Increasing Students' Reading Comprehension through Herringbone Technique: A Case of Vocational High School

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Abstrak

Teknik Herringbone telah dipandang sebagai metode yang efektif untuk membantu siswa memahami teks, dan untuk mendapatkan ide utama pada teks. Selain itu, penerapan teknik Herringbone memungkinkan siswa terlibat secara aktif dalam proses pembelajaran. Penelitian ini bertujuan untuk mengetahui efektivitas penggunaan teknik Herringbone dalam meningkatkan pemahaman membaca siswa di Sekolah Menengah Kejuruan Jurusan Perikanan. Penelitian ini menggunakan Penelitian Metode Campuran dengan tiga alat pengumpulan data (Pre-test dan Post-test, angket, dan semi structure interview). Hasil penelitian menunjukkan bahwa teknik Herringbone berpengaruh signifikan terhadap pemahaman membaca siswa. Temuan penelitian ini juga menunjukkan bahwa siswa memiliki persepsi positif terhadap pemahaman bacaan dengan menggunakan teknik Herringbone dan metode 5W1H. Studi ini menyarankan perlunya guru menerapkan teknik Herringbone dan metode 5W1H dalam mengajarkan pemahaman bacaan untuk membantu siswa meningkatkan motivasi dan prestasi belajar mereka.

Kata Kunci: *teknik Herringbone, pemahaman bacaan, 5W1H, Sekolah Menengah Kejuruan*

Abstract

The Herringbone technique has been viewed as an effective method to help students to comprehend the text, and to gain the main idea of the text. In addition, the applying of the Herringbone technique engages students to be actively involved in a learning process. This study aims to find out of the effectiveness of using the Herringbone technique in increasing students' reading comprehension in a vocational high school majoring in fisheries. This study employed Mixed Method Research (MMR) with three research tools (Pre-test and Post-test, questionnaire, and semi structure interview). The results showed that the Herringbone technique significantly affected the students' reading comprehension. This research findings also pointed out that the students have a positive perception of reading comprehension while utilizing the Herringbone technique and the 5W1H method. The study recommends teachers to apply the Herringbone technique and the 5W1H method in teaching reading comprehension to help students increase their learning motivation and achievement.

Keywords: *Herringbone technique, Reading Comprehension, 5W1H, Vocational High School*

Introduction

The Indonesian education national standard boards states that the objective of teaching English in vocational high school is to assist students in developing their communication skills, both oral and written, to attain a functional literacy level, raise their awareness of global competition, and enhance their comprehension of language and culture. The reason for this is that teaching English in vocational high schools differs from teaching English in senior high schools, where the English curriculum must align with the students' interests and be applicable to their chosen field of study (Noho et al., 2018).

The needs of the world of industrial work today require a variety of special skills. Students in vocational high school are expected to have competencies to enter several work fields such as fisheries, automotive, architecture, and other network departments (Noho et al., 2018). Therefore, the students are expected to improve their abilities and skills through English for Specific Purposes (ESP). It also will make them get their needs in the context of particular work or study (Tahang et al., 2021). In the ESP Program, it is possible to emphasize the development of reading skills to students to prepare them to work in engineering and/or in another specific technical area (Fitria, 2020). Although reading is not a productive skill (a passive activity), it is very important to help the students produce a text in writing or speaking. Students will get the ideas of a text when they have good activity in reading skill (Wibowo et al., 2020).

Reading comprehension is an ability to read, to get information and to gain ideas from the written text (Yusuf et al., 2016). Reading comprehension makes a big impact on students to perform their speaking skills better. Nunan (2003) said that reading is an activity when students comprehend text based on what they read. The process is not spontaneously to understand the content of the text but must comprehend the text. Since reading is related to getting the message of text.

The primary challenge encountered in teaching reading comprehension is that students often struggle with identifying the central concept of paragraphs. In order to comprehend what they are reading, students need to grasp the format of the text, specifically how the main ideas and supporting details are arranged. Supporting details are more precise sentences that serve to elaborate on, explain, substantiate, or imply the topic sentence by providing instances, definitions, and justifications (Banditvilai, 2020; Sirait et al., 2022). The problems of teaching reading occurred in fisheries vocational high school in Pontianak. To solve the problem, the teachers need to review and revise their teaching methods and incorporate reading strategy instruction in their lesson plans (Amirian, 2013; Marlin et al., 2022). Therefore, teaching techniques play a crucial role in encouraging the students in achieving the learning goals.

The Herringbone technique is of the techniques that helps students to develop their reading comprehension through a visual diagram of a fish skeleton. This technique can be used by the students in vocational high school in reading comprehension. It can help the students to gain the main idea of the text easily. Besides that, this technique will help the students to comprehend and understand the text. In further, the applying Herringbone technique engages the students to be actively involved. They are very enthusiastic and more active in learning English because this technique allows the students to explore their ideas while doing reading activity (Kurniawan & Indrawati, 2016). Therefore, it is believed that students are able to have better comprehension

in reading skill by using Herringbone technique, in which that technique facilitates students to improve the reading comprehension (Firda et al., 2016). Figure 1 illustrates how the Herringbone technique works and/or is operationalized (Rahila & Sakdiah, 2016).

Figure 1. *Herringbone Technique Diagram*
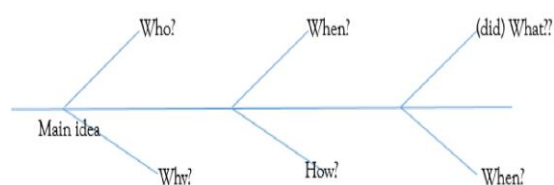
The use of Herringbone technique in teaching reading has been explored in the previous studies (Amumpuni, 2021; Fitriyani et al., 2020; Nurhidayat, 2021). However, the application of Herringbone technique in teaching reading for the fisheries vocational high school students has been found. Based on the results of the research above, there are similarities of the study. The similarities are mostly the use of Herringbone technique in teaching reading comprehension. The differences are mostly in the case of the object and subject. The research design is also different from each previous research above. The previous research above supported this research by giving important information about the advantages of Herringbone technique in teaching reading comprehension. Finally, this research is worth conducting based on the previous study above. Then, the researcher is interested to find whether the application of the Herringbone technique is effective or not on students' reading comprehension skills. This current study was guided by the research questions, "How effective is Herringbone technique employed to increase fisheries vocational high school students' reading comprehension?

Method

The current study employed Mixed Method Research (MMR) to investigate the effectiveness of Herringbone technique in teaching reading comprehension at vocational high school. Mixed methods involved combining or integration of qualitative and quantitative research and data in a research study (Creswell & Creswell, 2018). Of the four types of MMR as suggested by Weyant (2022)(2009), this study employed explanatory design which contains first quantitative data collection followed by qualitative data collection.

There were 3 (three) research tools used to collect data, namely pre-test and post-test, questionnaire, and interview. The data from the pre-test and post-test were analyzed quantitatively using statistical methods. The findings of the questionnaire, observation and the interview were analyzed qualitatively to examine the student's perceptions of the use of the Herringbone technique that focused on WH (who, what, when, where, why, and how) questions to investigate the effectiveness of that technique in teaching reading comprehension.

This current research took place in one Fisheries Vocational High School in Pontianak. The researcher particularly chose the department that was likely to be information rich (Bachtiar, 2022b). The current study employed purposive sampling by choosing the students of the fisheries aquaculture technology department in that school. The department was purposefully chosen from among the existing potential departments using predetermined criteria. One of the criteria is that the students in that department lack understanding of reading comprehension, including in the News Item type.

There were 3 (three) research instruments used to investigate the effectiveness of Herringbone technique on students' reading comprehension. These three instruments were pre-test and post-test, questionnaire, and interview. Pre-test and Post-test were employed to find out whether the Herringbone technique is effective or not to teach reading comprehension. In addition to the Pre- and Post-test, the researchers also distributed questionnaires, and conducted observation and Interview. The questionnaires were distributed

to the students in experimental group to know their response towards the strategy/treatment given. The questionnaire contained a list of questions or items about the students' attitudes, experiences, and opinions. For the interview, there were twenty students involved in Focus Group Discussion (FGD) to get deeper information dealing with the process of using Herringbone technique in reading comprehension.

The current study utilized both quantitative and qualitative data sources. The quantitative data was collected through pre-test and post-test measurements, as well as closed-ended questions in the questionnaires. On the other hand, the qualitative data was obtained through open-ended questions in the questionnaires and interviews. Pre-test and Post-test were given to investigate if there was a change between the results of the two tests as the results of the treatment to the students using the Herringbone technique. For the questionnaire, it was distributed to know the students' response towards the strategy/treatment given using the Herringbone technique. To enrich the data and to provide triangulation, some of the students were interviewed to get deeper information dealing with the process of using Herringbone technique in reading comprehension.

The quantitative and qualitative data were analysed separately. The quantitative data from the Pre-test and Post-test were transferred and analysed using SPSS 20. To investigate the students' perceptions of the use of the Herringbone technique, thematic analysis was used in the current research. Thematic analysis refers to the process of identifying recurring themes that play a crucial role in explaining a phenomenon (Bachtiar, 2022a; Nowell et al., 2017). Boyatzis (1998) defines a theme as "a pattern in the information that at minimum describes and organizes the possible observations and at maximum interprets aspects of the phenomenon" (p. 161).

Results and Discussion

This section presents and discusses the main themes emerged from the research findings. There were two main themes emerged from the findings: (1) the Herringbone Technique increased Students' Reading Comprehension; and (2) The Herringbone Technique of WH Questions was effective method used to teach reading comprehension in Fisheries Vocational High School. The details of the two themes are discussed in the following sections.

The Herringbone Technique increased Students' Reading Comprehension

The research findings show that there was a significant effect of Herringbone technique in teaching reading comprehension. It was based on the result that the mean score between experimental class and control class were slightly different. For the experimental class, there was a higher improvement between Pre-test and Post-test for the mean score from 49.2 to 64.4.4, compared to the mean score improvement of the control class from 49.8 to 55.8. It means the result of the post-test score showed that the experimental class had higher improvement (15.2) compared to the improvement of the control class (6,0). The results demonstrated that students who were instructed using the Herringbone technique achieved superior outcomes compared to those who were taught using the semantic mapping technique. These findings align with previous research. The findings of this study align with those of previous research, demonstrating that the Herringbone technique led to better results for students than the semantic mapping technique (Firda et al., 2016; Nurhidayat, 2021). Nurhidayat's (2021) study found that the Herringbone technique can help students to understand the idea of the text. Margaretta et al. declared that the Herringbone technique is effective to use in teaching descriptive text. They also indicate that the

Herringbone technique is a structured outlining procedure designed to help students organize important information in a text chapter. Along the same line, Firda et al. (2016) found that the Herringbone technique is a helpful technique in teaching reading descriptive text to the eight grade students.

In order to know the significance difference between the result of student's mean score in pre-test and post-test both in experimental and control group, t-test (testing of significance) was used. Table 1 shows the result of the independent Sample t-test.

Table 1. *Independent Samples 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
Pretest	Equal variances assumed	.911	.346	-.177	38	.861	-.600	3.391	-7.465	6.265
	Equal variances not assumed			-.177	36.506	.861	-.600	3.391	-7.475	6.275
Posttest	Equal variances assumed	.085	.772	2.484	38	.018	8.60000	3.46258	1.59037	15.60963
	Equal variances not assumed			2.484	37.919	.018	8.60000	3.46258	1.58988	15.61012

Table 1 shows that in pre-test, the P-value (0.861) was higher than α = 0.050. It means that the difference of prior knowledge of the students was statistically not significant, and experiment class and control class have the equal ability in reading before treatment. Table 1 also shows that P-value (0.018) was lower than α = 0.050 (0.018 < 0.050). It means that the difference in students' knowledge was statistically significant. The significant difference was caused by the different treatment given between the experiment class and control class. The experiment class was given the Herringbone technique in reading comprehension. Then, the control class was given Semantic Mapping technique in reading comprehension.

Another worth finding from the current study is the students' understanding of the meaning contextually related to social functions, text structure, and linguistic elements of the text. It is indicated that the student's reading comprehension in News Item text was improved through the Herringbone technique. It was proved that the Herringbone technique has helped the students to find important information and main ideas in a text. The findings from this research concur with previous studies (Amumpuni, 2021; Noho et al., 2018). The research results from Amumpuni (2021) and Noho et al. (2018) recommended of the use of the Herringbone technique for the teacher to teach the students in vocational high school, especially in reading comprehension, because there was some significant effect of the Herringbone on students' reading comprehension than teaching reading comprehension without using the Herringbone technique. The Herringbone technique helps the students to recognize the important information in the material of reading texts. It can be used as a graphic organizer to establish some supporting details to the main idea (Fitriyani et al., 2020; Lumbantobing et al., 2020; Rohmah, 2018). It facilitates the students with an interesting pattern. Furthermore, the Herringbone technique was also successful in developing their comprehension by increasing attention to detailed information (Lumbantobing et al., 2020). The reason for this is that the engaging visual patterns of graphic diagrams assist students in categorizing and organizing information from the assigned reading material. Graphic diagrams with interesting patterns assist students in organizing and categorizing information from assigned reading material, leading to better comprehension.

The Herringbone Technique of WH (Who, What, When, Where, Why, and How) Questions was effective method used to teach reading comprehension in Fisheries Vocational High School

The result of the questionnaire for the experimental group shows that most of the participating students (85%) felt it was easy to predict the main idea of all sentences in the text by using 5W1H questions and Herringbone technique diagrams. In addition, most of the

students (60 %) felt easy to understand the text when using the 5W1H questions and Herringbone technique diagrams. In relation to the extent the students could answer the questions easily, more than half of them (55%) agreed that the use of 5W1H questions and Herringbone technique diagrams have helped them. The questionnaire results were supported by the result of the interview, where most of the students stated that 5W1H and the Herringbone technique let them find the detailed information in the text easier. The research findings support the previous studies' (Rahila & Sakdiah, 2016; Rohmah, 2018) findings that the Herringbone technique is effective to use in finding the important information (explicit and implicit) and the main idea by asking six comprehension questions (who, where, why, what, when, and how) in a graphic diagram of a fish skeleton. Along the same line, the study by Rohmah (2018) found that the students' response toward the implementation of the Herringbone technique was very good, gave positive effect and helped them more easily in understanding the text.

Another interesting finding from this study is that most of the students (80%) felt more active in class when reading by applying the steps using 5W1H questions and the Herringbone technique. In addition, more than half of the students (55%) felt that the use of the Herringbone technique has helped them to understand the reading text given. The majority of the participating students (60%) also felt that 5W1H questions on the Herringbone technique have helped them as a reference for understanding the text given. Firda et al. (2016) also confirmed that the use of WH-Question which consists of who, what, where, when, why and how has helped students to answer the question easier. Another study by Nurhidayat (2021) also found that the use of the Herringbone technique could facilitate the students to actively engage in the learning process. The students were very enthusiastic and more active in learning English because this strategy allows the students to explore their ideas while doing reading activity. Nurhidayat's

(2021) study found that most of students were more active, interested, and motivated in learning by applying the steps using 5W1H questions and the Herringbone technique in learning reading. This technique made the students more enthusiastic because it made them feel more curious to continue the reading text.

Conclusion

The Herringbone technique and 5W1H improve reading comprehension by helping students understand text better and perform well on the Post-tests. Data shows that the students' scores on the Post-tests increased significantly after using the Herringbone technique. The students also have a positive perception of learning News Item text using this technique, and it encourages them to be active in the learning process. They enjoyed making and filling out the Herringbone diagram and were enthusiastic about practicing the technique.

This research investigated the effectiveness of using the Herringbone technique to teach reading comprehension to fisheries vocational high school students. However, further research is needed to determine if the technique is effective for teaching speaking, listening, and writing skills. It is suggested that teachers need to be creative in the classroom and find appropriate strategies for teaching to improve their students' English skills. The Herringbone technique is recommended for teaching reading comprehension, and students should actively use it to understand the text and answer questions correctly. To improve reading comprehension, future researchers should thoroughly understand the problem and consider implementing the Herringbone technique for other English skills, such as speaking, listening, and writing.

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