

## **Effects of Self-Protective Techniques on Independent Travel for Blind Students**

**Nabilah Qurrotu'aini\*, Neni Meiyani**

Universitas Pendidikan Indonesia, Bandung, Indonesia

\*E-mail: [nabilahkim@upi.edu](mailto:nabilahkim@upi.edu), [nenimeiyani@upi.edu](mailto:nenimeiyani@upi.edu)

**Abstract:** The problem in this research is the low skills of a blind student in traveling independently around the school environment. Researchers use self-protective techniques to improve blind student independent travel skills in grade 5th. The purpose of this research is to get data about the effects of self-protective techniques on the skills of independent travel for blind students. This research uses the experiment method with Single Subject Research (SSR) design, with A-B-A research design. Based on the research result, there is a positive effect on the use of self-protective techniques towards increasing the skills of independent travel of 5th-grade blind students. Therefore, it is recommended that orientation and mobility teachers use self-protective techniques as one of the orientation and mobility learning techniques that can improve independent travel skills among blind students.

**Keywords:** self-protective techniques; independent travel skill; blind students.

### **INTRODUCTION**

Children with special needs experience intellectual, sensory, physical, emotional, or behavioral disorders, and have special talents (Hajar & Mulyani, 2017). Children with sensory disturbances are called blind children (Noviatun et al., 2022). Blind students are part of the population of children with special needs who for some reason cannot use their eyes as the main channel for obtaining information from their environment (Pahlawaty & Aprilia, 2022; Maula & Sidiq, 2022). The presence of visual impairment in a person will automatically cause limitations. Because of these limitations, they need educational services that are specifically designed to develop their potential optimally.

According to Somantri (in Auliya, 2021), blind people are individuals who experience physical barriers, their sense of sight does not function as a channel for receiving information that interferes with daily activities. Blind people have visual acuity of less than 6/21, meaning that children's vision to read letters is limited to a distance of fewer than 6 meters, while alert people can read letters at a distance of 21 meters.

The ability to see is very influential in daily human life activities. People who have normal vision abilities can get more information than those who experience obstacles in vision. In children who are learning, a lot of indispensable information is obtained through vision, for example in learning colors, observing surrounding objects, observing other people's facial expressions, writing and reading, understanding distance perception, observing the movement/mobility of others as a whole, and so on.

Wahyuno (in Rika & Asep, 2018) mentions the characteristics of blind people, one of which is excessive dependence caused by blind people not mastering orientation and mobility skills so that the ability to move and move places is very minimal so they always need the help of others in all their activities. Someone who experiences visual impairment must receive appropriate education services or treatment to reduce the negative impact that occurs. The key is educational interventions that are appropriate and appropriate to the specific needs of learners.

According to Nawawi (2013, p. 292) "Blind learners who do not have a mental map of objects or objects that are in the surrounding environment, he will not know the position of himself in a place or environment where he is and will cause feelings of discomfort in a certain environment or place". Blind learners sometimes have difficulties when faced with a new environment. The correct test to determine the level of orientation skills possessed is to bring students to an unfamiliar environment. Orientation and mobility abilities are the ability

of individuals to move from one place to the destination safely (Azwadi, 2004; Rahayu & Sunardi, 2018).

"Orientation can save the blind while mobility can deliver the blind to their destination. Knowledge and skills of orientation and mobility can be acquired by blind people through a systematic and programmed training process under the supervision of a reliable and authorized trainer" (Hosni, 2007, p. 9). Orientation is useless without mobility, and mobility is not successful without orientation. Considering the importance of developing orientation and mobility skills for blind learners, these abilities should be developed as early as possible. Orientation and mobility learning in exceptional schools generally begin to be provided by the time the child enters the preparatory class. Orientation and mobility learning for children is intended to master important concepts needed for independent travel both indoors and outdoors such as home, school, playground, and others. Good mastery of orientation and mobility skills in childhood helps them become confident and independent walkers by adulthood. Thus, the ultimate goal of orientation and mobility learning is for blind students to enter every environment, both known and unknown, safely, efficiently, flexibly, and independently by combining both skills.

As we know the ultimate goal of imparting Orientation and Mobility skills to blind people is: so that children with visual impairments can move and enter environments both well recognized and not well recognized, safely and effectively without asking many others for help. According to Hosni, (T.t, p. 217) Self-protection technique is a technique in which blind people move without using any aids and this technique can only be used in areas or places that are well known. Endang (2015) revealed that technique is a way to make it easier. Orientation and mobility techniques are methods used by blind people to make it easier for them to move from one place to another. One technique that exists in orientation and mobility is the technique of self-protection. Self-protection techniques are a method used by blind people to move safely without using assistive devices. According to Husni (in Juliawan, 2011) in orientation and mobility, several techniques need to be mastered by blind people to walk safely and efficiently without hitting objects around them, namely self-protective techniques, which include upper hand, lower hand, and trailing techniques. Deni (2017) added that outdoor techniques are used in known and unknown areas, in contrast to trailing techniques and body-crossing techniques that are only used for known areas.

Barus, G. (1999 in Purwaka, 2005, p. 267) states that in general independence refers to an individual's ability to 'walk' or 'do' his life activities regardless of the control of others. Based on this understanding, it can be concluded that traveling independently (independent travel) is the ability of individuals to travel to a place without the help of others. Interventions for visually impaired learners are needed to improve their travel skills independently. One way is to use self-protection techniques. Self-protection techniques are techniques that can be used in the skill of traveling independently in a familiar environment for learners.

The use of self-protection techniques is assumed to improve students' independent travel skills in familiar environments, especially in school environments, and can increase courage when students travel independently to school environments. The previous research relevant to this research is Miko (2017) regarding: "The Use of Self-Protection Techniques to Improve Environmental Exploration Ability in Class VI Blind Students at SLB Negeri A Bandung City". The conclusion of the study shows that self-protection techniques can improve the ability to explore the environment and can make subjects move and walk in the school environment, although all these changes cannot be separated from strict guidance. The reach in this study is still limited to exploring the classroom environment and is the basis

for the author's development in the study to develop the reach of students in a school environment.

**METHOD**

In this study, the experimental method used is Single Subject Research (SSR), which is to find out how much influence a certain treatment (independent variable interventions) has on an affected (dependent variable) and given to the subject repeatedly in a certain time. This method is used because the researcher wants to study an event that occurs as carefully as possible so that the cause and effect of the event can be known. Prasetyo & Jannah (2007, p. 58) stated that "research methods Experimentation is a type of quantitative research that is very powerful in measuring causality". The treatment used in this study is a self-protection technique, while the result of the treatment is in the form of independent travel skills of blind students. Changes can be seen from the initial condition (baseline-1) and the condition after the intervention is stopped (baseline-2)

The research design used is A-B-A, which has three stages, namely: Baseline-1 (A-1) is the basic ability, namely the initial skills of blind subjects in traveling independently, Intervention (B) in the form of self-protection technique programs, Baseline-2 (A-2) re-observation of skills in blind subjects after measurements in intervention conditions are completed. The instrument used in this study is in the form of a question test that can measure students' independent travel skills. The data processing technique used in this study is to use descriptive statistics to obtain a clear picture of the influence or effect of the intervention on target behavior that will be changed within a certain period. This research will be carried out in one of the schools in Tasikmalaya. The subjects involved in this study were one person with total visual impairment with the initials ER.

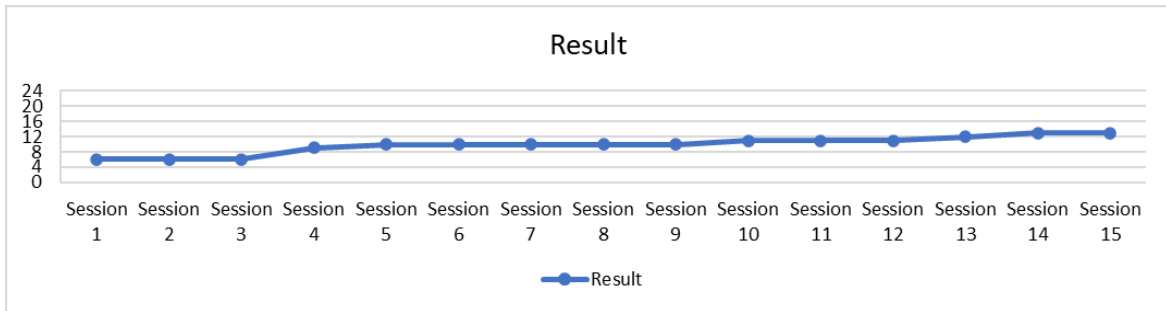
**RESULT AND DISCUSSION**

The following is a recapitulation of the recording of scores and percentages of skills to travel independently at baseline 1 (A-1), intervention (B), and baseline 2 (A-2) conditions:

**Table 1.** Recapitulation of score recording and percentage of skills to travel independently

No.	Kind	Sum	Score	Session														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Fast	6	6	1	1	1	2	2	2	2	2	2	2	2	2	3	3	
2	True	6	6	2	2	2	3	3	3	3	3	3	4	4	4	4	4	
3	Easy	6	6	2	2	2	2	3	3	3	3	3	3	3	3	3	3	
4	Safe	6	6	1	1	1	2	2	2	2	2	2	2	2	3	3	3	
<b>Sum</b>		24	24	6	6	6	9	10	10	10	10	10	11	11	11	12	13	
<b>Percentage</b>				25	25	25	37,5	41,7	41,7	41,7	41,7	41,7	45,8	45,8	45,8	50,0	54,2	

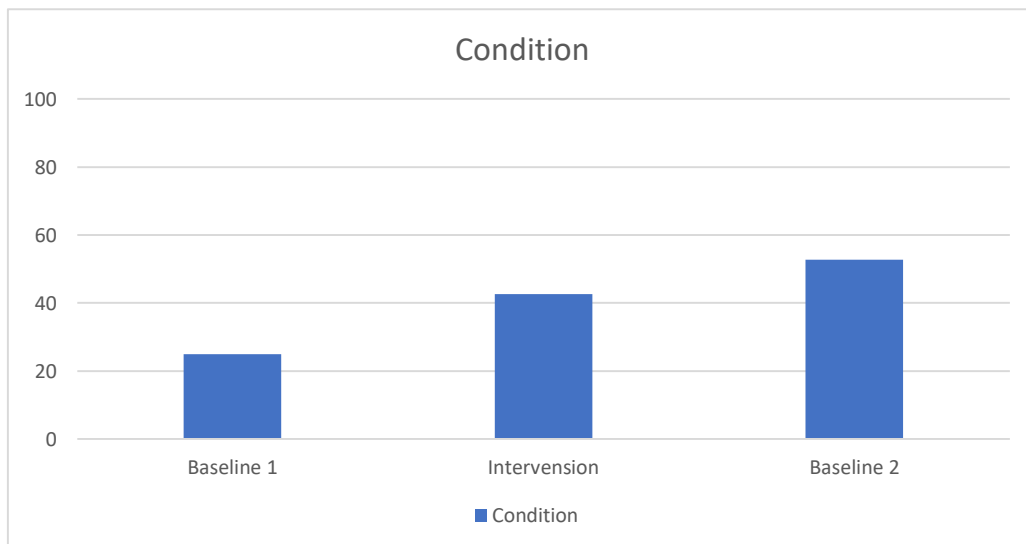
The score of 6 conducted during the first three sessions at baseline condition 1 (A1) has illustrated the lack of ER skills in traveling independently. Then the score for the next 9 sessions, namely in the intervention condition (B) illustrated an increase in ER skills in traveling independently. Ending with the score for the last 3 sessions, the baseline phase 2 (A-2) has illustrated an increase in ER skills in traveling independently.



**Graph 1.** Recapitulation of Independently Traveling Skill Score

It can be seen from the graph that the percentage results are obtained by calculating the number of ER scores divided by the maximum score multiplied by 100%. After the data is recorded in the form of scores, then the data is processed into graph form to make it easier for readers to see the increase or decrease that occurred during the study.

To determine the increase in the mean level of travel skills independently from each condition, namely in baseline 1, intervention and baseline 2 conditions can be visualized in the graph below:



**Graph 2.** Mean Level of Research Phase

Graph 2 shows a 27.8% increase in the mean skill level of independent travel in ER subjects. This can be seen from the mean level at baseline 1 of 25%, intervention of 42.6%, and baseline 2 of 52.8%.

The research was conducted on totally blind students in one of the extraordinary schools in the city of Tasikmalaya. In this study, the target behavior was to improve travel skills independently in the ER subject school environment. The orientation and mobility techniques used to improve the skills of traveling independently in the school environment are self-protection techniques.

The research data was obtained through a single-subject research experimental study with the A-B-A design, which consisted of three conditions, namely baseline 1 (A-1) which was carried out for 3 sessions, then intervention (B) was carried out for 9 sessions, and baseline condition 2 (A-2) was carried out for 3 sessions. Looking at the results of the data and analysis that has been presented from the overall data obtained, the implications of self-protection techniques influence increasing the skills of traveling independently for blind

students in the school environment. Reinforced by Yoga (2019) that treatment using Social Mobility and Communication Orientation Learning (OMSK) has a significant effect on the independence of toileting skills in blind students. This means that there is a significant influence between Social Mobility and Communication Orientation Learning on the Toileting Ability of blind students at SDLB-A YPAB Surabaya. Research has been done to improve the mobility of people with visually impaired who rely on signal processing and sensor technology, Marlina and Siti Qoniah (2018) U-Qoserlin tools are practical, feasible, useful and provide technological insights for the person of visually impaired; The U-Qoserlin tool effective in improving the ability to detect solid object spacing for the person of visually impaired.

## CONCLUSION

Based on data analysis under conditions and between conditions, it can be concluded that self-protection techniques affect the increasing skills of traveling independently for blind students in one of the schools in Tasikmalaya. The effect of the intervention can be seen from the mean level in each condition which shows an increase of 27.8%. This can be seen from the mean level at baseline 1 of 25%, intervention of 42.6%, and baseline 2 of 52.8%.

Test results at baseline condition 1 (A-1), ER was only able to obtain a score of 6 with a percentage of 25%. In the intervention phase (B) ER was given intervention for 9 sessions, ER improved with the highest score being 11 and the percentage was 45.8%. The condition of the last phase is baseline 2 (A-2), researchers conducted a test of travel skills independently after stopping the intervention, and the score achieved by ER increased again with the highest score being 13 with a percentage of 54.2%.

Self-protection techniques are given to blind learners to improve travel skills independently, in line with what Hill and Ponder (1976, p.27) explain that self-protection techniques are techniques intended for blind people to be able to walk efficiently and independently, especially in familiar environments, and protect blind students without using mobility aids.

Thus, it is recommended that orientation and mobility teachers use self-protection techniques as one of the orientation and mobility learning techniques that can improve the skills of traveling independently in blind learners. Researchers can then conduct research using other orientation and mobility techniques, such as the stick technique and the stick technique, on the subject so that it can contribute to wider knowledge.

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