



THE USE OF ASSESMENT APPLICATION BASED ON *DECISION SUPPORT SYSTEM (DSS) FOR IDENTIFICATION AND ASSESMENT OF CHILDREN WITH SPECIAL NEEDS*

Dian Atnantomi W., Abdul Salim

Special Education Department, Sebelas Maret University, Indonesia

Abstract:

This research aims to identify the effectiveness of assessment application based on Decision Support System (DSS). This effectiveness is viewed from teacher's needs and accuracy of this application in detecting impairment suffered by children with special needs. Research method used in this research is qualitative method with the subject of data are teachers from 10 cities in Central of Java teaching children with special needs. This research's result shows that the effectiveness assessment application based on Decision Support System (DSS) is suitable with teacher's need, namely: 50% very good, 37,5% good, 12,5% not very good, and 0% not good. While, accuracy test's results of assessment application based on Decision Support System (DSS) are 50% very good, 40% good, 7.5% not very good, and 2,5% not good. It can be concluded that assessment application based on Decision Support System (DSS) effectives to meet the needs and accuracy in identifying and assessing.

Keywords: identification, children with special needs, decision support system (DSS)

Introduction

Early identification and assessment in education for special needs are much needed in arranging proper education program for children. Unstandardized assessment becomes obstacles for teachers who teach children with special needs. Direktorat Pembinaan Luar Biasa (2007) classifies education characteristic for children with special needs as follows, (there are some characteristics adjusted with the children in school): (a) children with hearing impairment/deaf, (b) children with mental retardation, (c) slow learner children, (d) children with specific learning difficulty, (e) children with autism, (f) children with

ADHD. Since there are several characteristics of children with special needs and teachers don't have much knowledge about the characteristics, it makes improper identification towards children. Incorrect identification will cause ineffective education program designed for children with special needs.

Identification and assessment become the important elements in education for children with special needs, because it can classify children based on their impairment characteristics. Identification here (Abdurahman, 2003) means that an effort to identify or find children with special needs fit with their characteristic. To identify children with special needs in elementary school, it is oriented to children's characteristic including physical condition, intellectual competency, communication, and social emotional (Leylasari, 2015). According to Direktorat Pembinaan Sekolah Luar Biasa (2007), generally the purpose of identification is to gather information whether a child has impairment (physical, intellectual, social, or emotional) or not compared with normal child. The result then continued with assessment. It is used as a base for arranging education program suit with their competence and impairment. Identification can be done by class teacher, special teacher, parents, and professional staff. Meanwhile, observation, interview, psychological test, and independent test can be used to conduct identification.

Assessment, based on Direktorat Pembinaan Sekolah Luar Biasa (Special School Guidance Directorate) (2007) is a networking activity toward children with special needs. This assessment activity can be done by teacher, parents, and other professional staff. Assessment covers several parts, namely: academic assessment, sensory and motoric assessment, functional assessment, and psychologist assessment (emotional and social). There are two targets of assessment, (1) to identify and give label of study problem experienced by children in the need of administrative (2) to gather additional information that help in arranging education aims and remedial strategy for children suspected as children with special needs (Wallace, g & Larsen, S, 1978).

Identification and assessment by using digital instrument based DSS (Decision Support System) become one alternative way in globalization era. DSS based on Rohayani (2013) is a computer based system that serves and processes information which gives possibility in making more productive, dynamic, and innovative decision. DSS will give exact decision and flexible with aspect influencing the decision and also producing report in order to make user understand the decision (Pranoto dkk, 2013). The usage of DSS system let teacher deciding impairment of children easily.

This research aims to test the effectiveness of identification and assessment application based on Decision Support System (DSS) implemented in special school that gives service for children with special needs. This research also describes DSS usage that suitable with teachers' needs in school.

Research Method

The research used qualitative research method with source of data taken from 10 cities in Central of Java. Research subjects were teachers from 10 cities in Central Java teaching in school serving children with special needs such as special school and inclusive school. Technique of collecting data used is by filling instrument answered by teacher that shows the effectiveness of identification and assessment digital application based on Decision Support System (DSS). The instrument's scale used are very good (4), good (3), not very good (2), and not good (1). The data are analyzed by looking at data percentage gotten from the result of answered instrument.

Result and Discussion

Research's result to test the effectiveness of identification and assessment digital application based DSS viewed from teachers' need and result and assessment result accuracy of children with special needs can be showed in the form of percentage as follows:

1. Assessment application for Children with special needs is suitable with teachers' need/assessment officer.

Scale	Total	Percentage
Very Good	20	50 %
Good	15	37,5 %
Not Very Good	5	12,5 %
Not Good	0	0%
Total	40	100%

Table 1: Assessment Application of Children with Special Needs Suitable with Teachers' need/Assessment Officer

From table 1, it can be known that from 40 respondents, there are 20 respondents answer with very good, 15 respondents answer with good, 5 respondents answer with not very good, and none of the respondents answer with not good.

The data can be shown in the form of percentage. 50% answer with very good, 37.5% good, 12.5 % not very good, and 0% not good. From the data, it is made in a diagram.

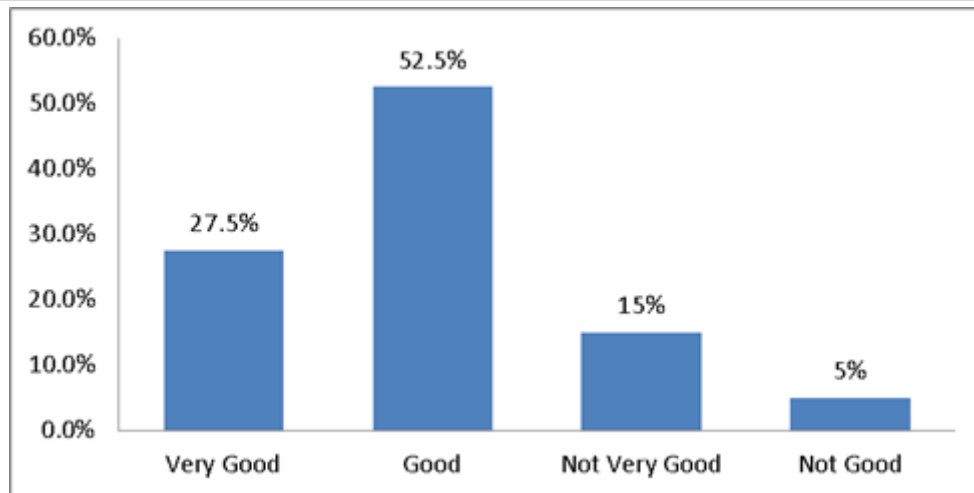


Figure 1: Assessment Application Children with Special Needs Suitable with Teachers' Needs/Assessment Officer

2. Assessment Application for children with special needs has result accuracy in taking decision.

Penilaian	Jumlah	Presentase
Sangat Baik	11	27,5 %
Baik	21	52,5 %
Kurang Baik	6	15 %
Belum Baik	2	5 %
Jumlah	40	100 %

Table 2: Assessment Application for Children with Special Needs has result accuracy in taking decision

From table 2 above, it can be known that from 40 respondents, there are 11 respondents answer with very good, 21 respondents answer with good, 6 respondents answer with not very good, and 2 respondents answer with not good. The result can be shown into the form of percentage. 50% is very good, 40% is good, 7.5% not very good, and 2.5% is not good. The data is served into diagram as follows:

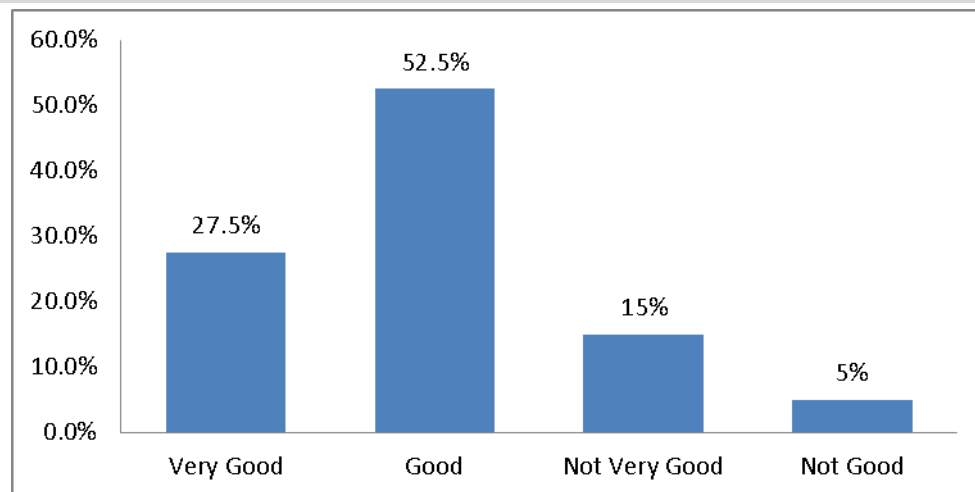


Figure 2: Assessment Application for Children with Special Needs Has Result Accuracy in Taking Decision

Discussion

Result shows that the usage of DSS (Decision Support System) is very effective with 50% for teachers' need or assessment officer in conducting identification and assessment toward children with special needs to determine their impairment. This research is in line with a research using DSS done by Jigeesh (2014). The research states that DSS can be used as needed and classifies good and bad side. Aribowo (2010) states in his research that DSS can classify book, dictate, and lecture materials suitable with users' needs. DSS becomes application used to take decision that can be used to decide strategy to solve problems (Drnevich, L, Paul., Brush, H, Thomas., & Chaturvedi, 2010).

For result accuracy in taking decision, it shows very effective result with 50%. For result accuracy in taking decision, DSS shows suitable result with fact in the field (Hartati, 2010). This DSS result accuracy is in line with research done by Rochmasari, Suprapedi, and Subagyo (2010) stating that DSS can show accurate data as handling or program recommendation. In a research done by Valverde (2011), it is described that the using of DSS shows not only an accurate decision, but also the risk.

DSS improvement is done to improve identification and assessment in deciding suitable education program for children with special needs. DSS gives information about intelligence that is useful to classify new students (Vorah & Das, 2011). Basically, assessment is used as reference in making a suitable education program for students appropriate with their needs (Deardorff, 2010). Assessment for students, especially children with special needs, is given to decide proper education service suitable with children's need and competence in school.

Conclusion

The use of assessment application based DSS shows very effective result that is used for teachers' need or assessment officer and accurate result in taking decision. The decision can be used as teachers' reference or assessment officer to plan a proper education program that is suitable with the need and competence of children with special needs in a school. The children can be classified into several groups based on their disability, namely: visual impairment, hearing impairment, mentally retarded, autism, etc.

References

1. Aribowo, Agus Sasmito. 2010. E-Elearning Cerdas Dengan Personalisasi Menggunakan Teknik Data Mining Dan Decision Support System. Seminar Nasional Informatika 2010.
2. Deardorff, K, Darla. 2010. Identification and Assessment of Intercultural Competence as a Student Outcome of Internationalization. *Journal of Studies in International Education*, Vol. 10, No. 3, Hlm. 241-266. Rohayani, Hetty. 2013. Analisis Sistem Pendukung Keputusan Dalam Memilih Program Studi Menggunakan Metode Logika Fuzzy. *Jurnal Sistem Informasi*, Vol. 5, No. 1, Hlm. 530-539.
3. Departemen Pendidikan Nasional. 2009. Pedoman Khusus Penyelenggaraan Pendidikan Inklusi. Pengadaan dan Pembinaan Tenaga Pendidik. Jakarta: Departemen Pendidikan Nasional.
4. Direktorat Pembinaan Sekolah Luar Biasa. 2007. Identifikasi Anak Berkebutuhan Khusus.
5. Hartati, Sri. 2010. Model Pengelolaan Guru Berbasis Decision Support System (DSS) dalam Rangka Peningkatan Efektifitas dan Efisiensi Kinerja Pegawai. *Prociding of Internasional Seminar On Business and Informatioan Technology 2010*.
6. Jigeesh, Nasina. 2014. A New Decision Support System for Supplier Selection Using Boolean Algebra. *International Journal of Managing Public Sector Information and Communication Technologies*. Vol. 5, No. 3, Hlm. 11-24.
7. Leylasari, Herdina Tyas. 2015. Pengembangan Panduan Identifikasi dan Asesmen Siswa Berkebutuhan Khusus di Sdn Inklusi X Surabaya. *Widya Warta*, No. 01, Tahun XXXIX.
8. Pranoto, Yosep Agus., Muslim., M.Aziz., Hasanah, Rini Nur. 2013. Rancang Bangun dan Analisis Decision Support System Menggunakan Metode Analytical Hierarchy

- Process untuk Penilaian Kinerja Karyawan. *Jurnal EECCIS*, Vol. 7, No. 1, Hlm. 91-97.
9. Rochmasari, Lia., Suprapedi., & Subagyo Hendro. 2010. Penentuan Prioritas Usulan Sertifikasi Guru dengan Metode Ahp (Analitic Hirarky Process). *Jurnal Teknologi Informasi*, Vol. 6, No. 1, Hlm. 115-121.
 10. Valverde, Raul. 2011. A Risk Management Decision Support System for the Real Estate Industry. *International Journal of Information and Communication Technology Research*, Vol. 1, No. 3, Hlm. 139-147.
 11. Wallace, G. & Larsen, S.C. 1978. *Educational Assesment of Learning Problem: Testing for Teaching*. Boston: Allyn and Bacon. Inc.

Creative Commons licensing terms

Authors will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Special Education Research shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflict of interests, copyright violations and inappropriate or inaccurate use of any kind content related or integrated on the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).