The Effectiveness of Token Economy in Improving Adaptive Daily Living for Children with Intellectual Disability

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Abstract

Parents have a strategic role in optimizing children's abilities. Children with intellectual disability have limitations in Adaptive Daily Living (ADL) abilities. ADL is an important abilities possessed by everyone to be able to live independently. Children who lack in ADL abilities will need the help of the closest person or parents in completing their daily tasks, so that there is a need for a development model for parents to develop the ability of children with intellectual disability. The aim of this article is to design a behavior modification modul with token techniques to develop the abilities of children with intellectual ability. The token technique used in this study is giving a token to the child everytime the child raises the expected behavior. The tokens can be exchanged for items that the child wanted, hoping that there will be an increase in ADL behavior of the child along with giving tokens to him. The method used in this study was experiment with single subject research. The subject is a child with moderate intellectual disability, with an IQ of 36 Binet Scale. The age of the child is 12 years 3 months. The results of this article illustrate the model of behavior modification design with token techniques to increase the ability of ADL children with intellectual disability.

Keywords: adaptive daily living (ADL), behavior modification, token economy technique

1. INTRODUCTION

Adaptive ability is the ability that is learned by everyone in their developmental period, which aims to assist in activities in daily life (Wehmeyer, 2018). Children with intellectual disability generally experience inhibition in their daily self-help abilities or adaptive abilities (Swapna & Sudhir, 2016; Permono, 2013). Adaptive ability is an important ability possessed by everyone including children with intellctual disability. If children with intellectual disability experience inhibition in adaptive abilities, they will have difficulties in carrying out daily activities.

Children with intellectual disability who experience inhibition of self-help need the help of the closest person or parent in completing their daily tasks (Permono, 2013). Parents are involved and influence of the development and adjustment of children with intellectual ability (Biswas, Tickle, Golijani-Moghaddam & Almack, 2016). Parents have a strategic role in developing the ability of children with intellectual disability, but in some cases parents lack of knowledge about developing their children's abilities and they feel concern about the condition of their children (Rani, 2016). Therefore it is necessary to provide training for parents to provide knowledge in developing the ability of children with intellectual ability.

There are several techniques that can be used in developing the ability of children with intellectual disability. Emotional Intelligence Training can enhance the social skills but not adaptive skills (Adibsereshki, Shaydaei & Movallali 2016). Program Touch Math (C) can enhance the ability to apply money but it is hard for children with intellectual disability to maintain it after the intervention ends (Waters & Boon, 2011). Behavior modification with token economy technoque can improve *Speechreading* ability for children with intellectual disability (Swapna & Sudhir, 2016).

In a midst of various development model of behavior modification, token technique is one way that can develop the adaptive ability of children with intellectual disability. However, research in behavior modification is done mostly by teachers in school rather than parents, while parents have a strategic role in developing the ability of children with intellectual disability. Therefore, this will discuss the adaptive abilities of children with intellectual disability using token techniques that can be done at home by parents. Researchers have confidence that behavior modification using token techniques provided by parents can be effective in improving abilities of *Adaptive Daily Living* (ADL) for children with intellectual ability.

2. METHOD

The method used in this study is a quasi-experimental method with single subject research (SSR). SSR presents a lot of data in graphical form in order to communicate the data

effectively and to see the development of the subject in each session. Participant in this study was a 12-year-old intellectually disabled child with an IQ of 36 Binet Scale. The instrument used in this study was Vineland Adaptive Behavior Scales which has been validated in 2016 with reliability values 0.94-0.97. Then the researcher conducted content validity by experts.
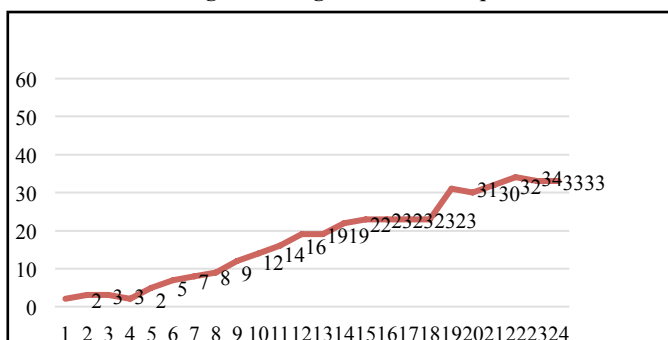
3. RESULTS AND DISCUSSION

3.1 Results

Behavior modification training for parents was conducted before conducting the development of abilities in the child with intellectual disability. The purpose were to let parents know what is meant by behavior modification, when to do the behavior modification, where to do the modification, who will do it, when to do it and how to develop the child's ability using behavior modification. After the training session, parents were asked to analyze the adaptive abilities of their child using the prepared instrument, Vineland Adaptive Behavior Scales, Third Edition (Vineland™-3) by Sparrow (2016).

The result of analysis done by the parents reported that the use of money was the lowest ability their child can do. D, the subject of this study was studying in *SLB C* (Special school that serve children with intellectual ability). The initial ability possessed by D was recognizing IDR 2000 and sometimes IDR 5000. D can be asked to go to a stall but D doesn't know how much money he takes and occassionally doesn't know where he saves the money. D does not know any remaining money when making transactions.

After finished analyzing the ability of D, the parents and researchers did a baseline which focused on understanding transanctions to the child. Baseline was done to determine the targeted behavior. After baseline was completed, the researchers and the parents have known the ability which is reffered to the targeted behavior. The next step was intervention which was divided into two goals; short-term goals and long-term goals. The intended intervention has four phases namely B1 with the target of understanding coins, B2 with the target understanding paper money up to tens of thousands, B3 adding money and B4 conducting transactions. Next is the deposition step where in a given time the participant was not given any intervention in the form of giving tokens and was seen how the behavior changes after no intervention was done. The results obtained as follows:

Graphic 1 The Development of Behavior Modification Program Using Token Technique

Graphic 1 shows the development of behavior modification program using token technique applied to D. Lines 1, 2, and 3 are baselines (A1) where the ability possessed by D without intervention is to understand the value of money 2000 and occasionally 5000. Whereas 4 to 8 are intervention phase (B1), in this phase the child is given the form of exercise to understand coins. D was given a token each time he answered correctly. on the seventh and eight day, D consistently showed his understanding on the value of the coins, namely 100, 200, and 500. Phase (B2), on days 9-13, is the phase where D was given an understanding of paper money up to tens of thousands. The result is that on the eleventh day to thirteen D has begun to understand paper money up to tens of thousands, but D was still having difficulty in distinguishing 1000 and 50,000. In this phase, the token was given to D after he gave two correct answers. Phase (B3), on days 14-18, D was given an understanding of adding money, the result is that D has begun to be able to add 100, 200, 500 and 1000 coins. D added the money using hand props, even though occassionally D still founf difficulty to add 500 + 500. Phase (B4) on day 19-23, D started to make transactions using money. D can conduct transactions with money, understand how much money was taken, until bring goods and bring home the remaining balance, even though in this phase D has not known with tell about the concept of remaining balance.

3.2 Discussion

D is a 12-year-old intellectually disabled child with an IQ of 36 in Binet Scale. D is classified as moderate intellectually disabled child with a range of intelligence 36-51 in Binet Scale. The suitable learning for children with intellectual disability is the ability to take care of themselves and do some activities on their own. Children with intellectual disability found difficulties in academic learning (Somantri, 2012). From this, adaptive behavior includes everyday abilities that can be done by D, so that research in developing adaptive abilities in D can be done.

Children with intellectual disability experience deficits in their cognitive systems rather than other systems, the lateness is different in each child (Vicari, Carlesimo & Caltagirone, 1995). Children with intellectual disability show good abilities in visual processing rather than other abilities (Abu-Hamour & Hmouz, 2018). Although there is inhibition in the cognitive system in children with intellectual disability, there are other spaces that can be developed through visual processing. So that learning for children with intellectual disability can be done with visual processing.

Prospective memory (PM) in children with intellectual disability is lower than normal children. PM in children with intellectual disability needs concrete signs such as images (Levén, Lyxell, Andersson, Danielsson, & Rönnberg, 2008). Therefore, visual learning will be more beneficial for children with intellectual disability to optimize their ability.

Behavior modification is a systematic application of a principle in learning techniques to improve both invisible and invisible daily abilities of a person. Token economy technique plays an important role in behavior modification in children

with special needs (Aziz & Yasin, 2018). Behavior modification is a program of behavior whereby individuals can get tokens continuously after the desired behavior appears. Behavior modification with token technique allows the children to directly get the token after the expected behavior appears. Behavior modification with token technique is the learning where the can concretely be received by the child after the behavior appears. In learning about transactions, real money is used to help the children get the visual process directly. So that there is hope for the development of abilities in children with intellectual disability.

Behavior modification according has at least four phases. The first phase is screening or receiving cases. In this phase the client is asked to provide information both general and specific information about the things they want to change along with the reason. In children with special needs, the information is provided by parents who want to develop their children's abilities. The second is the pre-program assessment phase. At this step modifiers access the targeted behavior that is to be changed and analyzes the environment so that the level of behavior modification is in accordance with the needs. The third phase is handling and designing programs which is carried out by parents and applying the program so that the targeted behavior can be achieved. Four, follow-up phase where the intervention has finished the research will be postponed in a short time and then being applied again to see if the handlers given still run effectively after the program is over. The results of the investigation in D's case is after 3 days D can make money transactions from understanding the amount, adding money to the transactions using money, where the score on the intervention is the same as the follow-up score.

Token economy is one of the techniques that can be developed in behavior modification for children children with intellectual disability. (Purwanta, 2015) explained that there are several stages in behavior modification with token techniques; the first stage is preparation, this is the stage where the researcher and parents design the program starting from determining the targeted, determining the item that will be exchanged by the token and giving score or exchange reward. The two stages of implementation begin by notifying the behavior that appears and giving gifts or tokens after behavior appears. Three is the evaluation stage to evaluate the program and design the following program that will be carried out by researchers and parents.

Identifying the targeted behavior should be done by determining the short-term and long-term goals of the program before the implemetation. The long-term goal of this research is to conduct money transactions while for short-term goals divided into four sessions. The first is to understand coins. The second session is to understand paper money up to tens of thousands, the third session is to count the amount and the fourth is to be able to do the transaction. Then, the targeted behavior should be determined in the beginning. After the information about the targeted behavior is obtained, then choose the right token, of course, considering interesting, easy to get, and durable. The token in this study is a pictorial pin of a character that is liked by D. Next, choose the supporting figures such as things that the participant likes, what activities are carried out in leisure time

or even social reinforcement such as praise or an injury as a sign that the child has appropriate behavior. The reinforcement given to D is in accordance with what D likes, such as soccer clothes, ball socks, robot toys, favorite foods namely fried chicken, as well as picture books and puzzles.

After the program design is complete, the next step is implementing the program. Programs that have been designed can be immediately implemented and recorded in every development. There were characteristics recorded in observations, assessments and at the time of evaluation, namely: (a) the behavior topography to record responses or movements that are seen directly in the problem given; (b) the number of frequencies –number of times the behavior appears within a specified time period; (c) the intensity of behavior –a measurement of the power or strength of a response displayed; (d) behavioral stimulus control –a response according to the stimulus given; (e) behavior latency –how long the response appears after a stimulus is given; (f) the quality of behavior –how well the behavior appears which is a combination of the frequency and control of the stimulus given.

Data that has been recorded can be directly written in the form of tables and graphs so that the development can be seen. Martin, 2015 explained that there are several tables that can be used to record the response of a table. It usually be used to see the frequency of behavior that appears, or the length of time needed in one experiment. In line with (Purwanta, 2015) who also explained that behavioral measurement techniques can be made by using frequency measurement, and also measurement using the duration of time. The data that has been obtained and recorded in the form of tables can be combined in graphical form to see how it is progressing every day.

In the study, behavior modification is a dependent variable. It is explained that the dependent variable will be influenced by independent variables and vice versa. This independent variable will affect the dependent variable. In this study the independent variable is a modification with the token technique. The dependent variable in a single subject study is known as the target behavior while the independent variable is known as the term intervention or treatment or in this study is Adaptif Daily Living (ADL).

Sparrow in Jeffrey S. Kreutzer, 2011 in his book explains that Adaptif Behavior consists of several aspects, namely; Receptive, Expressive: Written, Daily living skills Personal, Domestic: Community, Socialization, Interpersona Play and leisure time, Coping skills, Motorbike, Gross: Fine. This aspect of adaptive capacity has been developed into an instrument by Spararow, 2016, which is referred to as Instrument Third Edition (Vineland ™ -3). This instrument is an instrument development adapted from Vineland Adaptive Behavior Scales developed by Doll (1953). Then this ADL is trained to children by using token economy.

3.3   CONCLUSION

Behavior modification using token technique training for parents can develop the ability in children with intellectual disability. Behavior modification with token economy

technique can improve adaptive ability in children with intellectual disability.

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