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The Development of Learning Strategy in Reading Comprehension for Children with Hearing Impairment in Grade 4 SDLB

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Abstract: This research is motivated by the low understanding of children with hearing impairments in reading comprehension. Therefore, the purpose of this research is to develop strategies for teaching reading comprehension for children with hearing impairments. The method used in Mix Methods. Stages of research conducted in the hierarchy, meaning that the first stages of research will affect the research stage further in order to achieve the research objectives. The results showed that the application of learning strategy in reading comprehension has been developed effectively applied to children with hearing impairment at SLB Prima Bakti Mulya in grade 4-B, the academic year of 2015/2016. This is evident from the results of student learning has increased from the first to the fourth trial. While based on the Wilcoxon test known the value of Z count = -2, 201 with Asymp. Sig. (2-tailed) = 0.028 with a significance level (α) of 5%. Asymp Value. Sig. (2-tailed) = 0, 028 <α = 0.05, then Ho is rejected and Ha accepted because Asymp value. Sig. (2-tailed) <A = 0.05.

Keywords: Strategies; learning reading comprehension; children with hearing impairment.

INTRODUCTION

Every child need education. According to the Indonesian Dictionary (Nafrin & Hudaidah, 2021), education is the process of changing the attitudes and behavior of a person or group of people to mature humans through teaching and training efforts. Basically, every child has potential that can be developed through education, including children with special needs. As part of children with special needs, children with hearing impairments need special services in education in order to optimally develop their potential. A person who experiences hearing loss that hinders the process of language information through hearing, whether wearing a hearing aid or not wearing a hearing aid (Mustika, Novianti & Nadiyah, 2023). The language ability of deaf students cannot develop according to their chronological age because they do not experience a language acquisition period like hearing students do (Zuhri, Bagaskorowati & Lianty, 2021). The main problem experienced by children with hearing impairments is not their inability to communicate but the consequences of this for the development of their language skills, namely the inability to understand symbols and rules of language (Rapisa, 2021). In addition, they also experience limitations in mastering vocabulary and interpreting words. Language is an important means of conveying or receiving information in everyday life (Utomo, et.al.,2021). Children who hear have no problems in obtaining language input in large, complete, and clear quantities because they will be flooded with language through their hearing throughout the day, whereas for children with hearing impairments, this condition can only be achieved if it is balanced by reading (Queril Forsch & hammer, quoted in Bunawan & Yuwati, 2000). Reading is the best way to strengthen and expand language skills and acquire knowledge, especially for children with hearing impairments who are already at a higher education level or have left school (Bunawan & Yuwati, 2000; Ediyanto, 2023).

As one of the solutions to language barriers experienced by children with hearing impairments is mastery in reading skills accompanied by understanding the contents or what is commonly called reading comprehension skills. Given how important reading comprehension skills are for children with hearing impairments, teaching reading comprehension needs improvement. This is reinforced by the results of Yuwati's research (Budiarti, 2013), namely: the reading comprehension level of special school students is far below that of regular school students, even the grades obtained by students with hearing impairments are far below that of regular school students.

Based on the results of observations in the field, it was found that there were 6 students with hearing impairments in grade 4 SDLB Prima Bakti Mulya who had difficulty understanding the contents of the reading. This is due to their limitations in interpreting words and sentences as a result of their deafness, as well as the lack of variety of reading learning strategies applied by teachers so far. Teachers tend to give explanations to students more by using descriptions of words and gestures as supports so that it looks abstract to students. In addition, learning activities are dominated using the lecture method, so that students appear passive during the learning process. The impact of implementing the teacher's strategy is that students with hearing impairments have difficulty understanding the meaning conveyed by the teacher. Seeing these problems, one of the solutions that can be done is to develop a reading comprehension learning strategy that has been implemented by the teacher in the classroom. The development of the learning strategy was carried out based on research findings by considering the learning principles of children with hearing impairments.

METHOD

This research uses Mixed Methods because it combines two research methods, namely quantitative and qualitative into a research activity, so that the data obtained will be more comprehensive, valid, reliable and objective (Sugiyono, quoted in Nia & Loisa, 2019). This research is divided into 2 stages of research, namely stage I and stage II. The two stages in this research run continuously. Sustainability is meant here is the implementation of the stages in one research will affect the next research stage in order to achieve research objectives. In phase I, the research was carried out qualitatively in order to formulate a developed draft of a reading comprehension learning strategy. Meanwhile, in phase II the research was carried out quantitatively in order to find out the effectiveness of the reading comprehension learning strategies developed in children with hearing impairments in grade 4 SDLB. Each of these stages has different research approaches, subjects, data collection techniques and data analysis techniques, as well as research instruments. The chart of research procedures to be carried out is illustrated in chart 1.

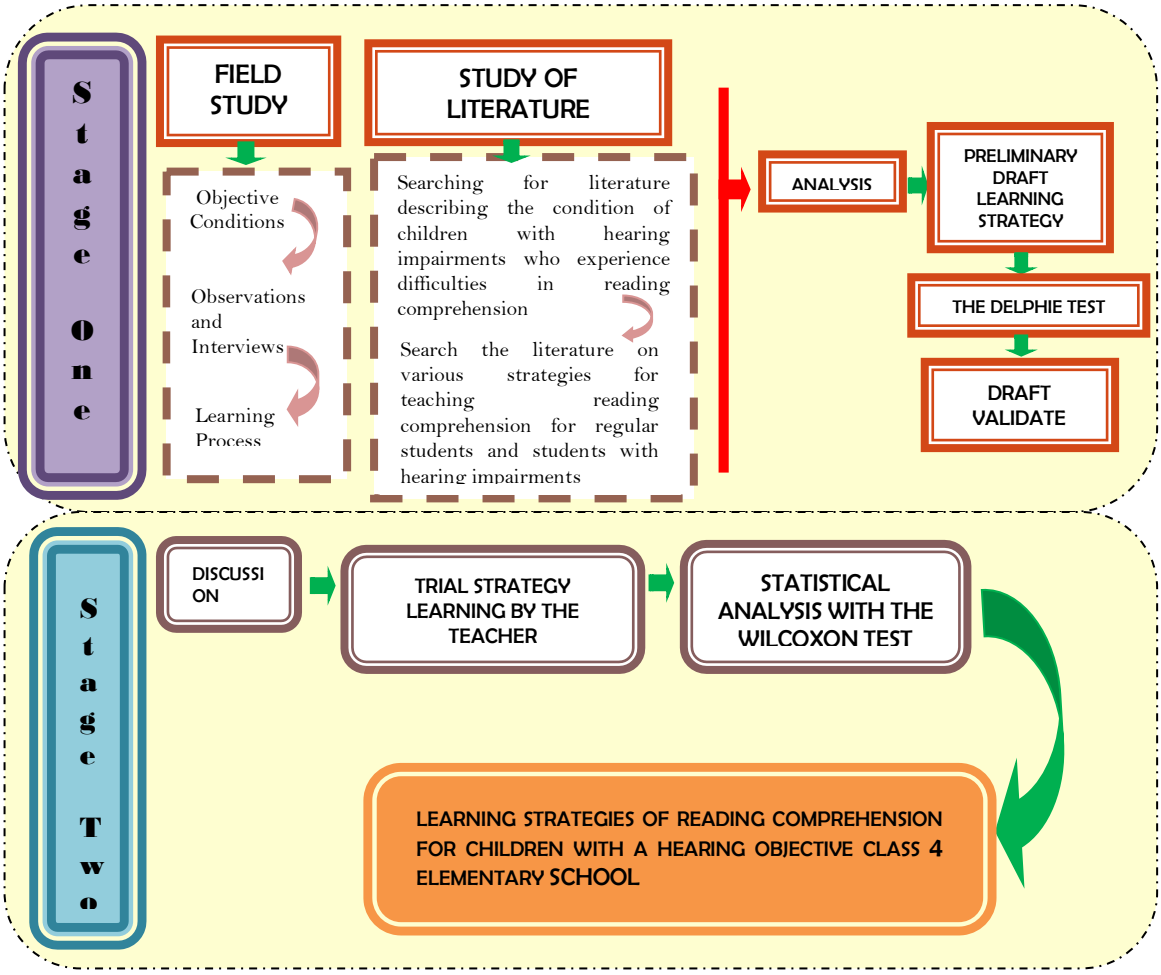

Chart 1. Development Research Procedures Reading Comprehension Learning Strategy

Based on the chart above, the stages in this study can be described as follows:

1. Research Phase I (Draft Formulation)

The first stage of this research is the formulation of a draft of a reading comprehension learning strategy. This stage begins with conducting field studies and literature studies together. A field study was conducted to collect data related to the learning process of reading comprehension for grade 4 at SLB-B Prima Bakti Mulya. This activity is carried out through observation activities in the classroom when the teacher teaches reading comprehension learning and interviews the class teacher. Meanwhile, a literature study was conducted to obtain a theoretical basis for developing a draft of a reading comprehension learning strategy. The implementation of this activity is by searching for literature on various strategies for teaching reading comprehension for hearing children and children with hearing impairments. The results of data acquisition from field studies and literature studies were then analysed to serve as a basis for developing a draft of a reading comprehension learning strategy. From the initial draft of the learning strategy for reading comprehension that has been formulated then validation is carried out using the Delphie test. The result at this stage is a draft of a validated reading comprehension learning strategy.

In this regard, in phase 1 research, the research approach used was a qualitative approach. Meanwhile, the subjects of this study were 6 children with hearing impairments

in grade 4 SDLB, 1 teacher in grade 4 SDLB and 3 experts validating drafts of learning strategies. The draft validation experts include 2 special education lecturers and 1 SLB teacher who has experience working with children with hearing impairments. Data collection techniques used are observation and interviews. Then, the data analysis used is based on the framework developed by Miles and Huberman. This analysis technique consists of three phases, namely data reduction, data display, and drawing conclusions or verification.

2. Phase II Research (Trial Draft)

The stage of this research was started by having discussions with the class teacher regarding the draft for the development of learning strategies that had been validated and asking for the teacher's consideration regarding the implementation of reading comprehension learning strategies in class. After that, ask the class teacher to try out the reading comprehension learning strategy in class. The trial was carried out to determine the effectiveness of implementing the reading comprehension learning strategy that had been developed. The data obtained from the implementation of the trial was in the form of experimental data, namely the results of the pre-test and post-test of reading comprehension. Quantitatively, experimental data were analysed using non-parametric analysis techniques through the Wilcoxon test. Then, to provide a descriptive picture of the trial implementation, observations were made. In addition, interviews were also conducted after the trial was carried out in order to improve the validated draft. The result at this stage is a draft strategy that has been tested and is ready to be used in teaching reading comprehension for children with hearing impairments in grade 4 SDLB.

In this regard, in phase 2 research, the research approach used was a quantitative approach. Meanwhile, the subjects of this study were 1 teacher in grade 4 SDLB and 6 children with hearing impairments in grade 4 SDLB. The data collection technique used was a reading comprehension test. Then, the analysis technique used is a non-parametric analysis technique through the Wilcoxon test (Wilcoxon test).

RESULT AND DISCUSSION

Result

1. Reading Comprehension Learning Process for Grade 4 SDLB-B Prima Bakti Mulya

In order to obtain data about the implementation of learning to read comprehension that has been carried out by the teacher, the researcher conducted observation activities while the teacher was teaching and continued with interviews with the class teacher. After conducting interviews and observations of learning to read comprehension in grade 4 SDLB-B Prima Bakti Mulya, the researchers obtained an overview of the strategies for teaching reading comprehension that have been applied by teachers in class so far. The implementation of the learning strategy can be illustrated in the following chart.

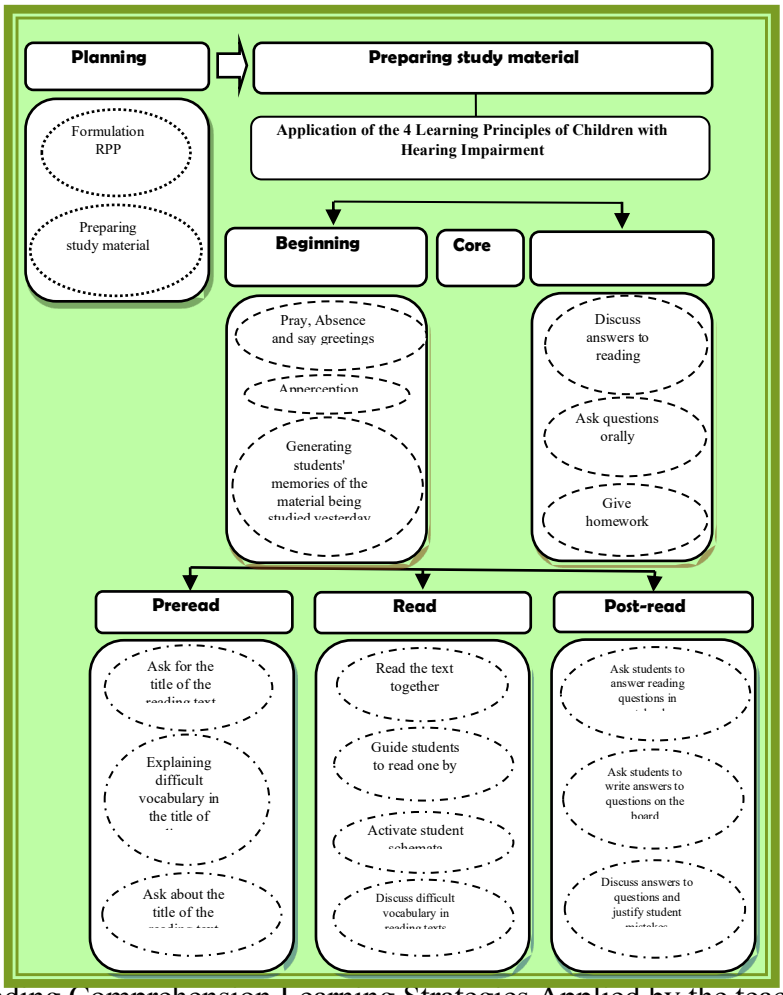

Chart 2. Reading Comprehension Learning Strategies Applied by the teacher in class

2. Formulation of Reading Comprehension Learning Strategies for Children with Hearing Impaired Class 4 SDLB

After going through the series of activities above, the next step is to develop an initial draft of a reading comprehension learning strategy. Then, the initial design was validated using the Delphie technique, where the researcher obtained several inputs and made improvements based on suggestions from several experts. The advantage of this strategy is that it includes several learning principles for children with hearing impairments. The implementation of these learning principles is in the form of collaborative learning strategies, namely: mind mapping strategies, cooperative learning strategies, expository learning strategies and simulation. Within the steps of the strategy are included six complementary learning methods, namely the mind map method, the conversation method, the Cooperative Integrated Reading, and Composition (CIRC), question and answer method, demonstration method, and role-playing method. The results of developing learning strategies after being validated can be described in the following chart.

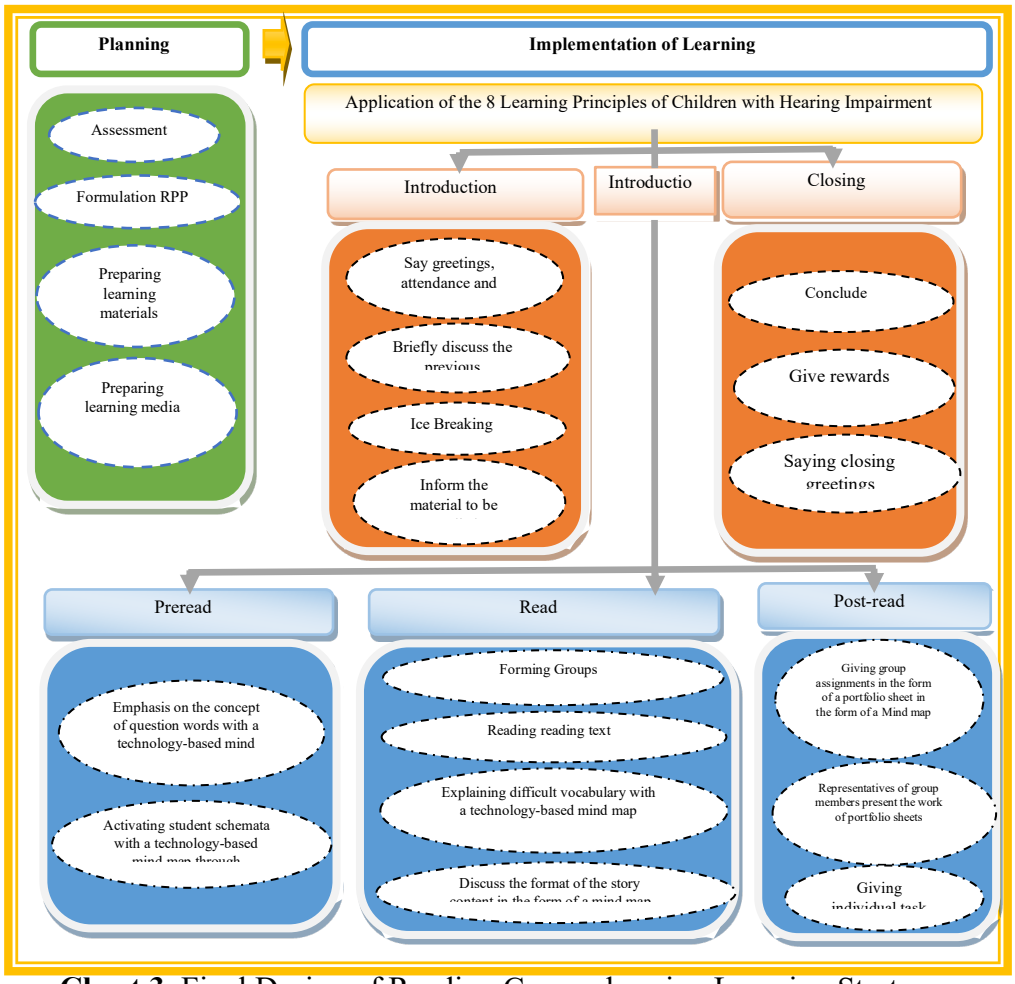

Chart 3. Final Design of Reading Comprehension Learning Strategy

3. The Effectiveness of Reading Comprehension Learning Strategies in Children with Hearing Impaired Class 4 SDLB

To find out the effectiveness of the reading comprehension learning strategy that had been developed in Class 4 SDLB-B Prima Bakti, the researchers conducted a pilot test. Before carrying out the trial, the researcher conducted a pre-test to determine students' initial ability to understand reading texts. Then, do a post-test after the trial implementation to find out students' abilities after learning to use the reading comprehension learning strategy that has been developed. In this study, researchers conducted four trials so that the results of the pre-test and post-test I to IV were obtained. The pre-test and post-test data values are then averaged which is presented in the table below:

Table 1. Average Data of Pre-Test and Post-Test Trial Results First, Second, Third and Fourth Learning Strategies Reading Comprehension Has Developed

Subject initials	Pre-test Average Score	Average value Post-Test
WMF	44, 75	65, 75
HAS	57, 5	81, 75
MTA	70	87
AAR	53,5	78, 5
PNS	63, 66	73, 33
RMA	51	62

With respect to the data on the average pre-test and post-test scores for the first, second, third and fourth trials above, it is known that the reading comprehension ability of the six research subjects has increased. This can be seen from the WMF pre-test average score of 44.75 which increased to 65.75 during the post-test. In line with WMF, the average pre-test HAS score of 57.5 increased to 81.75 during the post-test. Likewise, the MTA pre-test average score increased from 70 to 87 during the post-test. Not unlike the MTA, the average pre-test AAR score of 53.5 increased to 78.5 during the post-test. The same thing happened to civil servants, the average pre-test score increased from 63.66 to 73.33 during the post-test. This also happened with the RMA pre-test average value increasing from 51 to 62 during the post-test.

The next step is to analyze the Wilcoxon Signed Ranking Test. The results of the calculation of SPSS version 20 analysis of the Wilcoxon Signed Ranking Test are as follows:

Table 2. Statistical Test Results

Test Statistics[b]

	Posttest - Pretest
Z	-2.201[a]
Asymp. Sig. (2-tailed)	.028

a. Based on negative ranks.
b. Wilcoxon Signed Ranks Test

The data above was processed using the SPSS version 20 data processing program. The results of the hypothesis test for calculating the value of the pre-test and post-test from the first to fourth trials are the calculated Z value = -2.201 with Asymp. Sig. (2-tailed) = 0.028 with a significance level (α) of 5%. Asymp value. Sig. (2-tailed) = 0.028 < α = 0.05, then Ho is rejected and Ha is accepted, which means that there are differences in reading comprehension test scores before and after applying the reading comprehension learning strategies that have been developed in the first to fourth trials. It can be concluded that the implementation of the reading comprehension learning strategy that has been developed has an effect on the reading comprehension ability of children with hearing impairments grade 4 at SLB-B Prima Bakti Mulya in the 2015/2016 academic year.

Discussion

1. Reading Comprehension Learning Process for Grade 4 SDLB-B Prima Bakti Mulya

Children with hearing impairment often experience misperceptions in communicating. This is the impact of limitations in hearing acuity, so that they experience limitations in receiving information and experience a significant impact on their lives. The information obtained through the sense of hearing is very little so that individuals with hearing impairments make better use of their sense of sight. One way is by reading activities (Putri, Winarsih & Mulyeni, 2021). Reading is a process to get meaning from word by word, sentence by sentence that has been read. One dimension of reading skills is reading comprehension (Yetti, quoted in Nengsih & Iswari, 2019). Understanding reading content for deaf children is seen as an irreplaceable tool in language development, because this ability is the basis for having further abilities, thus reading skills must be mastered by students without exception (Nengsih & Iswari, 2019). Therefore, students with hearing impairments need special education services to be able to understand the contents of the reading properly (Prastiwi, 2017).

The findings of observations and interviews regarding the learning process of reading comprehension for children with hearing impairments in grade 4 SDLB-B Prima Bakti Mulya show that the strategies for teaching reading comprehension that have been implemented by teachers so far are less varied so it needs improvement in a better direction. So far, teachers tend to give explanations to students more by using descriptions of words and gestures as supports so that it looks abstract to students. In addition, learning activities are dominated by the use of the lecture method, so that students appear passive during the learning process. This is supported by Widayati's opinion (Rusadi & Marlina, 2021) that the weaknesses of the lecture method include: verbalism easily occurs, the visual becomes loss, the auditive one is more accepting, boring for relatively long use, it is difficult to conclude that students understand and are interested in what is being conveyed, and students become passive. In addition, teachers have not fully applied the principles of learning for children with hearing impairments because so far they have only applied four learning principles, namely the principles of sound directionality, facial directionality, modeling and intersubjectivity. This is not in line with Regulation of the Minister of National Education Number 16 of 2007 which states that the core competencies of special education teachers match the core competencies of general school teachers, namely: (1) Mastering the characteristics of students, (2) Mastering learning theory and learning principles, (3) Develop curriculum, (4) Organizing learning, (5) Utilize information and communication technology, (6) Facilitate developing the potential of students, (7) Communicate effectively, (8) Carrying out assessments and evaluations, (9) Utilizing the results of the assessment for the benefit of learning, (10) Perform reflective actions to improve the quality of learning (Meutia & Mursita, 2018).

2. Formulation of Reading Comprehension Learning Strategies for Children with Hearing Impaired Class 4 SDLB

The strategy for teaching reading comprehension developed in this research is a strategy that has been implemented by the teacher in the modified class according to the results of interviews with the class teacher and the results of observations of the process of learning reading comprehension in class. In addition, it is collaborated with strategies for learning to read comprehension obtained during literature studies. The collaborative strategies are in the form of expository learning strategies, mind mapping learning strategies and cooperative learning strategies. Then, the strategy that has been made is validated by three experts (validators). After being validated, the next step is to be tested by the teacher four times. The results of the implementation of these activities obtained the formulation of a final reading comprehension learning strategy.

One of the inputs from the validator is to make the eight learning principles of children with hearing impairments the hallmarks of this strategy. These principles include: facial directionality, sound directionality, intersubjectivity, concreteness, visualization, modeling, experience and learning by doing. It is said to be an advantage because these principles can provide meaningful learning for the subjects of this study and optimize their senses which are still functioning. The implementation of these learning principles is included in the collaborative learning method in the steps of this strategy. The learning methods in question include: the mind map method, the conversation method, the CIRC (Cooperative Integrated Reading and Composition) method, the question and answer method, the demonstration method, and the role playing method. The learning method is used by the teacher to create a learning atmosphere and the learning process so that students achieve basic competencies or a set predefined indicators (Nurochim, 2013).

3. The Effectiveness of Reading Comprehension Learning Strategies in Children with Hearing Impaired Class 4 SDLB

In order to find out the effectiveness of the developed reading comprehension learning strategy, the teacher tested the strategy four times. The trial results showed an increase in reading comprehension skills from the first trial to the fourth trial along with the improvements made in each trial. In addition, in order to determine the effectiveness of the strategies developed quantitatively, the researchers conducted pre-tests and post-tests using non-parametric analysis techniques via the Wilcoxon test. The reason for using the Wilcoxon test is reinforced by the opinion of Tanty, et al (2013), the Wilcoxon test is used to analyze the results of paired observations of two data whether there is a difference or not. In this regard, the Wilcoxon test as a non-parametric statistical test is used if the sample used has a small size, the data used is normal, and the data used is nominal (Mardani, Sopandi & Kusumastuti, 2021). In relation to this study, the results of the Wilcoxon test show that the application of the developed reading comprehension learning strategy affects the reading comprehension ability of children with hearing impairments in grade 4 at SLB-B Prima Bakti Mulya in the 2015/2016 academic year. This can be seen from the learning outcomes of students who have increased from the first trial to the fourth trial. Meanwhile, based on the Wilcoxon test, it is known that the calculated Z value = -2.201 with Asymp. Sig. (2-tailed) = 0.028 with a significance level (α) of 5%. Asymp value. Sig. (2-tailed) = $0.028 < \alpha = 0.05$ then Ho is rejected and Ha is accepted because of the Asymp value. Sig. (2-tailed) $< \alpha = 0.05$.

CONCLUSION

Based on the results of the research and discussion, the authors draw the following conclusions:

1. The learning strategy used by teachers so far leads to classical and teacher-centered learning.
2. The final formulation of the reading comprehension learning strategy, as follows: a. Learning planning, including: assessment, formulation of lesson plans, preparation of learning materials and media, b. Implementation of learning, including: 1) Preliminary activities, including: greetings, absences, pray, briefly discuss the previous material, ice breaking, and inform the material to be studied, 2) core activities, among others: a) pre-reading stage, including: emphasis on the concept of question words with a technology-based mind map and activate student schemata with technology-based mind maps through conversation, b) reading stage, including: forming groups, reading texts, explaining difficult vocabulary with a technology-based mind map, and discussing the format of story content in the form of a mind map, c) post-reading stage, including: giving group assignments in the form of a portfolio sheet in the form of a mind map, representatives of group members present the work of portfolio sheets, and assignment of individual assignments, 3) closing activities, including: conclude, reward each individual, and say goodbye.
3. The strategies that have been developed are effectively used by teachers in teaching reading comprehension for grade 4 at SLB-B Prima Bakti Mulya. This can be seen from the increase in the results of the first trial to the fourth trial which showed significant changes.

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