



# Mathematics Learning Children with Special Needs: Identification of Independence in the Mathematics Learning Process for Students with Learning Difficulties

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Mathematics learning, children with special needs, independence, learning process, students with learning difficulties.

## Abstract

The purpose of this study was to find out the profile of the independence of the mathematics learning process for children with special needs, especially students with learning difficulties. We used a qualitative research method with the subject of children with special needs (students with learning difficulties) in junior high schools, in West Java. The results showed that independence in the process of learning mathematics for students with learning difficulties can be analyzed from 3 aspects, namely: (1) independent learning in the aspect of freedom to make choices, (2) independent learning in the aspect of commitment to assignments, and (3) independent learning in aspects of self-confidence. This can be seen from the analysis of data taken from the field. Most children have a large percentage of their belief in the aspects of learning independence in the aspect of belief in their own abilities. The implications of this research are expected to be a reference in developing programs or determining learning methods used for students with learning difficulties.

## 1. Introduction

Independence is an important aspect that everyone must have in doing various things [1]. Independence is formed from the learning process [2]. Independence is one aspect that determines a person's level of success in achieving goals [3]. One of them, independence is needed in the learning process, especially learning mathematics.

Learning mathematics is a process that not only gets information from the teacher but many activities and actions are carried out especially when better learning outcomes are desired for students [4]. Learning mathematics is a learning and teaching activity that studies mathematics with the aim of building mathematical knowledge so that it is useful and able to apply it in everyday life [5]. Learning mathematics is very important because this has an impact on activities carried out in everyday life. Many activities in daily activities are related to mathematics. In Indonesia, mathematics is studied at every level of education [4-6]. This is recorded and outlined in the national curriculum. In order for the learning process to run effectively of course we must know the needs of students. Student

needs are known through identification and assessment [4]. Identification and assessment is often carried out by the school, especially for students with special needs.

Children with special needs are children who have various characteristics of problems [7]. The characteristics of the problems that are owned have an impact on the emergence of problems in the learning process [8]. Children with special needs are either permanent or temporary [9]. Children with permanent special needs occur because of internal factors from within the child and are usually related to aspects of sensory problems [10]. Children with temporary special needs Most of them occur because of external factors from the child, one of which is the environment that affects the problems that occur in children [11-14]. There are several types of children with special needs, one of which is children with learning difficulties. Learning difficulties faced by children, one of which is in the process of learning mathematics. Therefore, strategies, models, methods, and media are needed that suit the needs of students. This is so that students are able to achieve learning goals and achieve independence, especially in learning mathematics.



Currently, there is a lot of research discussing mathematics learning for children with special needs, starting from mathematics learning methods [15], mathematics learning media [16], mathematics learning strategies [17], mathematics learning models [18], and mathematics learning functions [19]. However, until now no one has discussed mathematics learning for children with special needs, especially regarding the identification of independence in the process of learning mathematics for students with learning difficulties. This study aims to determine the mathematics learning of children with special needs, especially regarding the identification of independence in the process of learning mathematics for students with learning difficulties. Qualitative methods are used in this study. The results of the research show how important it is to identify student independence in the process of learning mathematics, especially students with learning difficulties. The results of this study are expected to provide information for the development of further researchers regarding the determination of mathematics learning programs for students with learning difficulties. The novelty in this research includes the theme of identifying independence in the process of learning mathematics and the research subjects are students with learning difficulties.

## 2. Method

This research uses descriptive qualitative method. The subjects of this study were students with learning difficulties in junior high schools, in West Java. This research was carried out in several stages, namely field studies, literature studies on the basis of making data collection instruments, implementation, and data analysis.

Figure 1 shows the implementation procedure in this study. The field study stage was carried out to identify problems. The literature study stage is carried out as a study to obtain basic information in making research instruments. The implementation phase is carried out with the aim of obtaining various data and information needed, especially regarding independence in the process of learning mathematics for students with learning difficulties. The data analysis stage is carried out by processing and interpreting the data obtained so that it is easy to understand.



Fig. 1. Research procedure

## 3. Results and Discussion

### 3.1. Demographic profile of student independence

The profile of student independence is a general description of the level of independence in students with learning difficulties at the senior high school (SMA) education level in the West Java region. This aspect of student independence includes aspects of freedom to make choices, commitment to tasks and confidence in one's abilities. In general, the independence profile of the learner can be described as follows:

- (1) Learning independence in the aspect of freedom to make choices
- (2) Learning independence in aspects of commitment to tasks includes discipline, overcoming challenges in carrying out activities, responses to the social environment when in the process of carrying out activities, sub-aspects of self-management results,
- (3) independent learning in the aspect of belief in one's own abilities includes belief in carrying out activities, belief in self-motivation, belief in facing challenges, and belief in completing assignments.

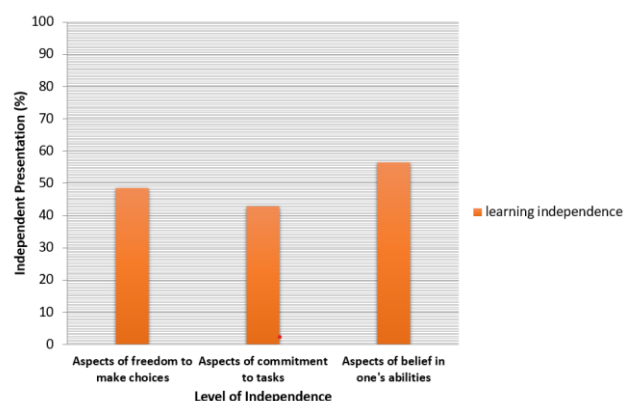


Fig. 2 Level of Learning Independence

In the aspect of freedom to make choices, it can be concluded that students are already independent in making their choices, especially in the choices that students like. They are more influenced by responses or feedback from their peers than from their families or



teachers. Some of the students still don't want to be open with their choices because they are embarrassed, while some of them have the courage to show their likes and dislikes, this is because the choices they make are not only made during high school, but have been built since elementary school, so that a sense of self-confident and responsible for the student.

In the aspect of commitment to the task, the results of the sub-aspect that are positively illustrated are how students have discipline and self-management. Students will tend to follow a regular and systematic schedule, this makes it easier for them to be consistent and disciplined in completing their assignments, so that it will have an impact on their commitment. In the sub-aspect of social response and overcoming challenges, several aspects need to be improved, especially if some friends or facilities and infrastructure are not supportive. A few choose to quit activities, although many will try first. In this aspect, it can be concluded that aspects of self-management are a top priority to continue to develop so that students' commitment to these activities can also be increased, especially if they experience boredom and also schedules that are not optimal, especially during learning during this pandemic.

In the aspect of self-confidence, it can be concluded that most students believe that they will complete assignments well in the activities they like, and also that they will be able to face challenges in the activities they like, but they lack confidence in their abilities in things that they do not. they like or control. Regarding motivation and also feelings of pleasure in carrying out activities at school, they stated that motivation and feelings of pleasure came more from the choice of activities they liked compared to activities they did not like. The initial factor in choosing activities will have an impact on their beliefs, if they choose on the basis of their own choices they are more confident in their abilities, this is different from students who choose activities compulsorily or only follow trends and most of their peers' choices.

#### 4. Conclusion

The research discusses the profile of the independence of the process of learning mathematics for children with special needs, especially students with learning difficulties. Qualitative research methods were chosen in this study. Children with special needs (students with learning difficulties) in junior high schools, in West Java, are the subject of this study. The results of the study show that

independence in the process of learning mathematics for students with learning difficulties can be analyzed to have a large presentation on the aspect of learning independence on the aspect of self-confidence. This can be seen from the analysis of data taken from the field. Most children have a large percentage of their belief in the aspects of learning independence in the aspect of belief in their own abilities. The implications of this research are expected to be a reference in developing programs or determining learning methods used for students with learning difficulties.

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