

The impacts of word attack strategies in improving students' reading skill: A sequential explanatory mixed methods study

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Abstract

This study sought to examine the effects of meaning and visual word attack instructional strategies on the reading skills of students focusing on Grade 6 students at one primary school in Bahir Dar City, Ethiopia. A sequential explanatory mixed-methods design was employed to explore the impact of these strategies on students' reading skills. A sample of 30 Grade 6 students was selected from an intact classroom using a purposive sampling technique. The students were assessed using a pre-test-post-test design, with the pre-test administered before the intervention and the post-test administered after the intervention. The results showed that the word attack instructional strategies significantly improved students' reading skills, as measured by a paired samples t-test. Furthermore, the qualitative results revealed improvements in students' self-confidence, motivation, and participation in reading activities. The findings suggest that incorporating word attack strategies into reading lessons can have a positive impact on students' reading skills and overall reading experiences.

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Introduction

Students in Ethiopia learn English as a Foreign Language (EFL) for various purposes. In Ethiopia, English is used as a means of communication for tourism, trade, technology, research, and science. It is also used in international schools and organizations. It is taught as a compulsory language from the lower primary grades and has continued to serve as a medium of instruction in middle primary schools, secondary schools and higher-level educational institutions (Ministry of Education [MoE], 2023; American Institutes for Research [AIR], 2019).

The most fundamental responsibility of schools is to teach students to read. Reading skills are abilities that relate to a student's ability to decode, read, interpret, and comprehend written texts. Thus, reading skills can be of great significance in assimilating and responding to written languages and communications. Reading skills have been the most essential aspect of human cognition associated with social, emotional, economic, and physical health because they affect all other academic achievements. Learning to read is not natural or easy for

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children. Good readers process the letters of each word in detail although they do so unconsciously.

Studies have indicated that the strategy for the attack of words is just one area of concern. Acquisition of a word attack strategy is considered the foundation for other skills such as listening, oral fluency, vocabulary, and comprehension (Cunningham, 2017). Baron (1985) and Sternberg and Gardner (1982) indicated that the concept of word attack strategy dates back to the teaching theories introduced to help students learn to read easily.

Reading strategies are ways that teachers and parents use with their learners to help them develop reading skills. Reading strategies are the ways teachers show students the how of reading through some methods of teaching reading. Strategies that improve decoding and reading comprehension skills benefit every student, but are essential for beginning readers, struggling readers, and English language learners (Nuttal, 1996). It is indicated that when we read, we look at written symbols such as letters, punctuation, spaces, and use our brains to convert them into words and sentences that have meaning to us (Brown, 1994).

Johns and Lenski (2019) explained that during the process of thinking in problem-solving, competent thinkers were those who could use strategies, such as identifying their goals, monitoring their progress, and evaluating evidence. Therefore, providing students with specific procedures they could use while reading could facilitate their comprehension. Competent readers might use a variety of strategies when reading a text. Studies in EFL reading indicated that students employ a variety of reading strategies when interacting with written texts so that they can improve their reading and overcome any difficulty. One of the strategies is the word attack strategy which includes recognizing syllable patterns, converting strings to sound on occasion, recognizing upper-and lower-case letters, using visuals, applying meaning strategies, and recognizing word boundaries (AIR, 2019; Hudson, 2007). The word attack strategy allows students to be engaged with and in control of, the reading text (Carrell, Pharis, & Liberto, 1989). Research evidence has also revealed that word attack strategies can be shown to children (Johns & Lenski, 2019).

The word attack strategy helps students convert orthographic symbols into language. Here, students could recognize that the script represents units of language, such as phonemes, syllables, and words. There are some sub-skills in word attack strategy that students should be taught to recognize such as recognizing syllable patterns, converting strings to sound on occasion, recognizing upper- and lower-case letters, and recognizing word boundaries (AIR, 2019; Hudson, 2007; Nuttal, 1996).

When discussing reading strategies and reading performance, Hudson (2007) concluded that a reading strategy can be described as any interactive process that has the goal of obtaining meaning from connected text, and reading skills operate within the context of such reading strategies. Therefore, the strategies of predicting, confirming, monitoring, reflecting, and evaluating can be consciously supported, and thus, strategies could also help to lessen demands on working memory by facilitating comprehension processing. Word attack is defined as the aggregate of skills that aid an individual in utilizing one technique or combination of techniques to recognize and master the meaning of a new word (Nuttal, 1996).

Word attack strategies help students to decode and pronounce unfamiliar words and understand unfamiliar words by using picture clues and prior knowledge, sounding out the

word, looking for fragments in the word, connecting to a word that they know, rereading the sentence, and keeping reading. In picture clues, students look at the picture if there are people, objects, or actions in the picture that might make sense in the sentence. In prior knowledge, students think about what they know about the subject of the book, paragraph, or sentence. They find anything that might make sense in the sentence and read the sentence with the word to see if it makes sense. In sounding out the word learners start with the first letter, say each letter sound out loud, blend the pieces, and spell out the word to see whether the word makes sense in the sentence. In search for fragments, the pupils look for familiar letter fragments in the word focusing on sounds, symbols, prefixes, suffixes, endings, whole words, or base words, and read each chunk by itself (Nuttal, 1996). Then students blend the pieces and spell out the word. In connecting to a word students know, they think of a word that looks like the unfamiliar word, compare the familiar word to the unfamiliar word, and decide if the familiar word is a chunk or form of the unfamiliar word, use the known word in the sentence to see if it makes sense and helps to get the meanings of the two words close enough for understanding. In rereading the sentence, learners read the sentence more than once, think about what word might make sense in the sentence, and try the word and see if the sentence makes sense. In keeping reading, learners read past the unfamiliar word and look for clues. If the word is repeated, students compare the second sentence to the first to recognize which word might make sense in both (Ehri, 2014; Nuttal, 1996).

There are three-word attack strategies: meaning attack, visual attack, and sound attack. The meaning attack involves the use of context clues and the expectancy of words and concepts. Visual attack involves the use of visual characteristics of words. For example, it incorporates the identification of known parts within words, the use of syllabification, the use of prefixes, suffixes, and root words, and careful visual study of the word. Sound attack includes the sounding of vowels and consonant, their combination, and the use of other methods of phonetic analysis (Brown, 1994; Gibbon et al., 2017).

It is important to note that students should receive the most beneficial word attack reading strategy early in formal schools (AIR, 2019; Dereje, 2012). When students are first provided with a formal reading strategy in primary grades, they need to understand what word attack is about. In particular, grade six English teachers should lay the foundation and help students practice word attacks through reading strategy to prevent them from poor reading and acquaint them with strategic readers for the next junior secondary school, grades seven and eight.

Grade 6 students are expected to learn specific things about the word attack strategy before they are promoted to grade seven. They need to understand how print works and be able to connect print with words (AIR, 2019). To help grade six students read words properly; teachers need to work on a word attack strategy that will help learners read systematically (Burns, 2015; Johns, & Lenski, 2019). The word attack strategy was argued to influence the reading performance of the students.

Rereading plays an essential role in learning a foreign language. One of the crucial objectives of classroom instruction is to help learners develop reading skills. Reading is important for children's intellectual development. It helps students learn new words, pronunciation, and spelling. Reading also plays an important role in student self-confidence, motivation, and participation. Thus, being an adequate reader is not only a necessity for a

person throughout primary and secondary schooling, but also a necessity in order to be a successful adult in the society (Clay, 1990). To improve ability of the students to word attack, there are certain direct teaching strategies, such as meaning attack, visual attack, sound attack, etc. However, for this study, meaning attack, and visual attack, strategies were used. Research shows that word attack strategies are highly effective when used for reading instruction, as they are useful to get meaning from visual and clue (Cates et al., 2006; Trabasso & Bouchard, 2002).

Statement of the Problem

As mentioned above, reading skill is crucial for learning other language skills and subjects. However, it has been found that many English language beginning learners think reading is quite challenging. They think it is difficult to recognize words and comprehend the reading, and oral reading is not easy for them as well. In addition, studies in Ethiopian primary school students' reading revealed that their reading skill achievement was below the expected level. The results indicated that grade six students showed very low word reading performance. The findings also showed that a large majority of them were unable to display proficiency in reading. It was found very low, gauged against the expected reading competences indicated for the grade level (Smith et al., 2012). The results appear to be similar with recent studies (e.g., Johns & Lenski, 2019).

Studies in Ethiopian primary school students on word reading revealed that students were unable to read as required. Researchers (e.g., AIR, 2019) administered tests to students with the objective of measuring their word reading ability. The findings revealed that word reading of the students was below average when evaluated against the basic minimum learning competencies of the grade level expected of them (MoE, 2020). This implies that equipping teachers and students with the reading strategies is crucial to facilitate student-teacher engagement and improve student reading skill. Therefore, the application of the word reading strategy is helpful, as suggested by (Short et al., 2018), which calls for intervention.

To date, in Ethiopia, some studies (e.g., AIR, 2019; Chanyalew & Abiy, 2015; Dereje, 2012; Smith et al., 2012) have been conducted on the English reading skill of primary school students. However, to the best knowledge of the researcher, there were no studies conducted on grade six students' reading performance that addressed word attack strategy to improve their reading. In addition, preliminary observations of Dona Berber, Felege Abay, Dilchibo, Qulqual Meda, and Zenzelima primary schools of Bahr Dar City by the researcher and informal discussions with English teachers revealed deficiencies in the reading skill of the students. This problem needs immediate remedy. To improve the student's reading skills, intervention is one way among others. Therefore, in this intervention, meaning attack and visual attack strategies were used as independent variables, and reading skill as a dependent variable.

The rationale for studying grade six reading was that it is the level where the students are expected to acquire basic reading skills such as phonics, phonemic awareness, and word reading fluency. Grade six is the level where students are ready to read paragraphs and essays before being promoted to grade seven (MoE, 2020).

Thus, the purpose of this study was to investigate the 'the impacts of the word attack strategy on the reading skill of grade 6 students. Based on this purpose, the study attempted

to answer the following research question: What are the impacts of word attack strategies on grade six students reading skill?

Methods

Research Design

To meet the objectives of this study mixed methods approach was used where the quantitative phase of data collection and analysis preceded the qualitative phase. One-Group Pretest-Posttest Research Design was used. Accordingly, the sequential explanatory research method was used. A single group of non-randomized grade six students took the pre-test–post-test using quasi-experiment to measure the difference between baseline data (pre-test) and outcome of the intervention (post-test): once before and once after the intervention. The test measured the independent variable, word attack that combined meaning attack, visual attack and sound attack strategies against dependent variable reading performance. A one-group pre-test-post-test grew from the simpler post-test only designs to help address some of the issues that arise with ethical concerns, assignment bias, and allocation of participants to groups (Creswell, 2013). Behavioral researchers often use one-group pre-post-test design to determine the effect of an intervention on a given sample. It allows researchers to make an uncomplicated assessment of an intervention applied to a group of participants (Tashakkori & Teddle, 2003).

Study Participants

The study was conducted on Grade six students at Zenzelima Primary School in Bahir Dar City. To address some of the issues that arise with ethical concerns, assignment bias, and allocation of participants to groups, the researcher used an intact classroom setting in which random assignment of participants of the study to different conditions was not mandatory (Creswell, 2013). Thus, the researcher used one section of grade 6 students thirty (n=30) for the intervention having obtained permission from the school’s director, teacher, and students.

Data Collection Instruments

Data were collected through Pre-Posttest, teacher self-reflection grid, classroom observation, and interviews to get reliable data and cross validate the data. Moreover, different data sources will increase the credibility of the findings and minimize the risk of drawing an unsound conclusion. It is suggested that using different instruments will increase the reliability and validity of the data and cross-check the result from different angles.

Pre and Post-test

The researcher was unable to obtain available standardized tests to measure the reading skill of primary school students. Thus, he adopted the tests prepared, and used by the concerned experts, (AIR, 2012) to measure the pre-post-test. There were two sections in the test. The first section was ‘Passage Reading’ based on a short narrative paragraph (Timed) (~60 words). The score was calculated by counting the number of words each student read aloud correctly in 1 minute. The second section was ‘Passage Reading Comprehension’; (Not

Timed) was based on the text used to assess passage reading. Before administering the pre-posttest, two grade six English language teachers evaluated the content validity of written reading skill tests and whether the questions could correctly measure students' reading skills. The face validity was also evaluated by teachers to check the degree to which the test objectively appears to measure the variable it is supposed to measure. They suggested that the test was in line with the contents, formats and test procedures of grade six students and the corresponding minimum learning competencies, syllabus, and English Grade six student text (MLCs) of MoE (2020).

The per-posttest was administered to students on reading skills to compare its result with the post-test scores and to check whether the students had improved their reading performance as a result of the intervention. After a student read the text aloud, six simple questions were asked about the passage. The score was the number of questions the student correctly answered.

Teacher Self-reflection Grid

The teacher's self-reflection grid was prepared by an English language college teacher based on 'Grade Six English language reading competencies' in the syllabus (MoE, 2020). The content and face validity of the items were evaluated by the teacher and the researcher. Then, the checklist was used to help the teacher self-reflect on her intervention on how she has taught word reading through the word attack strategy during the intervention.

Classroom Observations

This instrument was also adopted in the tests prepared, and used by the concerned experts, (AIR, 2012), and the reading competencies of the (MoE, 2020) to measure/check the context of the intervention.

Interview

After the intervention and the post-test, the teacher was interviewed on the date of appointment for the interview. The interview contained eight questions about the implementation of word attack strategies and how these strategies helped students with their reading development and reading skills.

Data Analysis

The study incorporated quantitative and qualitative data. In analyzing the quantitative data drawn from the pre-and post-tests, the researcher used a paired samples t-test. However, in analyzing the data from interview, classroom observation, and teacher's reflection, the researcher coded, described, and interpreted based on the themes and questions.

Ethical Considerations

Ethical clearance in research is an instrument to measure the ethical fulfillment of a research process. It is a reference for researchers in upholding the values of integrity, honesty, and fairness in conducting research. By obtaining ethical approval the researcher is

demonstrating that he has adhered to the accepted ethical standards of a genuine research study. Participants have the right to know who has access to their data and what is being done with it (Creswell, 2013). Thus, having obtained permission from the school's director, teacher, parents, and students, thirty (n=30) grade 6 students were made to participate in the intervention.

Intervention Procedures

Initially, two English language teachers and the researcher administered a pre-test to each grade six student (n=30). The teachers corrected the pre-test and kept the result for comparison with the post-test result.

Next, training of English teachers was conducted. The training was carried out for four rounds (each covered 2:00 hours). On the first day of the training, the researcher introduced the word attack reading strategies to the English-language classroom teacher and one reserve teacher. The reserve teacher was trained to replace the regular class teacher in case of emergency. The training of the two teachers created a collaborative and interactive scenario. The training was conducted through reflection of the trainees and feedback from the trainer. Teachers were provided with exemplary and demonstrative samples of the why, what, and how of word attack strategies in the training. They discussed how to apply the strategies in reading classes. Different units of the student textbook were covered. This was done to see whether the word attack strategy could be implemented regularly and actively during the intervention.

The trainees discussed with each other how to apply the strategy in reading classes. They exchanged their notebooks to help them check what and how they will do the intervention. Generally, teachers were trained in all sessions on how to plan and apply word attack reading strategies in their daily reading lessons and activities. After the training, one of the trained teachers implemented the intervention for three months.

Teacher-researcher Conference

The researcher collected the reports after the intended reading lessons. The word attack focused on self-reflection. The teacher taught word attack using word meaning attack and visual clue strategies. From the teacher's self-reflection report in the first reading lesson; the lesson was less clear and all objectives were not achieved as intended. This may have occurred due to the teacher's and students' early attempts of implementing new strategies that could have slowed the reading process; however, with sufficient practice, the teacher used strategies efficiently and helped students read the word. To identify the gaps and maintain strengths of the strategies, after the second classroom observation, both the teacher and the researcher used to read the teacher self-reflection report and came across the merits of reading strategies as supportive and encouraging except for few ideas that were written out of context (It was answered in the general reading sense rather than in the word attack reading strategies). Although the teacher's ideas were clearly indicated in the reporting grid format, the teacher wrote few ideas that deviated from the topic of the word attack reading practice.

Therefore, before the next reflection session, the researcher tried to detect what teacher's problems were and tried to reorient her how to apply strategies and self-reflect on

them. The clarification of the researcher and the informal discussion with the teacher resulted in sufficient and reliable use of strategies in her subsequent reports. The self-reflection grid also required the teacher to write the reasons for using the different reading strategies and activities. Her reflection indicated that strategy use have a facilitative role in enhancing students' word reading skill.

Classroom Observations

During the intervention, the researcher conducted six round classroom observations during the intended reading lessons using a diary to obtain reliable data. The English teacher taught reading using word attack strategies such as meaning and visual attack strategies. She used the words daily during instruction taking the time to ask students to find the word within the word lists.

The researcher observed the teacher applying the following word attack strategies procedures. She guided the students to use picture clues. The students looked at the picture and identified people, objects, or actions in the picture that made sense in the sentences. They practiced speaking the word out. They started with the first letter, and said each letter-sound aloud, blended the sounds together, and tried to say the word repeatedly. The students then examined whether the word made senses in the sentence. The students then looked for chunks and familiar words to get clues. The teacher invited students to practice sound symbols, prefixes, suffixes, endings, whole words, or base words using chunks. Then the students continued to blend the chunks together and sounded the words until they got the meaning of the words.

In the subsequent lessons, the teacher supported students to connect words they know to get meaning. Students thought of a word that looked like the unfamiliar word and compared the familiar word with the unfamiliar word. They decided whether word was a chunk or form of the unfamiliar word and used the known word in sentences. Students were able to see whether or not the meanings of the words were closer or similar to give meaning. Then, students kept reading sentences more than once, read past the unfamiliar word, and looked for clues. If the word was repeated, the students compared the second sentence to the first. Finally, they differentiated which words might make sense in both.

In the next classroom observations, the teacher let the students work a fun activity with the words to reinforce their use regularly. The teacher, along with the students, practiced many word attacks, such as wall chants, cheers, and games for practicing reading. The teacher quickly reinforced that students read and write these words in a fun transition activity in their reading. During the observations, teacher-mediated students apply the visual reminder as a reference tool for the entire reading lessons. Students used to refer to the word attack strategies throughout the lessons to check the meaning of the words they were unfamiliar with. Classroom observations revealed that during reading classes, word attack strategies were usually used in the intervention.

The observations also showed that teacher along with students had increased the application of word attack strategies from the first lesson to the next step by step to facilitate student reading performance. The following excerpts show how the word attack strategies were being implemented during the intervention.

After the intervention, two English teachers and the researcher collaboratively administered the post-test (similar to pre-test) to assess students' word reading skill. The assessors followed the same procedure as that of the pre-test.

Results

In this section, the results of the study are presented in a sequential, beginning with the quantitative results from the pre-test and post-tests, followed by an examination of the qualitative data collected through observations and interviews to provide a complete picture of the study's results.

Quantitative Results

The quantitative data obtained through the pre-test and post-test method were compared using a paired sample t-test to see whether word attack strategies had a significant effect on students' reading skills. The results are presented in Tables 1 and 2 as follows.

Table 1

Paired Samples t-test of the Students' Meaning Attack Strategy

Tests	N	Mean	Std. Deviation	Standard Error Mean	t	df	Sig. (2tailed)
Pre-test	30	31.9333	20.96744	3.82811	-10.755	29	.000
Post-test	30	36.733	20.6630	3.7725			

Note. $p=0.05$

Table 1 above revealed the existence of a statistically significant difference at the 0.05 significance level ($t_{29} = -10.755$, $P < .05$) in the reading scores of the pre-test and post-test of grade 6 students. The result revealed that teaching reading through the meaning attack strategy showed steady progress in students' reading skills. Improvements in grade 6 students' reading comprehension might have been achieved as a result of word meaning attack strategy instruction.

Table 2

Paired Samples t-test of the Students' visual attack strategy

Tests	N	Mean	Std. Deviation	Standard Error Mean	t	df	Sig. (2tailed)
Pre-test	30	7.7167	2.96440	.54122	-9.841	29	.000
Post-test	30	10.667	2.9634	.5410			

Note. $p=0.05$

Table 2 shows that the difference in the reading mean of the visual attack strategy (3.98) is significant, as the calculated (6.32) is greater than the critical (2.38) 12.29 at an alpha value of 0.05. The result implied that the students who were taught through the visual attack strategy had shown a significant increase in post-test reading performance compared to

the pretest. The significant difference observed in the reading performance of the students might have been achieved as a result of the intervention.

Qualitative Results

To substantiate the above quantitative results, additional data were collected through observation and interview methods. In this sub-section, the results obtained through these methods are presented as follows.

Results of Classroom Observations

The implementation of word attack strategies during the intervention was observed to be effective. For instance, on day seven, in lesson four, the teacher introduced vocabulary meaning and word-in-context attack strategies through a visual and meaning-based approach. Students read in pairs, groups, and individually, with their teacher and independently, until the end of the lesson. The teacher assigned a reading task on vocabulary meaning and word-in-context using word attack strategies.

On day twelve, the teacher introduced a new seating arrangement to facilitate group work. Students were paired in groups of three to share a desk, promoting collaborative learning and interaction. The teacher assigned tasks that encouraged students to share their reading strategies and skills with one another through crossover group work. Subsequently, the teacher instructed students on how to read words in context and word lists within a passage, allowing them to practice independently.

The teacher also implemented various group activities to promote the use of word attack strategies. On day fourteen, students formed eight groups to practice reading passages using word attacks. After completing the task, each group shared their answers with another group, discussing how they applied meaningful attack strategies. Representatives from each group then joined another group to further share their practice.

Throughout the lessons, the teacher monitored students' progress, asking about the meaning of studied words and the strategies used. Students reflected on their learning, describing the strategies they employed and the words they had studied. The teacher appreciated their efforts until the allocated time for the lesson was up.

The students' improved reading skills were evident as a result of using word attack strategies. For example, on day sixteen, students continued to make self-reading using visual and meaning attack strategies in pre-, while-, and post-reading phases. The teacher guided them in recognizing word boundaries and mastering new word meanings.

The teacher's intention was to develop an independent reading strategy that would promote students' reading skills and foster an understanding of the importance of reading in other subjects. The results showed that students' reading skills improved significantly over time.

Classroom observations revealed that the teacher played a crucial role in introducing reading strategies and activities. She modeled each strategy for students during the reading phases, followed by teacher-student, student-student, student-teacher interaction, and student-independent practice. As a result, both the teacher and students were able to apply most of the strategies regularly.

The observations also highlighted that the teacher was well-prepared to implement word attack strategies. She directed student participation, adjusted her pace according to students' understanding levels, and provided supportive feedback. This led to improvements in teacher-student interaction, student-student interaction, teacher feedback, and student-independent practice of strategies.

For example, seven struggling readers who could initially read only two words per minute were able to read six words using context clues and concepts after the intervention. Twenty-four students were able to read phrases and sentences confidently using identification of known parts within words and root words.

Overall, the implementation of word attack strategies resulted in significant improvements in students' reading skills, with the teacher playing a crucial role in guiding students towards independent reading practices.

Interview Results

The teacher's post-intervention interview revealed that the intervention had a positive impact on students' use of the word attack strategy. She reported that within weeks, she observed significant improvements in students' ability to identify words, their meanings, and read vocabulary, sentences, and paragraphs with increased ease. The teacher noted that students were able to decode and comprehend texts more effectively, demonstrating progress in their reading performance within four weeks.

The teacher emphasized the importance of word attack strategies in teaching reading, stating that they are essential for decoding, pronouncing, and understanding unfamiliar words. She explained that these strategies help students break down words into individual sounds, blend them together, and make connections between spelling and pronunciation. By using these strategies, students can identify differences between words, phrases, clauses, sentences, and paragraphs, leading to improved comprehension.

When asked about the benefits of the intervention on word reading skill, the teacher noted that mastery of words is crucial for a short period but that upper primary grade students will also need additional word attack strategies to continue developing their reading skills. She emphasized the importance of learning words through strategies in grade six as a foundation for learning language skills and reading other subjects.

The teacher also reported an increase in students' curiosity, motivation, participation, cooperation, competition, and individualized reading activities. She observed a marked change in student behavior, noting that those who were previously ashamed and frustrated were now actively participating in reading lessons. Besides, students displayed enthusiasm and engagement, using the strategies with high participation and creativity. This suggests a significant increase in student motivation and interest.

In conclusion, the teacher recommended that such an intervention program should be continuous to sustain the positive gains made by students. Overall, the interview results indicate that students have developed positive attitudes and motivation towards word attack strategies, which has promoted their development of reading skills and strategy use.

Discussion

This study indicated that the use of a word attack strategy brings about a strong significant difference in students' word reading skill performance. Word reading skills are crucial for students so that they feel motivated and confident about reading new words and phrases. If a student is not confident in his or her word reading, he or she will be less likely to read new words and take risks while reading. Throughout the intervention, it was visible that the students were gaining self-confidence in the strategy of word attack both in isolation and in the context of word attack performance. The comparison between the results of the analyses of the quantitative data from the pre-test and post-test indicated that students have shown an increased improvement in their reading skill of words in the post-test. This supported the initial predictions that the word attack strategy will have a positive effect on reading comprehension (AIR, 2019; Gibbon et al., 2017; Johns & Lenski, 2019).

Gibbon et al., (2017) and Johns and Lenski, (2019) developed intervention strategies based on the meaning attack strategy. The findings revealed that the meaning attack strategy had significant and positive effects on the reading performance of the students. Their results suggested that the students who participated in the intervention had shown more progress in their fluency in word reading and were found to be at a lower risk of reading failure. The findings of the current study were consistent with previous studies (e.g., AIR, 2019; Burns, 2015). The use of word attack strategies in a classroom can have a big contribution in improving language skills. Word attack activities encourage active student participation. Gestures, such as pointing to keywords during a lesson and offering visual reinforcement, can be very helpful for students (Johns & Lenski, 2019).

Hudson (2007) and Short et al. (2018) indicated that the word attack strategy remains one component of a comprehensive literacy program for early readers and, for older students experiencing reading difficulties, a part of the reading intervention. Recognizing high-frequency and irregular words automatically helps students read better. To prevent students from becoming dependent on the ineffective practice of memorizing lists of words, instruction should be administered in small doses alongside systematic phonics instruction. But it should not be less than 10 minutes. The words themselves should be drawn from related text lists and applied immediately to reading connected text, as word drills are not the route to skilled reading ability. When implementing effective reading instruction through word attack strategy, reading words becomes an effortless act.

The meaning attack strategy is popular for teaching reading comprehension. It is more effective for teaching words to primary-grade students. The strategy creates a place in the classroom where students display the meanings of important ideas using words and pictures. Meaning attack practice offers students the ability to comprehend and interpret ideas in the text when they encounter new vocabulary in a text or watch video (Blackwell & Laman, 2013).

The findings of Filkins (2018) indicated that the use of word attacks does not have equal benefits for all types of students. In the study, it was found that students above grade level (students who had better performance than average and low-performing students in the same classroom) received the least benefits from word attacks. However, the current study was contrary to the above findings. The findings disclosed that when the word attack strategy

is applied properly, accompanied by activities and explicit instruction, it is equally effective as observed in classroom observations during the intervention and the students' post-test results. The main point should be how to use the word attack strategy effectively in the classroom with the students.

The second strategy used in this intervention was visual attack (see Table 2). Visual attack is one of the creative efforts to create fun learning using visual clues. The results indicated that the strategy has improved students' reading proficiency. After the intervention, the difference between pre-test and post-test results was measured to see if there was a significant change in student performance. The post-test showed a significant increase in student reading performance.

The results uncovered that students who were taught through the word attack strategy showed a significant increase in their word reading performance compared to those who were taught in the usual method. Supporting the current finding, (AIR, 2019; Gibbon et al., 2017; Johns & Lenski, 2019) revealed that word reading is among the best predictors of fluency and comprehension. Results of classroom observation also supported that the use of strategies among students has a significant importance in reading classes. Besides, the effects of word attack strategies were significant on reading comprehension, suggesting that teaching children to manipulate words was an effective way to increase comprehension.

Other results indicated that the word attack strategy was effective and useful for teaching students words because it helped them master the words in the activity so that they could consistently recognize and read all the words in their hands, with confidence and without any noticeable hesitation. It is beneficial for teaching reading and can be used by teachers in the school as one of the new strategies for learning English. It will be livelier and fun and can improve students' vocabulary skills. It is also another fun strategy to give children extensive exposure to a variety of words. The word attack strategy is necessary for students to become proficient readers, as instruction in areas of fluency and comprehension is based on it (Johns & Lenski, 2019).

The interview results also showed that reading strategies helped the students in answering difficult vocabulary words, connecting words to get the entire meaning from the context, and using visual cues appropriately. They helped the students facilitate their reading proficiency and practice the strategies to simplify reading difficulties in their reading skill, particularly with struggling readers

Conclusions and Implications

This study investigated the effects of word attack strategies on the reading skills of grade 6 students. The results revealed significant and positive impacts on students' reading performance, leading to increased confidence, risk-taking, and proficiency in reading words, sentences, and paragraphs both in isolation and context. Furthermore, the findings showed that students demonstrated improved reading skills, developed motivation, self-confidence, and a greater interest in reading.

It is crucial for students to feel confident in their reading abilities, as a lack of confidence can lead to reduced reading frequency and imitation rather than genuine

engagement. Therefore, word-attack strategy instruction is essential for students to feel motivated and confident when learning new words, sentences, paragraphs, and essays.

The study's conclusions emphasize the significance of word-attack strategies for students' reading development in English. The findings have important implications for grade 6 English language teachers, who should incorporate word-attack strategies into their reading lessons to provide students with opportunities to improve their reading skills. Additionally, the study's results suggest that curriculum designers and textbook writers should incorporate more activities that encourage word attacks in teaching vocabulary and comprehension.

Limitations of the Study

To increase the generalizability of the findings, future research could explore the strategies across various grade levels, class sizes, and educational contexts. Additionally, incorporating diverse stakeholders, such as teachers, administrators, and students from different backgrounds, could provide more comprehensive insights into the effectiveness of the strategies.

Conflict of Interest

The researcher declares that there are no conflicts of interest regarding the publication of this article.

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