



# The Use of a Multisensory Approach for Letter Recognition Skills for Students with Special Educational Needs (SEN)

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b> Received 13 December 2024 Received in revised form 17 January 2025 Accepted 23 February 2025 Available online 15 March 2025</p> <p><b>Keywords:</b> Multisensory approach; letter recognition skills; students with special education needs (SEN)</p>	<p>The use of multisensory approach is very helpful in teaching today. The study aims to assess the extent of the knowledge, implementation and effectiveness of the multisensory approach that has been implemented by teachers in improving letter recognition skills among students with special educational needs (SEN). The letter recognition skills are the most crucial step for learning reading and writing, though students who have special education needs (SEN) encounter difficulty in these fundamental steps. The researcher used qualitative methods, and data collection was done through semi-structured interviews and field note observations. The researcher selected total of three teachers at the Special Integration Education Program (PPKI) school that is close to the Sultan Idris University of Education as study participant. The research findings through the interviews conducted were transcribed and the information obtained was analysed to clearly identify issues related to the use of a multisensory approach to improve letter recognition skills among students with special educational needs. The results of the study found that the special education teachers agree that the use of a multisensory approach in teaching letter recognition can improve letter recognition skills among students with special educational needs (SEN). With regard to the implications for this study, it was found that the use of a multisensory approach improving letter recognition skills among students with special educational needs should be widely implemented in order to ensure that students can show progress in a positive direction in addition to being able to increase the level of readiness to carry out teaching sessions and learning as well.</p>

## 1. Introduction

### 1.1 Background

Multisensory approach makes use of multiple senses in the learning process, including sight, hearing, touch, and movement. By using more than one sensory channel, if used correctly and adapted to special needs student, it can help in taking the information by more than one pathway thus easing processes of understanding and recall [1]. For instance, writing letters in sand or using flash cards with different colours is an interesting technique that will motivate students and

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<https://doi.org/10.37934/jhqol.5.1.6876>

familiarize them with the shapes of the letters. It also allows the students to practice learning letters through fun and repetitive activities which is an important aspect in their learning [2].

Students with learning disabilities will usually also have problems in academic achievement and development. According to Kashikar *et al.*, [3] uneven development patterns in certain developmental domains including language development, physical development, academics, and perceptual development among these students. The learning style of typical students compared to learning disabled students is different due to the level of ability that each individual. The dynamics different for students with learning disabilities, as their learning are based by their cognitive capabilities, which may not correspond with their chronological age [4]. It demands teachers to change their teaching approaches by planning more specific methods, techniques and strategies that cultivate mastery of skills through individual adjustments [5]. As such, learning interventions create opportunities for students to interact with their senses such as visual, auditory, kinaesthetic and tactile. This structured teaching activities may help the students to engage in learning actively.

According to Kasim *et al.*, [6] students with learning problems less focus and interest in teaching and learning based on blackboards and books. This may be due to teaching methods or activities that fail to engage these students effectively. Conventional methods that rely only on blackboards and books can quickly lead to boredom, as students are unable to participate in activities that stimulate other senses. In addition, the students also feel that their movement is more limited because they have to sit for a certain period of time in order to complete learning process. It is essential to give students opportunities to demonstrate their abilities through various activities aligned with specific learning objectives. Students need to be provided with learning activities that can develop their intellectual powers and encourage critical and creative thinking. Teachers need to provide appropriate, meaningful and fun materials. As a result, teachers need to plan activities accordingly to prevent students from becoming easily fatigued, as each student with learning challenges has unique needs [7].

The letter recognition skills are the most crucial step for learning reading and writing, though students who have special education needs (SEN) encounter difficulty in these fundamental steps [8]. According Mujahid [9], SEN students are not only cognitive deficient but also receive limited appropriate learning stimuli which makes it harder for them to identify and remember. Its cause literacy development is difficult. They are also behind their peers in learning due to traditional teaching methods that do not accommodate the varying needs of SEN students [10]. Hence, there is a specifically appropriate and effective tool in helping SEN students to master letter recognition skills. It has been suggested that a multisensory approach, which in the context of learning utilizes multiple senses to facilitate learning of information, is more useful method for helping students with SEN to identify letters [11]. According to studies by Sarudin *et al.*, [12] upon the efficacy of these methods with respect to special education in Malaysia are still scarce. Hence, to evaluate the degree in which a multisensory approach can enhance letter recognition skills among SEN students with literacy problems is important. Contribution not only for more affective and efficacious teaching strategy but also for making a better responsive teaching effort towards the needs of learners who have difficulties in literacy. In this study, letter recognition skills focus on Malay Language Communication. There is a lack of empirical studies on the effectiveness of the multisensory approach in teaching Malay Language to students with special education needs, as well as limited understanding of how these students perceive and respond to the approach within the Malaysian educational context.

## 1.2 Objectives

This study seeks to explore multisensory approach for letter recognition skills for SEN students. The specific objective is:

- i. To examine teachers' knowledge of multisensory approaches for letter recognition skills in Special Education Needs (SEN) students.
- ii. To investigate the implementation of multisensory approaches by teachers for letter recognition skills in Special Education Needs (SEN) students.
- iii. To explore the effectiveness of using multisensory approaches in developing letter recognition skills for Special Education Needs (SEN) students.

## 2. Literature Review

Social constructivist theory by Lev Vygotsky [13] emphasizes the significant role of social interaction and cultural contexts in cognitive development. Social constructivism, emphasize that learning is a social activity and occurs on common grounds of experiences shared among people. Relatedly, the knowledge is more meaningfully learned by students when they are able to participate and receive help from others, such as teachers or peers [13]. Here, the teacher uses a "scaffolding" approach to help students develop skills based on reducing support as they have more proficiency. This is very important for pupils with special educational needs, as it helps the support required to provide more confidence in learning and identify letters in a manner, they cannot do by themselves. Thus, through a social constructivist approach in learning, the perspective of cognitive achievement is not only on student but also include their social and emotional desire so that it can be said as more comprehensive and meaningful [14].

In such a scenario, the multisensory nature of approach can be very well aligned with philosophy of constructivism by making students relate direct to learning and concrete stimulation. According Seidl *et al.*, [15] recognizing letters through sight, sound, touch and tracing supports the connection between specific sounds and their visual representations, building multiple sensory pathways. This approach allows students to explore and learn within a shared learning environment where they can engage in discussions with classmates and receive direct guidance from the teacher. This not only enhances their knowledge but also increases their motivation and interest [16]. They feel more engaged and capable in their learning. These strategies provide an enriched educational experience, enabling students with special needs to develop letter recognition skills gradually in a structured environment where they can steadily progress in identifying letter shapes [7].

Multisensory approach may be helpful in improving reading skills for students with special needs (SEN). Research conducted by Cuajao *et al.*, [1] have reported reading ability of SEN students had significant improvement when multisensory techniques were used, such as involving the senses of sight, hearing, and touch in the teaching process. Students can associate sounds with letter symbols more effectively, which in turn helps them remember and identify letters better [17]. In addition, this approach has also been proven to increase students' motivation and self-confidence level. A study conducted by Sarudin *et al.*, [12] evaluated that using multisensory techniques to teach reading, enhances students' understanding and learning abilities while making the process more engaging and interactive. This approach not only enables students to learn through multiple senses but also allows them to apply these experiences in different situations.

### **3. Methodology**

#### **3.1 Research Design**

This study uses a qualitative study design that is partially structured to interview and also observation. The choice of qualitative methodology is rooted in the need to understand the experiences and perspectives of teachers regarding knowledge, implementation and effectiveness of multisensory approach on teaching letter recognition skills in Malay Language Communication subject. Researcher revisiting the interviewing protocol study, whereby this interview protocol refers to the document containing the design, structure and guidelines to conduct the interview in the investigation. On the other hand, observation will take place at classroom during Malay Language Communication subject.

#### **3.2 Participants**

The participants consist of three special education teachers from different schools who are teaching Integrated Special Education Program (PPKI). The names of the participants in this study are not announced, instead of being nominated Teacher A, Teacher B and Teacher C to maintain ethical research subjects must be protected to avoid any interference, threats, and misinterpretations against them. Teacher A is 52 years old with 20 years teaching experience, Teacher B is 28 years old with 4 years teaching experience, while Teacher c is 29 years old with 3 years teaching experience. All participants are female. Teacher A and Teacher B has obtained a Bachelor of Education (Special Education) with Honors from Universiti Kebangsaan Malaysia (UKM) and Sultan Idris Education University (UPSI), while Teacher c has obtained a Bachelor of Education with Honors in Special Education from Sultan Idris Education University (UPSI).

#### **3.3 Data Collection**

Data was collected through a face-to-face interview with Teacher A, Teacher B and Teacher C. This approach allowed for flexibility in exploring participants' insights while maintaining a focus on specific topics related to the use multisensory approach in teaching letter recognition skills. Each interview took between 35 minutes to 40 minutes. In accordance with the interview protocol, participants were asked semi-structural questions. The interviews will be conducted in a comfortable setting depending on participants' availability and preferences. Data from the interview session were transcribed verbatim upon consent from the participant. On the other hand, observation was conducted to provide a comprehensive understanding on how multisensory approach is utilized in practice. Data triangulation is a research method that uses multiple methods of data collection to increase the accuracy and validity of research findings [18].

### **4. Result and Discussion**

#### **4.1 To Examine Teachers' Knowledge of Multisensory Approaches for Letter Recognition Skills in Special Education Needs (SEN) Students**

According to Teacher A, she indeed uses a multisensory approach in teaching letter recognition to students with special educational needs in order to improve letter recognition skills among them. Teacher A added, the multisensory approach has a good effect on the memory of students with low functioning educational needs because her teaching focuses heavily on the use of audio visuals by using Information Communication Technology (ICT). This is because, in this age of technology, there

are many sources of information that can be obtained by browsing the internet. Likewise, with Teacher B, she also uses a multisensory approach in teaching letter recognition to students with special educational needs who still not recognize alphabet. She also agreed with Teacher A where this approach is very effective for the students because they understand and remember the teaching topics that are taught more quickly including recognizing letters. According to her, she wants to stimulate the senses of special education students, noting that this method helps in a more interesting direction. Teacher C also have same perception as Teacher A and Teacher B where she also uses a multisensory approach in teaching letter recognition to students with special education needs. According to teacher C, the multisensory method is an interesting approach because it combines various teaching approaches that involve the senses such as kinaesthetic, auditory, visual and touch in a lesson. Teacher C also made an innovation which is the production of an optical box that uses many of the student's senses for teaching letter recognition.

All three teachers employ a multisensory approach in teaching letter recognition. Teacher A understands the importance of using multisensory methods in her teaching. However, due to varying moods and behaviours, she often switches between different activities when working with students, such as those with Down syndrome, who have not yet learned to recognize the alphabet. Moreover, the use of this method also depends upon their class schedule. Unlike Teacher B who make use of a multi-sensory approach in every lesson on Malay Language Communication subject, and an introduction phase where the students learn how to recognize letter. She added that recognition is important for reading skills. In addition, Teacher C apply also the multisensory approach in letter recognition but using a different material and ways like an optical box so that students do not get bored easily thereby still focused on learning.

Based on the observations, multisensory approach is indeed used by all three teachers in the study to help improve letter recognition skills among SEN students. Teacher A teaches letters using a Smart TV that focuses on the use of audio visuals with ICT elements. Teacher B teaches to recognize letters using stickers of various colours for letter collage activities. Among the senses used in this activity are the sense of sight and touch where this is very good for SEN students to do activities directly in class. Teacher C teaches to recognize letters using an optical box as a result of her own innovation. The optical box produced is able to stimulate the sense of sight, the sense of hearing and the sense of touch, which indirectly makes this innovation more interesting because it combines various sensors in the teaching of letter recognition.

#### *4.2 To Investigate the Implementation of Multisensory Approaches by Teachers for Letter Recognition Skills in Special Education Needs (SEN) Students*

Teacher A uses Information and Communication Technology (ICT) in the teaching for letter recognition. She combined of audio-visual aids by using equipment such as smart TV and online activities. She also uses other learning materials such as dough, colours and coloured pencils. However, Teacher B believes in using available natural resources like salt, sand and stone as a multisensory method and plays based approach for learning. Teacher C used an optical box as a learning tool to engage students' attention and give them motivation during the process of study.

All three teachers teach letter recognition in a creative way. Teacher A uses a smart TV to teach letters and continue with some letter recognizing activities such as colouring and make collage. Teacher B, instead makes capital letters using clay and records it in a balloon game with music were the students have to guess which letter is shown. On the other hand, Teacher C used optical box as an innovation teaching method where she wanted students to insert letter cards in order for them to see a more clear and interesting letters than normal. It able to increase their focus on the letter

recognizing skills. Each of these methods is unique in its own way, yet all share the same purpose that is to make learning more engaging and effective for students, especially in helping them recognize letters.

From the interview results, three respondents highlighted the challenges they encountered in implementing the multisensory approach, which in class control, time and cost budget. According to Teacher A, she encounters challenges with infrastructure, especially the lack of internet facilities that could not carried out some online activities. Teacher B, in contrast, said one of her greatest challenges was to manage the class because students tend not to like reading. In addition, she needs to change her preferred method of teaching in accordance with students' levels of interest so that they are more engaged. Teacher B also raised the issue of students skipping school and cost to prepare materials. Teacher C experiences similar challenges as Teachers A and B, particularly when managing student behaviour during activities. Some students tend to disrupt or distract others while waiting for their turn.

Based on my observation, students in Teacher A class, actively involved during teaching and learning process of recognizing letters. When Teacher A asked the students to come in front of the class, they were excited and confident to answer the questions asked by the teacher about the alphabet. Pupils seem to focus and cooperate throughout the learning process. The students in Teacher B's class successfully complete a letter collage activity using patterned stickers. The students look fun and excited during alphabet collage making activity. All students actively involved in the class until the activity is finished. In fact, they also remember how many letters they have learned that day. Teacher C, on the other hand, uses an optical box for the learning process of recognizing letters. Through observation, the students seem excited and happy when wearing the unique optical box. They are actively involved in learning to recognize the letters of the alphabet. When the teacher asked about the letters found in the optical box, everyone was eager to answer and the answers given were also correct and accurate. This is because, they are very focused while the teacher is teaching, makes them to remember the shape of the letters learned.

#### *4.3 To Explore the Effectiveness of using Multisensory Approaches in Developing Letter Recognition Skills for Special Education Needs (SEN) Students*

The multisensory approach will improve the ability to recognize letters of those students with special educational needs, according to all three teachers. According to Teacher A, adapting multisensory teaching method is highly appropriate in the current situation, especially as students move away from traditional classroom tools like white boards. Similarly, according to Teacher B, this method can gain interest of students in learning and able to increased student ability recognizes letters. Similarly, Teacher C reported that the use of a multisensory approach assists students in breaking down letter symbols and promotes focusing on learning activities while letters are memorized. All three teachers believe, on the whole, that this approach helps struggling special education students to recognize their alphabet letters better.

All three teachers felt that this multisensory technique was very beneficial for SEN students as it helped to improve the letter recognition. According to teacher A, the teaching mode can attract students' interest in learning and enjoy a variety of activities. Teacher B also stated that the process takes time and it was a very good way for students to learn through multisensory approach using music, hands-on activities when they are beginning to recognize letters. Teacher B added students should be given time to achieve their learning. In the same way, Teacher C thinks that this method very useful for special need students because interesting and colourful materials will help children

focus more on activities which enables them to be active. Therefore, getting familiarised with letters faster.

There was a general consensus on the importance of continuing to use the multisensory teaching method, particularly for helping students with special educational needs learn how letters are formed. Teacher A assumed this was a real approach to make the learner attach into class, more over for low functioning student. However, teacher B believes this method is justifiable as it encourages growth in students and allows teacher to modify their teaching style according to what the student prefers. According to Teacher C, the multisensory approach is highly effective because it engages various senses, capturing students' interest more than traditional teaching methods and benefiting all stakeholders involved. All three of the teachers do agree that his is a highly useful method to teach pupils who have special educational needs.

## **5. Conclusions**

Based on the research that has been carried out, the researcher found that teachers' knowledge of the use of a multisensory approach for letter recognition skills for students with special educational needs (SEN) is high and satisfactory. In fact, special education teachers also often use this approach in teaching letter recognition to weak students. All participants indeed implement a multisensory approach in teaching letter recognition to students with special needs. Nevertheless, the approach and activities that are carried out according to their respective but still have multisensory elements in the teaching aids used in the teaching and learning process for special needs students in improving letter recognition skills. All participant uses existing materials as well as materials on the internet. Teachers should carefully consider the suitability of materials based on a set of criteria to ensure they are appropriate for use [19]. Teaching materials should include be variety that suits the need of students [20]. They also experience almost the same challenges during the implementation of the multisensory approach such as class control, time, and financial management. The results of the study also show that the use of a multisensory approach towards developing letter recognition skills for students with special educational needs (SEN) can be increased and show the effectiveness of this approach in teaching letter recognition. The multisensory approach is considered more engaging and enjoyable because it encourages students to be more active in class and stay focused until the end of the lesson. When students remain focused, they are better able to remember and understand what they've learned, including the shape and name of each letter.

This study highlights some challenges teachers face when trying to use the Multisensory Approach in their classrooms. These challenges include not having enough resources, lacking proper training, and struggling to manage the diverse needs of their students. To address these issues, schools and policymakers could focus on providing more materials and tools designed for students with special needs. At the same time, teachers need better training to feel confident and prepared to use this approach effectively. Simple, practical strategies for managing classrooms could also make it easier for teachers to successfully adopt this method and help their students.

In the future, researchers should work on addressing some of the limitations of this study. For example, using a larger and more diverse group of teachers and students could help make the findings more widely applicable. It would also be great to use a mixed-methods approach, combining interviews with teachers and students with actual data on how well students recognize letters. This would give a more complete picture of how effective the Multisensory Approach really is. Lastly, longer-term studies would be helpful to see if the benefits of this method stick over time. These steps could give us a better understanding of how well multisensory teaching strategies work for students with special needs and how we can use this method more in schools.

## Acknowledgement

The acknowledgement and the appreciation go to the Faculty of Human Development, Universiti Pendidikan Sultan Idris (UPSI) for moral support in producing this paper.

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