

Inclusive Multi-Sensory Kit: Teaching Letter Sounds To A Learner With Multiple Difficulties

Sheryl B. Bautista

sherylbautista441@gmail.com

Special Education Teacher 1, Kabacan Pilot Central School, Kabacan Cotabato, 9407, Philippines

Abstract

Learners with Intellectual Disability (ID) are characterized by having limitations in cognitive functioning and skills. This inflicts a different kind of challenge to teachers who handle them. If teachers use effective teaching techniques and media, children or students with intellectual disabilities can develop effectively and some learning challenges can be addressed (Jiu, et. Al, 2020). The objective of this study is to explore the responses, improvements, and experiences of a learner with difficulty in remembering and concentrating and difficulty in hearing in learning letter sounds using the Inclusive Multi-sensory Kit. Using a qualitative research approach specifically an instrumental case study, the responses, improvements, and experiences of the participant were analyzed through pictures, observation, interview, and thematic analysis. Using the Inclusive Multi-sensory Kit, the learner's responses were positive. The learner acquired improvements in her phonemic awareness. She was able to have positive learning experiences and became open to new learning experiences through the Inclusive Multi-sensory Kit.

Keywords: multi-sensory, intellectual disability, special education

1. Introduction

1.1 Context and Rationale

Disability, according to the International Classification of Functioning, Disability and Health (ICF) is often referred to as "issues in the function or structure of the body, such as a considerable deviation or loss". Intellectual Disability (ID) or Difficulty in Remembering and Concentrating (DRC), the latter is used when there is no medical evaluation from a licensed professional, affects cognitive functions and their development over time, leading to major learning difficulties, which is one of its most recognized and prominent characteristics. With regards to the teaching and learning contexts, there are numerous hurdles to literacy acquisition for learners with ID or DRC since cognitive functions such as attention and memory are affected by the disability. However, there is a substantial body of research that suggests that these children can gain literacy skills with effective literacy education. From a didactic point of view, the learning limitations of people with ID or DRC call for an appropriate approach so they may be provided with proper methodologies that will allow them to experience a higher level of interest and motivation in a given activity and consequently lead them to better learning results.

Kabacan Pilot Central School as one of the recognized SPED Centers in the country caters to Learners with Disabilities or difficulties (LWDs) and provides them with appropriate interventions and strategies for them to achieve their full potential and transition into mainstream society. One of the interventions that special education teachers in the school do is to design appropriate instructional materials for LWDs based on their specific needs as stated in their Individual Educational Plan (IEP). Currently, the school has 24 learners with ID and DRC in self-contained (non-

graded) classes and regular classes. One of them is the focus of this study. Based on the assessment conducted by the researcher using a checklist, the learner's cognitive level is far beyond chronological age. She was unable to recognize and produce letter sounds which is a reading prerequisite. Aside from having DRC, she also has difficulty in hearing (DH).

With the foregoing results, the researcher explored a didactic solution employing innovative instructional materials anchored on the multi-sensory approach to teaching. Multi-sensory learning is defined as using visual, auditory, kinesthetic, and tactile modalities. Several studies, like those from the National Institute of Child Health and Human Development, demonstrate that the best way to help children who struggle with learning is through a multisensory approach.

1.2 Action Research Questions

This action research aimed to explore the responses, improvements, and experiences of a learner with difficulty in remembering and concentrating and difficulty in hearing in learning letter sounds using the Inclusive Multi-Sensory Kit.

Specifically, it sought to answer the following questions:

1. What are the observed responses of the learner in using the multi-sensory kit?
2. What are the improvements observed in the phonemic awareness of the learner using the multi-sensory kit?
3. What are the experiences of the learner using the multi-sensory kit?

1.3 Intervention, Innovation and Strategy

This action research used the Inclusive Multi-Sensory Kit as an intervention material in teaching letter sounds to a learner with difficulty in remembering and concentrating and difficulty in hearing. It is a box containing instructional materials which include flashcards (visual), a sandbox (tactile), sandpaper cut-out letters (tactile), clay (tactile), a flash drive containing videos of letter sounds and objects that have the initial sound of the letter introduced (visual and auditory), and activity sheets involving kinesthetic activities. First, the learner's phonemic awareness was assessed using a checklist. This was the basis of how many letters were introduced in 6 sessions of intervention considering the difficulties that the learner has.

2. Methodology

2.1 Description of the Action and Implementation Plans

The action research utilized the Inclusive Multi-sensory Kit as intervention material particularly in teaching the first six letters (Mm, Ss, Aa, Ii, Oo, and Bb) in the Marungko Approach in teaching reading to a learner with difficulty in remembering and concentrating and difficulty in hearing.

During the intervention, the learner was asked to view a video introducing letter Mm, its sound, and some pictures that start with letter Mm. After viewing, the teacher presented flashcards with the same contents and emphasized the production of the letter sound. The learner was asked to produce and repeat the sound introduced. After that, the learner was asked to write letter Mm in the air, trace letter Mm using fingertips in the sandpaper cut out letters, write letter Mm in the sandbox and form letter Mm using clay, while producing the /m/ sound. Then, the learner formed the letter Mm using strings, cardboard, and glue. Lastly, the learner answered worksheets on letter Mm. The same sequence of activities was done for the rest of the letters introduced. There are some variations on the kinesthetic activities done like forming the letter Oo using parts of the body and lacing cut out letter Ss. The intervention using the multi-sensory kit was conducted in six sessions within 3 weeks. During the interventions, documentation was done by taking pictures and writing anecdotal records. An interview with the learner was conducted after the post intervention assessment.

2.2 Research Instrument and Data Collection

This study employed a qualitative approach using an instrumental case study to explore the responses, improvements, and experiences of a learner with difficulty in remembering and concentrating and difficulty in hearing in learning letter sounds using the Inclusive Multi-Sensory Kit. The researcher employed a purposive sampling procedure since a learner with difficulty in remembering and concentrating and difficulty in hearing was identified to be the participant of the study. The research instruments used in the study were the multi-sensory kit as the intervention material for a learner with difficulty in remembering and concentrating and difficulty in hearing, pictures during the sessions for the learner's responses, anecdotal records of the sessions for the learner's improvements and interview for the learner's experiences in using the Inclusive Multi-sensory Kit.

3. Presentation, Analysis and Interpretation Of Data

Results and Discussion

Learner's Observed Responses in using the Inclusive Multi-sensory Kit

Figure 2A shows pictures of when the multi-sensory kit was first shown to the learner before the intervention. Picture 1 shows the teacher presenting the letter Aa through a sandpaper cut-out while the learner is looking away showing a lack of interest. In picture 2, the teacher introduced the letter Aa to the learner by showing a flashcard. The learner gave the teacher a reluctant look. Picture 3 shows the teacher holding the learner's hand to trace the letter cut-out. Picture 4 shows the teacher demonstrating how to write the letter Aa in the sandbox.

Figure 2A. The observed responses of the learner in using the Inclusive Multi-sensory Kit before the intervention



The above figure shows that the learner was reluctant and lacked the enthusiasm to interact when the materials were presented to her. The teacher guided her and demonstrated how to use the materials in learning the sounds of the letters presented.

Figure 2B shows pictures of the learner's responses when the Inclusive Multi-sensory Kit was used by the teacher in teaching letter sounds during the intervention. In picture 1, the learner is attentively watching the video on the letter Oo. Picture 2 shows the learner focused on the flashcard the teacher is showing. Picture 3 shows the learner intently looking at the teacher's lips as she produces the /o/ sound. Picture 4 shows the learner listening attentively to the audio of the letter sounds on the phone.

Figure 2B. The observed responses of the learner in using the Inclusive Multi-sensory Kit during the intervention



The figure above shows that the learner was attentive and focused when the teacher presented the letters and corresponding sounds using the multi-sensory kit.

Figure 2C shows pictures of the learner's response when the multi-sensory kit was used by the teacher in teaching letter sounds during the intervention. Picture 1 shows the learner producing the sound /i/. Picture 2 shows the learner writing the letter Mm in the sandbox. Picture 3 shows the learner doing an activity on the letter Aa. Picture 4 shows the learner tracing with her fingers a sandpaper cut-out of the letter Mm.

Figure 2C. The observed responses of the learner in using the Inclusive Multi-sensory Kit during the intervention



The figure above shows that the learner was engaged and active in learning the letter sounds using the materials in the multi-sensory kit.

Figure 2D shows pictures of the learner's response during the evaluation after the letter sounds were introduced using the multi-sensory kit. Pictures 1 and 2 show the learner answering the teacher's questions with confidence and a smile on her face. Picture 3 shows the teacher giving the learner a thumbs up for giving the correct responses to her questions.

Figure 2D. The learner's response during the evaluation using the Inclusive Multi-sensory kit.



The figure above shows the learner having confidence in answering the teacher's questions during evaluation after the intervention given using the multi-sensory kit. The learner also shows happiness for her accomplishments.

In general, the learner showed positive responses in learning letter sounds using the Inclusive Multi-sensory Kit.

Learner's Improvements in Phonemic Awareness

Table 1 shows the learner's improvement in phonemic awareness using the Inclusive Multi-sensory Kit.

The record shows that there were three emerging themes. It indicates that the learner has no mastery in recognizing the letter sounds. This happened before the intervention was conducted. However, during the intervention the learner was able to produce and recognize the sounds of the 6 letters introduced (Mm, Ss, Aa, Oo, Ii, Bb) with minimal errors. This shows that the learner is approaching mastery. Finally, after the intervention, the learner was able to produce and recognize the sounds of the 6 letters introduced with no errors. This implies that the learner has acquired high mastery.

Table 1. The improvements observed in the phonemic awareness of the learner using the multi-sensory kit

Improvements	Themes
Before the Intervention -doesn't know the sounds of 6 letters introduced (Mm, Ss, Aa, Oo, Ii, Bb) -hesitant to use the materials	No Mastery
During the Intervention -able to produce and recognize the sounds of the 6 letters introduced (Mm, Ss, Aa, Oo, Ii, Bb) with minimal errors -attentive and participative	Approaching Mastery
After the Intervention -able to produce and recognize the sounds of the 6 letters introduced (Mm, Ss, Aa, Oo, Ii, Bb) with no errors -happy and confident in performing the tasks	High Mastery

Learner's Experiences in Using the Inclusive Multi-sensory Kit

Table 2 shows the learner's experiences in using the Inclusive multi-sensory Kit.

The record shows that there were three emerging themes. It indicates that before the intervention, when the materials were presented to the learner, she does not want to touch the materials and she doesn't know how to use them. This shows that she has hesitations. However, during the intervention, the learner felt happy. She liked the material and she learned more easily. This shows that the learner had positive learning experiences. After the intervention, the learner expressed that she wants to use the materials again in other lessons. This implies that the learner has an openness to new learning experiences.

Table 2 shows the learner's experiences in using the Inclusive multi-sensory Kit.

Experiences	Themes
Before intervention	
Ayaw kong galawin.	
I <i>don't</i> like to touch the materials.	Hesitation
Di ko alam gamitin.	
I do not know how to use (the materials.)	
During the intervention	
Masaya.	
Happy.	
Nagustuhan ko.	
I liked (the materials).	Positive learning experiences
Mas madali akong natuto.	
I learned more easily.	
After the intervention	
Gusto ko gamitin ulit.	
I want to use (the materials) again. Sa Sa ibang lesson, madaming lesson.	Openness
To other lessons, more lessons.	

4. Conclusions and Recommendations

4.1 Summary

The intervention material used in the study is called Inclusive Multi-sensory Kit. It is a box containing instructional materials which include flashcards (visual), a sandbox (tactile), sandpaper cut-out letters (tactile), clay (tactile), a flash drive containing videos of letter sounds and objects that have the initial sound of the letter introduced (visual and auditory), and activity sheets involving kinesthetic activities. A learner with difficulty in remembering and concentrating and difficulty in hearing of Kabacan Pilot Central School was chosen to be the participant of the study. First, the learner's phonemic awareness was assessed using a checklist. This was the basis of how many letters were introduced in 6 sessions of intervention considering the difficulties that the learner has. The researcher employed a qualitative approach using an instrumental case study to explore the responses, improvements, and experiences of the learner in learning letter sounds using the Inclusive Multi-Sensory Kit. The research instruments used in the study were the multi-sensory kit as the intervention material, pictures during the sessions for the learner's responses, anecdotal records of the sessions for the learner's improvements and interview for the learner's experiences in using the Inclusive Multi-sensory Kit.

4.2 Findings of the Study

Based on the results, the following are the findings of the study.

1. There were several observed responses of the learner in using the multi-sensory kit. She was reluctant and lacked enthusiasm when the materials were presented to her. During the sessions, she was observed to be active, focused, and engaged with the materials. After the intervention, the learner showed confidence in performing her tasks using multi-sensory materials.
2. The learner had acquired improvements in her phonemic awareness of the 6 letters introduced (Mm, Ss, Aa, Oo, Ii, Bb) from no mastery, approaching mastery to high mastery with the use of the multi-sensory kit.
3. The learner had hesitations about a new way of learning using the multi-sensory kit. With proper instructions and demonstration, she was able to have positive learning experiences and exhibited openness to new learning experiences with the use of the multi-sensory kit.

4.3 Conclusion

Based on the results and findings of the study, the following are the conclusions drawn:

1. Inclusive Multi-sensory Kit used as intervention material generated positive responses from the learner who was passive and unresponsive. These positive responses include being focused, active, and engaged in the tasks given by the teacher using the materials.
2. Inclusive Multi-sensory Kit used as intervention material can help improve the phonemic awareness of a learner with multiple difficulties.
3. Inclusive Multi-sensory Kit used as intervention material can help provide the learner with positive learning experiences and motivation to learn more.

4.4 Recommendation

Based on the findings and conclusions of the study, the following are the recommendations:

1. The use of the Inclusive Multi-sensory Kit in teaching letter sounds to learners with difficulty in remembering and concentrating is recommended.

2. The teachers are encouraged to adopt or adapt the use of the multi-sensory kit in teaching letter sounds to learners with disabilities or difficulties. Teachers are also encouraged to design their strategies and materials anchored on the principle of multi-sensory teaching.
3. The administrators are encouraged to provide training to the teachers on special education and on multi-sensory approach to learning.
4. Future researchers are encouraged to enhance the multi-sensory kit by adding materials on sign language which can help address the communication barriers for learners with difficulty in hearing.

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