

Do Teachers' Non-Verbal Behaviors Support The Verbal Production of Children With Autism Spectrum Disorders (ASD)?

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Abstract—This paper discusses non-verbal strategies performed by teachers to stimulate children with autism spectrum disorders in producing verbal expressions. Four learning processes were selected for the study. All classes consist of verbal children with autism, and each class was executed by different teacher. Non verbal strategies performed by the teachers were described to see their impacts to number and types of verbal expressions the children can produce. The results show that the non verbal behaviors the teachers performed are classified into three, i.e. facial gestures, body language or movement, and position. Such a classification has subclassification and it has different function to the others. In general, all strategies for facial gestures were executed mostly to stimulate the children in producing verbal expressions and provide models for the children in producing the expressions. Meanwhile, more types of strategy were performed under body language/ movement. These were commonly exploited to control the children attention as well as to assist them in producing the expressions. Finally, both teachers' standing and sitting position influence the way they control the children in following the learning process. The findings are expected to be beneficial for teachers or parents of children with autism spectrum disorders and assisting such children having the learning process.

Keywords— *autism spectrum disorders, verbal, expressions, non verbal strategies*

I. INTRODUCTION

Delivering a learning process for children with autism spectrum disorders (ASD) requires effective strategies. This is related to the fact that in general children with ASD have problems in communication (Wenar, 2004), which affect several other aspects of development (Landa, 2007). Furthermore, the common characteristic seen in children with autism among some of the features is the inability to interact verbally with others (Safaria, 2005; Dover, & Le Couteur, 2007; Blenner, Reddy, & Augustyn, 2011). Linguistically, these children show a habit of imitating what others say (Fletcher & Schuler, 2003), without considering whether other people follow the conversation or not (Shulman, 2003). They often misuse of pronouns, and lack of skill in interaction. In connection with this condition, teachers need to design the proper strategy to be able to make children with ASD respond or can contribute to an interaction. Several studies with these children have been conducted by psycholinguists such as by Fleury et al. (2014) who investigated active participation in book reading with a preschooler with ASD. On the other hand, one study was also performed to see how teachers exploit pragmatic politeness in making the learning process with these children more conveniently (Sugini et al., 2016).

One of the strategies that can be performed to prompt children with ASD to respond to teacher's initiating utterances is exploiting non-verbal behavior going along with stimulating verbal expressions. This can be systemic as such a strategy that combines two collaborative modes, namely verbal and non-verbal behavior. Designing these aspects for learning process for children with ASD is expected to be able to icebreaker two-way communication between the teachers and children with autism so that the process of transferring the learning materials can then be carried out. On that account, this study tries to see how the

teachers' non-verbal actions can help children with ASD respond or make a contribution to an interaction between the teachers and the children.

In general, non-verbal behavior conducted by teachers can be classified into two types, i.e. facial gestures and body movement. Furthermore, each type of strategy in its execution is represented by different activities between one teacher to others. What should be noted is that the quality of the non-verbal strategies carried out by the teacher in each class is different. There are teachers who actively and effectively consider these non-verbal aspects for their class, but there are also others who are less effective in doing non-verbal exercises. In other words, it is possible for each teacher in each class to do a different non-verbal strategy for the same purpose.

The first type is related to face and its parts, such as eyes, lips, tongue and mouth. These parts are usually processed collaboratively — simultaneously to present a non-verbal message. For example, when the teacher gives a greeting in Bahasa Indonesia such as *Selamat pagi* "Good morning" to students, the teacher will provide the expression of *Pagi* "Morning" so that it can be imitated by students as a response to previous greetings. The model to produce the word *pagi* is presented by the teacher by showing clear mouth shape representing the way of producing the sounds of [a] and [i] as vowels existing in the word of *pagi*. In this case, the teacher is showing the mouth shape for low and open vowel sounds and then followed by the mouth shape for the high and close vowel. Along with this process, the teacher also opens his eyes wide and before giving the pronunciation model for the word, the teacher sticks out his tongue in front of the students as a sign that the teacher is inviting students to try to pronounce the word being introduced. These steps are taken by the teacher so that in practicing the pronunciation, the students can do it comfortably.

Meanwhile, teachers can also do several body movements in the learning process. Every movement is carried out for a purpose. For example, touching a student's chin is done by a teacher to get her/ his student's attention. It is often to happen that such action is followed by directing the student's view towards the teacher so that student will see the pronunciation of a word. For example, when a student does not seem to respond to a greeting of *Selamat pagi!* "Good Morning" given by the teacher, the teacher will approach the student, touch the student's chin, and then expose the student's head to see the teacher's face, and at the same time, the teacher gives the pronunciation well. In this case, the act of touching the chin and directing the student's view to the teacher can represent a verbal action that says *Look* or *Watch* — or in other words, if a nonverbal action is verbalized, then the action is taken to make the student direct her/ his attention to teacher to be able to observe how a semantic unit is produced and so that the student can copy it. More than that, even though the teacher verbally does not say clearly, but the shape of the mouth that the teacher shows to the student can send a message to students to imitate the model given. To execute this implicit instruction, the teacher positions her/ his face right in front of the face of a student who is in focus or becomes the target of pronunciation practice. Then, the teacher also processes facial gestures in such a way as to accommodate the pronunciation model of the semantic unit being trained.

II. LITERATURE REVIEW

Four learning processes involving children with ASD become the focus of the study. Each class is individual, in the sense that the learning process occurs between a teacher and a student. Even though they are in an individual class, the four subjects are classified as children who can communicate verbally, have stable adherence, and have a good level of mental intelligence. The audiovisual recording was carried out to record the learning process. Teacher-student interaction in each class is then transcribed and analyzed to see how non-verbal actions performed by the teachers can play a role in supporting verbal language to make the children produce verbal expressions in the interaction.

III. METHOD

Observations and analyzes conducted on the interactions of each class indicate that teachers generally combine verbal language and non-verbal actions to make students actively involved in the learning interactions, as presented in the following table.

TABLE I. COMBINATION OF VERBAL DAN NON-VERBAL BEHAVIOR OF TEACHERS

Class	Verbal Utterance	Supporting Non-Verbal Behavior		Produced Expressions			Number of Combined Utterances
		Body Movement	Facial Gestures	Words	Phrase	Clauses	
A	Stating Commanding Asking Praising	√	--	93	1	1	25
B	Asking	√	--	2	1	--	3
C	Asking Stating Commanding Prohibiting	√	--	3	1	7	11
D	Asking Stating	√	√	112	3	1	37

The table above displays a pattern of double-mode learning strategies conducted by teachers from each class with the following description. Class A is an individual class taught by a female teacher who accompanies a student with autism who is classified as a student with high adherence, can communicate verbally and has a moderate level of mental intelligence. Teacher-student interaction in this individual class occurs for 40 minutes. In that duration, there are 76 exchanges. In this interaction, there are several exchanges that are a combination of modes, namely between verbal speech supported by the teacher's nonverbal behavior. These combined utterances were performed in 25 exchanges and successfully make the student produce verbal expressions. Meanwhile, the child also made verbal expressions directly responding to the teacher verbal prompting utterances without any support of non-verbal action.

In general, this class teacher tries to make students give responses in the form of verbal expressions using the verbal expression as well. Meanwhile, the verbal language is mostly represented in the form of questions - only a few are in the form of statement or praises. Some of these stimulating utterances did not get any response from the student at all, some others were directly responded by the student in a verbal mode, whereas the rest need the teacher's non-verbal action to support the prompting verbal utterances.

Meanwhile, even though in general non-verbal behavior can be classified into two types, i.e. those in the form of facial gestures and body movements--in this class, the teacher only conducted the movement of her organs of the body to represent her non-verbal language. There are several factors that make the teacher only use several types of body movements in this class, namely teaching the material, the closeness of position between teacher and student, and the level of mental intelligence of the student.

Considering the condition of the child's mental intelligence, the teacher simply used books and paper to write the material. Therefore, some non-verbal actions in the form of gestures are represented by the act of writing material and showing questions to students. In addition, the teaching material for counting makes the teacher used the provision of her fingers as one of the strategies for non-verbal behavior.

On the other hand, verbal expressions produced by the student are only in the form of word units, most of which represent numbers in Bahasa Indonesia, such as *satu*, *dua*, *tiga*, up to ten. There is only a phrase produced by the student, i.e. *angka sembilan* "number nine". These numbers are responses to the teacher's questions in the form of mathematical problems, like *Dua ditambah tiga ada berapa?* "what two plus three?" The teacher must repeat the initiating verbal expression several times, besides that the repetition is often accompanied or ended with a command. When repetition of verbal expressions is considered not to be effective in stimulating the child to give a response, then the teacher also performed non-verbal action such as holding up three fingers of the left hand and four fingers of the right hand in front of the student's face. This combination of verbal and non-verbal modes can make students produce a response in the form of an answer to the matter of counting. The student counted the fingers offered one by one, so the expression that he expressed is counting number one to seven. In addition to finger counting, the student is also able to read the numbers written on a book or paper. Several times the teacher wrote arithmetic problems in the student's book/ paper. By pointing to the numbers in the counting problem, the teacher tried to help the student provide answers to the questions provided. Thus, the non-verbal movement carried out by the teacher is to point out the exercises the student must do. For example, the teacher gave the command *Coba soal ini dikerjakan!* "Well, try to do this counting problem."--and at the same time, he wrote down the counting problem on the paper. Next, the teacher then showed it to the students and allowed him to solve the counting problem.

Meanwhile, the student is involved in Class B has similar characteristics; however, he is several years older and has a higher level of intelligence compared to the one in Class A. According to his age, this child must be in a junior high school. Therefore, the teaching material provided is also aligned with the material for children in junior high school — the condition of mental intelligence influences the teaching strategy. From the verbal language exploitation, the teacher looked like doing a learning

process with normal students. The teacher was no longer seen trying to make his single student produce verbal responses through the learning process, but he tried to transfer biological knowledge to the student. The transfer process was mostly carried out by the teacher by using *asking* and other types of utterances, namely *stating* and *commanding*.

Meanwhile, the student used more variety to respond to the teacher's speech, such as *answering*, *rejecting*, and *asking questions*. In doing the verbal language, the teacher completed it with non-verbal aspects, all of which were movements of the body, such as *pointing the questions*, *holding the student's hands*, and so on. However, the non-verbal actions performed by the teacher looked not to have big role in helping the student produce verbal responses. This is related to the fact that the student appeared to be able to provide a verbal response to prompting verbal utterances that the teacher forwarded to him.

The table above shows that during the learning process, the teacher has 11 combinations of verbal and non-verbal utterances as his contribution to the interaction between him and his student. All of these can make the student produce verbal responses to the same interaction. In addition, the teacher also performed many verbal-only utterances as he prompted his student to be involved in the interaction—and these were successfully responded verbally by the student with clauses represented in utterances. Although there are three units of the word, and one phrase, each of these units of language is an elliptical form of speech that the student used in responding to the teacher's initiating utterance. This case related to the fact that the student in this class can interact verbally well—even though he could not focus the contribution to the material being presented.

The student in Class C has similar characteristics to the one in Class B—he is a student with autism with verbal ability. Furthermore, such a student has a good level of mental intelligence. Most of prompting verbal expressions given by the teacher were successfully responded verbally by the student. The prompting material varies greatly from the names of family members, colors, months, teachers at the school, transportation systems, and so on. These stimulating materials were accommodated by four types of utterances, namely *asking*, *stating*, *commanding*, and *prohibiting*. Moreover, the student is also able to give responses in language units that vary from words such as green, red, January, June; phrases for the addressing systems for teachers at school like Pak Bani and Bu Dini to a clause such as *Apa kabar Pak Bani?* “How are you, Pak Bani?”

Most of the language units produced by the student in this interaction are responses to the teacher's questions. Due to his level of mental intelligence, during the learning process, the teacher did not use a lot of non-verbal aspects to support the verbal aspects that were presented to the student. There are only three exchanges that show a combination of verbal and non-verbal aspects. The type of non-verbal action taken by the teacher to support the verbal utterances in these three exchanges is to use his right hand to point to the teacher's chest with verbal provocation. Meanwhile, when the teacher asked *Apa ini?* “What is this?” and *Warnanya apa?* “What color is this?”, he touched the student's clothes for the first question and pointed to the table in front of the student to show the answer for the color. These two combinations of verbal and non verbal languages produce two words, namely *baju* “clothes” and *merah* “red”.

Meanwhile, the student in Class D has the best level of intelligence. The interaction process in his class produces thirty-seven (37) exchanges that showed his mental quality in giving verbal responses to the combination of verbal utterances and non-verbal aspects executed by the teacher. Most of language units produced by the student are in the form of words and there is only one phrase and two clauses. From the domain of the material presented, the verbal units produced by students resulted in words that represent numbers, colors, fruits, and organs of the body. In the learning process, the teacher tried to make the student produce a verbal response for each opening speech he gave. The type of teacher's speech itself can only be classified into three language functions, namely asking, commanding, and inviting. In addition, the teacher also did non-verbal language into two types, namely body movements and facial gestures to support his verbal prompting processes. The combination that was frequently done by the teacher was asking questions along with such a body movement as lifting the student's chin so he could see the teacher's face, or touching the student's stomach by performing facial expressions to prompt language units that became the target of verbal production. This strategy was effective enough in making the student give verbal responses related to the materials that became the target of the learning process. In addition, phrases were produced in a slightly different way. For example, when the teacher showed a toy plane and asked for the color of the object, this combination of non-verbal aspects and verbal aspects made the student respond to the question with a phrase of *pesawat putih* “white plane”. This method could also produce two nominal clauses, *hidungnya satu* “the nose one”, and *sendoknya putih* “the spoon white.” These two clauses appeared after the teacher made the student mention two things in sequence, *hidung* “nose” (the teacher touched his nose and asked *Ini apa?* “what this is?”), or *sendoknya* (the teacher held a spoon and asked *Ini apa?* “What is this?”) and then asking the number for the nose and asking the color for the spoon — so in the end the students managed to say *hidungnya satu* “the nose one” and *sendoknya pink* “the spoon pink.”

IV. RESULT AND DISCUSSION

The teacher-student interaction in each of the four classes shows that all the teachers use a combination of verbal language and non-verbal language in the learning process. There are teachers who maximized their non-verbal behavior to support verbal prompting utterances that are used, as done by teachers in Class A and Class D. In the process of interaction these two teachers tend to stimulate their students to be able to contribute verbally through

verbal prompting utterances only. However, several times the teacher must use non-verbal support, especially when the exploitation of verbal utterances only could not make the students provide verbal responses. When non-verbal behavior is used to help, then the combination of the two modes looks effective in making the students have verbal contribution to the interaction such as in the following example.

Example 1

- Teacher : *OK.. ini?* (pointing to the paper)
berarti berapa? ...
OK..this?
so how many?...
- Student :(no response)
- Teacher : *Tiga....* (providing three fingers to the student)... *tambah dua...*
 (providing two fingers to the student).
Three...
plus two...
- Student :(only looking at the fingers)
- Teacher : *Coba ini.. lihat... ini berapa?* (writing down number 5 on the paper and showing this number to the student)
Try this... look... how many are they?
- Student : *Lima...*
Five
- Teacher : *Hebat.. sekarang tulis lima*
Great.. now write: five
- Student : (writing number 5 on the paper)

The conversation above shows the teacher's strategy when verbal language stimulant is not able to make the student give a verbal response. Such verbal expressions should be supported by non-verbal actions so that the student feels more convenient and easier in trying to do the task—providing verbal responses to the teacher's initiating utterances. The teacher in Class D has maximum effort in exploiting non-verbal mode for the learning process. She also used facial gestures to guide and help her student produce words in good pronunciation.

On the other hand, two teachers in Class B and C are less optimal in performing non-verbal language for the learning process. Only a few gestures were performed by these two teachers, namely pointing objects, raising hands, or holding objects to help students find answers to the questions. Each student in these two classes can produce more diverse linguistic units, from words, phrases and clauses - these verbal expressions are actual responses from students to the encouraging utterances spoken verbally by the teacher. The teacher does not do a combination of verbal utterances and non-verbal actions in producing these verbal expressions. This can be related to the fact that the two students in Class B and C have higher age and mental intelligence compared to students in Class A and D. This mental quality is specifically indicated by the student in Class C who can provide verbal responses to most of teacher's verbal utterances correctly and relevantly, as in the example below.

Example 2.

- Teacher : *Biji padi ditanam dimana?*
Where are rice grains planted?
- Student : *Tidak tau Pak*
I don't know sir.
- Teacher : *Kemana?*
Where to?
- Student : *Cuci tangan pak*
Wash my hands sir.
- Teacher : *Bud, mau apa? Mau tidak?*
Bud, what are doing? Yes or no?
- Student : *Duduk saja pak. Malas aku nulis pak.*
I want to sit sir. I don't want to write sir.

The conversation above shows that student in this class has good mental intelligence, so that he can communicate verbally with the teacher correctly and relevantly. This could be the reason why the teacher did not need to use non-verbal actions to encourage such a student to produce verbal expressions — the teacher only focuses on transferring teaching material to him.

V. CONCLUSION

The four classes observed in this study show two types of modes for learning, namely verbal speech modes and non-verbal action modes used by teachers for students with autism. The focus of the study is more directed at the role of non-verbal actions in helping students produce linguistic units in the learning process. The strategy of combining these two types of modes turned out to be effective in facilitating the students to produce verbal expressions in the learning process, even though the students are also able to produce verbal responses without having to be helped by the non-verbal actions by the teacher. Meanwhile, the linguistic units produced are mostly in the form of words. There are only a few phrases and clauses that students can produce. Only students with high mental intelligence can produce clauses as representations of utterances in interaction with the teachers.

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