



## Braille Letter Introduction Method for Blind Children by Teachers

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**Abstract:** This study aims to understand the Braille recognition method used by teachers. The method used by the author in this study is Literature Review. With the stages of identifying, reviewing, and interpreting research. Literature review articles use publications from 2020-2024 which can be accessed via Google Scholar, then a literature review is conducted to find related research. Blind people are individuals with visual impairments that cause obstacles in their visual function. There are two groups of blind people, namely total blindness and low vision. Braille is a tactile writing and reading system that is important for the blind. To teach Braille, there are several commonly used recognition methods, namely the scramble method, the flashcard method, the left code method, the fernald method, and the SAS (structural analytic synthetic) method. Each method has advantages and can have a positive impact on learning. Good teaching skills are needed to help the blind develop their Braille reading skills. The conclusion of the presentation is that all Braille recognition methods have a significant influence and a personal approach is needed in teaching to ensure effective understanding and learning for each blind individual.

*Keywords:* braille letters, blind, braille recognition methods

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### I. Introduction

Education as a conscious and systematic effort in creating a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, self-control, personality, intelligence, noble morals. The role of the government in providing educational facilities must be evenly distributed to Special Schools (SLB). The government has provided educational facilities and infrastructure, educational curriculum, and efforts to develop educators for Children with Special Needs (ABK) in order to improve the quality of education evenly.

The need to learn letters achieving the ability to read braille letters needs more attention. Recommended by Jarjoura & Karni (2014), that blind students need 1.5 to 2 hours every day to learn braille letters. This method helps blind students to have high literacy skills. Children with normal vision learn to read starting from pre-reading activities, blind children too. Stated that the first stage of pre-reading braille is a training in the sensitivity of the blind's sense of touch, and is guided to play with their environment.

The differences in the use of teaching methods by each teacher for blind children vary. Polvanov (2023) used a method that braille for Children in general at school read by using their sense of sight to read books or writing on the board, but this is different for blind children. Blind children need to get education such as reading and writing from an early age to make it easier for them to carry out all their activities, therefore educators need to apply appropriate learning methods. Method blind child in the form of a combination of raised dots and the way to read it is by touch. effective such as braille, audio, tactile/raised diagrams, hand-over-hand technology and techniques involving physical guidance of blind children's hands. Agustin & Ernawat. (2023), effective methods include Fast Fourier Transform (FFT) with learning that is characteristics student, Radially Average Power Spectrum (RAPSV) and especially reading braille letters, letters for Which wavelet as well as several spatial features, namely Local Binary Pattern (LBP), Segmentation based on Fractal Analysis (SFTA), first order statistics, Gray Level Co-occurrence Matrix (GLCM), moment invariant and geometric features. Andriansyah & Junaedi (2021) Convolutional Neural Network; Desa dkk., (2024) using the left code method.

Introduction to Braille is the foundation for Braille reading and writing skills for the blind and must be taught in special schools. Teachers of blind children play an important role in helping them learn to read and write Braille for the first time. Because good Braille introduction prepares blind children to acquire skills in accessing information and communicating. However, are teachers able to introduce Braille letters well so that children can apply reading and writing Braille correctly or are teachers ignoring the main principles of the objectives of inclusive education? Currently, the objective situation in the industry shows that there are still many blind children attending secondary schools who still cannot read and write Braille. Therefore, it is necessary to think about how teachers can first learn what methods can be used to introduce Braille in special needs schools and schools for the blind.

## II. Method

This study uses the Literature Review research method. With the stages of identifying, reviewing, and interpreting research (Triandini dkk., 2019). The data collection process, we searched for data through Google Scholar with the keyword "Braille letter recognition method" from 2020 to 2024, there were 500 articles and 10 articles that were in accordance with the research theme. Starting by reading, recording and reviewing every scientific article that is relevant to the research topic to find related research. After that, analyze and draw conclusions that are in accordance with the research objectives.

## III. Results and Discussion

Learners with special needs who attend mainstream schools often experience difficulties in participating in learning and become obstacles for teachers when teaching with the unavailability of accompanying teachers. Therefore, it is very important to consider the needs of students, especially when organizing innovative inclusive education for special children and adolescents. The following results of the literature review are summarized in the results mapping table 1:

Table 1. Mapping of Literature Review Result

No	Research Title and Author	Research Result
1	Psychology Education Approach Multidisciplinary, Asrori (2020)	Blind is Individual which experience abnormality on sense of sight which cause individual the hampered in his vision.
2	Peeling Therapy For The Mentally disabled Mental Retardation Until Slow Study. Yogyakarta: Editorial Maxima. Year 2017, Wikasanti (2017)	In general etymological, blind people come from the word "Tuna" which means broken or loss and "Netra" which means eye, with thus blind is designation for individual which experience damage or obstacle on eye organ.
3	Encyclopedia Child in Need Special. Yogyakarta, Murtie. (2017)	Blind is a child or individual which experience obstacle in his vision. Called obstructed his vision Because a blind not yet of course experienced total blindness, and form his disorder too diverse, could be permanent thing or not.
4	Program Improvement Skills For The bearer Visually Impaired (Study at the Orphanage Rehabilitation of Bina Blind Poor, Java East), Sukmana (2020)	Letter Braille is system writing which used by person blind For read and write.
5	Improvement Ability Read Initial Letter Braille through Method Scramble on Blind Students Class I at SLB A YPTN, Adhitya (2017)	Scramble method is one of the language games, in essence game Language Is a activity For to obtain skills certain with method exhilarating
6	Learner An Braille Media Flashcard In TKLB Blind, Anindita (2020)	Flashcard can help participant educate in Study individual or group their questions can be answer through media flashcards.

7	Left Method in Teaching Reading and Writing Braille for Blind Children, Desa dkk. (2024).	Left code method Is a method in where teacher/trainer introduce letter braille with left code, dnamely a, b, k, l as letter base, furthermore introduced letter other with add point braille to 4 or dots to 5 or dots.
8	Use the Fernald Method to Improve Braille Reading Achievement for Class II Blind Students at SLB-A TPA Jember Semester II 2016/2017 Academic Year, Sudarningtyas (2020)	That method Fernald capable increase show ability read.
9	Synthetic Structural Analytical Method (SAS) to Improve Braille Reading Ability in Blind Children at Bhakti Luhur Malang, Nini & Harum (2023)	Method SAS is a method which assumes that observation child started from overall or Gestalt and Then to parts.

Blind people are individuals who experience abnormalities in their sense of sight which causes the individual to be hampered in their vision (Asrori, 2020). It is called impaired vision because a blind person does not necessarily experience total blindness, and the form of the disorder also varies, it can be permanent or not. Etymologically, blindness comes from the word "Tuna" which means damaged or loss and "Netra" which means eye, thus blind is a term for individuals who experience damage or obstruction to the eye organ (Wikasanti, 2017). Furthermore, according to Murtie (2017) blind is a child or individual who experiences obstruction in their vision. It is called obstructed vision because a blind person does not necessarily experience total blindness, and the form of the disorder also varies, it can be permanent or not. Blind people can be grouped into two types, namely:

#### 1) Total Blindness (Total blind)

Total blind is a vision condition that cannot see two fingers in front of them or only see light or light. They cannot use letters other than Braille. The characteristics of total blindness include physically crossed eyes, frequent blinking, squinting, red eyelids, infected eyes, irregular and rapid eye movements, eyes that are always watery and swelling of the skin where the eyelashes grow. Behaviorally rubbing the eyes excessively, closing or protecting one eye, tilting the head, or leaning the head forward, difficulty reading or doing tasks that require eye use, blinking more, bringing books close to the eyes, unable to see objects that are quite far away, squinting or frowning It is said to be blind if it is completely unable to receive light stimuli from outside (vision = 0).

#### 2) Low Vision (Lov Vision)

Low vision is a condition of vision that when looking at something, it must be brought closer or the eyes must be moved away from the object being viewed or has blurred vision when looking at an object. The characteristics of low vision include writing and reading at a very close distance, only being able to read large letters, the eyes appear white in the middle of the eye or the cornea (the clear part in front of the eye) looks cloudy, does not look straight ahead, squints or frowns especially in bright light or when looking at something, has more difficulty seeing at night, has had eye surgery and/or wears 12 very thick glasses but still cannot see clearly If you are still able to receive light stimuli from outside, but the sharpness is more than 6/21, or if you are only able to read the headlines in the newspaper.

Braille is a writing system used by blind people to read and write (Sukmana, 2020). Braille is a system of reading and writing through touch created by Louis Braille. In Braille there are letters, numbers, punctuation marks, and special characters represented in the form of dots that appear on the surface of paper or other materials. The system on Braille letters are a combination of six dots, arranged in a grid of three rows with two columns. Braille is not a language, but a code that allows various languages such as Indonesian, English, and others to be read and written. In improving the

skills and abilities of blind children in recognizing Braille letters, children must master the mastery of direction, sensitivity to touch, the ability to identify letters and the ability to trace lines. Learning through Braille media can increase students' learning motivation, respond to learning stimuli, increase self-confidence, in general they are more creative and not inferior to normal children in general. The use of Braille education shows how well the media can achieve the learning objectives set.

The Braille alphabet consists of cells that have 6 raised dots and the presence or absence of these dots will give the Braille symbol code. The Braille alphabet consists of cells that have 6 raised dots and the presence or absence of these dots will provide the code for the symbols. The following is explained through figure 1 and figure 2:

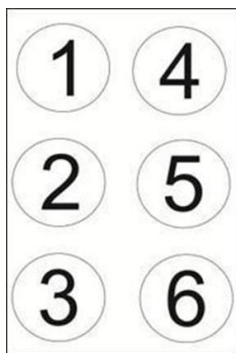


Figure 1. Braille Letter Pattern

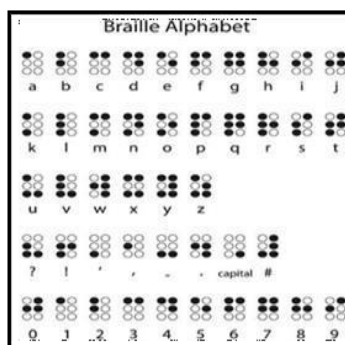


Figure 2. Braille Alphabet

The Braille alphabet consists of 26 Latin letter patterns along with punctuation patterns such as dots, question marks and exclamation marks.

Introduction Method there are several methods that the author has found that can be used to introduce Braille to blind children. Namely:

#### 1) Scramble Method

As explained by Suparno & Yunus (2007) "The scramble method is one of the language games, in essence language games are an activity to acquire certain skills in a fun way". This method is believed to be able to provide a positive impact on students to be more active and enthusiastic in participating in learning, and can improve students' reading skills. The advantages of the scramble method in reading activities include being easy and able to provide enthusiasm or increase interest in reading, and allowing students to learn while playing. Students feel like they are playing, but in fact students are learning while thinking and practicing accurately. With the duration given in playing, students practice thinking quickly, accurately, more focused, creating a sense of joy that makes students not feel bored and tired so that it improves students' reading ability. On scramble has some advantages, but also some disadvantages that need to be considered. The disadvantage of this method is that it can cause confusion for children who are just learning to read Braille. In addition, this

method does not help children understand the meaning of words and develop fluent reading skills. It is less effective for children with low intelligence levels, and it takes more time and effort to implement. To overcome these shortcomings, it can be overcome by using the scramble method. Use method introduction gradually, combine with other methods, provide support and guidance, and use more interesting learning media. By considering the shortcomings and how to overcome them, teachers can use the scramble introduction method more effectively for blind children learning to read Braille.

## 2) Flash Method

Picture cards are a form of media that can be used by teachers to introduce Braille to blind children. Media cards that have pictures of Braille letters make it easier for children to understand Braille, where each letter is on one card so that children can train their right brain and remember more easily. In addition, Flashcards can help students in individual or group learning, their questions can be answered through flashcard media (Zung et al., 2022). So this media is used to introduce early Braille letters individually or in groups. Flashcard media is considered a media that creates students' pleasure and interest in learning Braille, because flashcards are one form of learning media in the form of picture cards that students like and can be presented in the form of games. The advantages of flashcard media include: easy to carry, practical, easy to remember and fun. In addition, flashcard media can help the right brain's ability to remember the symbols of letters in Braille, so that it can improve the ability of SLB students to learn to read and write Braille. The disadvantage of Flashcards is the small size of the card so that it is only enough for a few letters and is limited to long sentences. But even so, flashcards are an effective medium for introducing Braille letters.

## 3) Left Method

The left code method is a method in which the teacher/trainer introduces braille letters with the left code, namely a, b, k, l as basic letters, then other letters are introduced by adding the 4th braille dot or the 5th dot or the 6th dot or the 4.5th dot, the 6th sequence is the opposite of several letters, the 7th sequence in other words. The use of the left method is based on the fact that the sequence of letters that pile up and are numerous makes blind children easily forget the letters they are learning, the left code method was created to help simplify the sequence of letters and their patterns. With memorize basic letters are (a, b, k, l) and then only add dots 4, 5, 6 and 4.5. In addition, the left code method can help blind children who have other disabilities other mental retardation, speech/language disorders, neurological problems, cerebral palsy, orthopedic disorders, behavioral disorders and also hearing loss. Children with multiple disabilities need special learning methods because of these other disabilities (Horn et al., 2019). The left code method is one of the innovations to introduce braille to children with multiple disabilities, the advantages of this method are simplifying the sequence of braille patterns so that blind children can more easily identify them accurately, while the disadvantages are that the sequence of patterns becomes different and limited when used for large groups such as blind classes. or are called multiple disabilities. According to Bruce & Ivy (2017), 40% of people with multiple disabilities tend to have other disabilities. These other disabilities include.

## 4) Fernal'd Method

Fernald's Method multisensory teaching also known as the VAKT method (Visual, Auditory, Kinesthetic and Tactile). The multisensory/VAKT method was developed by Fernald. Fernald's multisensory method has developed a multisensory approach method or VAKT (visual, auditory, kinesthetic, and tactile) for teaching reading, writing, and spelling). This method is carried out with several activities such as touching, listening (auditory), writing (movement), and seeing (visual). This is in line with what Zahirah (2024), stated

that the Fernald method able to improve reading skills. Fernald's method involves many sensors so that children will understand what is conveyed more quickly. With involving all aspects of the child's senses children will feel truly involved in the learning process. By involving all aspects of the child's senses, they will be more sensitive and learning will be more enjoyable. This method has four stages, namely: 1. The teacher writes a word, then the child traces it with his finger. The next stage, the child pronounces the word, then writes and reads it. 2. Children are free to learn words themselves by pronouncing and then writing. 3. Children create words, pronounce them before writing. 4. Children are able to remember new words based on the similarity of the words they have learned (Sudartiningtyas, 2020). The weaknesses of this method are that teachers must know what media can be used as aids, must always innovate at every meeting, and it takes a long time because this method involves various aspects of.

#### 5) SAS Method (Synthetic Analytical Structural)

According to Burchinal & Appelbaum (1991), the SAS method is a method that assumes that children's observations start from the whole or gestalt and then to the parts. This method uses the principle of stage-by-stage learning, where the child initially observes something as a whole and then observes its parts. In blind children, one of the principles of learning when teaching a concept is the principle of the whole or totality. Therefore, this method is used because it can teach Braille gradually until the whole is complete. The implementation of the SAS method begins by introducing students to the smallest language unit, namely sentences or several complete sentences. After that, one sentence is taken to be analyzed into words, words into syllables, syllables into letters and then re-synthesize the letters into syllables, syllables into words, words into complete sentences again. The advantages of this method can increase students' enthusiasm for learning Braille and teacher supervision of students' reading memory is easily seen. Meanwhile, the disadvantage is that at a certain stage, children who are not yet fluent in reading Braille will start to have difficulty at the next stage if asked to read a reading book without a reading board.

#### IV. Conclusion and Suggestion

Based on the review of the literature study conducted, it can be concluded that all methods are very influential in the introduction of Braille letters, these methods use their own roles in teaching, not only covering the cognitive students, but also requiring a more personal approach to students and so that each student will be easier to understand the material and teachers can also easily monitor the development of children's abilities. The author suggests that developing the Fernald method can improve the understanding and memory of blind children because by using many aspects with a note to simplify the form of efficient learning.

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