Improving reading comprehension learning for students with learning disabilities through know-want-learned strategy

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ABSTRACT

Reading comprehension is a crucial skill that needs to be mastered. It helps individuals to understand the context and message through reading. For students with learning disabilities, mastering reading comprehension skills is particularly important. This research focuses on enhancing the reading comprehension of these students using the Know-Want-Learned (KWL) strategy. The study involved three experts who validated the instrument and included eight students with learning disabilities as participants. A mixed-methods approach was utilized, combining both quantitative and qualitative data to evaluate the effectiveness of the KWL strategy. Pre- and post-tests were conducted to measure improvements in reading comprehension levels, while interviews revealed the students' experiences and perceptions of the strategy. The results showed a significant increase in reading comprehension scores among the participants, highlighting the effectiveness of the KWL strategy in aiding understanding and information retention. Furthermore, qualitative feedback indicated that students felt more engaged and motivated during reading activities, as the KWL strategy prompted them to tap into their prior knowledge and establish learning goals. This research emphasizes the need for customized instructional strategies for students with learning disabilities, showcasing the KWL method as a valuable resource for enhancing reading comprehension. Future research should investigate the long-term impacts of this strategy and its relevance in various learning environments.

Keywords: KWL strategy, learning disabilities, reading comprehension

INTRODUCTION

Reading comprehension is important to understanding texts and interpreting information (Ceyhan & Yildiz, 2021; Putri & Yarmi, 2024; Smith et al., 2021). Many studies regarding reading comprehension have been extensively published (Kamila & Sakti, 2022; Nugraha et al., 2022; Ardiana et al., 2022; Maryati et al., 2022; Agustin et al., 2022; Viyana et al., 2023; Alpapara, 2022; Nafilah & Sakti, 2022; Pujiastuti, 2024; Hartati et al., 2023; Dewi, 2023). Reading comprehension involves not only the recognition of words but also the ability to associate meanings, analyze text structures, and draw conclusions (Nuryani et al., 2021). Reading and understanding a text is an interaction between pre-existing knowledge and new information gained from reading. The main purpose of reading comprehension is to understand the message the author wants to convey through understanding the content of the reading (Hilaikal et al., 2023).

Reading comprehension is important for students' academic success and cognitive development. However, many students experience barriers in reading, which can be caused by various factors, including difficulties in comprehending texts and a lack of effective learning strategies. Reading comprehension learning difficulty has become one form of specific learning difficulties many students face (Arella & Rifdah, 2022; Primasari & Supena, 2021; Khasawneh, 2022). Reading comprehension learning difficulties can be categorized as specific learning

difficulties, where students with this condition show normal intellectual abilities but experience barriers in the process of reading and understanding texts (Caplin et al., 2022; Nilsson et al., 2021; Shaaban & Mohamed, 2024). Barriers in reading comprehension can have an impact on the learning process and academic development of students. Students experiencing difficulties in reading comprehension often have challenges in understanding the information contained in the text, which can be caused by various factors, both internal and external (Abbas, 2021; Pramesti & Makbul, 2023; Septia et al, 2022). Internal factors include health conditions, learning motivation, and cognitive abilities, while external factors include teaching methods teachers use and support from the family environment.

The success of education in Indonesia is determined by some factors, including the improvement of educational quality, which involves government efforts to enhance student learning achievements through achievement motivation that encourages both students and teachers to achieve educational goals (Suhada et al., 2023). External factors such as lack of attention and motivation from parents and monotonous teaching methods can exacerbate reading comprehension barriers for students (Aziz et al., 2022; Govindarajoo et al., 2022; Murtado et al., 2023). Therefore, it is important to understand reading comprehension skills and the factors that influence the development of these skills in order to design more effective learning strategies.

One promising approach uses Know-Want-Learn (KWL) based learning strategies to help students organize their knowledge and improve reading comprehension. KWL strategy aims to increase students' engagement in reading learning by utilizing students' prior knowledge (Damaranti et al., 2021; Mutalib, 2021).

The KWL strategy consists of three main steps: exploring what students already know (Know), determining what they want to learn (Want), and reflecting on what they have learned after reading (Learn) (Ardiyan et al., 2022; Khasanah et al., 2024; Sayar & Anilan, 2021). By incorporating this strategy, students are invited to explore what they already know, what they want to learn, and what they have learned after reading. KWL strategy not only helps students organise information but also increases students' motivation and interest in reading (AlAdwani et al., 2022; Laoli, 2021; Nurfadilah, 2021). This strategy allows students to explore topics in-depth and directedly to build connections between existing knowledge and new information obtained from reading. The KWL strategy also allows teachers to assess students' initial understanding and adjust teaching according to students' needs. Thus, the KWL strategy is important in creating an interactive and responsive learning environment.

Reading comprehension is the skill needed to understand the context and message conveyed through reading. Therefore, reading comprehension skills are essential for students with learning disabilities. This study aims to improve the reading comprehension of students with learning disabilities by applying the KWL strategy. Along with the challenges faced by students in comprehending texts, the application of the KWL strategy is becoming increasingly relevant. Many recent studies have shown that the use of this method can improve student learning outcomes at various levels of education. The KWL (Know, want to know, learned) strategy combined with Collaborative Strategic Reading (CSR) is effective in improving reading comprehension and English learning achievement of classroom students (Chimwong et al., 2024). Another study found that the KWL strategy has significantly and effectively affected students' reading comprehension. Students who were treated using the KWL strategy performed better in their reading comprehension than those who were not (Heriyawati et al., 2021). The effectiveness of the KWL strategy combined with pictures can improve subjects' reading comprehension because they are more interested in learning in online reading classes because the KWL strategy is combined with pictures (Suciani et al., 2022). However, no research has been found on improving the reading comprehension learning of students with learning disabilities through the KWL strategy.

METHOD

This research used a pre-experimental design consisting of pre-post testing and in-depth interviews. The experimental design used was a one-group-pretest-posttest design. Figure 1

explains the flow of this research, including research permission, data collection (pre-test, intervention, and post-test), and data processing.

In this design, a pre-test was conducted before treatment was given to make the treatment results more accurate because it compared the situation before and after treatment. The population in this study were 38 grade 5 elementary school students. Table 1 explains the sample in this study using a purposive sampling technique with a total of 6 students with reading comprehension learning barriers.
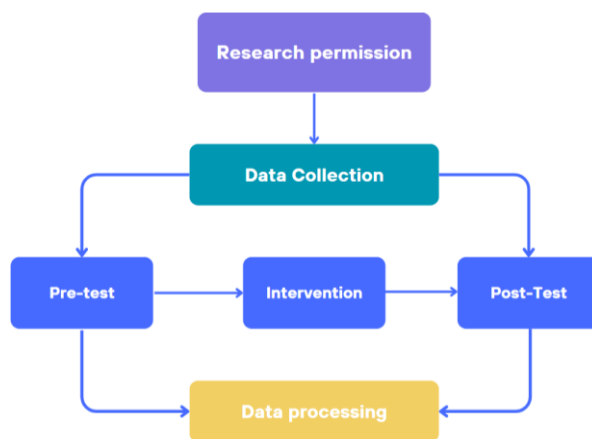

Figure 1. Research flow

Table 1. The respondents

No	Initials	Gender	Age
1.	A.F.A	Male	12 years
2.	M.R	Male	12 years
3.	M.R.P	Male	12 years
4.	Z.M	Female	12 years
5.	M.F	Female	12 years
6.	M.A.F	Male	12 years

Following the objectives of this study to measure the improvement of reading comprehension skills, the instrument used in this study was a test. Table 2 is the arrangement of test instruments in this study that aimed at obtaining information about the initial data of the ability of students with learning disabilities to read comprehension and the final data of the ability after using the KWL strategy.

Table 2. Research instrument

No	Sub-aspect	Number of instrument items
1.	Knowing the words in the reading passage and knowing their meaning.	6
2.	Understand the content of reading texts to reveal facts and sequences through questions	6
3.	Associating experiences and knowledge from the reading text to gain new knowledge implicitly	1
	Number of items	13

FINDINGS AND DISCUSSION

Findings

This research was conducted in an inclusive education school in West Java. This study aimed to improve reading comprehension skills for students who faced learning disabilities. The

indicators showing learning difficulties in students were that the students were unable to master the subject matter in the time allotted (Juhanaini et al., 2024). The results of research on applying the KWL strategy to improve reading comprehension skills in students with learning disabilities were obtained from the results of pre-test and post-test data from a total of 13 test instruments with a maximum score of 27. This study used a pre-experimental design research method using a one-group pretest post-test design. The data analysis technique used in this study was the nonparametric statistics Wilcoxon test, which was used to prove the hypothesis.

Table 3 presents data on pre-test results. The pre-test process was carried out as an initial step in taking data on reading comprehension ability tests for students with learning disabilities before being given intervention using the KWL strategy. Table 4 presents data on post-test results. The post-test research process was carried out as a final step in taking data on reading comprehension ability tests for students with learning disabilities after being given intervention using the KWL strategy.

Table 3. Pre-test result

No	Sample	Reading comprehension score			Total	Score
		Sub-aspect 2	Sub-aspect 3	Sub-aspect 1		
1.	A.F.A	10	1	3	14	51.8
2.	M.R	14	1	2	17	66.6
3.	M.R.P	12	1	3	16	59.3
4.	Z.M	15	1	2	18	66.6
5.	M.F	13	0	4	17	62.9
6.	M.A.F	12	0	3	15	55.5

Table 4. Post-test result

No	Sample	Reading comprehension score			Total	Score
		Sub-aspect 2	Sub-aspect 3	Sub-aspect 1		
1.	A.F.A	14	2	6	22	81.4
2.	M.R	14	3	6	23	85.1
3.	M.R.P	14	3	6	23	85.1
4.	Z.M	15	3	6	24	88.8
5.	M.F	14	3	6	23	85.1
6.	M.A.F	15	2	6	23	85.1

As for the intervention process carried out within three different meetings through the learning process with the KWL strategy, it shows the improvement experienced by each student. The intervention process used different test instruments, including pre-test and post-test. Table 5 explains the intervention process's test results 3 times. The results of the intervention process showed an increase in each intervention.

Table 5. Results of the intervention process

No	Sample	Intervention process		
		Intervention 1	Intervention 2	Intervention 3
1.	A.F.A	44.4	59.3	74.1
2.	M.R	37.0	48.1	63.0
3.	M.R.P	48.1	59.3	70.4
4.	Z.M	37.0	48.1	66.7
5.	M.F	51.9	63.0	70.4
6.	M.A.F	29.6	40.7	66.7

The results were further analyzed using the Wilcoxon Calculation Results table to compare the pre-post test scores. Table 6 is designed to clearly show the significant change in reading comprehension ability using the KWL strategy. The positive and negative rankings are summed to get Tcount, which has the smallest points. The Wilcoxon test has a significance level value of α = 0.05, and N = 6 is 0, hence Ttable = 0.

Table 6. Data processing with Wilcoxon tes

No	Sample	Score		(X-Y)	[X-Y]	R	+	-
		X	Y					
1.	A.F.A	51.8	81.4	-29.6	29.6	4.5	0	4.5
2.	M.R	66.6	85.1	-18.5	18.5	1	0	1
3.	M.R.P	59.3	85.1	-25.9	25.9	6	0	6
4.	Z.M	66.6	88.8	-22.2	22.2	2.5	0	2.5
5.	M.F	62.9	85.1	-22.2	22.2	2.5	0	2.5
6.	M.A.F	55.5	85.1	-29.6	29.6	4.5	0	4.5
			Total				0	21

Discussion

The research results in the field show that applying KWL (know-want-learned) learning effectively improved reading comprehension skills for students with learning disabilities, with an increase of 24.7. Based on the results of calculations with the Wilcoxon test, the smallest number of ranks or J count = 0. The value of the significance level was α = 0.05, and the sample or n = 6 then, J count = 0 ≤ Jtable = 0, the result H 0 was rejected. This study shows that applying the KWL (know-want-learned) strategy effectively improved reading comprehension skills.

In the learning process using the KWL strategy, it was found that students were quite active in participating in learning; this was because students felt valued and trusted to write on the board and were appreciated for their answers. This proves that the KWL strategy increased student activeness in the classroom by inviting them to participate actively in the learning process (Nurlisa et al., 2023; Shi & Cheng, 2021).

Another thing found in applying Step W, students tended to take a long time to express what they wanted to know about the reading titles *sliduran* and *pletokan*. The difficulty experienced by students was because these reading titles were not familiar. The effort to overcome this problem was that the teacher needed to provide an active role to explore or provoke students to dare to argue. The KWL table made by students and, when combined as a whole, is shown in Table 7.

Table 7. KWL table result

K	W	L
1. Already know 2. War-like 3. There are tools for play 4. Male students like	1. Why do male students like it? 2. How to play? 3. How many people play *Pletokan*? 4. Where is the game?	1. Like warfare 2. There are two groups, playing in many trees and bushes, who have been shot 3x fallen 3. More than three people 4. In many trees and shrubs

In Table 7, K starts from what they already know (K), and students could relate new knowledge to previous experience (Hendratno, 2021; Zulaikah, 2021). In Table 7 in K number 1, students wrote "already know" This was because students went through the pre-test stage on the first day. Numbers 2-4 students also wrote things that were relevant to their memories during the pre-test activities. In Table 7 in W, learners took a long time to find out what they wanted to know, so they needed to be stimulated, such as "Can you play pletokan alone? (point 3). Learners answered no, and the researcher gave another stimulus "how many people play pletokan?". The

stimulus given motivated learners to explore what they wanted to know. In Table 7 in L, one of the learners had difficulty finding the answer because this answer was not written in the reading text (implied), so the researcher also gave a clue: "is the group many people or 1 person?" "learners answered "many" The researcher gave another stimulus: "The group members must be fair, for example, Arvin with Rio and Marsya with Zenita or even, so how many people must play pletokan?" the students answered, "Must be even 2,4,6".

Based on the pre-test and post-test activities, there was an increase in reading comprehension, which was the benchmark for improvement in reading comprehension including an increase in pre-test and post-test scores in the ability to understand words or sentences in the text (58%), an increase in pre-test and post-test scores in the ability to connect knowledge and experience to get an average of 40%, and an increase in pre-test and post-test scores in the ability to connect to increase the ability to understand the content (15%)

CONCLUSION

One of the skills that must be mastered is reading comprehension, which allows individuals to understand the context and messages conveyed through reading. Therefore, acquiring reading comprehension skills for students with learning disabilities is very important. This study aimed to improve the reading comprehension of students with learning disabilities by using the KWL strategy. The study consisted of eight students who had difficulty learning to read comprehension, as well as three experts who validated the instrument. The study used a pre-experimental design with one group pre-test post-test. To test the hypothesis, this study used Wilcoxon nonparametric test statistics.

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REFERENCES

Abbas, K. D. A. (2021). Factors influencing students' reading comprehension difficulties amidst the use of modular distance learning approach in Mindanao State University Sulu–senior high school. *Open Access Indonesia Journal of Social Sciences, 4*(6), 581-602

Agustin, M. I., Muktiarni, M., & Mupita, J. (2022). Implementation of the reading and writing literacy program to elementary school students about the impact of the natural disaster of Mount Merapi. *Indonesian Journal of Teaching in Science, 2*(2), 99-106

AlAdwani, A., AlFadley, A., AlGasab, M., & Alnwaiem, A. F. (2022). The effect of using KWL (know-want-learned) strategy on reading comprehension of 5th grade EFL students in Kuwait. *English language teaching, 15*(1), 79-91

Alpapara, L. S. (2022). Promoting positive discipline in developing a love for reading using comprehensive analytical reading inventory (CARI): A review study. *ASEAN Journal of Educational Research and Technology, 1*(1), 1-6

Ardiana, A., Nandiyanto, N., Kurniawan, T., & Bilad, M. R. (2022). Implementation of sticky note learning media to increase reading interest in 5th-grade students towards lesson books in the pandemic of Covid 19. *Indonesian Journal of Multidiciplinary Research, 2*(2), 265-270

Ardiyan, R. N., Rosyid, A., & Priyantin, T. (2022). The use of KWL strategy on students' reading comprehension. *Journal of English Language Studies, 4*(2), 100-109

Armella, R. & Rifdah, K. M. N. (2022). Kesulitan belajar dan faktor-faktor yang mempengaruhi kesulitan belajar. *Sultan Idris Journal of Psychology and Education*, 14-27

Aziz, M. T., Al-Firdausy, M. K. H., & Syafi'i, M. (2022). Learning listening and reading skills from the Arabic language in a psycholinguistic perspective. *AL-ISHLAH: Jurnal Pendidikan, 14*(4), 4997-5006

Capin, P., Gillam, S. L., Fall, A. M., Roberts, G., Dille, J. T., & Gillam, R. B. (2022). Understanding the nature and severity of reading difficulties among students with language and reading comprehension difficulties. *Annals of Dyslexia, 72*(2), 249-275

Ceyhan, S., & Yıldız, M. (2021). The effect of interactive reading aloud on student reading comprehension, reading motivation and reading fluency. *International Electronic Journal of Elementary Education, 13*(4)

Chimwong, C., Naphatthalung, N., & Khattiyamarn, W. (2024). The effects of collaborative strategic reading and KWL plus technique on reading comprehension and English learning achievement. *Kasetsart Journal of Social Sciences, 45*(3)

Damaranti, A. F. D., Saefullah, H., & Ridwan, I. (2021). Exploring EFL students' reading engagement in KWL strategy. INTERACTION: *Jurnal Pendidikan Bahasa, 8*(2), 258-266.

Dewi, H., Damio, S., & Sukarno, S. (2023). Item analysis of reading comprehension questions for English proficiency test using Rasch model. *REID (Research and Evaluation in Education), 9*(1), 24-36. https://doi.org/10.21831/reid.v9i1.53514

Govindarajoo, M. V., Selvarajoo, N. A. D., & Ali, M. S. (2022). Factors contributing to poor academic achievement among low performing pupils: A case study. *Asian Journal of University Education, 18*(4), 981-997

Hartati, A. D., Maryanti, R., Azizah, N. N., Al Husaeni, D. F., Wulandary, V., & Irawan, A. R. (2023). Webtoon comic media to improve reading comprehension for students with hearing impairments in special primary schools. *ASEAN Journal of Community and Special Needs Education, 2*(1), 9-16

Hendratno, D. W. (2021). Penerapan strategi know want to know learned (KWL) untuk meningkatkan keterampilan membaca pemahaman siswa kelas V SDN Tambakrigadung I Lamongan. *Jpgsd, 09* No, 4

Heriyawati, D. F., Irawati, L., & Haliwala, A. C. L. (2021). The use of KWL (know, want, learned) strategy on students' reading comprehension. *English Teach. J. A J. English Lit. Lang. Educ, 9*(2), 94

Hilaikal, F., Wahyudin, A. Y., & Ayu, M. (2023). The implementation of sq3r in helping students'assessment in reading class at SMAN 1 Adiluwih. *Journal of English Language Teaching and Learning, 4*(1), 53-57

Juhanaini, J., Rizqita, A. J., Bela, M. R. W. A. T., Hernawati, T., Qolbi, I. N., & Khimmataliyev, D. O. (2024). Android-based technology: development of game-based learning media based on the results of analysis of arithmetic learning difficulties. *Journal of Advanced Research in Applied Sciences and Engineering Technology, 48*(1), 1-28

Kamila, I. N. & Sakti, A. W. (2022). Learning literature using 4M methods as an effort to increase reading interest of elementary school. *Indonesian Journal of Multidiciplinary Research, 2*(1), 69-76.

Khasanah, S. N., Rizal, H. S., & Mukminin, A. (2024). Pengaruh strategi KWL berbantu sorogan terhadap keterampilah maharah qira'ah santri usia dini. *Lahjah Arabiyah: Jurnal Bahasa Arab dan Pendidikan Bahasa Arab, 5*(2), 229-240

Khasawneh, M. (2022). The relationship of curriculum, teaching methods, assessment methods, and school and home environment with learning difficulties in English language from the students' perspectives. *Journal of Innovation in Educational and Cultural Research, 3*(1), 41-48

Laoli, A. (2021). Activate reading comprehension of second language acquisition (SLA) by applying know-want to know-learned (KWL) strategy. *IJEE (Indonesian Journal of English Education), 8*(2), 179-197

Maryati, W. E., Retnowati, E., & Thoe, N. K. (2022). Learning mathematics formulas by listening and reading worked examples. *Indonesian Journal of Teaching in Science, 2*(1), 61-74

Murtado, D., Hita, I. P. A. D., Chusumastuti, D., Nuridah, S., Ma'mun, A. H., & Yahya, M. D. (2023). Optimalisasi pemanfaatan media pembelajaran online sebagai upaya meningkatkan hasil belajar siswa di sekolah menengah atas. *Journal on Education, 6*(1), 35-47

Muthalib, L. M. (2021). The use of KWL (know-want to know-learned) strategy for reading comprehension in blended learning. *International Journal of Arts and Social Science, 4*(6), 373-378

Nafilah, N. P. &Sakti, A. W. (2022). The effectiveness of using YouTube applications as learning media to increase reading and writing interest of elementary school students. *ASEAN Journal of Educational Research and Technology, 1*(1), 71-78

Nilsson, K., Danielsson, H., Elwér, Å., Messer, D., Henry, L., & Samuelsson, S. (2021). Investigating reading comprehension in adolescents with intellectual disabilities: evaluating the simple view of reading. *Journal of Cognition, 4*(1).

Nugraha, H. H., Nandiyanto, A. B. D., Kurniawan, T., & Bilad, M. R. (2022). Education to develop reading literacy by analyzing the intrinsic elements of short stories in Islamic junior high school students. *Indonesian Journal of Multidiciplinary Research, 2*(1), 125-130

Nurfadilah, N. (2021). KWL (Know, Want to Know, Learned) strategy for teaching English reading comprehension in EFL classroom. *Al-Iftah: Journal of Islamic studies and society, 2*(1), 91-110

Nurlisa, N., Salahuddin, A., & Oktasusilawati, W. (2023). Effect of KWL strategy (know, want, learn) on reading ability of grade IV elementary students. *Journal of Vocational Education and Information Technology (JVEIT), 4*(1), 11-15

Nuryani, N., Utami, N. C. M., & Nurhasanah, N. (2024). Analisis kemampuan membaca pemahaman pada siswa sekolah dasar melalui model cooperative integrated reading composition (CIRC). *Kalam Cendekia: Jurnal Ilmiah Kependidikan, 12*(3)

Pramesti, A. N., & Makbul, M. (2023). Analisis kesulitan belajar peserta didik kelas vii 5 pada mata pelajaran pendidikan agama Islam di SMPN 5 Cikarang Utara Kabupaten Bekasi. *Az-Zakiy: Journal of Islamic Studies, 1*(01), 15-23

Primasari, I. F. N. D., & Supena, A. (2021). Meningkatkan kemampuan membaca siswa disleksia dengan metode multisensori di sekolah dasar. *Jurnal Basicedu, 5*(4), 1799-1808

Pujiastuti, I. (2024). Bibliometric analysis using VOSviewers with Publish or Perish of "academic reading". *ASEAN Journal of Educational Research and Technology, 3*(3), 267-274

Putri, I. M., & Yarmi, G. (2024). Analisis penilaian keterampilan membaca pemahaman siswa kelas tinggi sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar, 9*(2), 7304-7313

Sayar, N., & Anilan, H. (2021). The effect of KWL reading strategy in elementary school 4th grade students to reading comprehension. *Bulletin of Education and Research, 43*(3), 23-46

Septia, N. W., Indrawati, I., Juriana, J., & Rudini, R. (2022). An analysis of students' difficulties in reading comprehension. *EEdJ: English Education Journal, 2*(1), 11-22

Shaaban, T. S. & Mohamed, A. M. (2024). Exploring the effectiveness of augmented reality technology on reading comprehension skills among early childhood pupils with learning disabilities. *Journal of Computers in Education, 11*(2), 423-444

Shi, L. & Cheng, E. C. (2021). Developing metacognitive teaching in Chinese language through conducting lesson study in Shanghai. *International Journal for Lesson & Learning Studies, 10*(1), 75-88

Smith, R., Snow, P., Serry, T., & Hammond, L. (2021). The role of background knowledge in reading comprehension: A critical review. *Reading Psychology, 42*(3), 214-240

Suciani, N. K., Wardana, I. K., & Astawa, I. N. (2022). The use of KWL strategy combined with pictures to improve English reading comprehension. *Academic Journal on English Studies (AJOES), 2*(2), 121-132

Suhada, S., Sunardi, S., Amali, L. N., Katili, M. R., Lahinta, A., & Kilo, J. R. (2023). Using Discovery Learning and Problem-Based Learning to Increase Students' Motivation for accomplishment. *Elinvo (Electronics, Informatics, and Vocational Education), 8*(2), 255-263. https://doi.org/10.21831/elinvo.v8i2

Viyana, K., Nandiyanto, A. B. D., Kurniawan, T., & Bilad, M. R. (2023). Improving reading comprehension skills through the school literacy movement for children with learning difficulties. *Indonesian Journal of Community and Special Needs Education, 3*(2), 85-92

Zulaikah, A. (2021). Penggunaan know what learned (KWL) strategy untuk meningkatkan kemampuan siswa membaca report text. *Jurnal Lingkar Mutu Pendidikan, 18*(1), 114-122