



Increasing Slow Learner Reading Abilities Through Functional Reading : A Single-Case Study on An Elementary School Student

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Abstract: This study explored the effectiveness of teaching functional literacy to a 12-year-old slow learner in Indonesia. The participant struggles read words longer than two syllables and struggles to meet academic expectations. This research uses a qualitative approach with the single-subject design using the reversal method or the ABA research design. Data was collected through three phases: baseline, intervention, and evaluation phases. This study utilizes two sets of flashcards as instruments. The first set consists of pictorial cards displaying twelve common street signs, while the second set contains word cards with the matching names of the signs in Bahasa Indonesia. Each card is printed on a 13 cm by 7 cm flashcard. Over the intervention sessions, the participant demonstrated significant progress in functional reading skills. The data collected was then analyzed using visual analysis. The results indicates that slow learners benefit from frequent, concrete, and visually based learning abilities that aligns for their need for repetition. This study highlights the importance of functional literacy in enhancing independent living skills among slow learners, providing the students with the tool to better navigate their surroundings.

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Introduction

Slow learners are students who are unable to accomplish what is expected from their respected age group where they usually perform poorly in schools (Mercer et al., 1996; Ruhela, 2014). They are able to be identified through IQ scores, usually ranging below the average score yet slightly above the cut-off score for diagnosing intellectual disability (Pulina et al., 2019). Slow learners often experience learning problems due to their weak executive functions, difficulties in short-term, long-term, and working memory in comparison with their typically developing peers (Jankowska et al., 2012; Pulina et al., 2019). Slow learners tend to find difficulties in generalizing knowledge and create a connection between prior knowledge and the newly acquired information (Jankowska et al., 2012). The students also have difficulties in processing and integrating verbal and visual memory information, which become evident as they struggle to meet the demands and expectations from school (Pulina et al., 2019; Sättilä et al., 2022). They face trouble in understanding abstract concepts, showing lack of vocabulary, low motivation in school, and tend to need repetition to understand various subjects in school (Kaznowski, 2004; Hartini, Widyaningtyas, & Mashlulah, 2017). Their condition limits their ability to learn at a normal pace from instruction and learning materials for their age group, particularly the modalities involving abstract and verbal tasks, making them unable to achieve the fundamental educational standards (Jankowska, 2016; Tran, 2020).



As a result of failing to be on the same level as their friends, the students might lose their confidence in their academic ability, feel inferior to their peers and become a dropout (Wanabuliandari et al., 2021). Alesi et al. (2015) found slow learners to have lower self-esteem, high levels of school anxiety, and depressed mood. This may be caused by experiencing repeated failure where it might lead the students to show higher rates of anxiety, depression, as well as the perception of negative self-competence in students (Alesi et al., 2015). The additional challenges slow learners might encounter is failure to meet developmental and sociocultural standards for personal independence and social responsibilities needed in their daily activities (Baglio, 2016). These are the result of the lack of adequate complex socio-cognitive skills, which then impact their problem solving abilities to reason and adapt in social life (Baglio, 2016). Slow learner's difficulties in generalizing knowledge and limited ability to make use of skills might make slow learners' ineffectively apply the previous rules and strategies learned (Jankowska et al., 2012). This then might lead slow learners to possess a limited number of problem solving strategies (Jankowska et al., 2012). Without the adequate support, slow learners might be vulnerable or at risk for negative outcomes such as behavioral and social problems throughout their lives (Pulina, 2019). It might be difficult to function in a society when one cannot acquire basic literacy skills, where it hinders them to fewer educational and employment opportunities (Cree et al., 2012; Nurgiyantoro, Lestyarini, & Rahayu, 2020). The risks linked to slow learners' difficulties in daily life highlights the importance of providing the students greater opportunities to live independently.

In this study, the subject is a 12 years old slow learner from Indonesia. As a slow learner he experiences limited working memory as well as struggling to read words that are composed of more than two syllables. The participant faced difficulties in school as he struggled to keep up with his classmates in every school subject. In addition to that, the participant's family struggles to give him the appropriate amount of means needed to keep up with school demands. Through the various difficulties our participant faced then arises the need to give the appropriate assistance to increase his independent living skills to help him survive in the community. It is important to increase slow learners' independent living skills to limit the problems they might face in adulthood (Jankowska, 2016). One way to teach the students independent living skills is through functional literacy.

Functional literacy is a transition from basic literacy to operational literacy by using prior knowledge and skills to function in individual, socio-cultural, or economic areas (Ozenc & Carkit, 2021). A person might be considered as functionally literate when they are able to interpret objects in various forms, such as writings on products, visual manifestations, or actions (Nurgiyantoro, Lestyarini, & Rahayu, 2020). Functional literacy can be considered as a reflection of a person's ability in carrying out various functions of social life in society, as well as undergoing, dealing with, and solving various problems encountered in everyday life (Nurgiyantoro, Lestyarini, & Rahayu, 2020). It plays a significant role in society because it appears in every aspect of our daily life; understanding medication, technical instructions, or street signs. It would be difficult to function in society without literacy and would hinder a person from various opportunities into a successful life (Vaglyvol, 2016). For students, functional reading is crucial for student's problem solving skills as it helps students to implement prior knowledge to their environment (Ozenc & Carkit, 2021).

Slow learners might benefit from learning functional literacy as it helps the students to integrate new and old information to their daily lives (Shaw, 2008). Teaching functional literacy to slow learners requires a few strategies optimizing their strength. Slow learners are



able to process information that is presented visually faster compared to abstract information, especially when it is taught repetitively (Shaw, 2010). They learn most effectively when they are able to see, feel, touch, and practice the materials taught at school (Shaw, 2008). Due to their difficulties in generalizing their prior knowledge, slow learners might need more practice than their peers to understand and apply concepts (Shaw, 2008). They require more time to learn new knowledge because slow learners have to learn more examples before they effectively understand and apply the new information to their lives (Shaw, 2008). It is crucial to provide slow learners' an extensive number of exercises so students are able to create a connection between previous and recently obtained knowledge (Jankowska et al., 2012).

In their study, Brown et al. (1972) taught trainable students to read words for survival in their communities by using two sets of cards; one set of cards are pictorial cards showing images of certain objects, and the other set of cards were word cards consisting names of the objects depicted. Their study showed a significant difference in the students' ability to read and recognize the objects depicted. In this study we aim to recreate Brown et al. (1972) study by teaching functional literacy to slow learners to be able to read various street signs. Thus, this study aims to investigate the effectiveness of teaching functional literacy to slow learners. This study hopes to increase the participant's independent living skills to be able to recognize and read different public street signs so he's able to travel on his own.

Research Method

This study is conducted using a qualitative approach with a single-subject design using the reversal method, also called as the ABA research design (Price, Jhangiani, & Chiang, 2015). The research consists of three phases: baseline phase (A), intervention phase (B), and evaluation phase (A'). Baseline phase (A) was the control condition, where it will be compared with the intervention (B) and evaluation (A') phases. Data measurement was measured for 52 days; 1 day for baseline phase, 36 days for the intervention phase, and 1 day for the evaluation phase. The baseline phase consisted of three conditions: the subject's ability to read the street signs name cards, the subject's prior knowledge in naming the street signs pictorial cards, and the subject's ability to match the name card with the pictorial card. The intervention phase was conducted twice a week for 10-15 minutes per session during school lunch time with a total of 10 sessions. The evaluation phase was given 14 days after the last session during school hours, where we would ask the participant to name, read, as well as match each card presented without any help.

The participant for this study is F, a 12 years old boy who was a 6th grade student with an IQ score of 73 (based on Wechsler scale) categorized him as a slow learner. The participant was obtained through purposive sampling, recruited based on psychological examinations indicating his various difficulties in school. The participant has difficulties in reading as he can only read up to two syllables, still needs to spell each word when reading, and struggles to read consonants that are placed next to each other such as "ng" or "st", which is commonly found in Bahasa Indonesia. F also has a limited working memory which made it difficult for him to keep up with his school peers as well as the curriculum.

The instrument used in this study is two sets of cards; one set of cards are pictorial cards showing images of certain objects, and the other set of cards are word cards consisting names of the objects depicted. The set of pictorial cards consists of images of twelve street signs that the subject often passes by on his daily commute from home to school. The other set of word cards consists of the names of the pictorial cards in Bahasa Indonesia: '*masuk*'.



'keluar', 'parkir', 'tangga', 'halte bus', 'berhenti', 'penyeberangan', 'masjid', 'hati-hati', 'toilet', 'evakuasi', and 'dilarang masuk'. Each card is printed on a 13 cm x 7 cm flashcard.

Each intervention session consists of three stages: naming the pictorial street signs card, reading the street signs name card, and finally matching the pictorial cards to the correct name cards. First, we present F with the pictorial street signs card separately and ask him to name each card. If F incorrectly named a card, we would correct him by mentioning the correct name for the street sign. We then continue to present F with the set of name cards by showing him each card individually and ask him to read aloud. Should F read the card incorrectly, we then teach him the correct way by pointing out each syllable, ask him to read it, and ask F to read aloud the name as a whole. Finally, we would scatter the pictorial cards around the table in front of him as well as the name cards, and ask F to match each name card to the correct pictorial cards. The researchers would give F positive reinforcements such as "You did a good job!" after every correct answer. If F incorrectly matches the cards, the researcher would correct him by showing the pictorial card, ask him to read the name card, and show him the correct match.

During each intervention session, we record both the correct and the wrong answers given by F through observation. This data is obtained to monitor F's progress weekly and to identify any significant difficulties he may have in reading or recognizing the cards. Data obtained in this study is analyzed with visual analysis. Visual analysis was conducted by comparing the subject's ability to read the street signs name cards, naming the pictorial cards, and the subject's ability to match the name card with the pictorial card in order to determine the changes between sessions (Gravetter & Forzano, 2018).

Results and Discussion

The intervention was conducted as planned with a total of 10 sessions. Baseline data was collected one week prior to the intervention session after school with our subject. Each intervention session was conducted twice a week during school lunch time on Tuesday and Thursday for a total of 10-15 minutes. To maintain participant's motivation during each session, researchers would seldom modify the order of cards given. For example, there is one session where F is noticeably unmotivated to follow the intervention. The researcher then would ask F to choose if he would like to start the session by reading the name cards or the street sign pictorial cards. It helped F to warm up and motivated him throughout the session. The evaluation phase was held 14 days after the last intervention session, where we would ask our participant to name, read, as well as match each street sign as well as the word provided. From our intervention, it can be concluded that F exhibited a significant improvement at his functional reading ability conducted in this study. Figure 1 shows an increase in F's functional reading abilities in naming, reading, and matching each of the pictorial cards.

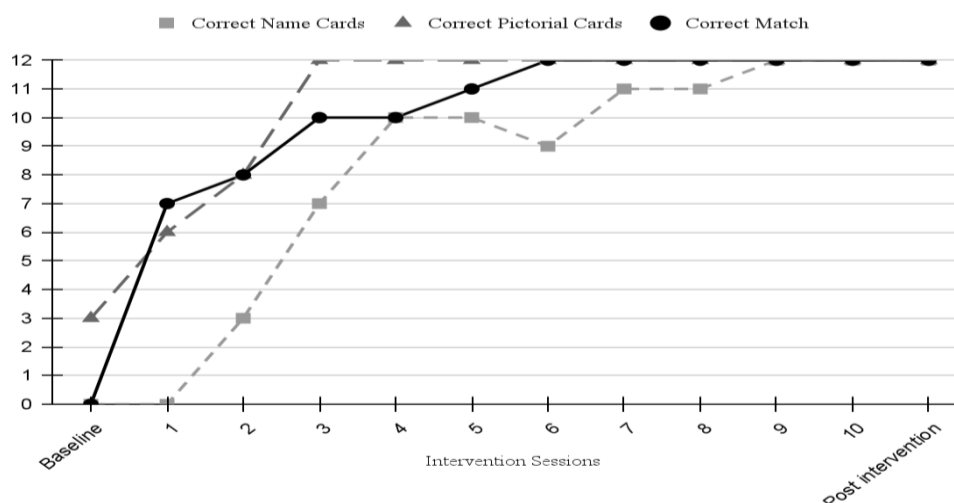


Figure 1. Number of correct answers given by participant throughout the research

In figure 1, day 0 was our participant's baseline in reading all three sets of cards. He was able to recognize 3 street signs provided through the pictorial cards, however he failed to read all of the name cards as well as match the correct set of cards. During the intervention sessions, the participant is able to recognize and name all of the street signs provided by session 3. On the other hand, the participant tends to be slower on reading all of the name cards as he was able to read all of the cards correctly by the 9th session. We found an interesting result in our participant's progress in the intervention session. In the 6th session the participant is able to correctly match all of the pictorial cards as well as the name cards despite being only able to read 9 out of 12 name cards. During the post intervention, we gave our subject a worksheet consisting of all of the street signs as well as the names positioned randomly on a page. We then asked our subject to match each sign to the respective names. The post intervention result shows a consistent effort given by our subject in maintaining the correct answer for the three treatments.

Our study found functional reading is effective to increase slow learner's reading ability. The participant's ability to read, recognize, as well as match the set of cards increased significantly throughout the intervention session. As slow learners require more time to learn new knowledge before they can effectively apply the new information to their lives, our participant's growth in reading ability might be due to the frequency of the teaching. We taught functional reading to our participant twice a week in the course of 36 days. This finding supports previous research that slow learners tend to require more time and practice compared to their peers to effectively understand new knowledge (Shaw, 2008; Shaw, 2010; Kaznowski, 2004; Hartini, Widyaningtyas, & Mashluhah, 2017). In addition to that, we also utilize slow learner's effective teaching strategies by using concrete materials such as pictorial cards and word cards. The concrete materials given in this intervention aids slow learner's difficulties in understanding abstract concepts as our participant is able to use his senses such as tactile and visual from our cards. This finding is aligned with previous studies that found slow learners more able to process information that are presented visually, especially if the students are able to use their senses to gain new information (Shaw, 2008; Shaw, 2010; Jankowska et al., 2012). Slow learner's proficiency in concrete tasks compared to abstract tasks might be the result of their weaker working memory compared to their peers (Jankowska et al., 2012).



In addition to the consistent frequency of our teaching sessions, this study also employed the use of street signs that our participant regularly encounters in his daily environment. By using familiar signs, our participant was more likely to recognize and engage with the material better. Furthermore, we introduce the words gradually in small manageable chunks. This allows our subject to focus on learning slowly step by step without feeling overwhelmed. This chunking method facilitated a smoother learning process, enabling him to become proficient in reading the words. As a result, he was able to better understand and retain the meaning of street signs, improving both his practical knowledge of the signs he encounters daily. This study method aligns with the specific needs of slow learners who usually responds well to repeated and practical learning.

The results of this study contribute to the existing body of knowledge through the use of functional literacy intervention in enhancing slow learner's reading abilities. The participant's significant improvements in reading highlights the importance of tailored, consistent, and practical teaching techniques. This research findings aligns with the existing literature that suggest slow learners benefits from repeated teaching to effectively assimilate new knowledge (Shaw, 2010). Teachers can enhance slow learners' reading skills by employing functional literacy strategies that include materials familiar to the students. Utilizing concrete resources that align with the teaching module can help slow learners grasp the concepts more easily. Additionally, the consistent teaching sessions over an extended period of time can lead to significant improvement. This highlights the importance of patience and repetition when teaching slow learners. Furthermore, introducing new words in small, manageable chunks helps students focus on gradual learning, reducing the risk of overwhelming the student and promoting a smoother learning process. These strategies collectively contribute to better recognition, retention, and practical knowledge for daily life.

Conclusion

This study shows that functional literacy can enhance slow learner's reading skills, especially in practical and real-world situations such as identifying public street signs. The participant made notable progress in naming, reading, and matching street signs through visual and sensory-based learning experiences. The consistent intervention and use of familiar, everyday words likely played a key role in the participant's improvement. These findings underline the importance of individualized, repetitive teaching methods to equip slow learners with essential skills for independent living. Future research should investigate the long-term outcomes and the possibility of applying these skills to other set of independent living skills.

Recommendation

Based on the findings of this study, teaching functional literacy significantly improves slow learner's reading abilities. A key limitation of this study was the small sample size which limits the ability to generalize the findings. Future research should aim to include a larger and much diverse group of participants to enhance the applicability of the results. Moreover, the short duration of the intervention may not have fully reflected the long-term effects of the functional literacy training. Further studies are needed to determine the lasting impact of the learning outcomes. We also recommend to actively involve parents in the educational process of slow learners. By integrating parents, the responsibility of supporting their child's education can be shared, fostering a sense of ownership and commitment among the parents. This collaborative approach not only enhances the learning experience for the child, but also empowers the parents to develop their skills to support their child. We also recommend



encouraging the parents to be involved in their education process. Future research can provide various resources that can help the parents understand how to assist their children effectively. For policy makers, it is important to encourage schools and special education programs to implement personalized teaching methods for students who needs extra care such as slow learners. This study has shown that by tailoring lessons to each student's unique needs and providing frequent practice are key to foster student's progress. The program might include visual and sensory-based learning approaches to help slow learners engage with and retain information more effectively.

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