

# Increasing Competence of Student with Special Needs Use a Decision Support System Application

<sup>1\*</sup> Tias Martika, <sup>2</sup>Hermawan

<sup>1,2</sup>Sebelas Maret University, Indonesia

**Abstract** This study aimed to improve student competence in conducting identification and assessment of children with special needs. The subjects of this study were the 4th semester students of FKIP UNS PLB in Orthopedagogic subjects with emotional and behavioural obstacles. There were 35 students in total. The method used in this study was qualitative comparative. The data was collected by filling out the self-evaluation instrument about the students' understanding of identification and assessment material in the pre-test and post-test. The data obtained were then analysed in a qualitative descriptive way. Assessment includes seven aspects, namely (1) understanding of identification, (2) understanding of assessment, (3) differences of identification and assessment, (4) importance of identification and assessment of children with special needs, (5) ways of identifying and assessment, (6) implementation of identification and assessment of children with special needs, (7) identification with the Decision Support System. Based on the results obtained by the data that the seven aspects have an increase in student understanding of identification and assessment, so it can be concluded that there is an increase in student competence in the identification and assessment of children with special needs through the use of the Decision Support System (DSS) application.

**Keywords:** Competence, Identification and Assessment, Children with Special Needs, DSS Applications

## 1. Research Background

Obtaining education is rights of every child. Indonesia has a 9-year compulsory education policy. This is in accordance with Indonesia Law number 20 of 2003 article 48 of the national education system which reads "The government is obliged to hold a basic education of at least 9 (nine) years for all children. In addition, the amended 1945 Constitution of the Republic of Indonesia, Article 31 is affirmed: "(1) every citizen has the right to get education; (2) every citizen must be involved in basic education and the government is obliged to finance it; (3) the government seeks and organizes a national education system, which enhances the faith and devotion and noble character in order to educate the nation which is regulated by law ". There are no exception on the right to obtain education, as well as children with special needs.

Children with special needs have the same rights in obtaining education. Indonesia had various laws and regulations concerning education for children with special needs, for example PP No. 17 of 2010 and Minister of Education and Culture of Indonesia Regulation No.72 of 2013 concerning the provision of special service education.

The implementation of the fulfilment of education services for children with special needs is not entirely similar with education services for regular children. Fulfilment of education services for children with special needs according to (Harlan et al., 2011) includes (1) academic and functional assessment, (2) assessment results, (3) material determination, (4) program plan preparation, (5) program priority determination, (6) program implementation, and (7) periodic evaluation. Based on the description above, it can be seen that the first form of education service is to carry out identification and assessment. The process of identification and assessment is a very important stage since it is the basis for designing learning programs for children with special needs.

\* Corresponding author: Tias Martika

tiasmartika@gmail.com

Published online at <http://IJDS.ub.ac.id/2020-1>

Copyright © 2020 Author(s) Licensed under CC BY-NC.

Identification activities are the beginning of the assessment activity. Both of these activities are inseparable unity, because they have the same goal of recognizing and knowing the needs of children with special needs. The implementation of identification and assessment of children with special needs in schools is carried out by a team formed by the school that has the task of carrying out identification and assessment. The identification and assessment team according to (Haryanto, 2011) consists of multidisciplinary, consisting of classroom teachers, Special Education teachers, administrators, parents, psychologists, medical personnel, and others if needed.

The implementation of identification and assessment at schools has obstacles both technically and non-technically. Research (Dewi, 2010), shows that teachers at SD Pasar Lama 3 in Banjarmasin are unable to conduct screening yet. The teacher does not provide tests to children using appropriate identification tools. In addition, a research (Hermanto, 2010) also shows the ability of teachers to identify children with special needs in primary inclusive schools in Pakel Yogyakarta is still very low. Other problems also emerged in the study (Salim, 2017). The results show that (1) the level of teachers' understanding of the identification of children with special needs was strongly not comprehend (37%), not comprehend (23%), and poorly comprehend (18%); (2) the needs for teachers to identify children with special needs are mostly the need of training programs and development of digital identification instruments, (3) problems found in the field about identifying children with special needs are standardized identification instruments, difficulties in conducting step of identification, the low competence of non-special-education teachers about identification and in detecting the same characteristics of children with special needs.

Based on the above background, the researcher conducted research aiming to improve student competence in conducting identification and assessment of Children with Special Needs. Through the use of the Decision Support System (DSS) application that has been developed by Abdul Salim et al (2014). With the use of the DSS application, it is

expected that it can provide better results so that children with special need can receive appropriate special education services.

## 2. Research Methodology

The research method used in this study was comparative descriptive methodology with quantitative approach. Descriptive is a method in examining the status of a human group, an object, a set of conditions, a system of thought, or a class of events in the present (Nazir, 2014). While the understanding of comparative research is research that compares the existence of one or more variables in two or more different samples, or at different times (Sugiyono, 2006).

This research was carried out in the Special Education Study Program of the Faculty of Teacher Training and Education, Sebelas Maret University, Surakarta, which is located at Jl. Ir. Sutami no. 36A Surakarta. The subjects of this study were the 4<sup>th</sup> semester students of Special Education Study Program in the Orthopedagogic course of Children with Emotional and Behavior Disorders. Data was collected by using self-evaluation instrument related to the understanding of identification of pre-test and post-test. The results were then analyzed by using qualitative descriptive.

## 3. Results and Discussion

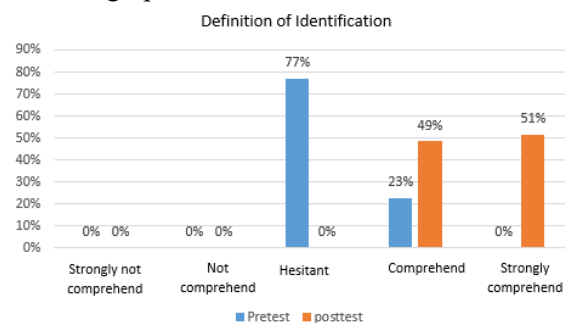
The result of the measuring of students' competence in conducting identification and assessment of children with special needs is shown as follows.

### 1. Definition of Identification

**Table 1.** Students' understanding about definition of identification

Unders- tanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	0	0	0%	0%
hesitant	27	0	77%	0%
Comprehend	8	17	23%	49%
Strongly comprehend	0	18	0%	51%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 1 above, it can be seen that students' understanding of the definition of identification shows that at pretest, 0% strongly not comprehend, 0% not comprehend, 77% are hesitant, 23% comprehend and 0% strongly comprehend. Meanwhile, in the posttest, it showed that 0% strongly not comprehend, 0% not comprehend, 0% are hesitant, 49% comprehend and 51% strongly comprehend. The data can be presented in the form of graph as follows



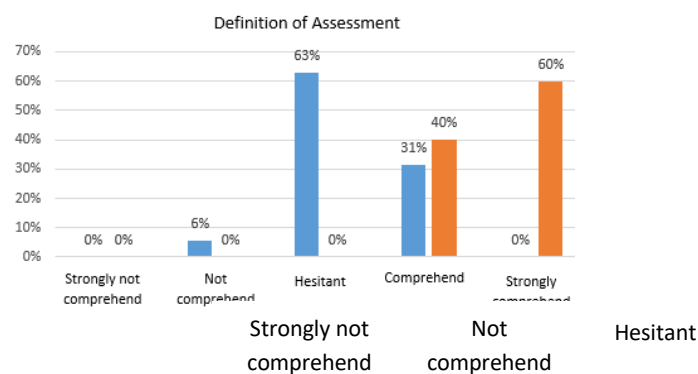
**Figure 1.** Students' Understanding about definition of identification

## 2. Definition of Assessment

**Table 2.** The Students' understanding about definition of assessment

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	2	0	6%	0%
Hesitant	22	0	63%	0%
Comprehend	11	14	31%	40%
Strongly comprehend	0	21	0%	60%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 2 above, it can be seen The Students' understanding about definition of assessment. The result of pretest showed that 0% strongly not comprehend, 6% not comprehend, 63% hesitant, 31% comprehend and 0% strongly comprehend. Meanwhile, the result in the posttest showed that 0% strongly not comprehend, 0% not comprehend, 0% hesitate, 40% comprehend and 60% strongly comprehend. The data can be presented as follows:



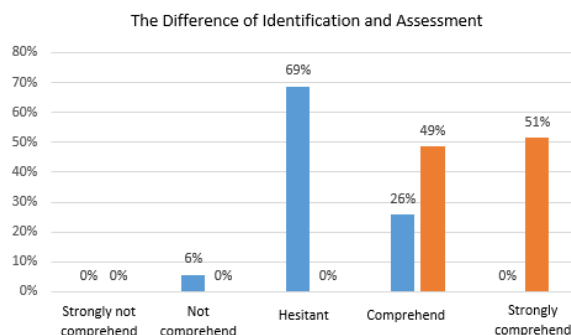
**Figure 2.** Students' understanding about the definition of assessment

## 3. The difference of identification and assessment

**Table 3.** students' understanding about identification and assessment

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	2	0	6%	0%
Hesitant	24	0	69%	0%
Comprehend	9	14	26%	49%
Strongly comprehend	0	18	0%	51%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 3 above, it can be seen the students' understanding about identification and assessment. The result of pretest showed that 0% strongly not comprehend, 6% do not comprehend, 69% hesitant, 26% comprehend and 0% strongly comprehend. And the result in the posttest showed that 0% strongly not comprehend, 0% do not comprehend, 0% hesitant, 49% comprehend and 51% strongly comprehend. The data can be presented as follows:



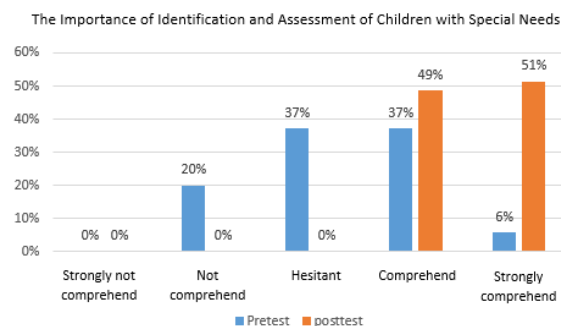
**Figure 3.** Students' understanding about identification and assessment

#### 4. The importance of identification and assessment of children with special needs

**Table 4.** Students' understanding about the importance of identification and assessment of children with special needs

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	7	0	20%	0%
Hesitant	13	0	37%	0%
Comprehend	13	17	37%	49%
Strongly comprehend	2	18	6%	51%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 4 above, it can be seen the students' understanding about the importance of identification and assessment of children with special needs. The result of pretest showed that 0% strongly not comprehend, 20% do not comprehend, 37% hesitant, 37% comprehend and 6% strongly comprehend. And the result in the posttest showed that 0% strongly not comprehend, 0% do not comprehend, 0% hesitant, 49% comprehend and 51% strongly comprehend. The data can be presented as follows:



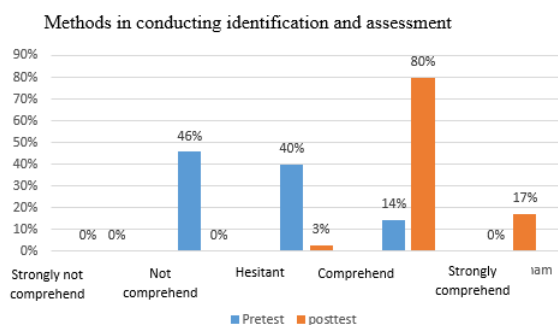
**Figure 4.** The students' understanding about the importance of identification and assessment of children with special needs

#### 5. Methods in conducting identification and assessment

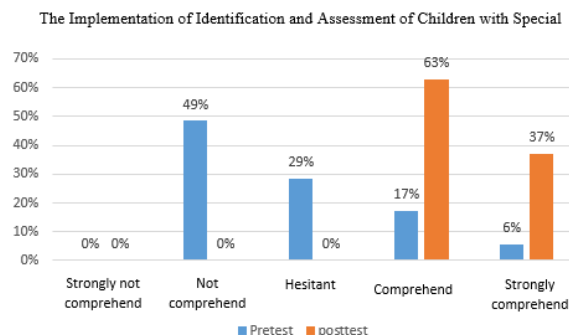
**Table 5.** students' understanding about methods in conducting identification and assessment

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	16	0	46%	0%
Hesitant	14	1	40%	3%
Comprehend	5	28	14%	80%
Strongly comprehend	0	6	0%	17%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 5 above, it can be seen the students' understanding about methods in conducting identification and assessment. The result of pretest showed that 0% strongly not comprehend, 46% do not comprehend, 40% hesitant, 14% comprehend and 0% strongly comprehend. And the result in the posttest showed that 0% strongly not comprehend, 0% do not comprehend, 3% hesitant, 80% comprehend and 17% strongly comprehend. The data can be presented as follows:



**Figure 5.** Students' understanding about methods in conducting identification and assessment



**Figure 6.** Students' understanding about the implementation of identification and assessment of children with special needs

## 6. Implementation of Identification and Assessment of Children with Special Needs

**Table 6.** Students' understanding about the implementation of identification and assessment of children with special needs

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	0	0	0%	0%
Not comprehend	17	0	49%	0%
Hesitant	10	0	29%	0%
Comprehend	6	22	17%	63%
Strongly comprehend	2	13	6%	37%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

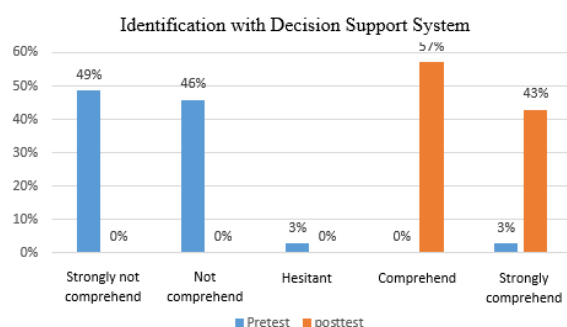
Based on table 6 above, it can be seen the students' understanding about the implementation of identification and assessment of children with special needs. The result of pretest showed that 0% strongly not comprehend, 49% do not comprehend, 29% hesitant, 17% comprehend and 6% strongly comprehend. And the result in the posttest showed that 0% strongly not comprehend, 0% do not comprehend, 0% hesitant, 63% comprehend and 37% strongly comprehend. The data can be presented as follows:

## 7. Identification with Decision Support System

**Table 7.** Students' understanding about identification with decision support system

Understanding	Pretest	Posttest	Pretest	Posttest
Strongly not comprehend	17	0	49%	0%
Not comprehend	16	0	46%	0%
Hesitant	1	0	3%	0%
Comprehend	0	20	0%	57%
Strongly comprehend	1	15	3%	43%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>100%</b>	<b>100%</b>

Based on table 7 above, it can be seen the students' understanding about identification with decision support system. The result of pretest showed that 49% strongly not comprehend, 46% do not comprehend, 3% hesitant, 0% comprehend and 3% strongly comprehend. And the result in the posttest showed that 0% strongly not comprehend, 0% do not comprehend, 0% hesitant, 57% comprehend and 43% strongly comprehend. The data can be presented as follows:



**Figure 7.** Students' understanding about identification with decision support system

Accordingly to analysis the results, there are some suggestions, which are:

1. The school should conduct identification and assessment for children with special needs at least when they enroll in school.
2. The identification and assessment of children with special needs is carried out by a team given a special task in identifying and assessing.
3. The application of the decision support system can be used to assist identifying the deficiency and needs of children, so that it becomes the basis of the teacher in designing learning programs in accordance with the children's condition.
4. Parents provide correct and appropriate information in the implementation of identification and assessment, so the result will be accurate.

## 4. Conclusions

Based on the result if the research, it can be drawn conclusion as follows.

1. Students' understanding about definition of identification shows that the pretest results are 77% hesitant, 23% comprehend. It increased in posttest that 49% comprehend and 51% strongly comprehend
2. Students' understanding about definition of assessment shows the pretest results are 6% did not comprehend, 63% hesitate, 31% comprehend. It increased in posttest that 40% comprehend and 60% strongly comprehend
3. students' understanding about identification and assessment showed

that the pretest results are 6% do not comprehend, 69% hesitant, 26% comprehend. It increased in posttest that 49% comprehend and 51% strongly comprehend.

4. students' understanding about the importance of identification and assessment of children with special needs showed that the pretest results are 20% not comprehend, 37% hesitate, 37% comprehend and 6% strongly comprehend. It increased in posttest that 49% comprehend and 51% strongly comprehend.
5. students' understanding about methods in conducting identification and assessment showed that the pretest results are 46% not comprehend, 40% hesitate, 14% comprehend. It increased in posttest that 3% hesitant, 80% comprehend and 17% strongly comprehend.
6. Students' understanding about the implementation of identification and assessment of children with special needs showed that the pretest results are 49% not comprehend, 29% hesitant, 17% comprehend and 6% strongly comprehend. It increased in posttest that 63% comprehend and 37% strongly comprehend.
7. Students' understanding about identification with decision support system showed that the pretest results are 49% strongly not comprehend, 46% not comprehend, 3% hesitant and 3% strongly comprehend. It increased in posttest that 0% strongly not comprehend, 0% not comprehend, 0% hesitant, 57% comprehend and 43% strongly comprehend.
8. Overall there is an increase in students' understanding of the identification and assessment of children with special needs through the use of the decision support system application.

## References

Dewi, Rapisa Ratih. 2010. Kemampuan Guru Dalam Melakukan Identifikasi Anak Berkebutuhan Khusus . *PEDAGOGIA : Jurnal Ilmu Pendidikan*.

Haryanto. 2011. *Asesmen Anak Berkebutuhan Khusus*. Power Point.

Hermanto. 2010. *Kemampuan Guru Dalam Melakukan Identifikasi Anak Berkebutuhan Khusus Di Sekolah Dasar Penyelenggara Pendidikan Inklusi*. Yogyakarta: Laporan Penelitian Pelatihan

Hermanto. 2010. Peningkatan Keterampilan Identifikasi, Asesmen, dan Intervensi Dini Anak Bertekbutuhan Khusus bagi Mahasiswa Pendidikan Khusus. *Wuny Majalah Ilmiah Populer*. Tahun XII No. 3 September 2010, hal 20-28.

Nazir. 2014. *Metode Penelitian*. Bogor: Ghalia Indonesia.

Peraturan Menteri Pendidikan dan Kebudayaan no. 72 tahun 2013 tentang “Penyelenggaraan Pendidikan Layanan Khusus”

Peraturan Pemerintah No. 17 tahun 2010 tentang “*Anak Berkebutuhan Khusus*”

Purnama, Maria Nduru. Identifikasi dan Asesmen Kesulitan Belajar Anak. *Proseding Seminar Nasional PGSD UPY*. Hal 23-28.

Salim, Abdul; Dian Atnantomi W. (2017). Analysis of Teachers’ Understanding Level, Needs, and Difficulties in Identifying Children with Special Needs in Inclusive School in Surakarta. *Journal of Education and Learning*. Vol. 11 (4) pp. 352-357. DOI: 10.11591/edulearn.v11i4.paper6387

Sugiyono. 2006. *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. Bandung:Alfabeta.

Undang-undang No. 20 tahun 2003 tentang “*Sistem Pendidikan Nasional*”

Undang-Undang Ps. 31 tahun 1945 ayat (1) dan (2)