



## A Web-Based Decision Support System For Guidance And Counseling Using Technique For Other Reference By Similarity To Ideal Solution Method (TOPSIS) In 2 Senior High School Makassar

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**Abstract.** This research was motivated by management of violation data, and student achievement data at SMA Negeri 12 Makassar which are still handwritten, resulting in ineffective use of resources, time and costs. Beside that, the information generated tends to be incomplete and inaccurate. So that the impact on making unfair decisions. To solve this problem, It is necessary to develop a WEB-Based Guidance and Counseling Decision Support System Using the Technique Method For Other Reference by Similrity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar, which theoretically and empirically can overcome these administrative barriers. The objectives of this study were (1) To design a WEB-Based Guidance and Counseling Support System Using Technique Methods For Other Reference by Similrity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar. (2) To implement a WEB-Based Guidance and Counseling Decision Support System Using the Technique Method For Other Reference by Similrity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar. The research data is direct communication technique with observation interview and document study. The research subjects were counseling teachers at SMA Negeri 12 Makassar. Data analysis using quantitative-qualitative descriptive. The results showed that the problematic student management system and student personal data were currently used. Counseling teachers at SMA Negeri 12 Makassar experienced problems in the process of storing and retrieving data. Counselors at guidance and counseling institutions in schools play a role in the process of forming student personalities and direct students to be better able to hone students' abilities in the academic field according to the individual characteristics of students. This role can be effective if guidance and counseling is supported by a good computerized system in schools.

**Keywords :** SPK, students guidance and counseling, Technique for other refwrence by similarity to ideal solution



## **PRELIMINARY**

The development of science and technology has now penetrated various sides of human life. The development of information technology can be used in various fields, one of them is in the field of education, in this particular case that is information system in school.

School is one of the facilities formal education that must be able to provide facilities for students and parents of student. The preparation of students to continue the higher education that useful for produce a qualified graduates and able to compete with the world of work, not only that paying attention to the side of the subject matter but also to the procces of student personality forming. Apart from personality, students also have a different characteristics of every students. Understanding of individual characteristics in students useful for teachers in providing motivation and guidance for student each individual towards their success learning.

Counselors at guidance and counseling institutions (BK) in schools play a role in the process of forming student's personality and direct students to be better able to hone students' abilities in the academic field in accordance with the individual characteristics of students. This role can be effective if guidance and counseling is supported by a good computerized system in schools.

At SMA Negeri 12 Makassar there are 1,201 students, consisting of: class X: 360 students, class XI: 420 students, class XII: 421 students and 2 counseling teachers. And at SMA Negeri 12 Makassar there is guidance and counseling for students, guidance and the counselor has a duty to guide and assist students while they go to school at SMAN 12 Makassar, every violation of student counseling is recorded in the BK teacher's notes.

With a lot of students and counseling teachers who are also limited so that if a counseling teacher wants to re-analyze the student's development with the results of the calculation of violations done before, the counseling teacher needs a long time to look for violation data, while the maximum number of students who have to be handled by a counseling teacher is 150-160 In addition, the delivery of student development that continues to a further level in the verbal form and the time to meet between BK teachers is also not necessarily the counseling teacher often has difficulty following up on these problematic students.

The counseling teacher must calculate the limit for the number of violations that students make to report to parents. Even though the maximum limit for each violation is different so reports to parents cannot be carried out maximally if the counseling teacher forgets to count the number of student violations. Based on the problems above, the WEB-Based Guidance and Counseling Decision Support System Using the Technique Method For Other Reference by Similarity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar is one of the solutions.

## RESEARCH METHODS

The research approach used in this research is the Guidance and Counseling Decision Support System using the Technique Method For Other Reference by Similrity to Ideal Solution (TOPSIS). Data analysis using quantitative-qualitative descriptive.

The multicriteria decision making method that was first introduced by Yoon and Hwang in 1981. TOPSIS uses the principle that the best alternative must have the closest distance from the Positive Ideal Solution and have the farthest distance from the Negative Ideal Solution from a geometric point of view using the Euclidean distance (the distance between two points ) to determine the relative proximity of an alternative.

The TOPSIS method was chosen because it is a simple method and a rational concept that is easy to understand and is able to measure relative performance in the form of a simple mathematical form.

the stages passed in this research are as follows: Analysis Phase: (1) System analysis; Design Stage: (2) Data collection, (3) System design, (4) Black box testing.

## THE RESULT AND DISCUSSION

In developing a WEB-Based Guidance and Counseling Decision Support System Using the Technique Method For Other Reference by Similarity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar produced a Web-based DSS system that will help counseling teachers in processing student data and also making it easier to archive. data of students who have achieved and who have committed violations.

The Web-based DSS application generated based on the needs analysis was then tested in several stages, that is;

### System analysis

This stage analyzes from a form of its element in order to be able to identify and assess various problems or disturbances that arise in the system so that prevention, recovery and improvement can be carried out.

### Data collection

This stage includes several elements, that is:

- a. **Interview**, that is conducting interviews with the BK guku at the school, who know more about student problems where the author conducts research to get the information / data the writer needs in accordance with existing data and facts or actual information.
- b. **Observation**, that is getting data directly in the observation of the system that is currently running at SMA Negeri 12 Makassar

- c. **Literature study**, that is: data collection by studying the books used as references in supporting the writing of the final project, and articles and journals that are used through internet media, such as: Google, Encyclopedia etc.

### **System design**

According to expert Mulyani (2017; 80) the notion of system design is the determination of the processes and data required by the new system. The purpose of system design is to meet the needs of system users as well as to provide a clear picture and a sticky design.

### **Black Box Testing**

According to Mustaqbal, and friend (2015: 34) "Black box testing focuses on the functional specifications of the software", while according to Hamdani (2015: 181) "Black box testing is a test carried out to find out faulty functionality features in an application". "Black box testing is focused on whether the program unit meets the requirements stated in the specifications" (Al Fatta, 2007: 172). So, Black box testing is a test to find out whether all software functions have been running properly according to functional requirements.

The black box testing results show that the aspects tested are running according to the expected function. Therefore, the WEB-Based Guidance and Counseling Decision Support System Using the Technique Method For Other Reference by Similarity to Ideal Solution (TOPSIS) is feasible to enter the next stage, namely the trial.

### **Trial**

Tests carried out to determine the feasibility of the WEB-Based Guidance and Counseling Support System Using the Technique Method For Other Reference by Similarity to Ideal Solution (TOPSIS) based on System testing using the black box trial method focusing on the functional requirements of the software. Because black box testing allows software developers to create a set of input conditions that will exercise all of the functional requirements of a program.

The testing phase describes how the BlackBox testing process of the system that has been built, testing is carried out to ensure that an event or input will run the output in accordance with the design in the previous design.

### **CONCLUSION**

Based on the results of research that has been carried out in making a WEB-Based Guidance and Counseling Support System Using the Technique Method For Other Reference by Similarity to Ideal Solution (TOPSIS) at SMA Negeri 12 Makassar, some conclusion points can be drawn from, that is:

1. The system can help BK teachers in giving student sanctions and their weights.
2. The system can simplify the process of searching for problematic student data
3. The system can store data on student achievement and violation data and make it easier for the reporting process to the student's parents. And as a backup of student data.

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