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## The Effect of The Use of Portable Reading Tools on Improving the Ability to Read Awareness Writings of Low Vision Students

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### ABSTRACTS

Low-vision learners experience obstacles in reading the writing of caution, this happens also to one of the students who are in Special needs School Bandung, Indonesia. With this condition, we create a plan that aims to improve the ability to read it. We tested reading aids to determine the effect of using portable reading lights on improving the reading ability of low vision learners. Data was collected by conducting tests to learners using advanced reading instruments analyzing through descriptive statistics and displayed in the form of graphs and tables. The results showed a positive influence on improving the ability to read the writing after being given a portable reading light. This can be seen with a stable value at the time of intervention, as well as an increase in the middle value (mean) that is when the baseline phase has a middle value of 27.5% and in the intervention has a middle value of 81.25%. The influence can also be seen from the percentage of overlap. The percentage of overlap between the baseline condition and the intervention phase is 0, meaning that the smaller percentage of overlap relates the better effect of the intervention. We concluded that portable reading lamps can be used for low vision learners who have difficulties reading in low light conditions. Thus, we recommend to the school and teachers to provide portable reading light aids to low vision learners to support in learning activities, especially reading writings.

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## 1. INTRODUCTION

Reading is one of the basic skills that must be possessed by every student, in addition to writing and arithmetic, reading has a central role in the development of education. The development of reading skills is something that is continuous, starting from initial reading skills to advanced understanding. Reading skills include five main elements, namely vocabulary and development concepts, reading aloud, understanding and interpretation, reading speed, and critical reading.

Reading is a complex activity that includes physical and mental activity. Physical activity includes eye movement and visual acuity. Mental activity includes memory and comprehension. In physical activities that include eye movements and visual acuity, there are some students who experience visual impairments called blindness.

The functioning of his vision will depend on factors such as lighting, optical aids used, the task at hand, and his personal characteristics. This situation means that there should be differences in services for students with low vision in their academic aspects, especially reading. This proves that in the teaching and learning process of blind students there must be special services both in the media and in the learning process. In the learning process teaching and learning activities for low vision students. Low vision aids include: light, standing read and magnifician tools. This proves that of course low vision students need adjustments in their learning to support the success and goals to be achieved in the learning.

Learning for low vision students is often not in accordance with their needs, because in reality there are still many teachers or schools that equate the learning process between low vision students and totally blind students. the learning achievement of people with low vision is lower than those who are classified as blind and are often considered lazy, this is as a result of the educational services provided to people with low vision being equated with those who are classified as blind, namely using Braille (Hosni, 2005). This proves that low vision students must receive special and different services from services for totally blind students.

Regarding reading ability, the researcher found low vision students at Special School A Bandung City who in the process of reading require adjustments and aids to read in dim conditions. The tool that students need is light. Sufficient lighting will make it easier for them to read alert writing, because when in a dim or low light place, the student has difficulty reading alert writing.

Based on the results of the initial observations made by the researcher, it is known the problem, namely in reading the writings with caution. This happened because according to his narrative, that when he read the cautionary text he could not read anytime and anywhere because when he read the alert text, he had to have sufficient light so that the available alert text could be read by him. Thus, researchers have an interest in making portable lighting devices. Portable here has the meaning according to the KBBI, namely "a small piece of electrical equipment, compact, easy to carry, easy to carry, and easy to move". Thus, students can more easily use it to assist him in carrying out reading activities with a time and place that can be done anytime and anywhere. This tool can be used by students, whether it is attached to the rod of their glasses or held by their own hands. However, it would be better if this tool is attached to the rod of the glasses to make it easier for students to read because the light will directly shine on the writing to be read and both hands can be used to hold a book or write.

## 2. METHODS

The research approach used in this research is quantitative with the type of experimental research Single Subject Research (SSR) which aims to obtain the necessary data by looking at the results or consequences of a treatment in the use of portable reading lights in improving the ability to read and write low vision children in Special School A Pajajaran, Bandung, Indonesia.

Research with a single subject as an experimental research is carried out to determine the effect of a treatment or treatment given to a single research subject and is carried out repeatedly within a certain time. Single-subject research or SSR refers to a research strategy developed to document changes in the behavior of individual subjects. This study will see whether or not there is an effect of portable reading light media which is given repeatedly to research subjects. The single-subject research design pattern used in this study is the A-B design form. Where A is the condition before being given treatment (baseline), B is the intervention or treatment. The A-B research design is the basic design of the single subject experimental research technique (SSR), other designs of the research subject case are actually the development of this A-B design. In this case, the baseline condition must have a stable value to be able to proceed to the next stage. [Susetyo and Puspitaningsari \(2021\)](#) suggest that the main procedure adopted in the A-B design includes measuring target behavior in the baseline phase and after the trend and data level is stable, then intervention is started. During the intervention phase, the target behavior is continuously measured until it reaches stable data. If there is a change in target behavior in the intervention phase after being compared with the baseline, it is assumed that the change is due to the influence of the independent variable or intervention.

## 3. RESULTS AND CONCLUSION

In Baseline (A), we test students' initial abilities by providing readings and questions. After three meetings, it can be seen that the condition of the students' abilities is stable. In this phase, students are not given treatment (intervention). After the baseline (A) was declared stable, the researchers proceeded to the next phase, namely intervention (B) where students were given treatment in the form of using reading lights for six meetings or until the values received by students became stable. The value obtained by students in each session both at baseline (A) and intervention (B) is a raw value, meaning that the data has not been processed in accordance with the techniques and data analysis.

The results obtained in the baseline and intervention phases are:

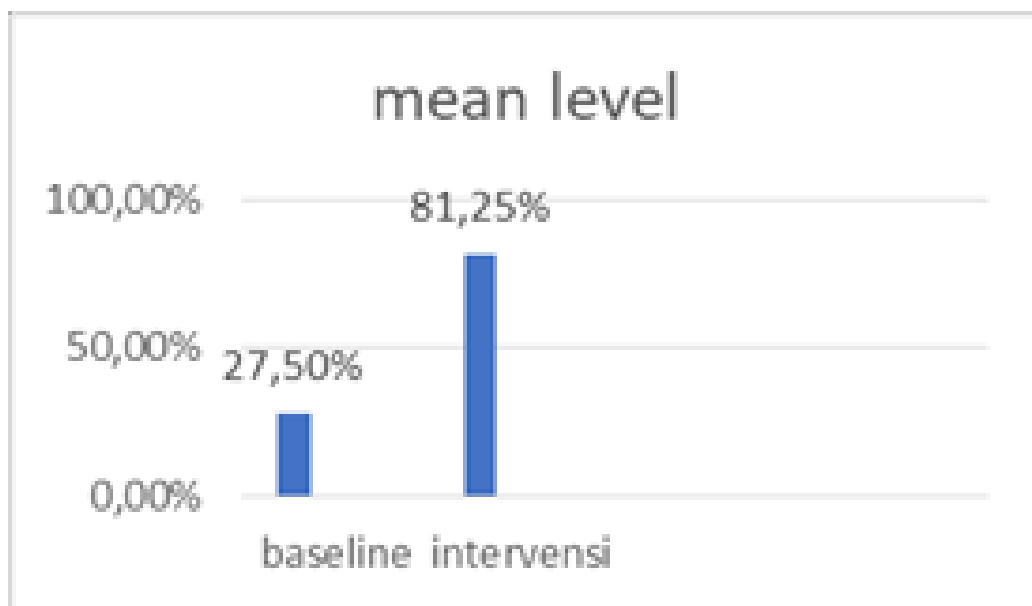


**Gambar 1.** Intervention results.

Based on observations at the Special School a Pajajaran, Bandung, Indonesia, there are 11th grade students who have low vision impairment where they are able to read carefully but with good lighting.

This problem makes researchers assume that students need reading aids (light) which are easy to carry and easy to use for these students. Therefore, the researcher made a "portable reading lamp" which is of course easy to carry and use by students in helping themselves to read careful writing in low light conditions.

This researcher used a single subject research (SSR) method with an A-B design which was conducted in 15 sessions consisting of 5 sessions of the baseline phase and 10 sessions of the intervention phase. Based on the results of the analysis of data processing that has been carried out and presented in the form of graphs and tables, it shows an increase in the percentage of ability regarding reading comprehension. In the baseline phase with 5 meetings where without using any assistive devices students were only able to answer 3 questions at most with a mean level of 27.5%, while in the intervention phase students were at most able to answer up to 7 answers correctly with a mean level of 81,25%. As for when displayed in the form of a diagram as follows:



**Gambar 2.** Mean Level.

Based on the diagram above, it can be seen that there is an increase in students' reading comprehension skills before and after being given a portable reading lamp. In addition, the overlapping data also shows a small percentage of overlap, which is 0%. The smaller the percentage of data overlap, the greater the influence of the intervention on the dependent variable. So, the influence of the intervention is 100%. Thus, portable reading aids affect the improvement of students' ability in reading comprehension.

#### 4. CONCLUSION

Based on observations at the Special School a Pajajaran, Bandung, Indonesia, there are low vision students in this school who have difficulties in reading alert writing because when reading these students require adequate lighting. This is enough to affect him to read the script well because he cannot read anywhere and anytime. Therefore, the researchers provided a tool, namely a portable reading lamp that has a small size and light weight so that in its use, students have no difficulty carrying the tool anywhere. In addition, the light emitted by this portable reading lamp can be adjusted according to the needs of the student.

Based on the results of research and data analysis, it can be concluded that the use of portable reading lamps has an effect on improving the reading comprehension ability of low vision students. This effect can be seen from the increase in the average value (mean level) in each phase. In the baseline phase (A) the percentage of the mean level obtained is 27.5 percent. Then in the intervention phase, the mean level obtained by student Y increased by a percentage of 81.25 percent. Then, the magnitude of the effect of the intervention using portable reading lights can be seen from the percentage of overlap. The smaller the percentage of overlap, the better the effect of the intervention. The result of the overlap percentage is 0 percent. Thus, the use of portable reading lights affects the improvement of the ability to read and write alerts for low vision students at Special School a Pajajaran, Bandung, Indonesia by 100 percent. Referring to the success of using portable reading lights in improving students' reading skills, the researcher recommends continuing to maximize the remaining vision possessed by these students by continuing to provide written reading that is tailored to the needs of students.

## **5. AUTHORS' NOTE**

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

## **6. REFERENCES**

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