

Observational Study on Teachers' Approach in Teaching Children with Autism to Read

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Abstract

Children with autism are characterized with unique cognitive and social emotional development which makes the process of teaching them to read to be difficult and complicated. In attending to the special needs and characteristics of children with autism, special education teachers should have necessary knowledge and techniques in teaching children with autism to read and taking their characteristics into consideration during the reading lesson. This research aims to examine the approaches used by teachers in teaching children with autism to read. A total of two special education teachers were willing to participate in the case study. A non-participant observation was carried out with the two respective teachers in different time frame in a selected autism centre. The findings were presented in different phases of the reading process which were carried out. There are no single theories which was used in teaching students to read in each phase. It involves the combination of various theories to help students to understand the content of the reading material. Based on the findings, the teachers used several theories in teaching reading to children with autism. These theories include reading theories (traditional, cognitive and metacognitive view of reading) and Vygotsky's Sociocultural theory.

Keywords: Observational Study, children with autism, teaching approach, reading.

1. Introduction

According to Individuals with Disabilities Education Act (IDEA), children with autism have developmental disability in both verbal and nonverbal communication which could affect their performance in education and other associated characteristics such as repetitive and stereotyped movements. A local survey had revealed that one in every 625 Malaysian are diagnosed with autism spectrum disorder (ASD). Researches shown that number of cases of autism is on the rise from year to year and hence, knowledge and awareness regarding autism disorder should be given primary concern.

Children with autism are characterized with unique cognitive and social emotional development which makes the process of teaching them to read to be difficult and complicated. They encountered problems in the normal standard methods of reading and comprehension due to their information-processing which is different from others (Hamm, 2009). Braun (2004) stated that children with autism have "limited auditory short term memories, making learning to read through a traditional phonetics approach difficult". Besides that, they have distinctive learning development stages and they learnt to read by looking at the pictures and certain specific words in the book. In fact, it is a great challenge for them to use or practice the language, social understanding, and emotional intent of messages to understand the social world (Quill, 2000). The deficiencies in their language and social cognition then caused difficulty in interpreting emotions and relating it to the different aspects of communication in social world.

The typical problems faced by children with autism are the difficulties in differentiating or filtering distractions, completing tasks independently, and starting certain work or activities. Besides that, students with autism have a hard time in making transitions such as in stopping a particular activity and move on to the next activity. Flexibility and difficulty in shifting attention are the common characteristics that could hinder their reading process (Autism Society of America, 2005). These characteristics could affect their reading skill as well and according to Barnhill (2000), high functioning children with autism spectrum disorders "may lack higher level thinking and comprehension skills" although they may have average or above intelligence and good memory skills. He continued by stating that they can decode words and use correct vocabulary and thus, giving a false impression about their understanding towards the subjects they are saying or reading. In fact, they may be parroting what they have heard or read, yet do not understand it fully. Children with autism should be provided with reading materials that could initiate or prompt their special interests which can also indirectly help in motivating them. Other than that, various attempts should be made as well to expand their interests and also to include socially-appropriate material to assist students with more information that can help and support their connections with peers and progress in the school. Reading materials such as flow charts, maps, Venn diagrams and others can help build their conception information (Hetzroni and Tannous, 2004).

Thus, in attending to the special needs and characteristics of children with autism, the special education teacher should have relevant knowledge and skills in teaching children with autism to read and in taking their characteristics into consideration during the reading lesson. This research aims to examine the approaches used by teachers in teaching children with autism to read through observation study.

2. Literature review

Special education teachers should be able to use various techniques to promote learning among children with autism. Teaching methods which include individualized instruction, problem-solving tasks, and group works depending on the types of disability. However, by providing a supportive environment and appropriate techniques, it can help to develop and strengthen reading skills among children with autism (Secor, 2012). Students with autism find it easier to participate in classroom routines and activities when they have had the opportunity to prepare which is also known as priming activities that are used to prepare students with new concepts or activities (Marks *et al.*, 2003).

On the other hand, children with autism tend to fragment information and focus only on the details which result in the lack of overall thinking and analysis. Thus, it will affect their understanding towards texts due to the unique characteristic. There are three major neuro-cognitive theories which could be used to explain the difficulties faced by children with autism in reading and learning. The theories mentioned relate the brain functions with the characteristics of children with autism. According to Hill and Firth (2003), weak central coherence theory proposed that there is a poor connection between the basic perceptual processes and top-down modulating processes for them. Children with autism encountered difficulties in collecting information and creating meaning out of the fragmented information. The theory of weak central coherence has implications on reading comprehension emphasized on a stronger recall of specific details. Whereas, theory of mind (Baron-Cohen *et al.*, 1985) focused on the ability to form or create representations of other people's mental states and to use these representations to understand, predict, and judge utterances and behavior. It is believed that the impairment in theory of mind is one of the symptoms of autism which result in difficulties in making conclusions, inferences, understanding perspectives, and understanding texts. Lastly, the executive functions (Martin and McDonald, 2003) are the systems that are responsible in managing and controlling the cognitive processes to enable us to adapt to new situations with flexibility. Flexibility is required by students in applying reading skills. However, students with autism will face difficulties in adapting to the changes in the text and using their flexibility in reading. Thus, it can be summarized that weak central coherence, theory of mind, and executive functions are all neuro-cognitive theories that can partially explain the obstacles that were faced by children with autism in applying their reading skills. Therefore, it is important for the teachers to practice appropriate teaching method and reading material in educating children with autism to read.

3. Methodology

Qualitative approach is used in this study because it seeks to probe deeply into the research setting to obtain in-depth understanding regarding the teaching approaches used by special education teachers in educating the children with autism to read. Case study research is particularly suitable because it can be used to examine why and the how questions in this study in a bounded system and observation is used as the data collection technique in this study. Yount (2006) defines observation as an act of watching or looking at certain situation, event, or person without the intention of trying to influence or manipulate the actual scene. The respondents involved in the case study would be restricted to the teachers involved in teaching children with autism to read in the autism centre only. Due to the specific respondents in this case study, consent or permission before conducting the case study was obtained from the principal of the centre. A total of two special education teachers were willing to participate in the case study. A non-participant observation was carried out with the two respective teachers in different time frame. Video-camera was set-up before the class started and it was located from a distance from where the teachers conducted their lesson to avoid any interruption or observer's effect during the entire reading session.

4. Findings

The findings of the study would be focused on the approaches used by teachers in teaching children with autism to read through different phases in reading. Observations were transferred into transcript format and field notes were prepared for each observation session. Each special education teacher was observed for three times in different days. The total observation in the autism centre is six. Each observation is labeled with numerical symbols to differentiate the days of observation made. Approaches used in teaching children with autism will be divided into different reading stages and the observation will be analyzed in accordance to the stages in reading process. Each observation's duration took a total of 90 minutes.

4.1 Introduction phase

The classroom environment for both teachers is the same and there are no partitions in separating the corners for other purposes. However, the reading session for lower and upper class are conducted in morning and afternoon time respectively. Thus, the reading sessions would not be interrupted by other teachers at the same time because the timings for the classes were different. The classroom is well ventilated as it is equipped with air-conditioner and several ceiling fans. Figure 1 shows the layout of the classroom during the observation periods.

Based on the classroom layout shown, it was found that teachers had provided a good reading corner for children with autism whereby the height of the tables and chairs suit the students from different ages. However, there are no accessible book shelves for students to read freely. The mini library for teaching materials is located at the left corner of the classroom where it is locked and only teachers are allowed to enter the mini library.

4.2 *Pre-reading phase*

Pre-reading phase aims to examine on teachers' early preparation in building students' interest in learning how to read and teacher's prompt in enhancing students' interest in the reading process. In this section, the analysis of observation content would be presented in excerpts (Table 4.1) on the exact instructions given by teachers during the class. The important instructions were highlighted and categorized in accordance to the table presented below.

4.3 *Guided-reading phase*

Guided reading phase is a phase where teachers guide students in reading when they faced difficulties in digesting the reading materials. In the process of guided reading, teachers spent considerable time in ensuring that students gained understanding and meaning for the materials during the reading session. The excerpts are highlighted in Table 4.2.

As we can see from the observation of teacher X and Y, they did not fail in explaining the difficult terms or new vocabulary through different methods such as in facial expressions, hand expressions, giving real-life examples and descriptions that could attract students' attention in the reading process.

4.4 *Post-reading phase*

Post-reading phase is a stage where it examines on the activities after reading process is done and to reexamine the understanding of the students after the reading session ended. The analysis in Table 4.3 shows the observation excerpts during the post-reading phase.

Post reading phase can be beneficial in showing them how individuals reach conclusions and main points from the reading materials. However, the observations in the autism centre showed that teachers did not emphasize much on the post-reading phase. Teachers emphasized in giving the final revision mostly for the teaching material which was considered to be unfamiliar for the students. For example, human diagram chart, alphabetical models, and the book with illustration of shapes are rarely used in the lesson taught as compared with the usage of flashcards and puzzles. Top-down model was practiced in the post-reading phase because it involves the process of making hypothesis, testing hypothesis and making conclusions. Thus, in the post-reading phase teachers encouraged students to make simple conclusions on what they had learnt by making a final recap of the lesson.

5. Discussion and conclusion

The discussion on teachers' approach would be presented by examining in-depth on the reading processes of children with autism. The reading processes were divided into four main phases which are introduction phase, pre-reading phase, guided-reading phase and post-reading phase. During introduction phase, both teachers used the same classroom for their reading lesson. However, the time scheduled for both teachers are different and the classroom environment for reading session is the same. As described earlier, there are no particular preparations made for the classroom environment in the classroom. Teachers started the class right after students settled down on their own seats. Thus, it can be summarized that there are no emphasis given on the effort of prompting students' interest to read for the classroom environment.

Next, the pre-reading phase was initiated by teachers in teaching children with autism to read. During the pre-reading phase, teachers applied different types of reading pedagogy depending on the types of materials used in teaching children with autism to read. There is no single type of theories which can be used to explain the approaches used by teachers but it was rather a combination of various theories to help students' understanding towards the content of the reading material. In this context, teachers did not provide on the objectives of their lesson before they started a reading lesson. Instead, they will start by asking the students to read from the text. The several types of reading materials used by teachers in teaching children with autism to read are flashcards, story books, puzzles, and human diagram chart. As for the flashcards, teachers started the lesson by asking students to guess from the flashcard held in their hands. Interactive model of reading which involves both bottom-up and top-down model was applied in this context.

As explained earlier, students would read either from the text or the illustration on the flashcards. Top-down model would be used by the students when they decode the meaning of the text from illustrations because hypothesis was formed based on the prior knowledge they had in their mind. Meanwhile, bottom-up model would be applied when students decode meaning directly from the text displayed on the flashcards. Thus, in the process of reading,

students will be using different types of reading models subsequently based on their understanding on the flashcards used. Combination of both models was demonstrated in the attempt of reading the materials shown. Rumelhart (1977) has proposed that an interactive model with both letter features or data-driven sensory information and non-sensory information come together at one place to explain the nature of reading process. Meanwhile, for the story book, both teachers used the bottom-up model directly in teaching children with autism to read. They required students to read after them for each sentences in the story book. Thus, it can be observed that students decode the meaning from the text through teacher's guidance. Meanwhile, for the teaching materials such as alphabet letters and human body diagram chart, illustrations were presented and they were prompt to read and guess from the illustrations based on their prior knowledge. Cognitive view of reading or top down model of reading was applied in this context. In this view, reading is a process of connecting information in the text with the prior knowledge of the reader instead of just extracting the meaning from the text (Smith, 1994).

As for the guided-reading phase, teachers provided scaffolding whenever students encountered difficulties in reading. Active participation was encouraged in the class. This was reflected in Vygotsky's Sociocultural theory whereby social communication played an important role in helping students to enhance their understanding towards the lesson taught. Teacher acts as the mentor in providing guidance for students in achieving understanding towards the materials learnt. Zone of Proximal Development (ZPD) theory was applied during the reading lesson as students were assigned with reading materials with certain level of difficulties to promote the learning or reading skills of the students.

Lastly, teachers did not give great emphasis on the post-reading phase due to several reasons. Teachers only provide revision on the teaching materials which are seldom used in teaching students to read. Children with autism have less attention span as compared to normal students. Thus, teachers did not spent extra duration of time to do a final revision on the lesson taught. This could be reflected in the observations made where students left their seats immediately after seeing the flashcards were repeated again. As a conclusion, it is shown that the teachers used several theories in teaching reading to children with autism. These theories include reading theories (traditional, cognitive and metacognitive view of reading) and Vygotsky's Sociocultural theory. However, the observational study was conducted in one of the autism centres situated in Malaysia only. The result might differ for other autism centres which have different teaching approaches in teaching children with autism to read.

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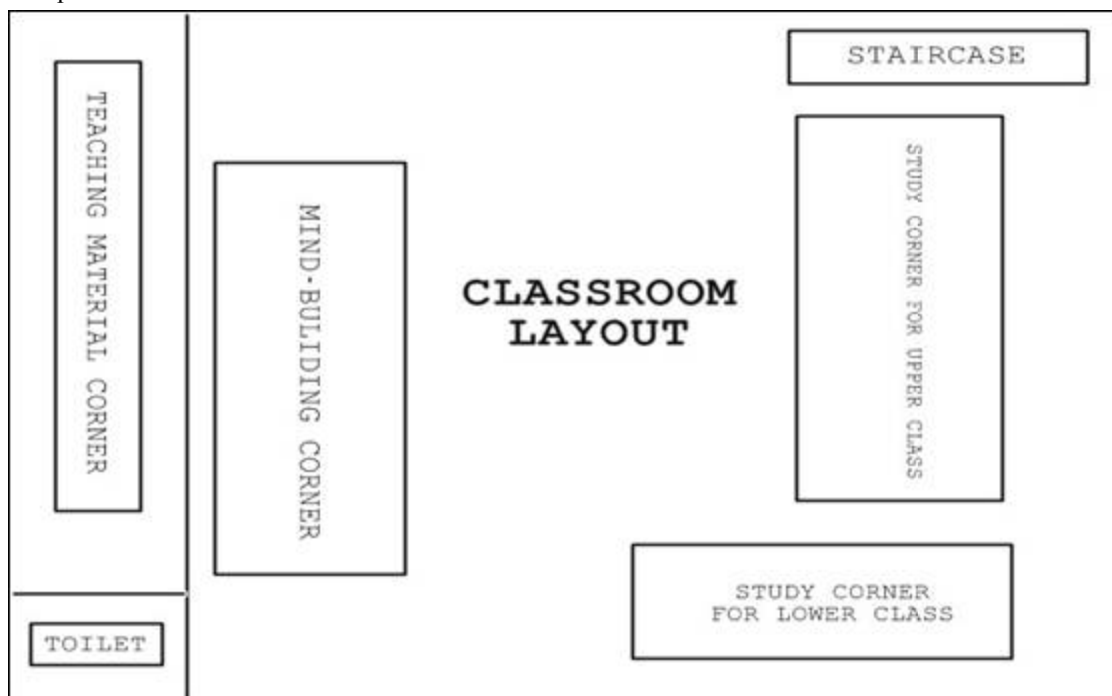


Figure 1: Illustration of classroom layout

Table 4.1: Observation excerpts for pre-reading phase

NO	Material used	Observation excerpts
O1	Flashcards with both illustration and texts on it	Can you tell me how to read the word on the flashcard? (Pointing on the flashcard) Note: The process repeated until the flashcards finished. The entire process had taken over for twenty times.
	Storybooks	Follow after me, read this (while pointing to the word on the story book) Note: The process repeated until the story book is finished for twice.
O2	Alphabetical models	Now, tell me what alphabet is this? (As she held up the alphabetical model, for example the alphabet A)
	Animal models and flashcards	(Hold flashcard on her hand, ask children to read) What is the animal on the flashcard? Help me choose which animal is hippopotamus from here (ask student to choose the animal model out of many animals)
O3	Human Body Part Diagram Chart	Today we are going to learn about the human body parts (Pointing to the head) What is this? Note: The process went like this: first, teacher will point at the human body part then students will have to recognize the body parts by saying it out aloud.
	Flashcards with both illustration and texts on it	Tell me what is this? (Pointing on the flashcard) Note: Teacher would show the flashcard and asked students to read it out.

O4	Flashcards with both illustration and texts on it	Tell me what can you see from the card? (showing the picture with gun and text) Note: The process of teaching continued and repeated with different cards for approximately eight times.
	Story books	Ah Ming helps out mother to carry her groceries back from the market. (pronounce it word by word as he looked at students' eyes) Note: Teacher instructed them to flip on the first page and read the first sentence out. Then students followed his lead and repeat after him while pointing on the sentences on the book.
O5	Flashcards were used to teach students with vowels, AEIOU	Do you still remember how to read this? (Showing the vowel, AEIOU) Note: The process went on and repeated over for six times until the alphabet J. JA, JI, JU..Then, teacher Y added with the combination of different set of alphabet.
	Puzzle consists of pictures and text on it	Before you proceed with the puzzle, do you know what is the meaning for the these? (Pointing on the pictures of the puzzle) Tell me, what is this? (Taking out the ambulance puzzle)
O6	Flashcards with both illustration and texts on it	Tell me what is this animal? (Takes out the card of north, south, west and east. Arrange it on the table for students to read and make comparison) (Pointing down on the flash card) How to read this?
	Book with a full illustration of shapes	What shape is this? (showing the cover of the book) Love shape (as he drew across the line)

Table 4.2: Observation excerpts for guided-reading phase

NO	Material used	Observation excerpts
O1	Flashcards with both illustration and texts on it	(Points to the next flash card, without saying a word but maintain eye contacts with her students) Yes, “don’t want”. When you don’t want to eat food or wants to say no, just say “Don’t want” (while explaining to students, she waved her hands and shakes her head to show the expression of “don’t want” Note: Teacher X gave answer after realizing students cannot answer her question
	Storybooks	Teacher X: Let start all over the book again. (pointing on the sentences again) Student A: (Give no response and look up at teacher for guidance) Teacher X: I become friend with cow. (Friends in mandarin language) is “peng you (friend)” Follow my lead, “peng-you” Student A: Peng-you Note: Teacher X pointed on the sentences, looking up at the students and expecting them to read it out aloud but they could not. They looked up at their teacher for guidance and thus, she continued to read the sentences aloud. Then, students

		followed their teacher's guidance and read it out aloud.
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O2	Alphabetical models	No guidance is provided because students were able to read it all.
	Animal models and flashcards	Teacher X: (Used animal models to help students to recognize the animals). What is this animal (holding up giraffe model) Student A: (Look at the teacher, not knowing how to answer) Teacher X: It's a giraffe. It has a long, long neck you see. (pointing at the giraffe's neck)
O3	Human Body Part Diagram Chart	Teacher X : (Points to the forehead of the diagram) Student A : Head, head. Teacher X : No, it is not head, it is forehead (pointing towards her forehead) Student A : Forehead. Forehead. (while pointing towards her own forehead)
	Flashcards with both illustration and texts on it	Teacher X : Tell me what is this? (Makes the hand imitation of wanting something or still want something) Note: If they could not read, teacher X will guide them to read it with further explanation with facial expressions and hand expressions. Students will then repeat after teacher every time when teacher corrected them.

O4	Flashcards with both illustration and texts on it	Teacher Y : (Reassure him). No, it is not a frog, it is a dinosaur. Student M : (Nodding his head and pointing on the flashcard) Dinosaur... Teacher Y : Yes, it's a dinosaur. Now, tell me what is this? Student P : Extinct! Teacher Y : Yes, extinct. There are no dinosaurs anymore in this world. Extinct, they extinct from this world already. (while explaining to student M) Note: In the beginning of the lesson, teacher Y did not state the objective for the lesson and the topic that he would teach in the following lesson. However, he provided a good guidance in teaching four students at once and did not missed the chance of ensuring that each student understood about the meaning before proceeding to the next card. In the section in further explanation about the cards, teacher Y also explained on the evolution from tadpoles to frog to the students.
	Story books	Follow my lead. Ah Ting is missing. Mother is very worried about her. Very worried (while showing the expression of very worry)
O5	Flashcards were used to teach students with vowels, AEIOU	Where is bahu? It's here? (patting on his own shoulder) (Touches his own chin and showed to them) This is dagu. Note: The difficulties in reading were increased step by step, beginning with the introduction of vowel, addition of an alphabet in front – producing phonology and the combination of it to form words. However, teacher Y will always start by

		reading the text first before asking students to repeat it after him. Explanation of the words was not provided by teacher Y
	Puzzle consists of pictures and text on it	Yes, ship. A, S-H-I-P
O6	Flashcards with both illustration and texts on it	(Imitate the action of putting horn on his head) What is this? Goat. No, it's not the same, this is back (taking both of the cards out and put it side by side for comparison)
	Book with a full illustration of shapes	(Draw across the line, one of the corners of the star) Yes, there is a little triangle here. Note: Besides recognizing the shapes, students were taught on other objects that have a similar shape with the shape that they are taught about. Thus, students were able to relate between shapes and the objects around them. Besides, teacher Y would teach students on how to recognize shapes by counting the number of angles for it.

Table 4.3: Observation excerpts for post-reading phase

NO	Material used	Observation excerpts
O1	Flashcards with both illustration and texts on it	No repetition or summarizing of flashcards were made after the class ended.
	Storybooks	No explanation on the content of story book or sharing of opinion or summarize of the storyline or message in the book.
O2	Alphabetical models	Now, tell me what alphabet is this? (As she held up the alphabet model before the session ended)
	Animal models and flashcards	No repetition or summarizing of flashcards were made after the class ended.
O3	Human Body Part Diagram Chart	Teacher X : (Points to each body part) Student A : (Answer all, while pointing to the human body part when she read the word)
	Flashcards with both illustration and texts on it	No repetition or summarizing of flashcards were made after the class ended.
O4	Flashcards with both illustration and texts on it	Teacher Y : Yes, finished already. (He moves away from his seat to take new teaching material) Student M : (Leaves the seat immediately)
	Story books	No explanation on the content of story book or sharing of opinion or summarize of the storyline or message in the book.
O5	Flashcards were used to teach students with vowels, AEIOU	No recap on the previous flashcards or new vocabulary taught.
	Puzzle consists of pictures and text on it	No repetition or summarizing of flashcards were made after the class ended.
O6	Flashcards with both illustration and texts on it	No recap on the previous flashcards or new vocabulary taught.
	Book with a full illustration of shapes	No, haven't finish yet. Let's revise again. (Flipping to the last page of the book. Pointing on the first shape)