‘Bina Wicara’ application and communication engineering of parents toward autism children

Y Yusria*, R Ridwan, D Hariyanto and M Ariska

Faculty of Tarbiyah and Teacher Training, UIN Sulthan Thaha Saifuddin, Jambi, Indonesia

*yusria@uinjambi.ac.id

Abstract: The ‘Bina Wicara’ application is a game that is used to practice the ability of children to communicate with other people around them that can be used for speech therapy. Communication engineering is a learning process that involves the participation of parents in helping children to talk. The purpose of this study is to help an application toward autism children who experience difficulties and disturbances in speaking through game play and parental communication engineering in engaging and actively participating. This study uses a qualitative and technological mixed approach to communication media technology in autistic children service institutions in Jambi province. The subjects in this study were some 8 years old, students. The final results of this study explain that: first, play games are able to encourage children to identify objects and pronounce them correctly. Through the use of speech development applications such as this game in children with autism can help children to mimic movements / motor mouth, vocal imitation, label and identify and follow simple commands. The second finding from the results of this study shows that through the involvement and active participation of parents in the learning process can help children organize their language development. The other side of the findings of this study explains that the interaction of the environment around children, especially children with special needs can help develop their speaking skills.

1. Introduction
Children are the most expensive gift from God for every parent. Having a healthy and perfect child is the longing that awaited parents, because children can be used as a binder of family harmony. In the regulation of Minister of Education number 157 of 2014 concerning children with special needs with autism are grouped in children with special needs. Autism is a passive developmental disorder in children characterized by disturbances and delays in the areas of cognitive, language, behaviour and social interaction [1].

Boutot et al in Santrock mention that autism spectrum disorders are characterized by problems in social interactions, problems communicating verbally and nonverbally, and repetitive behaviour [2]. The behaviour of autistic children is usually characterized by low verbal and nonverbal communication, social interactions that look strange, emotions that are erratic, unstable, sensory perceptions that are not normal.

The cause of autism according to the Indonesian Autism Foundation in Jaja Suteja is a severe neurobiological disorder that affects brain function so that children are unable to interact and communicate with the outside world effectively [3]. Autistic children out number boys than girls.
That showed on result research of Christensen DL et.al for 2012 said that children age 8 years was significantly higher among boys aged 8 years than among girls aged 8 years [4,5]. This opinion is reinforced by Santrock stated that boys suffer three times more emotional and behavioural disorders than girls [6]. This indication shows that boys tend to be more dominant in autism. Although the problem of autism can occur to anyone, do not know the socio-economic status, education and ethnicity, but parental awareness when the child is declared autistic is needed to help cure.

Based on data in 2016 in the city of Jambi there are 156 children who suffer from autism, autistic sufferers have increased every year [7]. From the 2016 data distribution in 5 schools / foundations in jambi city, as shown in table 1.

| School/Foundation                  | Amount          |
|-----------------------------------|-----------------|
| SLB Sri Soedewi                   | 53 autistic children |
| SABK Unggul Sakti                | 34 autistic children |
| Kiddy Autism Foundation           | 30 autistic children |
| Bunga Bangsa                      | 22 autistic children |
| Harapan Mulya                     | 17 autistic children |
| **Total**                         | **156 autistic children** |

The data above explain that the number of autistic children is spread in how many schools in the city of Jambi, but the handling and management are still carried out by the private sector. Handling autistic health requires government attention, because its handling requires a long time and costs quite expensive.

Based on the findings in the field, an 8-year-old child cannot speak, the communication that can be done by the child is only screaming to convey their wants and needs. The child likes to hurt himself by hitting the head and body, this is done because his desires are not fulfilled. The inability to use language to communicate their needs is expressed in the form of screaming children. The child in the study received speech therapy at the Autism Service Center in the city of Jambi. Current training intervention are typically targeted for children between the ages of six and twelve. As research has shown social language skills begin to develop early on in children until adulthood, and thus, an intervention that recognizes the various stage of social interaction may prove to be more effective in the training of nonverbal social language skills [8].

Based on the development of science and technology many methods and applications can help parents in helping children with autism speak. Although most of the parents do not understand and know the correct use of application for children's development, but for non-urgent needs, parents still give a smartphone to the child just so that the child is calm and can sit quietly. Base on result of Abdulkareem’s research about the knowledge of autistic Children’s mothers said that the mother’s knowledge of autism must have sufficient knowledge about autism in their children, and level of education play important role in improvement mother’s information [9].

This study focuses on how the involvement of parents in engineering communication using the application of speech development in helping children with autism speak. How to use the speech-building application to help autistic children speak. How to achieve the ability of children with autism to speak.

This Bina Wicara application is a word game that is recommended by the government. Communication engineering refers to parental involvement and active participation in providing support, attention, and intervention in learning to communicate with children with autism through the application of speech development. With this speech-building application, autistic children can learn individually in the classroom and at home.
The above problem clearly shows that to help improve the ability of children with autism to speak requires parental communication engineering in the form of parental involvement, parents’ active participation in using speech development applications according to the needs of autistic children.

2. Methods
This research uses a descriptive method. This research approach is qualitative participatory which aims to describe the involvement, attention and participation of people who are able to engineer communication in children with autism by using the application of speech development. The initial phase of collected data were observing the subject studied, the subject in the study was autistic child aged 8 years. He is a boy received therapy services at the Autism Service Center in the city of Jambi. To get information about the parentela’s of autistic child involvement and active participant through structured and unstructured interviews, and to get the right proof as a reinforcement of research result used documentation.

The data analysis uses the Miles and Huberman analysis model with the stage of collecting data, then data reduction is continued by displaying the data and finally the development of information needed from the data to be drawn is drawn. Conclusions are drawn to interpret all the symptoms encountered and obtained in the field. To check the validity of triangulation data is a valid way of checking data.

3. Results and discussion
There are findings can be revealed in this research, namely:

3.1. The role of parents in engineering autistic child communication
Parents are the first and foremost people responsible for the survival and education of their children. Receiving a diagnosis of an autism has a huge impact on an individual and their family. According to Mansell et.al stated that obtaining a diagnosis is the first step to accessing service and supports for both the person with autism and their family [10]. The recipient is autistic, is the initial door for therapy for children. Although many parents are at an early stage when a child is diagnosed with autism, there is resistance from parents, anger and even blame the doctor who diagnosed it. Rejection is one of the characteristics of the role of parents in dealing with autistic child. But not with parents of autistic child in this study. Base on result of the research conclude that the autism of boy should be organized for mothers about autism, and its management to improve their information, and to dealing with their children in appropriate way because the parents play important part in child rehabilitation [11]. The parents of child with autism are aware and accept the condition of their child with autism. The parents of child with autism are the active parents in their child's subscription, by bringing to the Autistic Service Center. But there are obstacles in sharing love with other their children. One child with another child feel disappointed because their attention are diminishing as parents focus more on an autistic child.

The involvement and participation of parents of child with autism in participating in the group of parents of autistic children. One of the ways that parents who have autistic children, especially in Jambi they gather strength by joining with other parents of autistic children who are members of a group called Parents Support Group (PSG). Parents ‘involvement, allowing a more intensive stimulation in home environment is frequently mentioned as one of the positive points [12].

This communication engineering is the development of communication patterns, discoveries in the field of electronics, and the development of visual design science [13]. Quality communication engineering is characterized by sensitivity, attention, reactivity, spontaneity, tolerance, generosity, flexibility, creativity and empathy [14]. Soorya et.al found that nonverbal communication, empathic responding, and special relations improved immediately after treatment, however, no significant differences were found at three-month follow up [15] Communication engineering in this study is a reciprocal interaction involving the participation of parents who were built to practice the speaking skills of autistic children. With this communication engineering parents can design learning using the
Bina Wicara application to build the response of children with autism to speak. And when this application is used must pay attention to the principle of using media in terms of safety, comfort, easy to apply and pleasant to use and has aesthetic value [16].

The form of communication engineering that is carried out by parents in children with autism can be in the form of reinforcements to help autistic children achieve success in speaking by repeating expressing and displaying the words that are communicated. According to Rogert Brown, parents have to spend hours [17]. So far, the ways that parents have done to help children with autism speak have not used and utilized information technology such as smartphones. From research result mentioned that receptive and expressive language defecated a core trait of autism is severe disruption in language development, limiting the extent children can participate in social interaction [18].

3.2. Learning to use the Bina Wicara application

Learning is done both at the Autistic Service Center and then continued learning at home still using the flash chart media that is pictorial cards. This picture card media teaches to identify objects and to mention complex ones. Children are taught to understand the activities in the picture card. For example if there is a child's desire for B A B, the child will point to the picture card in question while being taught to say it along with the body language or hand movements of the therapist or parent. How to teach is still conventional so it is less interesting and less fun for children.

Learning media is to facilitate the interaction of teacher and child to create effective and efficient learning. The learning process becomes clearer and more interesting, messages can be conveyed, reducing different interpretation and can reduce information gaps. Learning for child with autism in choosing and determining media must be in accordance with the characteristics of child with autism.

![Bina Wicara application](image)

Figure 1. Bina Wicara application.

Although there are applications such as speech development like this, because they are not well known and even smartphones are not yet available and are limited because of economic prices. Even if there is a smartphone, but parents do not understand and know that there are applications that can be used for autistic children and how to apply them. most parents give smartphones to their children both normal children and children with autism the goal is only so that their children are calm, not crying, and do not disturb parents when parents do something.

While for the condition of the child studied in this case requires quite a long time to handle, because this child is classified as autistic in the heavy category. Effective learning is given to children with autism through media technology as an introduction to communication. The media in question is the application of speech development as a medium used to help deliver autistic children to successfully communicate supported by the availability and completeness of infrastructure. It's just that in this case when the speech-building application is used when learning takes place does not give maximum results because the condition of this autistic child is in the weight category, so it requires quite a long time. But the form of parental support in delivering the success of speaking with autistic
children has made or engineered communication patterns in learning. This as the rate of growth and development of technology has helped many to answer practical problems in human life, especially in developing communication learning for autistic children.

3.3. The ability of child with autism to speak
The ability to speak shows an indicator of child development. Delay in speaking coupled with language disorders causes autistic children have difficulty in speaking and unable to understand the conversations of others. It's just that in detail indicators of the achievement of speaking of autistic children do not yet exist. So, the Bina Wicara application that is used cannot be seen in a relatively short time.

The linguist Noam Chomsky states that humans already have the biological ability to learn languages at certain times and ways. it goes on to say that children are born in the world with a language acquisition tool called LAD. Another opinion says that language only presents a series of responses obtained through reinforcement. The ability to speak with autistic children must be supported by a conditioned environment. From the results of the study show that in the implementation of the process of subscribing to autistic child communication disorders through three processes, namely the initial process, intermediate process and advanced process. In the process using four therapeutic methods namely ABA, Lovas, speech therapy and sensory integrity therapy and special education [19]. But through of therapy given to children with autism can provide progress for the development of speaking of autistic children. Although the progress was not optimal as in this study.

4. Conclusion
Parental communication engineering gives meaning to the development of speaking of child with autism, from the child's acceptance of what it is, involvement and participation, support, attention and affection. The Bina Wicara application is an application which suitable for using by children with special needs, especially child with autism who experience delays in speaking, but every child is not the same in achieving speaking ability adjusted to the level of autism that is experienced. The ability to speak of autistic child in this study has not yet reached maximum development because child in the severe autism category require a long process to use speech development applications.

Acknowledgement
The Authors would to thank the State of Islamic University Sulthan Thaha Saifuddin Jambi for funding the publication of this study. Also thank to the Autistic Social Service Jambi who has taken the chance to conduct this study, and thank to the child with autistic and his parents who took part in this study.

References
[1] Kayrn S 2004 Untukmu Segalanya: Perjuangan Ibunda seorang Anak Austitik, Mengungkap Misteri Autisme dan Gangguan Perkembangan Perpasif. Penerjemah Lala Herawati D. (Bandung: Qanita)
[2] Santrock J W 2011 Life-Span Development: Pergembangan Masa-Hidup Edisi Ketigabelas Jilid. I (Jakarta: Erlangga)
[3] Jurnal Edukseos III (1) Januari-Juni 2014
[4] Maslim R 2013 Diagnosis Gangguan Jiwa dari PPPDGJ-III dan DSM-5 (Jakarta: Nuh Jaya)
[5] MMWR Surveill Summ.2018 Nov 16;65(13): 1-23. doi:10.15585/mmwr.ss.6513a1
[6] Santrock J W 2011 Life-Span Development: Pergembangan Masa-Hidup Edisi Ketigabelas Jilid.1 Jakarta: 7(1) juni 2018 https://doi.org/10.30644/rik.v7i1.106
[7] Unknown 2019 Autisme Open Access. 9. Iss.2 No :240 ISSN: 2165-7890 Research Article
[8] Unknown 2018 American Journal of Nursing Research 6(5) pp 296-298 10
[10] Unknown 2005 [Online] Available at: https://www.researchgate. *Net. journal RG. Journal Autism Article* (Publisher: SAGE Publications)

[11] Unknown 2013 *Original Article Co DAS* 25(3) pp 289-96

[12] Unknown n.d.a [Online] Available at: Portal prakarya.blogspot.com 22 September 2016.

[13] Unknown n.d.b [Online] Available at: Portal prakarya.blogspot.com 22 September 2016

[14] Johnsen B H and Skjorlten M D 2004 *Pendidikan Berkebutuhan Khusus: Sebuah Pengantar* (Bandung: Unipub Forlog)

[15] Unknown 2014 *International Journal of Speech-Language Pathology* 16(1) pp 1-10

[16] Soorya L V, Siper P M, Beck T, Soffes S, Halpern D, Gorenstein M, ... and Wang A T 2015 Randomized comparative trial of a social cognitive skills group for children with autism spectrum disorder *Journal of the American Academy of Child & Adolescent Psychiatry* 54(3) pp 208-216

[17] Brown R 1973 in Santrock J W 2011 *Life-Span Development: Pergembangan Masa-Hidup Edisi Ketigabelas Jilid.1* (Jakarta: Erlangga)

[18] CHM-K 2019 *Applied Scientific Journal* 2(1)

[19] Khofifah 2015 *Penangganan Gangguan Komunikasi Anak Autis di Sekolah Khusus Autis Bina Anggita Yogyakarta* [Online] Available at: http://http://digilib.uin-suka.ac.id