**ALGEBRA : JURNAL PENDIDIKAN, SOSIAL DAN SAINS**

ISSN : 2807-663X e-ISSN : 2807-629X
Journal Homepage : https://ejournal.yana.or.id/index.php/algebra
**Volume 5 Number 1 (2025)**

# STRATEGY FOR STRENGTHENING LITERACY AND NUMERATION OF CHILDREN WITH GRAPHIC IMPROVEMENTS THROUGH FLASHCARDS AT SLB X KUDUS

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***ABSTRACT***

*This study aims to determine how the use of flashcard media can help improve basic literacy and numeracy skills in mildly mentally retarded students at SLB X Kudus. Mentally retarded students generally have difficulty in understanding letters and numbers due to cognitive limitations, memory, and concentration, so they need a concrete and enjoyable learning approach. This study uses a qualitative approach with a case study method on one student in class VIII-C1 with the initials DK. Data were collected through observation, interviews, and documentation during eight learning meetings. The results showed that before the use of flashcards, DK was not yet able to recognize vowels, distinguish consonants, mention numbers 1–10, and match numbers with the number of objects. After the flashcards were consistently applied, DK showed an increase in learning interest, focus, and the ability to recognize and mention letters and numbers in a guided manner. The discussion confirms that flashcard media which is visual, interesting, and interactive is suitable for the learning style of mentally retarded children who find it easier to understand concrete information. In conclusion, flashcards have proven effective in supporting the development of basic literacy and numeracy in mildly mentally retarded students, and can be a relevant visual learning strategy in the context of inclusive education.*

*Keywords: Flashcards; inclusive learning; basic literacy; early numeracy; children with mild intellectual disabilities.*

## INTRODUCTION

Basic literacy and numeracy are important competencies in the Independent Curriculum, which emphasizes project-based learning and the delivery of essential materials tailored to students' abilities (Amelia Rizky Idhartono, 2022). Students with intellectual disabilities tend to experience difficulties in understanding language and reading, so adaptive learning strategies are needed (Arwana, 2022). Firdaus et al. (2025) shows that image media can significantly improve the early literacy skills of children with mild mental retardation.

Basic mathematical skills in mentally retarded children include mastery of number concepts and simple arithmetic operation skills, such as recognizing and naming number symbols, ordering numbers, and addition and subtraction with the help of concrete objects. This mastery is important to develop from an early age so that children are able to understand and apply mathematical concepts in everyday life (Anggraeni & Kurniawan, 2023).

However, conventional methods which are abstract and less interesting are often ineffective for use with mentally retarded students, due to their limited memory, focus and motivation to learn (Samsul, 2023). Therefore, a fun and interactive learning approach is needed.

One of the media that has proven effective is flashcards, because they present concrete, colorful, and directly touchable visual stimuli. Flashcards are able to attract students' attention and increase their involvement in the learning process. Sintia Fitri Anggraeni et al. (2022) noted that the use of this media can improve the early reading skills of mentally retarded students by up to 36%.

Compared to conventional methods such as lectures or written exercises, flashcards are more attractive to students with intellectual disabilities because of their simple form, striking colors, and interactivity. Children feel more motivated because they can directly see and respond to information visually. This is very much in line with the learning style of children with intellectual disabilities who rely more on visuals and concrete experiences than on text or verbal explanations.

However, until now, the learning approach using flashcards has rarely been studied qualitatively, especially those that focus on the individual and indepth learning process of students. In SLB X Kudus, the use of this media has not been widely documented as a special needs-based learning strategy.

This study is based on the use of a descriptive qualitative approach to explore how flashcard media can help students with intellectual disabilities build basic literacy and numeracy skills more effectively. In addition, this study explores how students interact with teachers and their responses during the learning process, thus providing a comprehensive, contextual picture. Therefore, the purpose of this study is to understand the process and impact of using flashcards in strengthening literacy and numeracy skills in students with mild mental retardation at SLB X Kudus, and to describe in depth the responses and involvement of students during the learning process

## RESEARCH METHODS

This study uses qualitative research with a case study approach. This study aims to gain an in-depth understanding of the literacy and numeracy learning process in mildly mentally retarded students. The subjects of this study were students in class VIII-C1 at SLB X Kudus with the initials DK. This study was conducted for 2 weeks with a total of 8 meetings, each lasting 30 minutes per session.

This approach was chosen so that researchers can understand the learning process naturally without manipulation, and focus on meaning, experience, and interaction in the context of actual learning (Isroini et al., 2024). Because it is an in-depth case study, these findings are not intended to be generalized, but rather to provide contextual understanding that is useful in developing adaptive learning strategies (Handayani & Nadirah, 2024).

There are three data collection techniques in qualitative research, namely: 1) Observation: Seeing directly what is happening without interfering; 2) Interview: Questions and answers with sources to obtain information; 3) Documentation: Collecting data from photos, notes, videos, or other related documents (Septiana et al., 2024). This study used interview, observation, and photo documentation data collection techniques. DK is one of the mentally retarded students in class VIII-C1 at SLB X Kudus. DK is not yet able to read and write independently, he can only follow through the dictation method. The researcher conducted interviews with class VIII-C1 teachers at SLB X Kudus to find out the learning strategies used to improve literacy and numeracy of mentally retarded students, as well as the obstacles faced during the learning process. The researcher conducted observations to find out the real conditions of the learning process in the classroom, especially in the

use of flashcard media and students' responses to the media. The researcher also conducted documentation to collect supporting data in the form of photos and students' work during the learning process.

This study uses data analysis techniques from Miles and Huberman which consist of: Data collection, Data reduction, Data presentation, and Drawing conclusions.

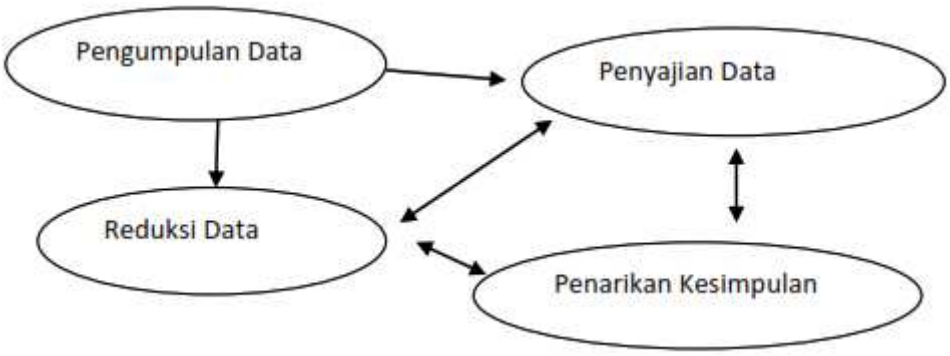


**Figure 1. Data Analysis Techniques**

Source: Miles and Huberman (Qomaruddin & Sa'diyah, 2024)

Data collection was carried out by collecting information from direct observation, interviews with class teachers, and documentation of student learning outcomes. Data reduction was carried out by sorting important information related to students' literacy and numeracy skills. Data presentation was carried out by conveying the results of observations and interviews systematically and descriptively. Conclusions were drawn by summarizing the main findings to understand the needs and appropriate learning strategies for students.

Qualitative data triangulation is a method for verifying the validity of data by checking data from various sources, techniques, or times, so that the research results are more valid and reliable (Ilhami et al., 2024).

## RESULTS AND DISCUSSION

This study aims to determine the condition of literacy and numeracy skills of students with intellectual disabilities (mental retardation) and appropriate learning strategies through concrete media such as flashcards, pictures, and alphabet/number magnets. The subject of the study was a student with the initials DK, who is a class VIII-C1 student at SLB X Kudus.

The results of observations and interviews show that DK experiences quite significant obstacles in the aspects of literacy and numeracy. The results of observations conducted on students with the initials DK at SLB X Kudus on April 11, 2025 showed that DK experienced difficulties in the aspects of basic literacy and numeracy.

Literacy Skills, DK has not been able to recognize vowels (a, i, u, e, o) consistently and still often gets confused when mentioning the sounds. DK also has difficulty distinguishing consonants such as "m" and "b", especially if the letters are displayed in different written forms or varying sizes. He has not been able to read and write simple words independently, and can only write when dictated by the teacher, without understanding the meaning or sound. As for Numeracy Skills, DK has not been able to mention numbers 1 to 10 in sequence. He often mentions numbers randomly or skips sequences. DK has also not been able to indicate the number of objects based on certain numbers independently. Understanding of the relationship between number symbols and the number of objects is still very limited and requires concrete media and direct assistance.

DK has a low level of concentration, is easily distracted, and has not been able to follow learning for a long time. However, when given visual and tactile learning stimuli such as pictures, magnets, or flashcards. DK shows increased interest even though it is still limited in time. He is more responsive to learning that is concrete and fun. The class teacher said that DK has not been able to recognize letters and numbers independently and can only write if dictated. The teacher said that learning that uses concrete aids and repetition is very helpful in increasing DK's involvement and understanding, although it is still limited.

This development shows that although it is slow and not yet fully independent, the use of visual media such as flashcards has a positive impact on DK's mastery of basic literacy and numeracy. One of the reasons why DK prefers flashcards compared to regular learning methods is because they are

attractive, colorful, and can be touched directly. DK is more interested in learning when using brightly colored and movable media, such as flashcards. Compared to methods such as lectures or writing alone, flashcards make DK more focused because he can directly see and hold pictures of letters or numbers. In addition, DK feels happy and proud when he succeeds in answering correctly. This is in accordance with the needs of mentally retarded children who learn more easily if they use visual aids and activities that involve many senses.

Based on the results of observations and interviews, DK is a mentally retarded student who has difficulty in understanding information and building basic academic skills, especially in literacy and numeracy. This obstacle makes DK need a special learning approach that is more concrete, visual, and fun.

In the field of literacy, DK has not been able to recognize letters as a whole and has difficulty reading and writing words. This inability indicates that DK is still in the early stages of building a relationship between letter symbols and sounds. Likewise in the numeracy aspect, his inability to sequence numbers 1–10 or match numbers with concrete quantities indicates that the basic concept of numbers has not been formed strongly. This finding is supported by teacher interviews which stated that DK has weak short-term memory and low interest in learning if not accompanied by interesting media. Therefore, a varied and interactive learning approach is very important.

Flashcards are effective for mentally retarded children because they provide visual and tactile stimulation that suits their learning style so that they can more easily understand and remember information through images and direct touch, so that flashcards help the learning process become more active and meaningful (Miptahudin et al., 2024). The learning style of mentally retarded students tends to be visual, prefers visual media, and has difficulty remembering oral information. Adjusting teaching methods to suit learning styles is important to increase the effectiveness of learning for children with special needs (Prameswari et al., 2024). Flashcards encourage students' active engagement with concrete learning experiences, thereby improving their retention and motivation to learn.

The use of visual media such as pictures and teaching aids is effective in helping mentally retarded children understand abstract concepts, strengthen memory, and increase learning motivation (Kurnia et al., 2024). Sementara itu, Sari et al.(2025) emphasizes that interactive learning media involving visual and audio elements provide a fun learning experience and are in accordance with the learning style of mentally retarded children who prefer touch and visuals.

However, the development of DK takes place gradually and requires patience and consistency in implementing learning. Teachers play an important role in guiding, repeating material systematically, and creating a positive and enjoyable learning atmosphere. The right, consistent, and sustainable learning program is an important key in helping mentally retarded students achieve their optimal potential.

Thus, learning for students such as DK needs to be designed individually, taking into account their intellectual limitations, learning styles, and special needs. Strategies that focus on concrete media, repetition of materials, multisensory approaches, and active teacher involvement can be the basis for designing inclusive and effective learning in SLB.

## CONCLUSIONS

This study shows that the use of flashcard media as a visual aid has a positive impact on the development of basic literacy and numeracy in children with mild mental retardation at SLB X Kudus. DK as the subject of the study experienced an increase in the ability to recognize vowels, distinguish consonants, mention numbers, and match numbers with the number of objects in a guided manner. Flashcards that are brightly colored, attractive, and can be touched directly have been proven to be able to increase DK's focus, motivation, and learning engagement. Therefore, this study also strengthens the multisensory and visual approach as an effective strategy for children with mild mental retardation in learning basic literacy and numeracy.

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