

# The Implementation of the Forward Chaining Method to Enhance the Vocational Skill of Students With Mild Intellectual Disabilities

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## ABSTRACT

This study aimed to determine the effectiveness of the forward chaining method to improve the vocational skill among students with mild intellectual disabilities. This study applied a pre-experimental design, a one-shot case study research design. Research subjects included six students with mild intellectual disabilities from a special high school. All subjects participated in the intervention program which consisted of ten meetings. Data obtained from the test were then analyzed using non-parametric statistics. The result showed an average post-test score is 89 after receiving the intervention programs. Moreover, data analysis using binomial tests showed the value of 0.00217 which is smaller than crisis value of 1,000, so that the working hypothesis is accepted. Thus, it can be concluded that the forward chaining method is effective to improve the vocational skills among students with mild intellectual disabilities particularly in doing laundry.

**Keywords:** *Forward chaining, Vocational skills, Students with intellectual disabilities*

## 1. INTRODUCTION

Education has a big influence on the development of the nation because it can create competent and quality resources. Every individual has the right to receive proper education, an education that is expected to be comprehensive and equitable. Based on these statements, it can be understood that children with special needs must also obtain education. This is also supported by Indonesia's Government Regulation Number 17 of 2010 which explains that special education for students with disabilities has a specific aim. That aim is to provide educational services for students who have difficulties in following the learning process due to physical, emotional, mental, intellectual, and or social disabilities. In terms of education, special needs are not an obstacle although educators often have to adjust based on students' characteristics [1], [2]. Because children with special needs also have the potential to benefit their education and life. Special education for students with special needs also aims to develop students' capabilities optimally. One of the students who needs this special education service is a student with intellectual disability.

Children with intellectual disabilities have the main characteristic which is low level of thinking or reasoning, lack of learning abilities and also social adaptation are below average [3], [4]. Therefore, to overcome these obstacles, children with intellectual disabilities are given different ways of education services compared children in general education and must be adjusted to the level of the disabilities. Due to the low level of ability to think or reasoning, then for children with intellectual disabilities who have education up to high school level specifically and most who do not continue to tertiary level of university need to be given special skills as a provision for themselves to work and live independently in the community for life sustainability.

In the Indonesia' Minister of National Education Regulation No. 22 of 2006, said that the curriculum content in special schools was more emphasized on the ability to help themselves and simple skills that made it possible to support the independence of students. Therefore, the bigger proportion of vocational skills for students in special schools is preferred [5], [6]. Kis [7] and Liang [8] explained that vocational skills are skills to do work to be able to support themselves properly and profitably, special skills needed for mental retardation,

namely vocational skills, are one of the special skills emphasized at special senior high school. For this reason, the development of life skills needs must be adjusted to the interests, talents and needs of children.

The explanation above can be concluded that the independence of children with special needs by providing provisions in the form of vocational skills to students who will graduate from high school level is a special obligation of educational institutions. Children with intellectual disabilities in the mild category can be educated into semi-skilled labor, such as laundry work (washing clothes with washing machines), agriculture, animal husbandry, household work, even if properly trained and children with intellectual disabilities in the mild category can work in factories with the assistance of instructor supervision [9]–[11]. This means that post-school mentally retarded persons who have work competence at the semi-skilled or semi-skilled level are caused by the limited intelligence of persons with mental retardation, ranging from 55 to 70 according to the American Association on Mental Deficiency. For this reason, it is felt that vocational skills in services or careers that are needed by the community are needed, one of which is given laundry.

Laundry skills are chosen because they are one of the everyday domestic skills, mastery of these skills can also be used as a provision for individuals to work (working in the laundry, domestic workers, hotels, etc.). Laundry skills have also been felt important to be taught as one of the skills in school, especially in schools for children with special needs.

Learning programs both in the Formal Education and in the Non-Formal Education pathways must provide life skill selection skills, so that by having these skills students are expected to be equipped to work and try to support the achievement of a better standard of living [12], [13]. Moreover, behavior modification approach gives special attention to behavior and performance, or things done in daily life [14]. The approach focuses on adaptive development, prosocial behavior, and reducing maladaptive behavior in daily life.

One method of the behavior modification procedure can be applied to children with mild intellectual disability and is suitable, namely the forward chaining method, where the easy steps in a behavior are placed at the beginning such as the laundry steps [15], [16] as follows (1) wetting; (2) lathering; (3) initial flushing; (4) bleaching process; (5) flushing; (6) sour / soft; (7) extortion. Forward chaining can help improve the ability of children with intellectual disability, because with this method each activity carried out is arranged sequentially and becomes a small series [17], [18]. Based on the explanation above, if students with mild intellectual disability are given laundry skills using the forward chaining method, it is hoped that students with mild intellectual disability will be able to do semi-skilled work in the form of laundry with a forward chaining method. Therefore, the purpose of this study is to examine the

effect of the forward chaining method on laundry skills for students with mild intellectual disabilities.

## 2. METHOD

This research is classified as a type of pre-experimental research with a one-shot case study research design. One-shot case study is a group of subjects given a certain treatment after treatment is given, then a measurement of the dependent variable is carried out [19]. A total of six mildly retarded students from high school specifically became the subject of research. The data collection technique is done by using tests. Data analysis techniques are needed in order to calculate and determine whether or not the influence of treatment has been done. The calculations used in this study are non-parametric statistics and using binomial tests [20].

## 3. RESULT AND DISCUSSION

Based on the results of the study indicate that there is a significant effect between the forward chaining method in learning laundry skills for students with mild intellectual disabilities. The influence or change can be seen from the results obtained by students during treatments 1 to 10 carried out, as well as from the results obtained from the post-test with an average of 89.

Previously, students with mild intellectual disability had never gotten laundry skills. So, at the beginning of the students had felt confused, but after starting to try the first treatment, students immediately began to show interest. Not only academic matters, but students with intellectual disabilities also need a life skill so that after graduating from school. Students with mild intellectual disability have the ability to equip themselves for life and independence in the future. In line with Indonesia's Minister of National Education Regulation No.22 of 2006 that for the special school curriculum content of the intellectual disability group is more emphasized on the ability to help themselves and simple skills that support the independence of students. So, one of the skills expected to be a provision for students with intellectual disabilities is laundry skills.

Laundry is one of the household activities that uses detergent as an auxiliary material to clean clothes, carpets and other household appliances [21]. The presence of this laundry in addition to facilitating household work can also bring considerable benefits to the economy by reducing unemployment and increasing the standard of living of humans.

In this study, using the forward chaining method, in which the treatment and assignments performed by students with mild intellectual disability in the form of fragments from a series of each stage of laundry skills in sequence. In line with the opinion of Gevarter [15] and Meiza [16] which stated that forward chaining can help improve the ability of children with intellectual disability, because with this method each activity carried out is

arranged sequentially and becomes a small series. The implementation of laundry skills using the forward chaining method consists of three stages, namely the preparation stage, the washing/grinding stage and the drying stage.

The laundry skill stage carried out in treatment 1 to treatment 4, these mild intellectual disability students are taught directly with concrete objects, through concrete or original objects mild intellectual disability students will be able to see, feel, hold, differentiate and know the object directly. From the first treatment of students with mild intellectual disabilities are introduced to tools and equipment for laundry skills, which are then repeated until the 4th treatment so that the abilities of students with mild intellectual disabilities can be achieved optimally. Treatment for 1 mild retarded student was still difficult to label the equipment needed and distinguished the sequence of buttons to be set. From the first treatment, the average ability of students with mild intellectual disabilities was 40% and in the second treatment 58%, it can be seen that there was an increase of 18%, but the average number obtained was still lacking so the researchers made repetition back. After treatment up to 4 times, the results obtained an average of 88% and can be said to be good and can continue to the next stage.

The fifth to the 10th treatments are treated in the form of washing/grinding and drying stages. The previous stages of preparation made a little easier for students with mental retardation in doing the stages of washing and drying. After the 5-6 treatments about the stages of washing and drying, an average grade of 39% is obtained which can be seen that mild retardation students are lacking and need repetition. When mild intellectual disability carried out 5-6 treatments, it can be seen that students still need help verbally in setting the button on the washing machine. From 5-6 treatments to 9-10 treatments there was an increase of 42%, namely an average value of 81%. The post-test results also showed that the average ability of students with mild intellectual disabilities was 89%. It can be concluded that there was a significant influence between the forward chaining method in laundry skills for students with mild intellectual disabilities. During the treatment, students with mild intellectual disabilities are able to do instructions well and can implement laundry skills after being treated repeatedly and the steps are broken down into small parts in sequence [22].

This is in accordance with the opinion of West [23] and Weir [24] that if students with mild intellectual disabilities are given good guidance and education, students with mild intellectual disabilities will be able to obtain the appropriate skills with them at a later time. Obstacles in the implementation of this laundry skills learning are some students with mild intellectual disabilities who experience boredom because in their implementation the researcher applies the same activity and is carried out repeatedly. However, these obstacles

can be overcome by giving rewards to students in the form of simple praise or prizes. In addition to that researchers also provide motivation to students with mild mental retardation. In line with this, the provision of reward has the aim to be able to arouse students' learning interest [25], [26], besides that support from parents of students also influences the learning of laundry skills.

#### 4. CONCLUSION

The aim of this study was to find out the effectiveness of the forward chaining method to improve the vocational skill among students with mild intellectual disabilities. Results show that  $p(x) 0.00217 \leq 1,0000$ , then  $H_0$  is rejected and  $H_a$  is accepted, which means there is an influence of the forward chaining method for laundry skills for students with mild intellectual disabilities at special school. Implications of the results of research on the influence of the forward chaining method on laundry skills for mild intellectual disability in addition to being able to become a provision of life in the community can also increase social interaction and confidence for students with mild intellectual disabilities. Furthermore, this research can be used as a reference for further research, taking into account the conditions and needs of students. In addition to further research can use more samples from this study also more varied in learning techniques or methods.

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