Visual Analysis of Autism Works with Symptom Slow Processing Speed Disorder in The Improvement of Communication Response Ability Based on Sensation Methods

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Abstract. This study is a visual analysis of the work of persons with autism with Symptom slow processing speed disorder, which is a disorder in the communication system so that sufferers respond very slowly to communication. Visual work is the result of treatment for a person with autism through drawing activities. The subject is a 20-year-old person with Autism Spectrum Disorder (ASD) with symptoms of low function and slow processing speed disorder. The research objective was to identify the objective correlation between the development of image objects and the pattern of storytelling in relation to the increase in communication response speed using the Sensation Method. The research was conducted at a special educational institution for people with disabilities Art Therapy Center Widyatama Bandung. The research method uses the principle of case studies because autism is a very broad symptom and complex diversity. The case of autistic people with symptoms of low function and slow processing speed disorder is a single case at the Widyatama Art Therapy Center, so special methods and problem-solving are needed. Through the analysis of the work, identified the significance between what is visualized and the increased speed of the subject's communication response. The development of drawing objects is a cognitive aspect, technical drawing with a small brush and water color is a fine motor aspect, and the ability to correlate between objects as storytelling is both a cognitive and affective aspect. These aspects are in line with the increasing ability to complete the task according to instructions. These findings are the basis of a therapeutic system to increase communication speed response for people with autism who have slow processing speed disorder through drawing techniques.

Keywords: Visual, Autism, Slow Processing Speed Disorder, Storytelling , Sensation Methods

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1 Background

This research is based on the author's experience teaching at special educational institutions for people with disabilities at the Widyatama Art Therapy Center (ATC) Bandung. This institution was founded in 2014 with the ability to build a mission and behavioral abilities through Sensation Method-based therapy for people with physical or mental disabilities aged 6-20 years. One mental disability that is handled is autism or autism spectrum disorder (ASD). Each person with autism is known to have different symptoms and problems, the therapeutic needs of each subject are also different. It is known that people with autism are in the functional category who have good intellectual abilities, communication skills, and motor communication. However, this ability is not found in persons with autism in the low function category. ASD with this category was born with a disruption to the speed of information processing so that it takes a long time to respond to communication. When asked to talk, the symptoms shown are generally silent between 20 to 30 seconds, making their own signals by moving their hands, tantrums if they are interrupted because the information is blocked and the subject must start from the beginning to respond to the communication. This symptom is called slow processing speed interference. Impaired processing speed is slowly found in people with ASD who are identified as low functioning or intellectual impairment. However, symptoms and disorders related to speed differ between people with ASD and others. The impaired response rate is related to motor response and communication / verbal response. In the case to be studied, the subject is a person with ASD with symptoms of low functioning accompanied by impaired slow processing speed. Especially in terms of verbal and motor communication responses, this happens because the subject is very slow to process information so that it interferes with physical reflexes and responds to communication. However, the subject did not show any delay in drawing activities. It is interesting to study because there are opportunities for efforts to improve physical reflexes and communication through activities that approach the Sensation Method. The communication sensation method is the author's finding in 2012 as a method for building response abilities in people with autism and has been applied at the Widyatama Bandung Art Therapy Center (ATC).

Research numbers on the problem of increasing the speed of communication response in people with ASD with symptoms of slow processing speed impairment. One of the people with ASD that the author works with is 21 years old, Faiz Muhammad. Subjects are persons with disabilities with symptoms of low functioning and identified impaired communication response process speed or slow processing speed disorders, particularly the ability to respond verbally and motorically.

1.1 Formulation Problem

The formulation of the problem to be solved through this research is:

1. What is the pattern of drawing the subject in technical and conceptual terms?
2. How does the subject recognize each image object and the ability to retell it?

3. Is there any significance between the ability to visualize images with an increase in the speed of responding to communication?

1.2 Purpose and Benefits Study

1. Objective
   Research to analyze the concept and technique of drawing subjects so that there is identified or not a significant correlation between the ability to visualize images and storytelling with an increase in the speed of communication response.
2. Benefit
   The results of the research will be useful for the development of the image-based Sensation Method as a methodical alternative for therapists to treat cases of people with ASD accompanied by slow processing speed disorders in verbal and motor terms.

2 Literature Review

Sensation Method is the previous study conducted by writer for dissertation in 2012 that effectively build a stimulus for person with autistic to respond a communication. This method has applied in educational system at the Art Therapy Center Widyatama since 2014. Through this system, Faiz Muhammad as the therapy subject has proven improving his communication response speed. By analyzing the subject's drawing concept and technique, it will identify whether there is significant correlation between visualizing object and storytelling with the improvement of responding speed, specifically for student with ASD who who have symptom slow processing speed disorder.

2.1 Previous Study

The research carried out is the development of the Sensation Method which was previously discovered. The application of the Sensation Method at the Widyatama Art Therapy Center has been proven to be effective in building communication responses in accordance with learning or therapeutic goals.

Sensation Method is an alternative learning method that was found in 2012. It studied the sensitiveness of specifically children with autism to visual, audio or sound, movement and used it as the mediator to develop the ability in responding to communication through the creative process. The sensitivity of children with autism to visuals, sounds or movement is the most natural, acquired thing through five senses or sensory from incident everyday in the environment subject [1].

The Sensation Method begins with recognizing the natural stimulus in the subject. If the stimulus is right, then the stimulus formation can be designed correctly. According to the character of the subject, sensitive to audio or visual. For this reason, the steps of the Sensation Method in building a communication response are as follows:

A. Identify the subject's sensory sensitivity to auditive or visual matters.

B. Learning Area: Identify the subject's natural stimulus; movies, commercials, sound and so on. The natural stimulus is the basis for building a formation stimulus. Both are collaborated into a learning process. In the case of this study, the image object becomes the stimulus media formation. Drawing the appearance of the object while mentioning the name of the object is intended to build the subject's communication response and cognition, not knowing becomes knowing.

C. Communication Area: Identify internal and external communication by identifying its elements. These elements include internal communication and external communication.

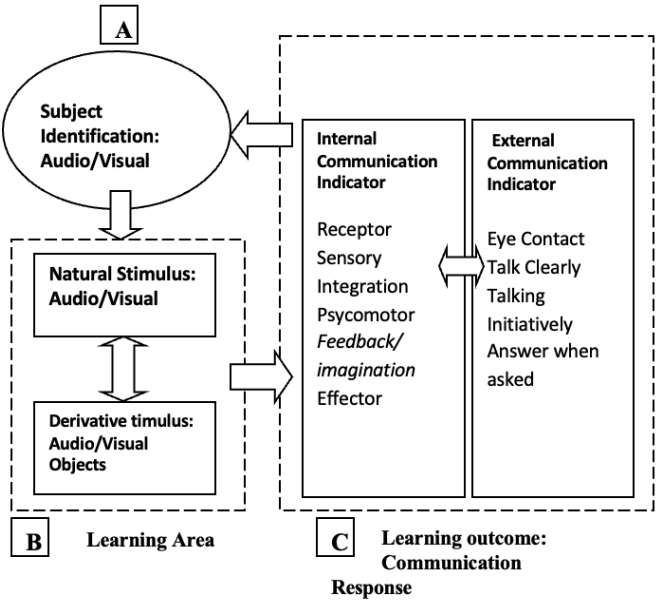


Fig. 1. Method Sensation and Response Communication [1]

Sensation method can be applied to various cases, in this research aimed at building a communication response. So the implementation strategy is to design a learning area [A] and a learning objective area [B]. The application of the Sensation Method to people with ASD with symptoms of slow processing speed disorder aims to build the ability to respond quickly to communication.

“Processing speed is the time it takes for us to take in information, make sense of it, and respond. The information can be visual, verbal, or motor. Another way to define it is to say it's the time required to perform an intellectual task or the amount of work that can be completed within a certain period of time” [2].

Braaten further stated that slow processing speed disorders are not always related to intelligence capabilities. There are several aspects that influence, among others, the culture of human life which always places speed as a measure of human intelligence. That is, the problem of speed as a nuisance can be renewed through special activities.

Faiz Muhammad's visual works as objects in this study can be used as a benchmark for the significance of the relationship between the goals of therapy based on the Sensation Method and the increase in the speed of his communication response. Visual in the form of images is understood as non-verbal communication, not just a composition of shapes or colors, but there is meaning in it. Indonesian creativity expert Primadi Tabrani [3] stated that pictures contain meaningful stories, so this meaning needs to be identified in relation to research objectives, namely whether or not there is a significant correlation between the ability to visualize images and storytelling by increasing the speed of subject communication responses.

Story telling is known as a therapeutic approach with the aim of exploring human thought and memory in a personal context. Tara Rooney, Katrina Lawlor and Eddie Rohan in a journal entitled Telling Tells: Story Telling as a Methodological Research [4]. The phrase 'Once Upon a Time' opens the mind and the imagination to infinite possibilities. Stories have always permeated every fabric of human society [5]. Warner [6] refers to this as the Ocean of Story which has been encircled us since the beginning of time. They are a universal language loaded with symbolism and significance which allows us to unravel the mysteries of the world in which we live.

The deepening of visual meaning can be done through story telling by exploring the subject's daily experiences as a basis for work.Practically, they provide a framework through which we can investigate experience [7]

2.2 Slow Processing Speed Disorders

Slow Processing Speed Disorder is not a formal learning disability, but it can be a problem with learning and attention for people with dyslexia, attention deficit disorder (ADHD or ADD), dysgraphia, dyscalculia, and auditory processing disorders. The time to respond to someone to the communication delivered by other people will be different from one another. Likewise Faiz Muhammad, in the process of communicating it takes longer to respond to instructions even though the subject has understood them. The time to respond is a result of something called processing speed.

In the conclusion of his research, Rommelse, et al. [8] concluded that slow processing disorder is a cognitively relevant measure of clinical cross-disorder, which requires further research. Depending on the demands of the task, a person with slow processing speed disorder may in some cases, be visibly capable of exhibiting dynamic intelligence. It is hoped that this consideration will help guide further research to gain more insight into genetics and neural mechanisms related to poor functioning in people with slow processing speed disorder. It is suggested to develop research to accommodate these children during their learning process using models that can facilitate the learning process.

3 Research Method

This study will use the symbolic interaction method as a qualitative research method. A qualitative approach is to support a research and understanding process based on a methodology that investigates a social phenomenon and human problems. Bogdan and Taylor ([9], stated that qualitative methodology is a research procedure that produces descriptive data in the form of written words as well as from observed people and behaviors.

The methodological approach in this research is a phenomenological approach, according to Creswell [10] symbolic interaction is one of the models. In the symbolic interaction model, it is assumed that objects, situations, and events do not have their own meaning, feelings on it are given to them.

The research phase according to the symbolic interaction method approach will be carried out in several stages of work, namely:

1. Preparation
   This stage begins with examining the existing problems and then conducting a literature study on similar research that has been conducted. In addition, data collection was carried out in the form of images by Faiz Muhammad for the 2017-2019 period.
2. Implementation
   This stage begins with creating a visual analysis mechanism in the form of images by Faiz Muhammad for the 2017-2019 period which consists of works at the beginning of therapy, the therapy process and the end of the therapy period. The scope of therapy uses the sensation method which includes:

   ∞ Initial application of therapy: visual assessment, analysis of the subject's natural stimulus
   ∞ Learning plan as a stimulus is formed as a basis for the therapy process

3. Data Analysis
   The data from the test results were analyzed in order to obtain a conclusion regarding the relationship between visual variables and technical drawing of the results of therapy activities on the subject. existing in this study to determine the effect of giving a treatment or treatment of research subjects. Items analyzed include:

- ∞ Cognitive: the ability to understand instructions, the development of drawing objects and the mention of these objects, the ability to correlate between drawing objects to be contextual in a story telling format.
- ∞ Affective: tolerate instructions and changes in the drawing system or formation stimulus.
- ∞ Psychomotor: Development of speed in carrying out drawing instructions as part of therapy.

4. Testing and Evaluation of Results
   This stage begins with conducting material testing in the form of images resulting from the 2017-2019 therapy process by creating a symbolic interaction analysis mechanism. The symbolic interaction research model used in the research relates to the data and findings obtained based on the interpretation of the drawing. The author's interpretation is used to find meaning and statements about how to draw, categories and similar primary data. The accuracy of the data is obtained from below in the form of primary data obtained directly from the source. The data obtained in the study were then analyzed interactively during the process and after the research took place. The data analyzed interactively is adjusted to the theme studied with the aim of finding concepts or theories that are arranged inductively.

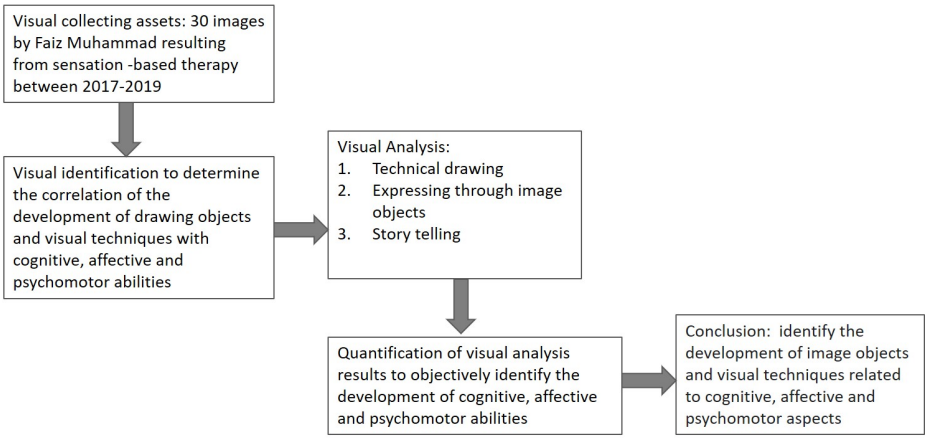


Fig. 2. Research Design

4 Visual Analysis

This chapter will analyze the process of drawing by Faiz Muhammad as a research subject identified as autistic with a slow processing speed disorder. Images are works produced as outputs of therapy programs that aim to improve cognitive, affective, and psychomotor abilities. The visual analysis includes:

∞ Technical drawing (visual way)
∞ Organize through image objects
∞ Storytelling

Storytelling involves a two-way interaction between Faiz and one or more listeners. The responses of the listeners influence the telling of the story. In fact, storytelling emerges from the interaction and cooperative, coordinated efforts of subject and audience.

Table 1. Faiz's Work in The Second Regular Class

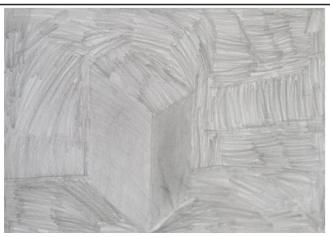
Meeting 2 (LPK)	Visual Analysis		
Date: Friday/24 November 2017 Theme: Drawing straight line forming rectangle	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Understanding square objects Do not understand middle composition Lines are inconsistent in direction and pressure	Tolerance of doing tasks according to instructions	The use of pencils is still not well coordinated Working time 3 x 60 minutes Black and white pencil

Table 2. Faiz's Work in The Third Regular Class

Meeting 3 (LPK)	Visual Analysis		
Date: Friday/8 December 2017 Theme: Drawing Leaves	Cognitive	Affective	Psychomotor: Drawing duration and technique
	It is difficult to interpret the shape of the leaves Understanding composition Lines are inconsistent in direction and pressure	Tolerance of doing tasks according to instructions Complained about being slower than others	The use of pencils is still not well coordinated Working time 3 x 60 minutes 1 object on A3 drawing paper Colored pencils

The image in which the subject appears does not conform to the given line. Faiz has difficulty making flat shapes, inconsistent lines, thin colors, and doesn't understand the composition. To draw this, Faiz needed 3 hours and special attention from the teacher.

Table 3. Faiz's Work in The 5th Regular Class

Meeting 5 (LPK)	Visual Analysis		
Date: Friday/8 December 2017 Theme: Drawing Mango	Cognitive	Affective	Psychomotor: Drawing duration and technique
	It is difficult to interpret the shape of the mango fruit Understanding composition Inconsistent line direction and pressure, thin color	Tolerance of doing tasks according to instructions Complained about being slower than others	The use of pencils is still not well coordinated Working time 3 x 60 minutes 1 object on A3 drawing paper Colored pencils

Table 4. Faiz's Work in The Second Therapy Activities

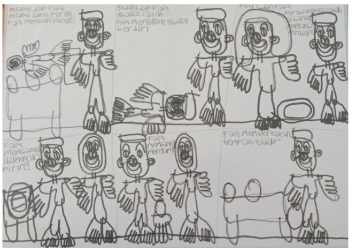
Meeting 2 Special Treatment Natural Stimulus: Object	Visual Analysis		
Date: Friday/8 December 2017 Theme: Drawing Human	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Interpretation of human objects: Hands, feet and body Don't understand composition The line is not consistent in direction and pressure The color is thin, the image object is still large	Tolerance of doing tasks according to instructions Liking human objects because of natural stimulus	The use of pencils is still not well coordinated Working time 2 x 60 minutes 1 object on A3 drawing paper Colored pencils

Table 5. Faiz's Work in The Third Therapy Activities

Meeting 3 Special Treatment Natural Stimulus: Human Object	Visual Analysis		
Date: Monday, 12 February 2018 Theme: Learning Social Concept	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Interpretation of human objects: Hands, feet and body Get to know the concept of symmetry The lines are not consistent in one direction and the pressure is thin	Tolerance of doing tasks according to instructions Liking human objects because of natural stimulus Formed Stimulus: Recognize social concepts	The use of pencils is still not well coordinated Working time 2 x 60 minutes 4 objects on A3 drawing paper Colored pencils

The picture tells about the topic of mother and family, which consists of father, mother, brother, and Faiz. The drawing technique uses a drawing tool that is easy to use and is able to clarify the drawing object, namely colored pencils. A3 paper image media, without using an eraser as a goal to build self-confidence.

Table 6. Faiz's Work in The Seventh Therapy Activities

Meeting 7 Special Treatment Natural Stimulus: Women Object	Visual Analysis		
Date: Wednesday, 28 February 2018 Theme: Learning social concept, helping people and story telling	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Interpretation of human objects: Hands, feet and body Understand the concept of reading direction left to right Inconsistent line direction and pressure, thin color Given each object, the storyline with a scene by scene system	Tolerance of doing tasks according to instructions Liking human objects because of natural stimuli Formed Stimulus: Recognize the concept of mutual help	The use of pencils is still not well coordinated Working time 2 x 50 minutes 11 human objects on A3 drawing paper Pencil, black and white

In the next stage, the subject discusses drawing human objects with different themes according to their social scope. For example, drawing humans who have to respect each other, social rules, as well as form stimuli in the form of imaginative object images.

Table 7. Faiz's Work in The 38th Therapy Activities

Meeting 38 : Special Treatment Formulative Stimulus: Drawing as informative media	Visual Analysis		
Date: Wednesday, 28 July 2018	Cognitive	Affective	Psychomotor: Drawing duration and technique
Theme: Warna-Warna Exhibition with Andien Aisyah, 28 August-9 September 2018			
	Interpretation of images as a medium of information Understand the concept of images and text The lines are consistent in direction and pressure, the colors are clear and neat	Tolerance of doing tasks according to instructions Formed Stimulus: Tells about the experience of participating in an exhibition Tells each object voluntarily	Drawing is faster, fine motor is more controlled Working time 1 x 45 minutes Human object and writing A3 drawing paper & markers Before drawing, write down the story of the exhibition experience

To practice his fine motor control skills, the subject uses watercolors and the smallest brush size 00 This encourages other abilities, namely patience, tolerance, and speed at work.

Fig. 3. This Image Was Created Using Watercolor and Brush Size 00. The Author Gives An Example First Followed By Faiz

Table 8. Faiz's Drawing with An Imaginative Theme as A Visual Asset for Calendar Creation

Meeting 38 : Special Treatment Formulative Stimulus: Sport	Visual Analysis		
Date: Wednesday, 17 November 2018 Theme: Thematic drawing for 2019 Calendar	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Object interpretation: various sports activities (cycling) Understand the concept of drawing custom themes The lines are consistent in direction and pressure, the colors are clear and neat	Tolerance of doing tasks according to instructions Stimulus formation: various sports Tells each object voluntarily	Drawing is faster, fine motor is more controlled Processing time 1 x 30 minutes / image 2 pictures of sports objects (cycling and rowing) A4 drawing paper & markers Before drawing, write down stories about cycling and rowing

Tables 8 shows the development of Faiz abilities in technical terms which identify fine psychomotor skills, speed in processing, object images and narrative completeness.

Table 9. Faiz's Drawing with An Imaginative Theme as A Visual Asset for Calendar Creation

Meeting 38 : Special Treatment Formulative Stimulus: Sport	Visual Analysis		
Date: Wednesday, 17 November 2018 Theme: Thematic drawing for 2019 Calendar	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Object interpretation: various sports activities (cycling) Understand the concept of drawing custom themes The lines are consistent in direction and pressure, the colors are clear and neat	Tolerance of doing tasks according to instructions Stimulus formation: various sports Tells each object voluntarily	Drawing is faster, fine motor is more controlled Processing time 1 x 30 minutes / image 2 pictures of sports objects (cycling and rowing) A4 drawing paper & markers Before drawing, write down stories about cycling and rowing

Table 10. Faiz's Drawing with An Imaginative Theme as A Visual Asset for Calendar Creation

Meeting 47 : Special Treatment Formulative Stimulus: Drawing Cows	Visual Analysis		
Date: Wednesday, 22 November 2018 Theme: Get to know the concept of drawing a cows from various directions	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Interpretation of cow objects: body, head, legs, tail, horns Understand the concept of drawing multiple directions The lines are consistent in direction and pressure, the colors are thin but clear and neat	Tolerance of doing tasks according to instructions Formed Stimulus: Tells about the experience of seeing a cow Tells each object voluntarily	Drawing is faster, fine motor is more controlled Working time 1 x 45 minutes 8 Cow objects with circular shapes in various directions A3 drawing paper & markers Before drawing, write down the experience of seeing a cow

Table 11. Faiz's Drawing with An Imaginative Theme as A Visual Asset for Calendar Creation

Meeting 48 : Special Treatment Formulative Stimulus: Drawing Horses	Visual Analysis		
Date: Wednesday, 26 November 2018 Theme: Get to know the concept of drawing a horse from various directions	Cognitive	Affective	Psychomotor: Drawing duration and technique
	Interpretation of horse objects: body, head, legs, tail, mane Understand the concept of drawing multiple directions The lines are consistent in direction and pressure, the colors are thin but clear and neat	Tolerance of doing tasks according to instructions Formed Stimulus: Describes the experience of seeing a horse Tells each object voluntarily	Drawing is faster, fine motor is more controlled Working time 1 x 30 minutes 8 horse objects from different directions A3 drawing paper & markers Before drawing, write down the experience of seeing horses

5 Conclusion

Faiz Muhammad is an individual with dominant characteristics of the right brain, visual as a natural stimulus is shown by his tolerance in carrying out the given drawing task. The object presented is not to show beauty but with the aim of telling what it deems

important to tell. This is a reaction from the natural stimulus, so that the visual approach as a formed stimulus is the right step for the subject. Through the sensation method formula, the therapeutic steps for Faiz as an autistic person accompanied by a slow processing speed disorder are designed as follows:

The purpose of learning through the Sensation Method for Faiz Muhammad as a research subject begins with recognizing his natural stimulus, namely things that are visual or images with story content including the subject's experience with his mother. The stimulus formation is designed according to the character of the subject who is sensitive to these two aspects. For this reason, the steps of the Sensation Method in building a verbal communication response for the subject are as follows:

- Natural Stimulus: drawing with stories from experiences with mother.
- Formation Stimulus: development of drawing objects, building understanding of correlations between objects into stories, increasing fine motor responses
- Learning Area: Identify the subject's natural stimulus; in the form of drawing activities with stories of experiences with mothers to build a stimulus for formation. Both are collaborated into a learning process. In the case of this study, the image object becomes the stimulus media formation. Drawing the appearance of the object while mentioning the name of the object is intended to build a response and increase the speed of answering and the subject's cognition does not know to know.
- Communication Area: Identify internal and external communication by identifying its elements. These elements include internal communication and external communication.

Referring to the presentation of the visual analysis by Faiz Muhammad, in the period November 2017 - November 2018, he can reject the following:

- Increased cognitive ability improvement in the form of developing objects to draw from the character of one character, namely his mother, to several figures that are still related to events with his mother, as well as other drawing objects such as animals or plants.
- Another cognitive ability is the ability of the subject to retell what has been written and drawn through technical storytelling. This relates to the subject's ability to remember (long-term memory).
- The speed of completing the task increases between 30-60 minutes.
- More controlled fine motor skills, with the ability to draw objects that are smaller than before.
- In general, an increase in cognitive, affective and fine motor enhancement correlates with an increase in the subject's ability to work. In this case, it can be shown that there is a significance between the ability to visualize images and an increase in communication response speed.
- Research cases in persons with autism who are equipped with a slow processing speed disorder are rare. It is necessary to apply the sensation method as therapy in cases that occur so that the analysis can be compared to obtain a more objective answer.

Research cases on autistic people accompanied by slow processing speed disorder are rare. It is necessary to identify the application of the sensation method as a therapeutic step in similar cases, so that the analyzes can be compared to obtain a more objective answer.

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