

The Influence the Picture Exchange Communication System Method toward The Communication Ability of Autistic Child

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Abstract: Children with autism have some very complex developmental disorders including communication, social interaction, emotions, and interest in certain behaviors. They need certain tools and methods for developing communication and language skills, especially in speaking skills. One of the methods is the Picture Exchange Communication System method. This research was conducted by using the Single Subject Research method with A-B-A design. Data collection was conducted in 20 sessions. The results of this study indicated that the effect of PECS method towards communication ability of children with autism. This was evidenced by an overlap percentage of 0%. The conclusion showed that PECS method has an effect towards the communication ability of autistic children

Keywords: picture exchange communication system, communication skill, autistic children

INTRODUCTION

Children with the special need are children with the special character which are different from other children in general, for example, show the disability of mental, emotional physical condition. Children with special need are called special children. According to Mangunsong (1998), special children are children but significantly different is some important dimension from humanity function. It's in line with Efendi (2008), children with a disability or special children are children that have disabilities or disorder from average children in general in physical, mental and social aspect so their potential development needs special education in accordance with their characteristic.

Children with autism are easy to learn something with visual technique more than verbal technique or verbal instruction. One of the visual methods that can help children with autism in communication is PECS. PECS is a method that used for developing communication of children with autism with exchange the picture to good desire in accordance with the picture.

The effort to develop communication skills by training children to talk continue to be done. Though practicing speaking alone is not necessarily appropriate, because just practicing speaking means only training one aspect of communication. Heryati & Ratnengsih (2017). Speech skills are important in learning but actually more important is understanding the language and the ability to communicate both ways. The autistic child's communication skills can be developed because they still have the potential to communicate for example through gestures or with visuals.

Learning process of children with autism has

a characteristic of learning is easy to understand and remember the various things in touch (visual learner or visual thinking) , easy to understand various things he is a natural (hands-on learner) therefore the use of tools using visual strategies (visual aids) can be used in teaching communication skills (Septiari *et al.*, 2015). One visual strategy that can be used in helping autistic children communicate is by using PECS media through structured learning methods.

Based on the above explanation, it can be understood that to apply children's learning autism needs the right method because children with autism have difficulty in understanding the implied meaning. Therefore, the process of communication with children with autism should be pursued concretely. The use of visual aids (visual support) will also help the process of expressive and receptive communication. Visual aids are the medium used to show what is expected in a child. For example: when you say food, an autistic child is given a picture of food, so the child can easily understand that is talking about food. Visual aids can be images, photos, objects, lists, posts (instruction sentences) or anything that can display information visually.

The PECS method is part of the AAC method (Alternative, Augmentative Communication). AAC is a special system to support communication, by utilizing services and devices, such as visual symbols, signs, images or word cards, or sound output devices to supplement or replace (serve as an alternative) communication method. One of the simplest forms of this ACC is the PECS method. According to Wiwit verbal symbols that used to train communication through an approach is named with PECS (Wiwit, 2014).

The PECS method was developed to overcome the limitations of communication such as autism by giving images to others. The basic prerequisites needed to apply this PECS method are eye contact, hearing, and compliance. Because of this if not trained it will inhibit to more quickly obtain the functional communication system (Bondy & Frost, 2011). The supporting research, who conducted research with the PECS method. The results show that autistic children trained using the PECS method of verbal ability are more likely to increase (Maisaro, 2015)

Autism has the obstacle in socialize learning with their surrounding that cause some impacts, one of the children communication difficulties of children with autism is the method needed to help children by showing what they want. Children with autism have difficulty making eye contact so as to give the impression of not caring about others around him. The main disorder of an autistic child is in terms of communication, often repeating words (echolalia), and performing actions that are always the same, routine, in certain patterns and regularly. If his activities are obstacles or changes, he will behave strangely and shout, walk around, kicking or bang his head against the wall. This condition also often occurs when the child is tense, happy, or in a strange place (Abdurrachman & Sudjadi, 1994).

Based on this problem, children need an aids and special method to develop communication and language skill, especially in speaking skill. Base on children's communication skill problem, we need a method to resolve this. One of the methods to develop the speaking skill and communication ability is PECS that is expected can help increase communication ability children with autism in SLB Autism Laboratorium University of Malang.

METHOD

The method used in this research is the experimental method with the design of Single Subject Research (SSR), research conducted on one subject repeatedly within a certain period of time. The research design used in this study used ABA design. The ABA design is a research design whose data processing is used to investigate changes in target behavior where (A1) is baseline, B is an intervention, and (A2) is the second baseline. In the early stages, the target behavior is measured sustainably at a baseline condition (A1) with a certain period of time than under the intervention condition (B). The addition of this second baseline condition (A2) as a control for the intervention phase is possible to draw the conclusion of the functional relationship between independent

variables and variable dependent kat (Sunanto *et al.*, 2006).

The design of communication skills study in autistic children was conducted for 20 sessions. The baseline-1 condition (A1) was conducted for 6 sessions, the intervention condition (B) was 8 sessions, and the last at baseline-2 (A2) was conducted for 6 sessions.

This research uses two types of variables: dependent variable and independent variable. The dependent variable in this research is to increase communication skills in children with autism indicated by the score after the intervention while the independent variables are the method of Picture Exchange Communication System (PECS)

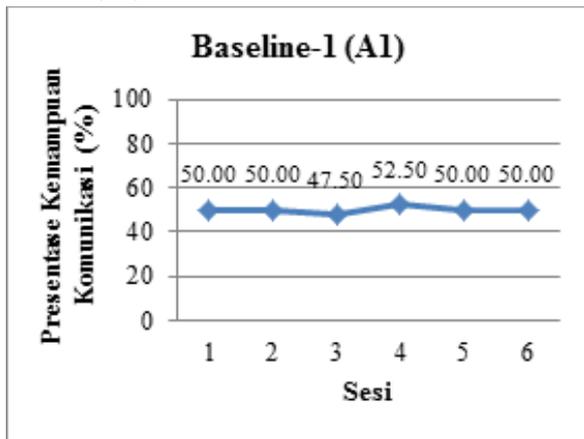
The subject of the researcher is a class I student SLB Autism SLB Autism Laboratorium University of Malang which has characteristics of children with autism. The research data is derived from the acquisition of students' communication skills measured through an observation sheet validated by expert judges and test trials.

Media validation is done by media expert validator namely lecturer of Department of Special Education, Faculty of Education, State University of Malang and validator of material expert that is the teacher of class 1 SLB Autism Laboratorium University of Malang. This data is included in the quantitative data.

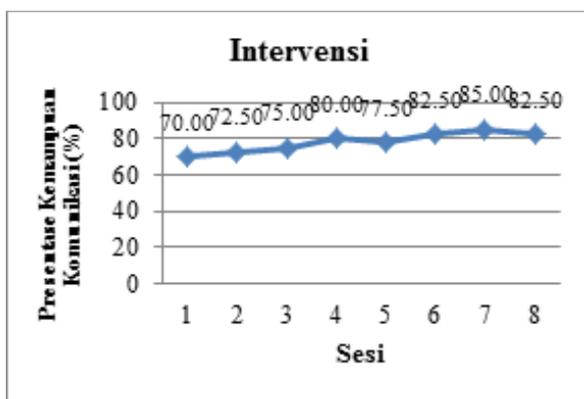
This data is calculated using the rule mus adapted from (Akbar, 2013), while the product validation analysis also uses the criteria of appraisal and validation levels that are adapted from (Akbar, 2013). Validity that used in this research is content validation with expert judgment techniques (judgment). This validation is used experts in media who is the lecture and teacher practitioner. The instrument that is used is the effectiveness of media checklist paper. In checklist paper, the statements are about media appropriateness that will be used in the next intervention. Score that is gotten after validation will be measured using the Likert scale. According to Sugiyono (2015), explains that a Likert scale used to measure attitudes, opinions, and perceptions of someone or group about social phenomena.

In this study data analysis using simple statistical descriptive analysis techniques and methods of visual analysis. Analysis. Descriptive statistics are visual analysis consisting of analysis in condition and analysis between conditions because research with the single subject is more focused on individual data than the group. The visual analysis method is to observe the data presented in the line graph.

Graph 1. Baseline-1 Condition Measurement Results (A1) Autistic Child Communication Skill



Graph 2. Intervention Condition Measurement Results (B) Autistic Child Communication Skills



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When starting to analyze changes in data between conditions, stable data must precede the conditions to be analyzed (Sunanto *et al.*, 2006). This is because if baseline data is unstable it will be difficult to interpret the influence of intervention on the dependent variable. In addition to the stability aspect there is or not the effect of the intervention on the dependent variable also depends on the aspect of rate change, the magnitude of the distance that occurs between the two conditions being analyzed.

FINDINGS AND DISCUSSION

Findings

The first step taken in the data collection is to measure the initial ability of subjects in communication skills before being given intervention. Measurements at baseline-1 (A1) condition were carried out from February 26, 2018, to March 5, 2018. Measurements were conducted for 6 sessions with a period of 45 minutes/session. This measurement is done before the child gets the PECS method.

Based on graph data 1 shows the results of baseline-1 (A1) condition of communication ability of autistic children class 1 SDLB in SLB Autism Laboratory UM which is described with the blue line graph. The graph above shows the highest percentage getting 52.50% results in the 4th session. Then the lowest percentage is 47.50% in the 3rd session. The graph illustrates the child's communication skills before being given treatment or intervention. Here are one documentation of the implementation of baseline-1 (A1) measurements of children with autism grade 1 SDLB at SLB Autism Laboratory UM:

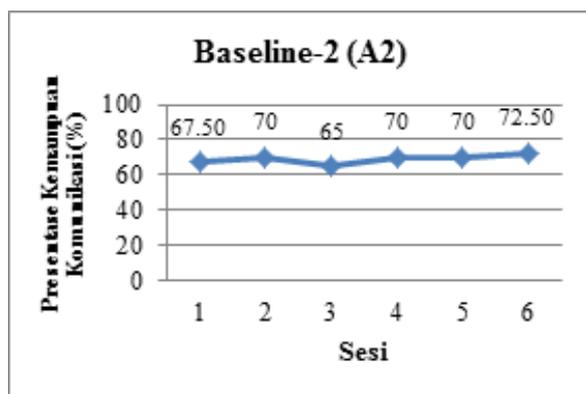
Measurements under intervention conditions (B) are carried out from March 7, 2018 - March 20, 2018. This condition is conducted for 8 sessions over a period of 45 minutes/session. At intervention condition (B) the child receives intervention PECS method. This measurement is done after the subjects receive PECS method intervention.

Based on the graph 2 shows the results of intervention measurement (B) communication skills of children with autism class 1 SDLB described by the blue line graph. The graph above shows the highest percentage gets 82,50% percentage at the 6th session and 8th session. The lowest percentage in this condition is 70.00% in session 1. The graph illustrates the child's communication skills when given treatment or intervention.

The following is one of the documentation of the implementation of measurement of intervention condition (B) of 1st grade autistic child of SDLB at SLB UM Laboratory.

Measurements at baseline-2 (A2) conditions are conducted from March 21, 2018 - March 29, 2018. This condition is conducted for 8 sessions with a 45 minute/session time period. At condition of baseline-2 (A2), in this condition the subject is not given any intervention at all. This condition is used to evaluate the effect of the intervention that the researcher has given on the subject.

Graph 3. Outcome Measurement of Baseline-2 Conditions (A2) Autistic Child Communication Skills



Based on graph 3, shows the results of baseline-2 (A2) condition of communication ability of children with autism class 1 SDLB depicted with the blue line graph. The graph above shows the highest percentage gets a percentage of 72.50% in session 6. The lowest percentage in this condition was 67.50% in session 1. The graph illustrates the child's communication skills after being given treatment or intervention.

Here is one documentation of the implementation of baseline-2 (A2) measurements of children with autism grade 1 SDLB at SLB UM Laboratory.

Discussion

Communication skills before being given intervention in the form of a Picture Exchange Communication System (PECS) method is relatively lower than after being given intervention. In this condition, the child is still difficulty in responding to instructions given by the communicator. Compliance and eye contact is also very lacking. Furthermore, children also have difficulty in mentioning objects that are around them, such as stationery, objects in the classroom, provision of food and drinks they bring. Students also do not understand the purpose of the communicator who asks the child to take a picture card object in the communication book and submit the image to the communicator. When children are given the objects they want, they tend to seize them when the communicator trades the original with the image.

In this condition, the average score of 50.00% of the ability of communication (estimated level) with the estimation of the horizontal trend, but the range of autism communication ability score is low, so the score increase is not conspicuous. The tendency for stability in the baseline-1 phase of communication ability indicates 100% which means that the data is stable. In addition, traces of communication capabilities data at the baseline-1 phase are horizontal because the initial

data scores and the final data scores at the baseline-1 phase are the same, but the increase in the range of scores obtained is low. Level of communication ability change in baseline-1 phase shows score = 0 which means no change because the first-day score obtained 50.00% then for the last day score also obtained 50.00%. Therefore, from the analysis it can be concluded that the results of the study at the baseline-1 phase (A1) indicate the communication ability of autistic children still shows a low score, although the estimation of the horizontal tendency so that the subject still needs intervention to improve communication skills.

In some previous researches such as PECS method has been used in research thesis entitled "Effectiveness of PECS Method (Picture Exchange Communication System) Phase I-IV Against Ability Express Communications In Autism Children Class 1 SDLB in Special School Negeri 1 Bantul". The results of the study are stated that there is an increase in the expressive communication ability of children with autism class 1 SDLB in SLB Negeri 1 Bantul (Wiwahani, 2015). The results are evidenced by the effectiveness of the PECS method shown by increasing test scores from baseline to intervention conditions. At the baseline condition, the score of performance ability test of expressive communication ability is 21% and at intervention condition 67% so the mean increase of 46%. The data is supported by a 0% overlap percentage indicating that this method is effective against expressive communication capabilities.

There is the similarity in the research conducted by Wiwahani (2015) with the research to be conducted by the researcher, both of which use the PECS method as the method of giving intervention or treatment. Both are also researching communication skills in children with autism. However, the two studies also differed, in which the previous study was conducted using SSR method with AB design that is examining the effectiveness of PECS method on expressive communication ability in one grade 1 SDLB autopsy in SLBN 1 Bantul, while the research will be conducted by researchers using the method of SSR with ABA design is to examine the influence of PECS method of communication ability of autistic children in SLB Laboratorium UM.

Putranto (2015) states, "Children with autism are easier to learn by seeing (visual learner/thinkers). Therefore, children with autism disorder can be treated by developing a method of learning through images. One example of this method is the PECS (Picture Exchange Communication System) method ". In principle, visual therapy is done to hone the child's brain to be more optimal in absorbing information and learning messages.

The results of data collection in the intervention condition (B) show an increase, as indicated by the data analysis calculation under conditions under

intervention (B) with mean level of 77.50%, the condition of estimated uptrend direction, data trace estimate increased due to score which is obtained stable and increasing, and the level of change shows positive data (+) of +12.50 which means the subject has increased communication ability.

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The child's communication skills increase after being given interventions using the PECS method from phase 1 to phase 6. As the ability of eye contact and obedience of the child when given the instruction also increases, responds by raising the hand when called, responding to instructions ("see", "see this"), responds to the "hand-folded" instruction by folding his hands on the table, being able to select objects as desired and passing them on to the communicator when the communicator asks for the object (phase 1), able to take the desired picture card in a communist book and hand over a picture card (Phase 3), able to arrange sentence strips using multi-word and image objects (phase 4), able to request the desired object with the use of phrase multi-word "I want, I see etc .." next child took picture the desired object and placed to the right of the phrase symbol multi-word (phase 5), and able to spontaneously ask for the desired object and can answer the question "what do you want?" or "what do you want?" using the image (phase 6).

Condition after the intervention is baseline-2 (A2) condition, this condition is done to know how big influence of intervention (B) to research subject or this condition can be called with the control condition. Changes in conditions from intervention condition (B) to baseline-2 (A2) condition decreased. However, at the final baseline condition (A2) the scores obtained improved compared to baseline conditions (A1). This is indicated by the acquisition of a mean score of 69.16%.

In addition, the estimated condition of the baseline-2 direction (A2) direction tendency indicates improvement when compared to baseline-1 (A1), the estimated trace data increases because the communication ability score obtained stable increases, and the change rate indicates +7.50 which means the subjects experience increased communication ability by 7.50%. Of the 8 interventions given, there was a significant influence, seen from the baseline-1 (A1) value of 50.00% and the baseline-2 average value of 69.16%. The use of PECS methods for communication skills

is supported by previous research by (Maisaro, 2015) stating that there is the influence of the use of PECS method to improve the communication ability of children with autism.

Other research is done by Heryati & Ratnengsih (2017) about the use of method (Picture Exchange Communication System) PECS to improve the communication ability of autistic children in SLB Autism Mutiara Hati Mojokerto. The results of this study describe the results of the analysis and discussion that there is a change in the mean value of learning on the speech and communication skills of the special needs of autistic students from the average pre-test score of 48.7 before being given intervention by using Picture Exchange Communication System (PECS) to 70.2 on average post-test or after being given intervention using Picture Exchange Communication System (PECS).

Research Effect Picture Exchange Communication System (PECS) method of communication ability of autistic children in SLB Autism Laboratory of UM shows that PECS method used can improve communication ability of autistic children. This condition shows communication ability score at baseline-1 (A1) ranged from 47.50% to 52.50%. Meanwhile, a significant increase in scores was shown during the intervention condition (B) of 70.00% to 82.50%, then for the baseline-2 control phase (A2), the communication ability score became 65.00% to 72.50%. A change in the level of intervention (B) to baseline-1 (A1) of +20.00 means that there is an increase in the score from baseline-1 (A1) to intervention (B). In the results of this study, the overlap of intervention to baseline-1 (A1) shows 0% results means that the intervention of Picture Exchange Communication System (PECS) method has a good influence on the communication skills of children with autism.

In general, communication skills show an increase in scores when given intervention and after the intervention, but there is a decrease in the score in that phase. One of the conditions causing the decline is the less supportive condition at the time of the intervention. These circumstances include the circumstances when the subject of HN gets interruption or distraction from the outdoor environment or from home has experienced bad mood which during the implementation of the intervention to the HN subjects. The autistic child's communication skills can be improved through several methods appropriate to the child's condition. This is because the characteristics of children with autism vary between individual characteristics with one another. Therefore, teachers should have many learning references to optimize the child's communication skills with various methods. In this study PECS method is one form of the method chosen as a method to improve communication skills in children with autism.

Based on the opinion expressed by Kurniawan *et al.* (2016) that autistic children are easier to learn something using visual techniques rather than verbal or verbal instructions. One of the visual methods that can help children with autism in communicating is PECS. PECS is a method used to develop autistic child communication by using that is by swapping the image with the desired object according to the picture. So it can be understood that to apply children's learning autism needs the right method because children with autism have difficulty in understanding the meaning implied. Therefore, the process of communication with children with autism should be pursued concretely. The use of visual aids (visual support) will also help the process of expressive and receptive communication. Visual aids are the medium used to show what is expected in a child. For example: when you say food, an autistic child is given a picture of food, so the child can easily understand that is talking about food. Visual aids can be images, photos, objects, lists, posts (instruction sentences) or anything that can display information visually.

CONCLUSION

Attempts to develop communication skills by training children to talk continue. Though practicing speaking alone is not necessarily appropriate, because just practicing speaking means only training one aspect of communication. Speech skills are important in learning but actually more important is understanding the language and the ability to communicate both ways. The autistic child's communication skills can be developed because they still have the potential to communicate for example through gestures or with visuals.

The communication skills before being given intervention are lower than the communication skills after an intervention. The ability of communication after the intervention of the Picture Exchange Communication System (PECS) method has improved compared to the previous baseline condition. Methods Picture Exchange Communication System (Pecs) affects the communication skills of children with autism. This is indicated from the acquisition of overlap percentage results from intervention to baseline-1 (A1) of 0%, meaning that there is no overlap of intervention data at baseline-1 phase (A1) so it can be concluded that the intervention influences the target behavior.

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