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Simple Coding Method Application For Dyslexic Student Beginning Reading Skills: Penerapan Metode Simple Coding Untuk Kemampuan Membaca Permulaan Siswa Disleksia

Susanah Susanah, susanah.2025@student.uny.ac.id (*)

Program Studi Magister Pendidikan Luar Biasa, Fakultas Ilmu Pendidikan, Universitas Negeri Yogyakarta, Indonesia

Ibnu Syamsi, ibnu_syamsi@uny.ac.id

Program Studi Magister Pendidikan Luar Biasa, Fakultas Ilmu Pendidikan, Universitas Negeri Yogyakarta, Indonesia

(*) Corresponding author

Abstract

General Background Reading constitutes an essential language skill that provides the foundation for academic success, necessitating adaptive instructional practices within inclusive educational settings. **Specific Background** Students diagnosed with dyslexia frequently experience chronic neurobiological deficits in phonological processing, leading to significant difficulties in distinguishing visually similar letters and blending syllables. **Knowledge Gap** Despite the known benefits of multisensory learning, limited classroom action research has specifically investigated the Simple Coding Method as a structured visual strategy to guide dyslexic learners from letter recognition to word decoding. **Aims** This study investigates the application of the Simple Coding Method to elevate the beginning reading skills of first-grade students with dyslexia at an inclusive elementary school. **Results** Following two instructional cycles, average beginning reading mastery progressed from a baseline of 43.75 percent to 77.08 percent in the first cycle, ultimately reaching 89.58 percent in the second cycle. Participants demonstrated substantial improvements in vowel and consonant identification, syllable blending, reading fluency, and classroom confidence. **Novelty** This research highlights the practical efficacy of integrating a systematic, color-based visual coding system with explicit phonics instruction and structured parental engagement as a compensatory mechanism for phonological weaknesses. **Implications** Educational institutions should adopt visual coding as a standard adaptive pedagogical strategy and establish continuous professional training alongside parental cooperation to build supportive literacy environments.

Highlights

- Visual color cues significantly improve phonological decoding and visual discrimination of confusing characters.
- Average early literacy mastery levels reached 89.58 percent following two adaptive instructional cycles.
- Structured parental engagement combined with explicit phonics instruction fosters robust academic confidence and participation.

Keywords

Dyslexia; Visual Coding; Phonological Processing; Inclusive Education; Early Literacy

INTRODUCTION

Reading is an essential language skill that provides the foundation for children's success in school throughout their school years. In the elementary school, reading is not just the ability to recognize written symbols, but also a pathway to acquiring knowledge, fostering critical thinking, and participating effectively in classroom learning. Reading is the primary medium through which most learning activities occur (Ehri, 2005; Snow, Burns, & Griffin, 1998), and students who do not acquire beginning reading skills in the early grades are more likely to experience continued academic problems in later years. Consequently, the development of beginning reading competence has become one of the main goals of elementary education all over the world. Beginning reading is the first phase of reading acquisition, where children learn to identify letters, establish letter-sound correspondence, blend phonemes into syllables, decode simple words, and gradually get reading fluency (Ehri, 2005). At this stage, successful reading depends heavily on children's phonological awareness, alphabet knowledge, decoding ability and automatic recognition of familiar words (National Reading Panel, 2000). When students are unable to decode words, it can be a significant obstacle to reading comprehension, as they must devote much of their cognitive effort to decoding rather than to understanding what they are reading.

There are many internal and external factors that affect beginning reading skills. According to Pramesti (2018), the main factors that determine children's reading achievement are intellectual ability, neurological development, motivation, reading interest, and support from the environment. Internal factors include cognitive functioning, language development, memory, attention, and phonological processing; external factors include parental involvement, literacy-rich home environments, instructional quality, and access to appropriate learning resources (Snow et al., 1998). The increasing use of digital devices without adequate educational supervision in recent years has also led to a decline in children's engagement with print reading materials, thus limiting opportunities for developing early literacy skills. Among the many causes of reading difficulties, dyslexia is one of the most commonly identified specific learning disorders. The International Dyslexia Association (2002) describes dyslexia as a specific learning disability that is neurobiological in origin and is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These problems are due, typically, to weaknesses in the phonological components of language despite normal intelligence, typical classroom instruction, and sufficient opportunities to learn. Similarly, Lyon, Shaywitz, and Shaywitz (2003) state that dyslexia is primarily a disorder of phonological processing, leading to problems with recognizing letter-sound relationships, blending phonemes, and decoding unfamiliar words efficiently.

Students with dyslexia frequently experience chronic difficulty in distinguishing visually similar letters such as b–d, p–q, and m–n, in reversing letters while reading, in omitting sounds, in substituting words, and in needing considerably more time to decode printed material (Shaywitz, 2003). If no appropriate intervention is provided, these characteristics may lead to slow development of reading skills, low reading confidence, reduced academic motivation and poor learning outcomes. Many children who have reading difficulties in the early grades continue to have problems in adolescence and adulthood without systematic instructional support, which affects their educational attainment and social participation (Snowling, 2019). For example, inclusive education would mean that a school must provide equal learning opportunities for all students, including those with special learning disabilities such as dyslexia. In Indonesia, the legal basis for this commitment is Law Number 20 of 2003 concerning the National Education System which guarantees the right of every citizen to obtain quality education in accordance with individual characteristics and educational needs. In inclusive classrooms, teachers are expected to develop adaptive instructional practices that would cater to various abilities of the learners, rather than applying uniform teaching methods to all students. Thus, successful reading instruction for students with dyslexia should be personalized and systematic, with ongoing practice and multisensory learning activities (UNESCO, 2020).

The Simple Coding Method is a teaching method that has the potential to improve beginning reading skills in students with dyslexia. This method uses visual coding systems (such as colors, symbols, images or specific markers) to represent letters, syllables or phonological patterns. Visual coding allows students to see the difference between confusing letters, reinforces memory for letter-sound associations, and provides systematic decoding with structured visual cues. The cognitive learning theory suggests that the delivery of verbal and visual information improves information processing and retention as learners are given complementary representations of the same concept (Mayer, 2021). Similarly, multisensory approaches of learning have been shown to be effective in improving reading development for children with dyslexia because they involve the use of visual, auditory, and kinesthetic modalities when teaching reading (Birsh & Carreker, 2022). SDN 007 Batu Ampar elementary school has become an inclusive education service for students with various learning characteristics. For the academic year 2025/2026 there were 35 pupils in the Grade I class, split between two classrooms. The first identification by classroom teachers revealed that ten students showed characteristics of dyslexia, of which seven students belonged to Class IA and three students belonged to Class IB. The condition implies that early reading difficulties are a persistent problem of instruction which calls for specific educational interventions.

In February 2026, the researcher conducted a preliminary assessment via classroom observations, beginning reading tests, and interviews with classroom teachers and found that a number of first-grade students exhibited low beginning reading achievement. From the students identified with reading difficulties, three students who showed the most prominent dyslexic characteristics were selected as the research participants, namely AH, KA and MA. These students still struggled with letter recognition, phonological awareness, syllable blending, and simple word decoding. The assessment results showed that AH often confused visually similar letters, particularly b–d, p–q, and m–n, and reversed letters when reading. AH was also significantly slower than peers in letter identification and frequently lost concentration during independent reading activities. KA could identify several alphabet letters but had great difficulty blending letter sounds into syllables resulting in slow and broken decoding. On the other hand, MA was able to recognize most letters but still had trouble in distinguishing between vowel and consonant sounds and could not read simple words fluently without help from the teacher. The initial

reading assessment scores further confirmed the low reading performance of students. Using an instrument of letter recognition, letter sound pronunciation, syllables reading and simple word reading, AH scored 40, KA scored 35, and MA scored 30, with an average mastery level of only 43.75%. This indicates that the participants were still far from the expected competency standard for Grade I students.

Classroom observations also indicated that beginning reading instruction continued to be teacher-centered, with a heavy emphasis on verbal explanation, alphabet drills, and textbook exercises. Instructional practices had not yet been differentiated to meet the unique learning characteristics of students with dyslexia; all learners were treated the same way. The instructional materials were textbooks and basic alphabet cards lacking visual cues to help distinguish the letters. Consequently, students with dyslexia needed much more instructional time than other students and often got behind in classroom learning. Early reading interventions for students with dyslexia, according to previous research, often involve phonics instruction, multisensory techniques, the Orton-Gillingham approach, the Fernald method, alphabet cards, digital media, and educational games (Birsh & Carreker, 2022; Shaywitz, 2003). These interventions have been effective for phonological awareness, decoding accuracy, and reading fluency with consistency. However, there is little research that has specifically investigated the use of the Simple Coding Method as a structured visual instructional strategy to improve beginning reading skills of elementary students with dyslexia. Furthermore, few classroom action research studies have explored students' gradual progress from letter recognition to syllable decoding and finally to simple word reading using this approach. Based on the classroom conditions and the research gap that has been found, this study aims to improve the beginning reading skills of first-grade students with dyslexia at SDN 007 Batu Ampar through the implementation of the Simple Coding Method. The findings are expected to make a theoretical and practical contribution by providing empirical evidence regarding the efficacy of visual coding strategies in beginning reading instruction and providing elementary school teachers with a flexible, systematic and inclusive instructional alternative to support students with dyslexia.

METHOD

This study used Classroom Action Research (CAR) with model developed by Kemmis and McTaggart which has four cycles of stages namely planning, acting, observing and reflecting. Classroom Action Research was chosen because it allows teachers to systematically identify classroom problems, to implement instructional improvements, to evaluate the success of the intervention, and to improve their next instructional practices. This approach is especially suitable to the context of inclusive education, as it allows to the continuous adaptation of the teaching strategies to the individual learning needs of students with dyslexia. The study was conducted in two cycles of action. Each cycle consists of two meetings of learning with the theme of improving the ability to read early by applying Simple Coding Method. The research was conducted at SDN 007 Batu Ampar, East Kutai Regency, East Kalimantan, Indonesia in the second semester of the academic year 2025/2026. 14 first grade pupils formed the sample from Class IB. The research subjects were selected purposively, namely three male students aged seven years, with the initials AH, KA and MA, identified based on preliminary classroom observations, teacher recommendations and beginning reading assessments, who had the most prominent characteristics of dyslexia. Students showed persistent difficulties with letter identification, discrimination of visually similar letters, phonological awareness, blending letters into syllables, and fluent reading of simple words and were therefore appropriate participants for the intervention.

The instructional intervention was the implementation of the Simple Coding Method. The method employs visual coding through color differentiation and structured symbols to foster letter recognition, phoneme identification, syllable blending and simple word reading. Planning included development of lesson plans, color coded alphabet cards, coding boards, student worksheets, observation instruments and beginning reading assessments. During the action stage, students participated in structured activities such as visual letter identification, letter sound pronunciation, kinesthetic letter tracing, letter blending into syllables, and reading simple words. Guidance was personalized and reinforcement was ongoing during the learning process. Student participation, reading performance and responses to the instructional strategy were recorded through observations, while reflection at the end of each cycle was used to assess the effectiveness of the intervention and revise instructional procedures for the next cycle. Data was obtained from beginning reading tests, observation sheets of student activities, observation sheets of teacher activities and documentation. Four indicators were assessed in the initial reading assessment: letter recognition, letter-sound correspondence, syllable reading, and simple word reading. The data were analyzed using descriptive quantitative and qualitative methods. The quantitative analysis involved calculation of individual scores, mean scores, learning mastery percentages and improvements in the preliminary assessment, Cycle I and Cycle II. Qualitative analysis was done through data reduction, data display, and drawing conclusions based on classroom observations and documentation. The intervention was deemed successful if 75% or more of participants attained a minimum reading score of 70, with improvements noted in classroom participation and beginning reading performance.

RESULT AND DISCUSSION

Initial Condition (Pre-Action)

The researcher conducted a preliminary observation and initial reading pre-test to get to know the initial reading skills of the research participants before carrying out the instructional intervention. The pre-action assessment was done to establish the baseline data regarding the initial reading skills of the students before the introduction of the Simple Coding Method. The assessment was given to the three first grade students with dyslexia individually, AH, KA and MA. The pre-test was made up of 10 picture-based items that were designed to measure four core elements of beginning reading, which are: (1) letter recognition, (2) letter-sound correspondence, (3) reading syllables and (4) reading simple words. Each student was graded on a performance scale of up to eighty points. The test was given in individual worksheets, which enabled the

researcher to observe not only the students' scores but also the reading difficulties experienced in the test. Preliminary assessment results suggest that all three students were low in beginning reading proficiency. There were difficulties in recognizing the letters of the alphabet, distinguishing between similar sounds of letters, blending letters into syllables and reading simple words fluently. They mixed up letters that looked alike (e.g., b–d and p–q), had trouble telling the difference between vowel and consonant sounds, and took much longer than their classmates to decode written words. The findings of this study supported the need for a structured instructional intervention based on students' learning characteristics of dyslexia.

Table 1. *Pre-Test Results of Beginning Reading Skills*

No.	Student	Maximum Score	Obtained Score	Percentage	Category
1	AH	80	40	50.00%	Poor
2	KA	80	35	43.75%	Poor
3	MA	80	30	37.50%	Poor
Total	—	240	105	131.25%	Poor
Average	—	80	35	43.75%	Poor

As can be seen in Table 1, the mean of the three participants' reading achievement at the beginning of the intervention was 35 of a possible 80, which is equal to the average mastery level of 43.75% categorized as poor. AH (40 or 50.00%) followed by KA (35 or 43.75%) and MA (30 or 37.50%). The highest score was obtained by AH. AH performed better than the other participants, but all three students were still well below the expected level of beginning reading competence for first grade students. These quantitative findings were corroborated by the qualitative observations. AH had a history of difficulty visually discriminating similar looking letters and often would reverse letters while reading. KA could recognise some letters of the alphabet but had trouble blending the sounds of letters together to make syllables. The reading was slow and choppy. Meanwhile, MA identified most letters, but had trouble distinguishing vowel and consonant sounds and could not read simple words alone. All three students during the assessment depended heavily on prompts from the teacher, hesitated frequently while reading, and displayed low confidence when asked to read aloud. The results of the preliminary observation and pre-test indicate that, overall, the participants had not yet learned the basic parts of beginning reading. They are low achievers and have frequent decoding problems that suggest a need to adopt an adaptive teaching strategy. Therefore, the Simple Coding Method was introduced as the classroom intervention with the expectation that students would improve in letter recognition, phonological awareness, syllable decoding, and simple word reading through systematic visual coding activities.

Cycle I

The first cycle was planned from the results obtained in the preliminary assessment, which showed the participants had problems in the letter recognition, phonological awareness and decoding simple syllables. During the planning phase, the researcher prepared all instructional materials such as lesson plans, color-coded alphabet cards, student worksheets, beginning reading assessment instruments, and observation sheets for teacher and student activities. In Cycle I the emphasis was on instructional introduction of the vowel and consonant letters by means of the Simple Coding Method. To help visual discrimination and to reinforce the letter-sound relationships for students with dyslexia, specific groups of letters were given their own special color. Cycle I consisted of two instructional sessions (2 × 35 minutes) (a total of 70 minutes). The learning activities were targeted at the recognition of vowels and consonants letters by using visual coding. Students were introduced to the color-coded alphabet cards. Each vowel was a different color while consonants were another color category. Students practiced letter identification, letter sound pronunciation, association of letters with familiar objects, tracing the shape of the letter, and blending consonants and vowels to create simple syllables such as ba, bi, and bu throughout the lessons. Continuous individual guidance was provided to ensure that each participant correctly recognised the relationship between visual symbols and speech sounds. At the end of the second meeting, students completed a worksheet and an oral reading assessment to determine their progress in beginning reading.

Student participation was measured by an observation instrument that consisted of ten indicators in four aspects, namely: attention, interest, participation and learning attitude during Cycle I. Maximum students could score was 40.

Table 2. *Student Participation During Cycle I*

Student	Maximum Score	Meeting 1	Percentage	Meeting 2	Percentage
AH	40	24	60.00%	29	72.50%
KA	40	27	67.50%	30	75.00%
MA	40	25	62.50%	29	72.50%
Average	40	25.3	63.30%	29.3	73.30%

The results of the observation show that there is a positive improvement in student participation from the first meeting to the second meeting. The average of participation score increased from 63.30% in the first meeting to 73.30% in the second meeting. Teacher explanations were more easily attended to, directions in the classroom more consistently followed, and students more willing to participate in reading activities. Within the participants, KA gained the highest participation score in the second meeting (75.00%) that showed more confidence in identifying letters and reading aloud. AH demonstrated significant gains in sustaining attention and responding to teacher prompts. MA demonstrated increased persistence during reading activities and more active interaction with the teacher. The overall observation results indicated that the implementation of the Simple Coding Method was able to improve students' engagement in the instructional process.

At the end of Cycle I, students' initial reading performance was re-evaluated using the same assessment indicators used in the pre-test. The assessment consisted of four components of beginning reading: letter recognition, letter-sound

correspondence, syllable reading, and simple word reading.

Table 3. Comparison of Beginning Reading Achievement Before and After Cycle I

Student	Pre-Test Score	Pre-Test (%)	Cycle I Score	Cycle I (%)	Improvement (%)
AH	40	50.00%	60	75.00%	25.00%
KA	35	43.75%	60	75.00%	31.25%
MA	30	37.50%	65	81.25%	43.75%
Average	35.0	43.75%	61.6	77.08%	33.33%

As shown in Table 4.3, all participants showed significant improvement after the first cycle was implemented. The mean beginning reading score improved from 35.0 (43.75%) during the pre-test to 61.6 (77.08%) after Cycle I, an overall improvement of 33.33 percentage points. AH went up from 40 to 60, indicating greater accuracy in identifying vowel and consonant letters and greater ability to blend letters into syllables. KA rose from 35 to 60, reflecting substantial gains in phonological decoding and more confidence while reading. MA showed the greatest improvement from 30 to 65 (81.25%). This suggests that the visual coding strategy was effective in supporting letter discrimination and syllable decoding. As for the students' visual recognition of similar-looking letters, they still had some trouble, but they were more fluent recognizing vowels and consonants and they were able to combine the letters to make simple syllables with less teacher help than in the pre-action assessment. Findings indicate that Simple Coding Method had a positive impact on the development of beginning reading skills of students with dyslexia.

Cycle Reflection I noted that the instructional intervention resulted in meaningful gains in both student engagement and beginning reading achievement. But there were still a number of problems. However, some students still confused letters that looked visually similar, despite the color coding, indicating that visual discrimination was not yet fully developed. In addition, the consolidation of new letter-sound associations was disrupted by irregular reading practice at home. The findings led to the planning of several modifications for Cycle II. First, the visual coding system would benefit from the addition of color cues to other visual markers, making similar letters more different and avoiding unnecessary cognitive load. Secondly, classroom instruction would need to include more concrete materials to learn from and more practice activities with syllables and simple words. Finally, parents would be given structured home practice materials to reinforce students' reading skills outside of the classroom and to improve the consistency of the daily reading practice. These refinements were expected to increase the effectiveness of the Simple Coding Method in the second cycle.

Cycle II

The instructional activities implemented in Cycle II were based on the reflections obtained in Cycle I. Although the first cycle produced considerable gains in students' initial reading performance, several challenges persisted, especially in distinguishing visually similar characters, fluidly combining characters into syllables, and maintaining regular reading practice outside of class. Hence, the lesson plan was modified multiple times to enhance the effectiveness of the intervention. There were three major enhancements in the revisions to the instruction. First, the use of color coded letter, picture and meaningful words extended the learning media to improve the students visual and semantic association. Second, the learning activities progressed from letter recognition to blending syllables and reading simple words, thus allowing students to practice decoding in contexts that were increasingly meaningful. Third, we provided structured home practice sheets with parental guidance to facilitate regular reinforcement of the reading skills outside of school. These modifications were expected to improve students' phonological processing and transfer of learning from isolated letters to meaningful words.

Cycle II was made up of two teaching sessions of 70 minutes (2 × 35 minutes). The first meeting was dedicated to learning how to combine consonants and vowels into syllables, using the Simple Coding Method. The teacher reviewed the vowel and consonant letters introduced in Cycle I and demonstrated how individual letters could be combined to form syllables such as ba, bi, bu, be and bo. Students continued to practice reading syllables with color-coded letter cards, picture associations, classroom games, and individual oral reading activities. Continuous corrective feedback was given when students misidentified letters or mispronounced syllables. The second meeting was from teaching syllables to teaching simple words. Students learned to combine two syllables to make meaningful words such as bola, buku, mata, baju and meja. Each word was shown with color-coded syllables separated by visual markers to help segment before blending. Students then chose picture cards and found the corresponding words and wrote them on the board and read them one by one. The students received additional worksheets to practice at home, pairing words with pictures and completing missing syllables with their parents' help. These activities were meant to develop automaticity of decoding and slowly decrease the extent of the teacher's help. The student's participation was still observed by using the same observation instrument as in Cycle I which consisted of ten indicators covering attention, learning attitude, participation and interest.

Tabel 4. Student Participation During Cycle II

Student	Maximum Score	Meeting 1	Percentage	Meeting 2	Percentage
AH	40	29	72.50%	32	80.00%
KA	40	30	75.00%	31	77.50%
MA	40	30	75.00%	33	82.50%
Average	40	29.6	74.16%	31.6	80.00%

As indicated in Table 4, student participation was improved in Cycle II. The average score of participation increased from 74.16% in the first meeting to 80.00% in the second meeting. This result was above the predetermined success criterion of classroom participation. AH showed significant gains in reading confidence and was an active volunteer for oral reading activities. KA had consistently high participation across both meetings with more confidence blending syllables into words

by himself. In the second meeting, MA got the highest score of participation among the three participants (82.50%) reflecting the increased enthusiasm, confidence, and responsiveness in the classroom activities. Taken together, these results indicate that the modified instructional procedures were effective in increasing students' engagement and motivation during beginning reading instruction. At the end of Cycle II, students' beginning reading ability was re-assessed using the same assessment instrument administered during pre-test and Cycle I. This assessment was designed to measure the students' ability to recognize letters, identify letter sounds, blend syllables, and read simple words.

Table 5. *Comparison of Beginning Reading Achievement Across the Three Assessment Stages*

Student	Pre-Test	Pre-Test (%)	Cycle I	Cycle I (%)	Cycle II	Cycle II (%)
AH	40	50.00%	60	75.00%	70	87.50%
KA	35	43.75%	60	75.00%	70	87.50%
MA	30	37.50%	65	81.25%	75	93.75%
Average	35.0	43.75%	61.6	77.08%	71.6	89.58%

Table 5 shows that beginning reading achievement improved significantly after Cycle II was implemented. The average score in Cycle I was 61.6 (77.08%) and in Cycle II increased to 71.6 (89.58%). It means that the instructional modifications applied in Cycle II were effective to improve students' reading performance. AH improved from 60 (75.00%) to 70 (87.50%) demonstrating more fluent reading of syllables and simple words with less decoding errors. KA also improved from 60 (75.00%) to 70 (87.50%), showing improved letter discrimination and enhanced phonological decoding skills. MA continued to deliver the best performance, improving from 65 (81.25%) to 75 (93.75%). This suggests that students who begin with the most serious reading problems may benefit substantially from systematic visual coding and repeated practice in decoding. All participants made great strides in the area of letter recognition, discrimination of vowel and consonant sounds, syllable blending, and reading meaningful words relative to the pre-action assessment. More reading fluency and confidence was exhibited by the students during the assessment activities, and they needed less help from the teacher than the previous cycle.

The result of Cycle II shows that the application of Simple Coding Method has achieved the goal of classroom action research. The indicators with regard to the process and the learning outcomes exceeded the success criteria defined earlier. Students showed higher beginning reading achievement, more classroom participation, more self-confidence, and a greater willingness to read aloud. The improvements were mostly the result of the instructional revisions in Cycle II. The enhanced visual coding, availability of picture-supported learning materials, systematic progression from letters to syllables and words, and structured parental involvement reduced students' confusion in differentiating visually similar letters while enhancing retention of letter-sound relationships. These changes also led to more consistent reading practice, both in and out of the classroom. MA had the highest proportional improvement among the participants, from 37.50% in the pre-test to 93.75% at the end of Cycle II. This indicates that students with greater initial reading difficulty may derive greater benefit from systematic visual scaffolding and repeated guided practice. Although there were still small differences in the amount of practice participants had at home, the results as a whole indicate that the Simple Coding Method effectively improved the beginning reading skills of first grade students with dyslexia. Thus, the classroom action research was stopped after Cycle II, since the predetermined success criteria had been achieved.

Discussion

The result of this classroom action research is the application of the Simple Coding Method can improve the beginning reading skills of first-grade students with dyslexia at SDN 007 Batu Ampar. Before the intervention, the three research participants (AH, KA and MA) had severe difficulties in recognizing letters, differentiating between vowel and consonant sounds, blending letters into syllables and reading simple words autonomously. Pre-test average score was only 43.75% which means all the participants were in poor category. Moreover, observations in the classroom showed students' unwillingness to take part in reading tasks since traditional teaching heavily depended on verbal explanations and repetitive drills without enough visual support. Consequently, students often confused similar looking letters, hesitated in decoding words, and showed low confidence in oral reading activities. These findings are consistent with the descriptions of the characteristics of dyslexia by the International Dyslexia Association (2002) and Shaywitz (2003) which state that dyslexic learners primarily have deficits in phonological processing that interfere with accurate and fluent word recognition.

The gains seen throughout Cycle I suggest that the introduction of systematic visual coding was successful in remediating some of these phonological difficulties. During this cycle, students learned to distinguish between vowels and consonants using color-coded alphabet cards and then moved on to creating syllables. The multimodal approach of visual cues, oral repetition and personalized instruction significantly increased student participation in class and initial reading ability. The average reading achievement increased from 43.75% in pre-action to 77.08% in Cycle I. Increased student participation was also observed in all instructional sessions. Findings of this study showed that the Simple Coding Method was successful in drawing students' attention, reducing their anxiety in reading activities, and facilitating students' more accurate identification of letter-sound correspondences. Dual Coding Theory posits that learning is more effective when verbal information is paired with meaningful visual representations, allowing the learner to process information through two complementary cognitive channels (Paivio, 1986). Similarly, Mayer (2021) proposes that the combination of verbal and visual information improves cognitive processing by reducing extraneous cognitive load and enhancing long-term retention.

Despite the considerable progress made in Cycle I, classroom observations indicated that several students still had difficulty in discriminating letters with similar visual features such as b-d and p-q. In addition, learning consolidation was further hindered by irregularities in reading outside the classroom. Therefore, Cycle II included several instructional changes such as more visual encoding, picture-aided instructional materials, a systematic progression from syllables to words, and more parental involvement through guided home practice. These improvements led to still another increase in beginning reading

achievement, with the average score reaching 89.58% by the end of Cycle II. At this stage students showed greater fluency in blending syllables, reading meaningful words and completing reading tasks with significantly less teacher support. The findings suggest that the continued improvement of instructional strategies through reflection and repeated practice makes a huge difference in improving literacy outcomes for students with dyslexia. The slow improvement is in line with the cyclical nature of Classroom Action Research as proposed by Kemmis & McTaggart (1988), where every cycle has the opportunity to improve the instructional practices from the evidence collected during the previous implementation.

The effectiveness of the Simple Coding Method can also be understood in the context of Cognitive Load Theory. Students with dyslexia are often overtaxed by the cognitive demands of processing letter recognition, phonological decoding, and memory retrieval simultaneously. The extraneous cognitive load was reduced by using consistent visual coding, providing more visual cues to assist in the discrimination of vowels and consonants without students having to rely on phonological memory alone. Students, as they were repeatedly exposed to the same visual patterns during the instructional sessions, developed more efficient schemas for decoding of letters and syllables and increased the automaticity of reading. As Sweller, Ayres and Kalyuga (2011) state, "Instructional designs that reduce extraneous cognitive processing and enhance schema construction enable learners to allocate more cognitive resources to meaningful learning" (p. 2). Therefore, the progressive improvement from Cycle I to Cycle II indicates that visual coding was a strong learning aid and a successful compensatory strategy for the students' phonological weaknesses.

The differences in individual achievement between the three participants also support the theoretical explanation of this intervention. All participants improved significantly but MA achieved the highest final score (93.75%), followed by AH and KA with 87.50% each. Classroom observations indicated that MA was more consistently engaged in additional reading practice at home and AH and KA less regularly outside school. The differences show how important it is to have repeated guided practice to consolidate beginning reading skills. This finding is in line with Vygotsky's (1978) concept of scaffolding, which asserts that learning is best achieved when a temporary form of instruction is gradually internalized through repeated guided practice. In the present study, the color coding served as an instructional scaffolding that aided students to identify letter-sound relationships more efficiently. Parental support gave the students additional opportunities to practice outside of classroom instruction. Students were more familiar with the visual coding system and were also reading syllables and simple words more independently with less teacher support.

The results of this study are also consistent with previous research showing the effectiveness of multisensory and structured literacy approaches for learners with dyslexia. According to Birsh and Carreker (2022), explicit, systematic, and multisensory instruction enhances phonological awareness and decoding skills as visual, auditory, and kinesthetic learning modalities are activated simultaneously. Similarly, Ehri (2005) explains that successful beginning reading development depends on children's ability to establish stable connections between orthographic symbols and their corresponding speech sounds through repeated decoding experiences. The present study extends these findings by showing that a relatively simple visual coding strategy can effectively support beginning reading instruction in an inclusive elementary classroom. Many structured literacy programs require extensive specialized training or expensive instructional materials. The Simple Coding Method can be implemented with inexpensive color-coded cards and worksheets, making it very practical for classroom teachers in inclusive schools where educational resources are limited. Overall, the results of this classroom action research provide strong empirical evidence that the Simple Coding Method is an effective instructional strategy for improving beginning reading skills among students with dyslexia. The improvements seen were not just the result of using color as a visual cue, but rather the systematic combination of visual coding, explicit phonics instruction, repeated practice in decoding, individual support, and structured parental engagement. Complementary instructional components effectively addressed students' phonological processing difficulties, and incrementally increased decoding accuracy, reading fluency, classroom participation, and self-confidence. Thus, the findings add to the growing evidence base on adaptive and inclusive literacy instruction and suggest that the Simple Coding Method may be a useful alternative for elementary school teachers seeking to improve early reading outcomes for students with dyslexia.

CONCLUSION

The result of this classroom action research showed that the application of the Simple Coding Method was effective to improve the ability of beginning reading skills of first-grade students with dyslexia at SDN 007 Batu Ampar. The intervention was effective in improving students' ability to identify vowels and consonants, discriminate letter sounds, and blend letters into syllables and read simple words with greater accuracy and confidence. The improvement was seen in the learning process and learning outcomes, which showed an increase in the average beginning reading score of 43.75% in the pre-action stage to 77.08% in Cycle I and 89.58% at the end of Cycle II. The method improved reading achievement and increased students' participation in the classroom, motivation and self-confidence in doing reading activities. These findings indicate that systematic visual coding with explicit instruction, repeated practice, individualized guidance and parental involvement is an effective instructional approach to support beginning reading development of students with dyslexia in inclusive elementary school settings. On the basis of the results of this study, it is proposed that the Simple Coding Method be introduced as an alternative method of instruction for teachers working with students with difficulties in beginning reading, especially with dyslexia. Teachers are encouraged to offer individualized support for students' learning needs by using color-coded visual supports, structured phonics instruction, and repeated reading activities during daily literacy lessons. Schools should be able to apply adaptive instructional practices by providing adequate learning materials and professional development opportunities for teachers to promote inclusive education. Parents are also encouraged to actively support reading practice at home by participating in structured and fun literacy activities, to improve the transfer of learning outside the classroom. Future researchers are encouraged to investigate the effectiveness of the Simple Coding Method with larger samples, in different educational settings, or in combination with digital learning media, in order to provide broader empirical evidence regarding the Simple Coding Method's contribution to beginning reading instruction for students with dyslexia.

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