation of $SD = 4.6$ (Table 1). In contrast, the control group, instructed through traditional methods, had a mean pre-test score of $M = 72.8$, with a standard deviation of $SD = 3.9$ (Table 1). These scores provide an understanding of the initial reading comprehension levels of the students before any intervention took place.

After the intervention, the experimental group demonstrated a significant improvement in their reading comprehension scores. The mean post-test score for this group was $M = 85.3$, with a standard deviation of $SD = 5.2$ (Table 2). On the other hand, the control group, which did not receive the Herringbone technique instruction, had a mean post-test score of $M = 77.6$, with a standard deviation of $SD = 4.1$ (Table 2). These scores indicate the reading comprehension levels of the students after the implementation of the Herringbone technique and traditional methods. To determine the effectiveness of the Herringbone technique, a comparison was made between the pre-test and post-test scores of the experimental group. The results revealed a statistically significant improvement in reading comprehension scores ($p < .05$), indicating the positive impact of the Herringbone technique on the students' reading abilities.

Moreover, a comparison between the experimental group and the control group demonstrated a significant difference in the post-test scores. The post-test scores of the experimental group were higher than those of the control group, indicating that the Herringbone technique yielded better outcomes compared to traditional methods (Author et al., 2023). These findings suggest that the Herringbone technique is an effective instructional approach for enhancing reading comprehension skills among class XI students. By actively engaging students in interactive discussions, collaboration, and critical thinking, the Herringbone technique promotes deeper understanding and comprehension of English texts.

In conclusion, the comparison of reading comprehension scores between the Herringbone technique and traditional methods indicates the superiority of the Herringbone technique in improving students' reading abilities. The findings support the notion that the Herringbone technique is a valuable instructional approach that can be utilized to enhance reading comprehension skills in English language learning. The results revealed a significant improvement in the reading comprehension scores of the experimental group, which received instruction using the Herringbone technique. The
mean pre-test score for this group was $M = 75.2$, and it increased to $M = 85.3$ in the post-test (Table 1 and Table 2). This improvement indicates the positive impact of the Herringbone technique on the participants' reading abilities.

The comparison between the experimental and control groups demonstrated a statistically significant difference in the post-test scores, with the experimental group outperforming the control group. This suggests that the Herringbone technique was more effective in enhancing reading comprehension skills compared to traditional methods (Author et al., 2023). The findings of this study align with previous research that has highlighted the effectiveness of the Herringbone technique in improving reading comprehension. For instance, Amanda (2019) conducted a study on the use of the Herringbone technique in teaching reading comprehension and found that it led to significant improvements in students' comprehension skills. Similarly, Felly et al. (2019) investigated the effect of the Herringbone technique on students' reading comprehension and reported positive outcomes.

The success of the Herringbone technique can be attributed to its interactive nature, which engages students in active discussions, collaborative learning, and critical thinking. By incorporating these elements, the technique promotes deeper understanding and analysis of texts, enhancing students' overall comprehension. The findings of this study have important implications for English language teaching. Incorporating the Herringbone technique into instructional practices can contribute to more effective reading comprehension instruction. It provides students with the opportunity to actively engage with texts, develop critical thinking skills, and improve their ability to comprehend and interpret complex English passages.

According to Dhillon et al. (2020), basic English skills can be categorized into two types, namely receptive and productive skills. Receptive skills include listening and reading, while productive skills include writing and speaking. These skills are usually seen as an integrated system that supports each other in achieving successful learning. Although both types of skills are important, reading is considered one of the most crucial skills that students need to acquire. By reading, students can learn about a wide range of topics such as science, society, health, technology, and more. Ivantara & Manalu (2020) define reading as a means of acquiring language to communicate and share information about ideas. However, as stated by Lumbantobing & Pardede (2020), reading is not merely about pronouncing printed material or following every line of a written page, but it involves various activities. In essence, reading is a way for students to enhance their abilities and knowledge as it facilitates interaction between readers and writers, allowing them to comprehend the author's ideas.

In the process of learning English, reading is considered one of the four language skills that students must develop. It is essential for students to read books to broaden their knowledge and gain insight into events that occurred in the past and present, as
well as stay updated with the latest information. Reading involves a continuous process of gathering information from the reader's personal background and language to build comprehension. The primary objective of reading is to comprehend the material being read (Silalahi et al., 2022)

The Herringbone technique is used to find the main idea of a text after identifying the questions in the visual patterns of the Herringbone technique. This technique can stimulate students' creative thinking so that it is hoped that students will be motivated to learn to read. The enthusiasm of students in following the lesson is a positive thing that needs to be improved. However, students in the control class who were taught by conventional techniques tended to be passive and lacked concentration. Students are also often sleepy when attending lessons because they only listen to explanations of subject matter using the lecture method, so that students are not enthusiastic about following lessons because of the monotonous atmosphere without any variations.

From the results of the t-test, it was found that the probability value was 0.001. This value is less than 0.05 which means there is a significant difference in English reading skills between those taught with the Herringbone technique and those taught with conventional techniques. The results of this study are in line with the results of the study (Amanda, 2019; Nirvana, 2021; Paramida, 2021; Putri & Isyam, 2013; Sinambela & Carolina, 2022; Taufik & Wahyuningsih, 2023; Liu, at.al., 2022). Some of the problems found by researchers during research are in accordance with Tankersley's theory such as students' poor vocabulary skills, students having difficulty decoding words and sentences, students having difficulty understanding the main ideas of texts and finding inferences from texts, students having difficulty reading speed, and students have difficulty in working memory to remember the text.

Moreover, the researcher discovered that students encountered difficulties in finding motivation and interest in comprehending what they read. Consequently, they become passive learners and lack confidence, as they fear making mistakes while reading. The outcomes of the problems described in the literature review are present in students, and there are even additional difficulties that arise when applying the herringbone technique to teach reading comprehension.

The utilization of the Herringbone pattern in teaching has benefits in the learning process of news texts. One of the advantages is that this approach aids in improving students' comprehension of the material. This finding is consistent with prior research conducted by Husin (2015), who investigated the effectiveness of the Herringbone pattern in teaching descriptive texts to MA students. The study results revealed that employing the Herringbone pattern in teaching is an effective method to enhance students' reading comprehension. This is evidenced by the improvement in student
grades within the class, as seen through the comparison of pre-test and post-test scores before and after teaching with the Herringbone pattern.

This technique has been shown to enhance students' engagement in learning. It also makes the class more lively and interesting, preventing boredom. According to McKnight (2010), the Herringbone pattern is a visual aid that can help students comprehend the material easily. Its fishbone-like structure is intriguing to students and can capture their attention in the reading process. On the other hand, students in the control group who received conventional teaching felt bored and perplexed because the teacher simply delivered the material and had them write in their notebooks. As a result, the material was not conveyed to the students effectively. Additionally, the teacher serves as a role model in the classroom, and the learning atmosphere depends on how the teacher creates it. A conducive atmosphere, combined with proper preparation and selection of techniques, can generate students' interest in the learning process.

The findings of this study have significant pedagogical implications for English language teaching, particularly in the area of reading comprehension instruction. The effectiveness of the Herringbone technique in improving students' reading comprehension skills suggests that it can be a valuable instructional approach to enhance students' engagement, critical thinking, and comprehension abilities.

By incorporating the Herringbone technique into instructional practices, teachers can create an interactive learning environment that promotes active participation and collaborative learning. This technique encourages students to analyze texts, ask critical questions, and engage in meaningful discussions, fostering a deeper understanding of the content. Moreover, the Herringbone technique can be adapted for various text types and genres, allowing teachers to address different reading comprehension skills and language proficiency levels. The Herringbone technique's emphasis on interactive discussions and critical thinking aligns with the goals of 21st-century education, which emphasizes the development of higher-order thinking skills. By implementing this technique, teachers can enhance students' analytical abilities, problem-solving skills, and ability to draw inferences from textual information.

The findings of this study make important theoretical contributions to the field of language learning and teaching. They provide empirical evidence of the effectiveness of the Herringbone technique in improving reading comprehension skills. This study supports the idea that interactive and collaborative approaches to instruction can have a positive impact on students' learning outcomes. The Herringbone technique draws on constructivist and socio-constructivist theories of learning, emphasizing the importance of student-centered and collaborative learning environments. This technique provides students with opportunities to construct meaning through active engagement with texts and interactions with their peers. The positive outcomes of this study further support the theoretical foundations of constructivism and socio-constructivism in language learning.
CONCLUSION

This study aimed to investigate the effectiveness of the Herringbone technique in improving reading comprehension skills among class XI students. The findings revealed that the Herringbone technique had a significant positive impact on students' reading comprehension abilities. The experimental group, which received instruction using the Herringbone technique, showed a statistically significant improvement in their post-test scores compared to the control group. These results support the hypothesis that the Herringbone technique is more effective than traditional methods in enhancing reading comprehension skills.

The implications of this study for practice are twofold. First, the findings highlight the importance of incorporating interactive and collaborative instructional approaches, such as the Herringbone technique, in English language teaching. Teachers can adopt this technique to create engaging and student-centered learning environments that promote critical thinking, active participation, and deeper understanding of English texts. By implementing the Herringbone technique, educators can enhance students' reading comprehension skills and contribute to their overall language development.

Second, the results emphasize the need for teacher professional development programs that focus on innovative instructional strategies. Teachers should be equipped with the knowledge and skills to effectively implement the Herringbone technique and other similar approaches in their classrooms. Providing opportunities for ongoing professional development can enhance teachers' pedagogical repertoire and empower them to create engaging and effective learning experiences for their students.

In conclusion, this study demonstrated the effectiveness of the Herringbone technique in improving reading comprehension skills among class XI students. The findings contribute to the existing body of knowledge regarding innovative instructional approaches and their impact on language learning outcomes. By adopting the Herringbone technique, teachers can create dynamic and interactive learning environments that foster critical thinking, collaboration, and deeper comprehension of English texts.

It is important to note that this study is not without limitations. The research was conducted in a specific educational context and with a specific sample size, which may limit the generalizability of the findings. Future research should consider conducting similar studies in different contexts and with larger sample sizes to validate and expand upon these findings. Overall, the Herringbone technique offers promising opportunities for enhancing reading comprehension instruction. By leveraging the power of interactive discussions, critical thinking, and collaborative learning, educators can create meaningful learning experiences that empower students to become proficient readers and critical thinkers in the English language.
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