

The Effectiveness of Early Grade Reading Assessment (EGRA) Method on Elementary Students' Reading Fluency

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ABSTRACT

Along with the evolution of time, individuals were required to learn quickly, especially in mastering new things. Therefore, it became the main reason reading is considered a fundamental skill that should be mastered from a young age. Several methods have been created to enhance reading fluency, including the Early Grade Reading Assessment (EGRA). This research aims to determine the EGRA method's effectiveness on students' reading fluency. A quantitative approach with a quasi-experimental method and a nonrandomized pretest-posttest control group design was employed. Thirty-seven fourth-grade elementary school students at SDN X Cikarang Regency participated. Eight (8) elements of EGRA were used as treatment materials, namely: (a) letter identification; (b) distinguishing initial sound; (c) nonword reading; (d) read aloud/oral reading; (e) reading comprehension; (f) listening comprehension; (g) Indonesian vocabulary; and (h) dictation. As for analyzing the data, the researcher employed Mann-Whitney U to compare the pretest and posttest scores of the control and experimental groups. The results showed that The EGRA method significantly improved reading fluency in fourth-grade elementary school students ($p < 0.05$). Thus, the EGRA method can help educators teach elementary school students to read more fluently.



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1. Introduction

In learning and teaching in school, an individual relies on many abilities to absorb information, including reading. This statement is supported by the fact that school has become the pinnacle of teaching and learning in many countries, with reading as the foundation of learning (Pepe, 2024). As a result, reading skills are taught at an early age to optimize their cognitive abilities in capturing information. Currently, the government is working to improve Indonesia's reading ability, which has been declining. This decline is evidenced by the Program for International Student Assessment (PISA) results, which assess the quality of education in all countries, including Indonesia. PISA is conducted every three years and consists of three categories: (a) Mathematics, (b) Science, and (c) Language or Literacy. The most recent PISA results conducted in 2022 revealed an increase in ranking compared to 2018. In 2022, Indonesia's ranking increased by 5-6 positions from 2018, but literacy scores decreased by 12 points (Kementerian Pendidikan dan Kebudayaan, 2023).

Other results from the Progress in International Reading Literacy Study (PIRLS) also indicate that the reading ability of students in Indonesia, especially in grade 4, is still low. Indonesia has only taken the PIRLS twice, in 2006 and 2011, and has yet to participate again because the country's preparation for the test remains limited (Pusat Asesmen Pendidikan, 2022). Furthermore, the Indonesian student competency assessment in 2019 reported that 47% of grade 4 students in Indonesia had difficulties in reading. These findings indicate that students' reading ability remains low in Indonesia, especially in grade 4 of elementary school. Several studies mentioned that children's reading ability has two competencies that must be possessed, namely reading fluency and reading comprehension. These two competencies complement each other to support their reading skills (Hjetland et al., 2017). Ardington et al. (2021) state that children's reading fluency is positively related to reading comprehension when they read a passage at a speed below 35 words per minute (WPM).

Reading fluency also influences children's reading comprehension, involving their thinking process. The processes involved occur automatically by associating elements such as (a) phonology, which is knowledge about the sounds of letters/sentences; (b) word definition; and (c) reading intonation (Samuels & Decker, 2023). These processes can develop due to the child's early reading abilities. The development of students' reading ability is inseparable from the factor of early reading (Schwanenflugel & Knapp, 2015). Early reading teaching can be seen when children learn to read at school, where the curriculum regulates the instruments. The curriculum is the government's formula for regulating the learning plans that schools will provide to students. This is regulated by Law Number 20 of 2003 concerning the national education system Article 1 point 19 (Utami & Gischa, 2022). Indonesia is currently using the independent learning curriculum to improve the quality of education in Indonesia (Daga, 2021).

The fact is that the targets set by the government have yet to be fully implemented. Based on observations at one of the schools in Belitung Regency, it was found that there were still many students who had difficulty in reading. Approximately 13 students in 4th grade received scores below the minimum completeness criteria in Indonesian language subjects. This event has made it difficult for teachers to provide material to their students (B. Prebiyanto, personal communication, March 15, 2023). This phenomenon can be concluded if early reading is vital to children's reading abilities. Early reading is a highly sophisticated structure encompassing a wide range of skills that must be coordinated simultaneously to complete various reading tasks. Dubeck and Gove (2015) defined early reading as eight aspects: (a) letter identification, (b) distinguishing initial sounds, (c) nonword reading, (d) read aloud/oral reading, (e) reading comprehension, (f) listening comprehension, (g) Indonesian vocabulary and (h) dictation. A previous study using the EGRA test tool in Indonesia, conducted by USAID in 2014, aimed to provide an overall picture of early reading abilities in each region in Indonesia. The study's findings revealed an unevenness in early reading abilities among children in Indonesia

(Jiménez-Castellanos et al., 2014). Therefore, EGRA can help improve children's reading abilities by applying engaging variations according to students' needs.

Several studies, such as Retaminingrum et al. (2019), used EGRA to measure reading comprehension in fourth-grade students but have yet to examine the use of EGRA for reading fluency. Meanwhile, in the study by Christine et al. (2023), EGRA was only used to measure children's reading abilities before and after intervention. Therefore, this study aims to examine the effectiveness of the EGRA method to improve reading fluency in students at SDN X, Cikarang Regency. The selection of Cikarang as the location was due to the number of students with poor reading fluency, almost the same as in the previous research. Thus, this research can help fourth-grade students with poor reading fluency to become fluent readers through the EGRA method.

2. Methods

2.1. Participant and Research Procedures

The subject of the current research was 4th-grade elementary students in the age range of 9 to 12 years who have difficulty reading. This is intended as a control variable and refers to the disfluency in reading for 4th-grade students (Christine et al., 2023). Before conducting the research, the researcher obtained informed consent to request approval from the school and participants. The sampling was done using purposive sampling, considering specific characteristics as research subjects (Sugiyono, 2015). The characteristics above are traits that individuals possess that support the research process.

This research employed a quantitative approach with Quasi-Experimental design, an experiment where sampling is not carried out randomly or involves nonrandom assignment for placing experimental and control groups (Hastjarjo, 2019). The quasi-experimental design was used because the participants were selected based on predetermined criteria, such as being between 9 and 12 and having difficulty reading. The experimental and control groups are also divided according to students who are fluent and non-fluent readers. The experimental group comprises non-fluent readers and receives eight treatments, whereas the control group consists of fluent readers and only receives one treatment. The form of Quasi-Experiment used was a nonrandomized pretest-posttest control group design. This design utilized pretest and posttest to measure children's reading fluency before and after being given treatment. This aims to control the consistency of the proactive history (innate factors) by equalizing the pretest and posttest (Seniati et al., 2011). Hence, the group allocation was designed in tabular form as follows:

Table 1 Allocation of control group and experimental group

| Group | N | Pretest | Treatment | Posttest |
|--------------|----------|----------------|-------------------|-----------------|
| Experiment | 10 | XE1 | 8 aspects of EGRA | YE1 |
| Control | 27 | XCI | 1 aspect of EGRA | YC2 |

Explanation:

XE1 = The experimental group who received EGRA treatment

XCI = The control group who only received 1 aspect of EGRA

YE1 = The experimental group that is being measured in reading fluency

YC2 = The control group that is being measured in reading fluency

Table 1 shows the allocation of the experimental and control groups with different treatments. The experimental group was given eight aspects of EGRA, whereas the control group was only given one fundamental aspect. This allocation is to observe the difference between the group given the complete aspects of EGRA and the group given only one aspect in terms of EGRA. These differences will later be seen in the results of the posttest conducted by the researcher. Before treatment, students were given a pretest and also a posttest after treatment.

2.2. Research Instruments

2.2.1. Reading Fluency

The instrument used in the research, the pretest and posttest, was a reading fluency measurement tool aligned with the independent learning curriculum standard. This tool contains 3 aspects of reading fluency: accuracy, speed, and intonation. This measurement tool was created to elaborate on reading fluency dimensions (Hudson et al., 2005) and was adapted from the fourth-grade student question book. After developing the measurement tool, the researcher sought expert validation and tested its reliability. Based on the reliability test, the reading fluency measurement tool has a Cronbach's Alpha value of 0.799. This value exceeds 0.5, indicating that the measurement tool can be used to evaluate children's reading fluency. The blueprint of the pretest and posttest using the reading fluency measurement tool can be seen as follows:

Table 2 The blue print of reading fluency measurement tool

| Section | Description | Item Description |
|-----------------------------|--|---|
| Ketepatan (Accuracy) | The measurement of the accuracy dimension is based on the number of words read correctly by the student in a passage. The number of words given is 100 words without a time limit. | Agustus 2020 Salam, Bimo Apa kabarmu? Semoga kamu serta Om dan Tante sehat semua, ya. Kami di sini juga baik-baik saja. Ingat tidak, pohon jambu yang ada di depan rumahku? |
| Kecepatan (Rate) | This dimension is measured based on the number of words read correctly by the child in a passage. The given number of words is 100, with a time limit of 60 seconds. The reading material is the same for the tested student, but a time limit is given to assess the student's reading speed within 1 minute. | Sekarang pohon itu sudah besar dan tinggi. Aku suka sekali memanjatnva. Memanjat sudah menjadi hobiku. Kadang aku belajar dan membaca buku di atas pohon itu. Suatu kali tanganku tidak sengaja menyenggol ulat. Uh, gatal sekali. Sejak itu aku takut setiap melihat ulat. Aku pikir, mungkin aku fobia dengan ulat, tetapi kata Ibu aku hanya takut biasa. Bagaimana denganmu, apa hobimu? Apa yang tidak kamu suka? Salam hangat, Abdul, penyuka durian |
| Intonasi (Prosody) | This dimension is measured based on intonation using punctuation marks when the student reads a passage. The same reading material was used without time limitations. | |
| Total | | 3 items |

2.2.2. Early Grade Reading Assessment (EGRA)

In this study, EGRA was used to assess the reading fluency of elementary school students for the experiment group. EGRA consists of 8 aspects: (a) letter identification, (b) distinguishing initial sounds, (c) nonword reading, (d) read aloud/oral reading, (e) reading comprehension, (f) listening comprehension, (g) Indonesian vocabulary, and (h) dictation. These eight aspects of EGRA were used as the treatment and given to the experimental group of 10 students. These aspects were scheduled as follows:

Table 3 Treatment schedule for control group and experimental group

| No. | Day | Date | CG | EG | Time |
|-----|-----|------------------|----------------|---------------------------|-------------|
| 1 | Fri | 3 November 2023 | Pretest | Pretest | 13.00-15.00 |
| 2 | Mon | 6 November 2023 | | Letter Identification | 13.00-14.00 |
| 3 | Tue | 7 November 2023 | | Distinguish Initial Sound | 13.00-14.00 |
| 4 | Wed | 8 November 2023 | | Nonword Reading | 13.00-14.00 |
| 5 | Thu | 9 November 2023 | Letter | Oral Reading | 13.00-14.00 |
| 6 | Fri | 10 November 2023 | Identification | Reading Comprehension | 13.00-14.00 |
| 7 | Mon | 13 November 2023 | | Listening Comprehension | 13.00-14.00 |
| 8 | Tue | 14 November 2023 | | Indonesian Vocabulary | 13.00-14.00 |
| 9 | Wed | 15 November 2023 | | Dictation | 13.00-14.00 |
| 10 | Thu | 16 November 2023 | Posttest | Posttest | 13.00-14.00 |

2.3. Data Analysis

The analysis used in this research was Mann-Whitney U to determine sample changes from the pretest and posttest. This technique is a non-parametric method for non-normally distributed data with independent samples at the same median (MacFarland & Yates, 2016). The statistical formula for testing data using Mann-Whitney U can be seen as follows

$$U_1 = n_1.n_2 + \frac{n_1(n_1-1)}{2} - R_1$$

$$U_2 = n_1.n_2 + \frac{n_2(n_2+1)}{2} - R_2$$

Explanation:

- U = Mann-Whitney U statistic (1 and 2)
- n = number of the sample (1 and 2)
- R = the rank in the sample (1 and 2)

3. Results and Discussion

3.1. Results

The number of students in the experimental and control groups is unbalanced because fewer students have reading difficulties. The control group consists of 27 students, whereas the experimental group consists of 10 students who received the treatment. The treatment involved the EGRA method for the experimental group, which consists of 8 parts, whereas the control group received only one treatment: letter recognition. Table 4 shows the descriptive data of the control and experimental groups after treatment as measured by posttest.

Table 4 Result of reading fluency test in control group and experimental group

| | Group | N | Mean Rank | Sum of Ranks |
|------------------------|------------|----|-----------|--------------|
| Reading Fluency Scores | Control | 27 | 22.87 | 617.50 |
| | Experiment | 10 | 8.55 | 85.50 |
| | Total | 37 | | |

In Table 5, the data analysis results were not distributed normally, so the non-parametric Mann-Whitney U was used. Asymp value. Sig.(p) was $p < 0.05$. This value demonstrated that the EGRA method improved the reading fluency of elementary school students in the experimental group. Therefore, EGRA proved effective in improving the reading fluency of fourth-grade elementary school students. The results of the Mann-Whitney U test are shown in Table 5.

Table 5 Result of the Mann-Whitney U Test

| | Reading Fluency |
|--------------------------------|-------------------|
| Mann-Whitney U | 30.500 |
| Wilcoxon W | 85.500 |
| Z | -3.586 |
| Asymp. Sig. (2-tailed) | .000 |
| Exact Sig. [2*(1-tailed Sig.)] | .000 ^b |

3.2. Discussion

Various studies have examined the impact of the EGRA method on reading fluency because it involves two components. These components consist of decoding and comprehension to develop reading fluency in children. Decoding focuses on the way students recognize letter forms in a text, while comprehension is the student's ability to understand the text (Sari et al., 2020). Unlike the reading panel in explaining the elements of reading fluency, according to Hudson et al. (2005), reading fluency is divided into three components: (a) accuracy, (b) speed, and (c) prosody. Accuracy refers to a child reading a passage without any errors in pronunciation. Next, speed is the child's ability to read a passage involving time. Lastly, prosody is the appropriateness of a child's reading based on punctuation marks. Therefore, reading fluency consists of elements that are interconnected with each other.

EGRA already possesses the elements of reading fluency described. This is because EGRA has eight sections that support children's reading competence, namely (a) letter identification, (b) distinguishing initial sounds, (c) nonword reading, (d) read aloud/oral reading, (e) reading comprehension, (f) listening comprehension, (g) Indonesian vocabulary and (h) dictation. The eight parts of the EGRA can be modified in various ways, as demonstrated by (Christina et al., 2021). According to the research findings, the EGRA components of (a) reading aloud, (b) reading comprehension, and (c) listening comprehension effectively train children's reading skills using the tell-and-show method. Furthermore, according to Sutedi and Rahmawati (2021), the EGRA method is used to assess children's abilities and determine whether they differ depending on their stage of development. Because the article above reviewed the EGRA method for improving one aspect of children's reading,

Retaningrum et al. (2019) use EGRA as a measuring tool for children's early reading and reading skills.

The variation of the EGRA method described above is related to Vygotsky's 1978 theory, which emphasizes the role of the environment in the child's learning process. The environment can provide opportunities for children to learn to read (Krupar & D'Sa, 2024). Vygotsky introduced three concepts, one of which is the zone of proximal development (ZPD). ZPD is a condition where a child is interested in learning new things, which indicates that the child has potential abilities (Smagorinsky, 2018). When children are in this zone, media can stimulate their learning process. This theory is supported by research by Christine et al. (2023) regarding using game media to improve children's reading fluency. This game media is intended as a learning tool by including EGRA elements. The findings show that games significantly impact children's reading fluency both before and after they are introduced. As a result, the EGRA method has the potential to help children improve their reading fluency.

Another study's presentation showed that the modified EGRA method effectively improves reading comprehension. However, this study only proves the efficacy of the EGRA method, which is a limitation of this research. Additionally, this research only involved 37 participants from the same school, so it is hoped that future research can increase the number of participants to obtain valid data.

4. Conclusion

This study found that the Early Grade Reading Assessment (EGRA) method effectively improves the reading fluency of fourth-grade elementary school students. Educators can utilize and adapt the eight aspects of EGRA to teach reading fluency to elementary school students. However, the study is limited to testing the EGRA method for reading fluency. Thus, further research is needed regarding other methods to enhance the reading fluency of elementary school students. Additionally, increasing the number of research participants can help ensure the results are valid. Educators and parents can use the EGRA method as one of the techniques to improve children's reading fluency. Certain aspects of EGRA can be modified or removed as needed and packaged more engagingly.

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