

## Analysis of the Reading Ability of Low Vision Students at the Primary School Teacher Education, PGRI Ronggolawe University

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**Abstrak:** Reading is one of the language skills a person has. When someone experiences problems with their sense of sight, it will definitely affect their reading ability. One of the disorders in the sense of sight is Low Vision. This research aims to describe the reading abilities of elementary school teacher education students with low vision. In learning practices at higher education institutions, low vision students have the same rights as regular students. This research method is a case study, and the research data was collected using interview and observation techniques using interview sheet instruments and observation guide sheets. The data that has been collected is analyzed descriptively qualitatively. Based on the results of interviews and observations, the type of letters that can be read are Times New Roman, Calibri, and Arial. The results of interviews and observations show that the three letters are size 12, spacing 1, 1.5, and 2, 2.5. and 3 spaces 1, 1.5, and 2 are not readable from any distance. The three letters, with sizes 14 and 16, bold, space 1, 1.5, and 2, black, white background, are not legible, but they are legible at a distance of 10 to 15 cm when using spaces 2, 2.5, and 3 and students occasionally spell and activities are carried out in outdoor. When indoors, students need more time to carry out these activities. Research subjects were also unable to read paragraphs consisting of three or more sentences. The reading activities of research subjects are also influenced by the light around them.

**Kata kunci:** Reading ability, Low Vision Student, PGRI Ronggolawe University

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### PRELIMINARY

Reading is one of the basic abilities that a person must have, which is also called receptive language skills. Reading is a basic ability of a person's language skills, a person's reading speed also influences understanding of reading content (Amalia, 2017). Hidayah & Nawawi, 2017 reading ability will have an impact on a person's mastery of science and technology. Nurta, 2013 Apart from that, a person's reading ability plays an important role in every aspect of his life. Information, knowledge, knowledge that a person has is obtained through reading activities. Therefore, reading is one of the basic skills that a person must have in life. Slamet, 2009 In practice, reading is the main activity carried out by students to learn everything related to the content of the material. Students

as learners in an academic environment are certainly inseparable from these activities. Most of the academic activities carried out by students are through reading activities.

Reading itself involves the health of a person's sense of sight and cognitive abilities. Based on this description, if someone experiences visual impairment it will have an impact on their reading ability. Existing visual impairments have several categories ranging from mild to severe. Low Vision is one of these categories. Siagian, 2015 describes that Low Vision is someone who has very low vision which is lower than normal vision, namely 1/300. Apart from that, according to Hidayah & Nawawi, 2017 Low Vision is a person who has visual impairment but can still read letters printed in large size and bold, whether using assistive devices or not. Apart from that, residual low vision makes it possible to read at a certain distance. According to Agustina and Farida, 2019 Low Vision is a type of crew member who should receive special services in education to be able to develop their reading skills and potential. Apart from that, Dewi and Prastiti, 2022, explained that reduced visual acuity or Lov Vision disrupts reading activities and has an impact on disrupting daily activities. This is also confirmed by Nisa, et al, 2018 that Low Vision are those who have residual vision and can identify letters and numbers at a certain distance and a certain size. The description given, can be concluded that Low Vision is a type of crew whose characteristics are someone who has residual vision and is still able to identify writing at a certain distance and size. Therefore, special services are needed to develop reading skills in learning activities and this will have an impact on daily activities carried out.

Getting an education is the right of all citizens, whether normal or with special needs, this is stated in the 1945 Constitution article 31 paragraph 1 'every citizen has the right to education' and this is explained again in Law no 4 of 1997 article 11 'every person with a disability has the same the opportunity to obtain education in units, pathways, types and levels of education in accordance with the type and degree of disability'. Therefore, it can be concluded that every crew member has the same rights to receive educational services according to the type of crew member they have. The problem faced in learning with Low Vision students is that teaching materials that suit their needs are not yet available. This is an urgency that must be resolved. As a learning problematic statement is, a problem, problem or obstacle in learning activities and must be resolved to achieve the set learning objectives (Estyanah, 2022).

As a result of interviews and observations carried out on research subjects, students stated that they still had residual vision so they could identify writing at a certain distance and a certain size, as well as certain types of letters. Therefore, it is very possible for the person concerned to be provided with services using alert writing rather than Braille. The letters used will be adjusted according to the needs of the research subject. According to Ramadani's research results. 2017 in serving people with low vision, the principles used in developing teaching materials are color, lighting and font size.

Learning that always coexists with digital is very possible to be used in developing teaching materials for Low Vision students. The large number of developments in learning media, teaching materials such as E modules, e-books, digital books, have become an alternative choice of teaching materials that can be developed for Low Vision students. Based on their characteristics, Low Vision students in the PGSD Study Program are provided with services in the form of using sight letters developed in interactive digital books in lecture activities.

## **METHOD**

The research was conducted using qualitative research methods. The type of qualitative research used is case study. In this type, researchers conduct in-depth studies to produce analytical narratives with research subjects face to face. The research subject is a 2022 class A PGSD student, with the name Adhi Ajeng Rohmawati. The informant who was involved in the research was Mutiara Ambarwati Oktavia, the informant was a classmate with the research subject. Another research assistant, Luluk Widiyanto, assisted in collecting documentation. The research was carried out at the Primary School Teacher Education Study Program at PGRI Ronggolawe University. The research period is one year starting in early 2023 and ending in early 2024.

The data in this research is the reading ability of Low Vision students. Data related to the reading abilities of Low Vision students was extracted through interviews with research subjects and observations regarding the reading abilities of research subjects. The research instruments used were interview sheets and observation sheets. The collected data was analyzed using descriptive analysis techniques.

## RESULTS

### 1. Interview

The results of the interviews conducted are presented in table 1 below.

**Tabel 1 Results of interviews with Low Vision students**

No	Questions	Results of interviews with research subjects
1	When did you start to know you were experiencing Low Vision?	since the beginning of elementary school
2	Have you consulted with an expert?	subjects consulted with an ophthalmologist at the Surabaya eye hospital at elementary school age
3	Do you use tools?	yes, the subject uses glasses
4	how to adapt during learning activities?	When I was in elementary school, I always sat in the front side
5	How to identify objects?	research objects identify other people from voice, gestures and body shape
6	When will you start being able to read writing?	At elementary school age he can read
7	What factors can influence the reading ability?	letter, place and lighting, as well as place
8	How to adapt during lectures, especially related to reading ability?	view material on a smartphone by increasing the text size.



**Picture 1. Conducting interviews with research subjects (students with Low Vision.)**

### 1. Observation

Apart from conducting interviews, research results were obtained from observations made on research subjects. The observation results are presented in table 2 below.

**Tabel 2. Results of observations with Low Vision students**

No	Questions	Observation results with research subjects
1	The ability to read in the room	The subject can read the writing with bright lighting, if the lighting is a bit dim it is impossible to see the letters being read
2	Ability to read outdoors	subjects can read writing in sunlight, it is easier for research subjects to read outdoors.
3	Indoor reading visibility	in the room can read text from a distance of 1 meter with a font of more than 70pt. At a distance of 15-20 cm can read letters with size 26, 28, 36, 48.
4	Outdoor reading visibility	Outdoors with a 70pt font size it can be read up to 1.5 meters. If in a room letters with sizes 26, 28, 36, 48 are read at a distance of 15-20 cm, but outside the room they can be read up to 30 cm
5	Typeface	the subject can only read the first letter, not able to read the next letter.
6	Space	the legible space size is 1.5-3.
7	Font Size	Can read font sizes of more than 16pt with certain spacing and lighting.
8	Colour	can read writing in white using a black background, and the subject has difficulty when the writing has gradient colors.
9	Word count	can read simple sentences with certain spacing and letter size. In one sentence, there are a minimum of two words, a maximum of 10 words with more than 2 spaces.
10	Background	the subject can read with a dark background and light writing



**Picture 2. Observation of research subjects' reading ability indoors using writing (students with Low Vision).**



**Picture 3. Observation of research subjects' reading ability indoors using technology (students with Low Vision).**



**Picture 4. Observation of the reading ability of research subjects outside the room (students with Low Vision).**



**Picture 5. Observation of reading distance of research subjects in the room (students with Low Vision.)**



**Picture 6. Observation of reading distance of research subjects outside the room (students with Low Vision).**

## DISCUSSION

Based on the results of interviews, it is known that students begin to become aware of experiencing Low Vision from the start of elementary school. When students are given multiple choice questions by the teacher and cannot answer because the writing size is very small. The assistive devices used by the research subjects were glasses with a size minus 2. These assistive devices were based on tests carried out by ophthalmologists. Apart from that, these assistive devices were used from the start since elementary school and did not change in size. Since elementary school age, when adapting to learning activities, the subject has always sat in the front. Apart from that, you can write by dictating to the teacher and looking at your friends' writing. Research subjects can identify other people based on voice, gesture and body shape. Other people's faces can be identified from a viewing distance of 15-30 cm.

Research subjects have had the ability to read since elementary school. This ability is obtained by remembering the shape of letters. However, this ability is limited to simple sentences, the subject has difficulty reading paragraphs. The conditions that can influence research subjects being able to read are; size of writing, shape of letters, spacing, size of letters, color of writing, background, light or lighting, and location.

During lecture activities, the PPT displayed on the screen can be read at a distance of 30-35 cm, while normal students will read it at a distance of 5 meters. The adaptation made by the subject was reading material displayed on a smartphone and increasing the size. Writing on a smartphone can be read if the font size is increased. Research subjects could read clearly in a closed room measuring 4x4 meters with 40 watt lighting. When in the readable font room, Arial, Calibri and Times New Roman, the subject had difficulty with other fonts. The distance between the eye and the writing when indoors is 20pt, 22pt,

24, bold space 2 to 3 can be read at a distance of 15-20 cm. spaces 1 and 1.5 are not readable at all. Sizes 26pt, 28pt, bold or not with 2 to 3 spaces are legible at a distance of 20 cm and unreadable at a distance of 15 cm. 36pt, and 48pt bold or unreadable at a distance of 20-30cm. Writing with a size of more than 70pt is legible at a distance of 1 meter and the subject has difficulty at a distance of 1.5 meters.

Based on the results of observations, it was found that lighting is one of the supporting factors in reading activities. When you are outside at 10.30 WIB, the distance between your eyes and writing is longer than when you are in a closed room with lamp lighting. The type of letters that can be read outdoors is the same as when indoors. The font size is 16pt and 18pt, consisting of only 4 to 10 words with 2.5 to 3 spacing, which can be read at a size of 15-20 cm. sizes 20pt, 22pt, 24, bold space 2 to 3 can be read at a distance of 15-20 cm. Sizes over 70 can be seen at a distance of 1 to 2.5 meters.

The use of background is very influential where younger subjects read when the background is dark and the writing is light. When it's behind the subject it has difficulty reading because from 3-10 words when the background is dark the writing takes 8-10 seconds but when it's behind the subject it takes longer because of the spelling. When faced with writing measuring 18pt with 2-3 spacing, only one subject sentence ran smoothly, but when it was the same size, several subject sentences found it difficult. Therefore, when observing the subject, it was very difficult when faced with paragraph text.

## **CONCLUSION**

Based on the results and discussion, it was concluded that the research subjects still had residual vision. Aids in the form of glasses only help a little in reading activities. The ability to read a subject is greatly influenced by several factors, namely lighting, font size, font color, reading only loose letters, spacing, number of words, and background. Based on these conclusions, teaching materials should be developed to assist research subjects in learning activities.

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