

## Applied behavior analysis (ABA) on the emotional development of autistic children



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### ABSTRACT

The development of autistic children both physically, emotionally, intellectually, and psychosocially has a problem that results in the inhibition of children reaching a level of emotional development that is appropriate to their age. Applied Behavior Analysis (ABA) in children with autism includes autistic children providing emotional, social, informational, and practical support. An autistic child will feel that he is loved and wanted if more and more people in the family environment love and care for him. The purpose of the study was to know the effect of Applied Behavior Analysis (ABA) on the emotional development of children with autism. This type of quantitative research uses a Quasi-experiment with the design Pre-test Post-test with Control Group Design. The observation was carried out twice. The first observation is to determine the emotional development of an autistic child before being given Applied Behavior Analysis (ABA) and the second observation after being given Applied Behavior Analysis (ABA). Sampling was done by purposive sampling with the criteria of parents and autistic children aged 6-12 years in the autistic schools of the provinces of Yogyakarta and Ponorogo, East Java. Analyzed analytically using paired t-test and Wilcoxon, with a significant level of  $p < 0.05$ . The emotional development of children with autism in the experimental group before Applied Behavior Analysis (ABA) was given to most categories were good of only 34 children with autism (73.9%) and after Applied Behavior Analysis (ABA) most categories were good for 44 autistic children (95.7%). In the control group before most were less as many as 28 children with autism (60.9%) and after most good as many as 17 children with autism (37.0%). The experimental group pre-test and post-test with a value of  $p$  (sig) 0.000, meaning there is a difference between pre-test and post-test in the experimental group. In the control group pre-test and post-test with  $p$ -value (sig) 0.000 meaning there is a difference between pre-test and post-test in the control group. There was an effect of Applied Behavior Analysis (ABA) on the emotional development of autistic children.

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## INTRODUCTION

Autism is an emotional developmental disorder caused by organic damage to the brain. Generally, autistic children have difficulty communicating both verbally and nonverbally, when they want something the way to do it is to pull the other person's hand to get attention. Attitudes such as withdrawal, children can not establish communication, talk alone, sing alone, cry for no reason, spinning for no reason, can even cause resentment of people around him. Autistic children have abilities and characteristics that are different from each other, so different ways of interacting with themselves and the environment and making autistic children unique individuals (Ginanjar, 2007).

Until now, no definitive cause of autism can be found, so prevention and treatment methods have not yet been developed. At first, autism was seen as a disorder caused by psychological factors, namely parenting patterns that are not emotionally warm. In the early 1970s research on the characteristics of autistic children succeeded in determining the diagnostic criteria which were subsequently used in the DSM-V (Diagnostic and Statistical Manual of Mental Disorder). Autistic disorders are defined as emotional developmental disorders with three main characteristics, namely disruption in emotional, social interaction, disruption in communication, and limited interests or the ability of imagination (Ginanjar, 2007).

In the United States, there is currently a comparison between normal children with autistic children 150: 1, in the UK 100: 1, while in Indonesia there are no data on autistic children because there has never been an official survey. Although different from normal children, children with autism still have basic rights as normal children. Autistic children need to play, learn and socialize, emotional development in the community in their environment (Ginanjar, 2007).

The emotional development of autistic children both physically, emotionally, intellectually, and psychosocially has a problem so that the result of inhibition of children reaching a level of emotional development by their age. The emergence of various emotional developmental obstacles in children with autism is a phenomenon that needs to be addressed further so that sufferers can still live well and optimize the slightest ability possessed. This is important because, despite its various limitations, every human being has the same right to grow, develop, be accepted, and carry out certain roles in society.

To achieve maximum results, every educational process always requires cooperation between the school and parents. Education in principle must start from home and education will fail without parental participation. One of the main requirements that must be met by parents in seeking good cooperation with the school so that the educational process takes place optimally is to give full attention to the emotional development of the child as a person, and not just attention to what is achieved by children. Similarly, the education of children with autism. Between parents and other family members with educational institutions must be able to work well together.

This is consistent with the exposure in various literature, that the effectiveness of various programs for handling and improving the ability of life of children and adolescents who have special needs will greatly depend on the participation and full support of parents, families, and communities. The knowledge and skills acquired for example emotional development by children at school will be more endured and well mastered if parents can also practice it at home or outside the school environment with help and direction from parents. Parents play a role as educators of their children especially autistic children. The family environment is also said to be the most important environment, because most of the lives of children with autism in the family, so the most widely accepted education for children with autism is in the family.

Parents must understand their nature and role as parents in raising children, equip themselves with knowledge about proper, knowledge about the education that children go through and knowledge about child emotional development, so it is not wrong in applying a

form of educational pattern especially in the formation of personality children by the purpose of education that is to educate the nation

Autistic children can be maximized by utilizing the rest of their abilities. Autistic children also need to get special treatment by involving parents in accompanying them while at home. Applied Behavior Analysis (ABA) in children with autism includes autistic children providing emotional, social, informational, and practical support and emotional development. An autistic child will feel that he is loved and wanted if more and more people in the family environment love and care for him. This Applied behavior Analysis (ABA) to understand and follow verbal instructions, respond to the words of others, describe an object, imitate the words and movements of others, to teach reading and writing. The importance of Applied behavior Analysis (ABA) for parents and families who have children with autism, so that parents and families can accompany and emotional development of children with autism during care and assistance at home (Badi'ah, 2018).

Based on the results of a preliminary study conducted by the author by interviewing 7 Autistic schools in DIY Province (SLB Autism Samara Bunda, SLB Autis Dian Amanah, SLB Autis Fajar Nugraha, SLB Autis Citra Mulia Mandiri, SLB Autis Bina Anggita, SLB Negeri Pembina Yogyakarta and the Autistic Service Center (PLA) in Sentolo) and the Autistic School / Children with Special Needs (ABK) Baitul Qur'an Ponorogo East Java to 16 parents who have autistic children obtained the results of most parents (93%) assume that by including children autism to an autistic special school (SLB) by its limitations means their efforts can be said to be sufficient. The rest is the school that is responsible for educating and teaching various life skills to their children. They do not yet understand that the lack of attention and support from parents will make the results of the educational process at school not optimal. Not all Applied Behavior Analysis (ABA) realize that having children with special needs in accompanying the emotional development can maximize emotional development.

Based on the description above, it is necessary to research "The Effect of Applied Behavior Analysis (ABA) on the emotional development of autistic children".

## METHOD

This type of research is a Quasi-experimental study with a pre-post-test with a control group design. The design of this study can be described as follows:

<i>Pretest</i>	<i>Intervention</i>	<i>Post-test</i>
O <sub>1</sub>	X	O <sub>2</sub>
O <sub>3</sub>	-	O <sub>4</sub>

### Keterangan:

- O<sub>1</sub> : Pre-test the emotional development of autistic children in the experimental group
- X : Intervention with Applied Behavior Analysis (ABA)
- O<sub>2</sub> : Post-test the emotional development of autistic children in the experimental group
- O<sub>3</sub> : Pre-test the emotional development of autistic children in the control group
- O<sub>4</sub> : Post-test the emotional development of autistic children in the control group

The study was conducted from July to September 2019 (duration of intervention for 3 months). Research sites in 8 autistic schools, in the province of DIY 7 autistic schools (SLB Samara Bunda Autism, Dian Amanah Autism SLB, Fajar Nugraha Autism SLB, Citra Mulia Mandiri Autism SLB, Autism Bina Anggita SLB, Yogyakarta Public Assistance SLB, and Autism Service Center (PLA) ) in Sentolo), and 1 in the Autistic School / Children with Special Needs / ABK Baitul Qur'ani Ponorogo East Java. The population is all pairs of parents with autistic children of school age (6-12 years old) in 7 autistic schools in DIY province (SLB, Samara, Mother of Autism, SLB, Dian Amanah, SLB, Fajar Nugraha, SLB,

Citra Mulia Mandiri, SLB, Autism, Bina Anggita, Yogyakarta Public Assistance SLB, and the Autistic Service Center (PLA) in Sentolo) and the Baitul Qur'ani Ponorogo East Java School of Autism / Children with Special Needs (148) parents of parents with autistic children of school age (6-12 years). The samples in this study were 92 couples of parents with autistic children of school age (6-12 years) in autistic schools in DIY Province (SLB Samara, Mother of Autism, SLB Dian Amanah, SLB Fajar Nugraha Autism, SLB Citra Mulia Mandiri, SLB Autis Bina Anggita, SLB Yogyakarta Specialist Country and Autism Service Center (PLA) in Sentolo) and the Baitul Qur'ani Ponorogo East Java School of Autism/ Children with Special Needs taken by purposive sampling technique.

Determine the experimental group given a pre-test, then do the Applied Behavior Analysis (ABA) then do a post-test using the same observation sheet as the pre-test. Determine the control group is given a pre-test, then post-test is done using the same observation sheet as the pre-test. The experimental group with the control group compared emotional development before and after Applied Behavior Analysis (ABA). Provision of intervention or Applied Behavior Analysis/ABA (X) in the experimental group. Examination data were analyzed descriptively and analytically with the help of the SPSS for Windows version 16.0 program using t-test and Wilcoxon with a significance level of 0.05.

## RESULTS

### Research location and number of autistic children in 8 autistic schools

Table 1 Research location and number of autistic children in 8 autistic schools (n = 92)

No	Research location	Experiment Group		Control Group	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	SLB Fajar Nugraha	4	8,7	4	8,7
2.	SLB Negeri Pembina	6	13,0	6	13,0
3.	SLB Bina Anggita	5	10,9	5	10,9
4.	SLB Citra Mulia Mandiri	10	21,7	10	21,7
5.	Pusat Layanan Autis (PLA)	11	23,9	10	21,7
6.	SLB Samara Bunda	4	8,7	4	8,7
7.	SLB Dian Amanah	3	6,5	4	8,7
8.	SLB Baitul Qur'an	3	6,5	3	6,5
Total		46	100	46	100

Source: primary data (2019)

From Table 1 it can be seen that in the experimental group the highest number of autistic children from the Autism Service Center (PLA) was 11 children (23.9%) and those with the least SLB Dian Amanah and Baitul Qur'an were 3 children (6.5% ). Whereas in the control group the highest number of autistic children from Citra Mulia Mandiri SLB and Autism Service Centers (PLA) was 10 children (21.7%) and the lowest was Baitul Qur'an with 3 children (6.5%).

### Characteristics of children and parents in 8 autistic schools

Characteristics of children and parents of autistic children in 8 autistic schools can be seen in Table 2.

Table 2 Characteristics of autistic children and parents of autistic children in autistic schools (n = 92)

No	Characteristics of Respondents	Experiment Group		Control Group	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	<b>Age of child</b>				
	6-8 year	11	23,9	14	30,4
	>8-10 year	6	13,0	8	17,4
	>10-12 year	29	63,0	24	52,2
2	<b>Gender of Children</b>				
	Man	35	76,1	32	69,6
	Woman	11	23,9	14	30,4
3	<b>Class</b>				
	Kindergarten	7	15,2	10	21,7
	Primary School	39	84,8	36	78,3
4	<b>Age of parent</b>				
	20 – 30 year	5	10,9	1	2,2
	31 – 40 year	31	67,4	38	82,6
	41 - 50 year	9	19,6	5	10,9
	51 – 60 year	1	2,2	2	4,3
5	<b>Parent Education</b>				
	Primary school	4	8,7	4	8,7
	Junior high school	10	21,7	10	21,7
	Senior High School	24	52,2	21	45,7
	Bachelor	8	17,4	9	19,6
	Postgraduate	0	0	2	4,3
6	<b>Parents' job</b>				
	Government employees	8	17,4	11	23,9
	Private occupations	24	52,3	20	43,5
	Housewife	14	30,4	15	32,6

Source: primary data (2019)

### The emotional development of the experimental and control groups before and after Applied Behavior Analysis (ABA) is given to autistic children in the Autistic School

Tabel 3 The emotional development in the experimental and control groups before and after Applied Behavior Analysis (ABA) is given to autistic children in autistic schools

No	Category of emotional development	Experiment Group				Control Group			
		Pre Test		Post Test		Pre Test		Post Test	
		f	%	f	%	f	%	f	%
1.	Good	34	73,9	44	95,7	17	37,0	17	37,0
2.	Enough	12	26,1	2	4,3	1	2,2	16	34,8
3.	Less	0	0	0	0	28	60,9	13	28,3
	Total	46	100	46	100	46	100	46	100

Source: primary data (2019)

In Table 3 above it can be seen that the emotional development of children with autism in the experimental group before Applied Behavior Analysis (ABA) was given to most categories were good of only 34 children with autism (73.9%) and after Applied Behavior Analysis (ABA) most categories were good for 44 autistic children (95.7%). In the control group before most were less as many as 28 children with autism (60.9%) and after most good as many as 17 children with autism (37.0%).

### Normality test

The normality test was tested using Shapiro Wilk because  $n < 50$ , with  $p(\text{sig}) > 0.05$  means the data were normally distributed and  $p(\text{sig}) < 0.05$  was not normally distributed.

Table 4 Test the normality of the experimental group and the pre-test and post-test control groups in children with autism in the Autistic School

Variable		Group	p	The results
Emotional Development	Pre	Experiment	0,000	abnormal
		Control	0,000	abnormal
	Post	Experiment	0,000	abnormal
		Control	0,000	Abnormal

In Table 4 above it can be seen that the pre-test experimental group with p (sig) 0.001 <0.05 and post-test p-value (sig) 0.000 <0.05, have data that are not normally distributed so that the parametric test of the t-test is used. namely Wilcoxon. In the control group the pre-test data with p (sig) 0,000 <0.05 had abnormally distributed data and the post-test with p (sig) 0,000 <0.05 had abnormally distributed data so that the non-parametric test of t-test was used, Wilcoxon.

### Bivariate Test

Table 5 Test results of data analysis of the differences between pre-test and post-test in the experimental group and the control group in children with autism in the Autistic School

Variable	Group		p (sig)
Emotional Development	Experiment	Pretest	0,000
		Post-test	
	Control	Pretest	0,000
		Post-test	

In Table 5 above it can be seen that in the experimental group pre-test and post-test with a value of p (sig) 0,000 <0.05 then  $H_a$  is accepted and  $H_o$  is rejected, meaning there is a difference between pre-test and post-test in the experimental group. In the control group pre-test and post-test with p-value (sig) 0,000 <0.05 then  $H_a$  is accepted and  $H_o$  is rejected, meaning there is a difference between pre-test and post-test in the control group.

## DISCUSSION

### The emotional development before to Applied Behavior Analysis (ABA) in children with autism in autistic schools

In Table 3 above it can be seen that the emotional development of children with autism in the experimental group before Applied Behavior Analysis (ABA) was given to most categories were good of only 34 children with autism (73.9%). In the control group before most were fewer as many as 28 children with autism (60.9%). At the time of pre-test children with autism is difficulty in socializing with peers, difficulty interacting, and difficulty communicating. Children with autism have a level of intelligence that varies from low to genius. Autistic children who have normal intelligence are generally of low school achievement. This is caused by the acquisition of information and understanding of emotional and ability in emotional development to experience fewer obstacles when compared to other normal children. Autistic children lack understanding verbal information. This makes it difficult for children to accept abstract material, so Applied Behavior Analysis (ABA) is needed to facilitate understanding of a concept in children with autism so that children will easily emotional with parents and peers.

Applied Behavior Analysis (ABA) is an activity carried out so that parents direct and assist children in socializing and interacting and emotional with others. According to

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Susilaningrum's (2015) data analysis results obtained in the study that there is a significant influence on the use of media in learning for children with special needs. Media in this case Applied Behavior Analysis (ABA) in directing and assisting children with autism in socializing and interacting with peers and others and will facilitate emotionally and facilitate the teaching and learning process in the classroom because it can help interaction between teachers and students clearly and pleasantly and students can with easy to understand the material to improve emotional development taught by the teacher so that learning objectives will be achieved and assistance is done by parents at home so that children can socialize and interact and emotional development with peers and other people.

### **The emotional development after to Applied Behavior Analysis in children with autism in the Autistic School.**

In Table 3 above it can be seen that the emotional development of children with autism in the experimental group after Applied Behavior Analysis (ABA) most categories were good for 44 autistic children (95.7%). In the control group after most good as many as 17 children with autism (37.0%). At the time of the post-test autistic children still have difficulty in interacting and emotional development with peers and other people. This is due to many factors that affect autistic children in emotional development of autistic children's. Interventions for children with autism in children / infantile autism in the form of Applied Behavior Analysis (ABA). Before children are included in the Applied Behavior Analysis (ABA) that is being followed, parents should accompany children with autism at home without stopping so that children do not drown in their world. Don't leave the child alone and with rigid interests and activities, for example turning on and turning on lights, being amazed at watching the fan spinning, and other insignificant activities. Always try to have someone accompany your child while not sleeping. Invite children the emotional development both ways both verbal and nonverbal. Do not let the child be preoccupied with television or other games that are unidirectional and damage eye contact. In the beginning, don't expect your child to respond to the emotional invitation given to him most of the responses of indifferent children, do not understand that communication with emotional development is addressed to him or even if conscious they may respond negatively like crying out loud because they feel disturbed so that children can socialize and interact and emotional development with peers and other people.

Children who are in a relationship interacting with their families in a healthy manner (attentive and affectionate with their parents) can facilitate children's emotional development. Conversely, if the relationship between children and parents is not healthy, the emotional development is also not good. The neighborhood also influences the emotional development of children's, where the village environment with close family conditions and socialization with the environment is still good, so the contact of children with children the same age is still intensive enough so that children can play with peers using toys to improve emotional development. This contact with children of the same age encourages children's emotional development (Soetjningsih, 2012).

Family socioeconomic status of several studies stated that children from poor families will experience emotional development delays compared to children from families whose economic level is better. This condition is caused due to lack of learning opportunities in children from poor families (Yusuf, 2008). Adequate family income will support the growth and emotional development of children because parents can provide all the needs of children both primary and secondary for example providing games to improve emotional development (Soetjningsih, 2012). Poverty is associated with damage to nerve structure and function, including smaller white and cortical gray matter and the hippocampus,

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amygdala related to cognitive abilities (Black M, 2016). Families with low socioeconomic status have a tendency to limited knowledge, time, and low quality in accompanying and accompanying children to play and communication activities to provide Applied Behavior Analysis (ABA) of play to improve emotional development that should be needed by a child in growth and development (Black M, 2016).

According to Engle and Huffman (2010) in improving children's emotional development can be done the following ways, namely exclusive breastfeeding, adequate child nutrition, providing food to children give patiently and lovingly, often invited to outside activities and play, invited to sing, teach children something simple every day and train children to pray (Black M, 2016).

### **The influence of Applied Behavior Analysis (ABA) on the emotional development of autistic children in autistic schools**

In Table 5 above it can be seen that in the experimental group pre-test and post-test with a value of p (sig) 0,000 <0.05 then  $H_a$  is accepted and  $H_o$  is rejected, meaning there is a difference between pre-test and post-test in the experimental group. In the control group pre-test and post-test with p-value (sig) 0,000 <0.05 then  $H_a$  is accepted and  $H_o$  is rejected, meaning there is a difference between pre-test and post-test in the control group.

Applied Behavior Analysis (ABA) in accompanying children can train to communicate, interact, socialize, and emotionally with children with autism so that it can influence emotional development. Andriana, (2011) states that the benefits of assistance can be to practice social skills and interact with others. Thus it can be said that Applied Behavior Analysis (ABA) given to children with autism who have emotional development disorders can affect increasing emotional development in autistic children.

This is due to the frequent accompaniment of children, so that children will be able to adjust interaction and socialization with peers and others and make it easier to develop emotional. Increased child emotional development before and after due to Applied Behavior Analysis (ABA) with the assistance provided regularly will be received by the five senses and will then be conveyed to the brain. The brain and senses of a child have not yet reached a new level. This will trigger the brain to learn, analyze, understand and give the right response to the stimulus. Andriana (2011) argues that giving stimulus should be done every time there is an opportunity to interact with children. The more frequent and regular stimuli received, the stronger the relationship between these brain cells.

### **CONCLUSION**

- 4.1.1. Emotional development in the experimental group before Applied Behavior Analysis in children with autism in the Autistic school category is sufficient and the control group category is good.
- 4.1.2. Emotional development in the experimental group after Applied Behavior Analysis (ABA) in children with autism in the Autistic school category is good and the control group category is lacking.
- 4.1.3. There is an effect Applied Behavior Analysis (ABA) on the emotional development of autistic children in autistic schools with p (sig) <0.05 means that  $H_a$  is accepted and  $H_o$  is rejected.

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