Analysis of Honorary Teachers 'performance Through Simple Additive Weighting (SAW) For Supporting performance Assessment Decision in Vocational High School 3 Terbanggi Besar Central Lampung

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Abstract: Honorary teachers in Vocational High School 3 Terbanggi Besar Central Lampung were the teachers who were in the young age. The honorary teachers frequently worked in other schools so that it affected to their work discipline. The teacher performance assessment was also required to evaluate these honorary teachers. The performance assessment of the honorary teachers carried out by using the performance assessment of the State civil servants' teachers. There were many components of this teacher performance assessment. Therefore, the teacher performance assessment for the honorary teachers should been made separately from that of State Civil Servant Teachers. The human resource quality was one of the supporting factors to improve the employee performance productivity. The highly competent human resources were able to support the level of performance. With this performance assessment, the achievements of each employee identified. Moreover, this able to be used by the management as a consideration in determining the best employees. Vocational High School 3 Terbanggi Besar Central Lampung was able to compete with the other public schools. In the implementation of the teacher performance assessment for the honorary teachers, it expected that the teachers had balanced soft skills and hard skills so that they were able to be active and have achievements in both academic and non-academic fields. Therefore, Vocational High School 3 Terbanggi Besar Central Lampung was able to identify the teachers who were able to do the work in the academic and non-academic fields.

Keywords: SAW, Teacher Performance Assessment

1. INTRODUCTION

The use of computers today not only for processing data or presenting information, but it is also able to provide options as decision support. It possible to implement because of the development of hardware and software technology and the ability to assemble and incorporate several decision-making techniques into it. The integration of hardware, software, and decision-making processes produced a Decision Support System (DSS). The use of information technology in education, for example, the decision support system for teacher performance appraisals. Teacher performance appraisal need to be done; this to improve teacher quality. If there a teacher's assessment, at least there a desire for the teachers to advance in career development in providing material to students.

The honorary teachers of the Vocational High School 3 Terbanggi Besar, Central Lampung were young teachers who were very fresher in knowledge, but there were often problems with lack of discipline in work. Because there were several factors because the honor teachers taught in the other schools. The assessment of the performance of the honor teachers at Vocational High School 3 Terbanggi Besar done through performance assessment of the State civil servants but it considered that there were too many components of the assessment. Therefore, it required a separate performance assessment for honor teacher. Every school must implement a good quality in education

process as it is in Vocational High School 3 Terbanggi Besar. The Vocational High School 3 Terbanggi Besar always provide efforts to increase teacher professionalism by monitoring teacher performance in implementing their duties so that the predetermined competency standards achieved.

The quality of human resources one of the supporting factors for increasing the productivity of an agency's performance. Therefore, highly competent human resources support the level of performance. The performance assessment used to identify the achievements of each employee. This used by agencies as a consideration in determining the best employees.

Vocational High School 3 Terbanggi Besar, Central Lampung was able to compete with the other public schools. In the implementation of the honorary teacher performance assessment activities, the teachers are demanded to have balanced soft skills and hard skills so that the teachers were expected to be active and had achievements in both academic and non-academic fields. Therefore, Vocational High School 3 Terbanggi Besar Central Lampung need to identify the teachers who were able to do both and were awarded as outstanding teachers.

The Vocational High School 3 Terbanggi Besar, Central Lampung currently had a problem in determine the best teacher. This due to the unavailability of an objective method to decide quickly with existing data who had the right to become the best teacher. Therefore, the author created a computerized system using the Simple Additive Weighting (SAW) in determining the best teacher at Vocational High School 3 Terbanggi Besar.

2. LITERATURE REVIEW

Decision Support System

Decision Supports Systems (DSS) were computer-based information systems designed in such a way that help managers select one of the many alternative solutions to a problem. The general term 'computer-based information systems a constellation of a variety of information systems e.g., office automation systems, transaction processing systems, management information systems, and management support systems. It possible to automate some of the decision making processes in a large. The DSS sophisticated and analyze huge amount of information fast. It help corporate to increase market share, reduced costs, increased profitability, and enhanced quality. The nature of problem play the main role in a process of decision making. A DSS an interactive computer-based information system with an organized collection of models, people, procedures, software, databases, telecommunication, and devices, which help decision makers solve unstructured or semi-structured business problems.[1]

Simple Additive Weighting (SAW) Method

The basic concept of the method Simple Interview Additive Weighting used to seek the weighted summation of the rating data. The SAW method required a decision matrix normalization process to a scale that was able to compare with all available alternative ratings[2]

The SAW method required a process to normalize the decision matrix (x) to a scale that can be compared with all alternative ratings[3]. The definition of the problem and the desired solution, by determining the weight value through the Simple Additive Weighting (SAW) method approach. It expected that the weighted value obtained was able to be used to project a level that more relevant and in accordance with existing facts[4]

The SAW method often also known as a weighted addition method. The basic concept of the SAW method to find the weighted sum of the performance ratings for each alternative of all attributes.

The SAW method also a method used for MADM. This method also the most method easy to apply because it had an algorithm that not too complicated. The SAW method often also known as weighted addition method. The basic concept of the SAW method to find the weighted sum of the performance ratings for each alternative on all attributes. The SAW method required a decision

matrix normalization process (X) to a scale that was able to be compared with all available alternative ratings[5]

The Simple Additive Weighting (SAW) method the method of finding the weighted amount of the performance rating onevery alternative on all criteria. The SAW method required a decision matrix normalization process to a scale that was able to be compared with all available alternative ratings. This method had 2 (two) attributes in the form of benefit criteria and cost criteria [6].

The SAW method required a decision matrix normalization process (X) to a scale that able to be compared with all available alternative ratings. To perform normalization was using equation 1.

$$rij = \begin{cases} \frac{xij}{Max\ xij} \\ \frac{i}{Min\ Xij} \\ \frac{i}{Xij} \end{cases} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where r_ij the normalized performance rating of the alternative Ai on attribute Cj; i = 1,2,…, n and j = 1,2,, n. The preference value for each alternative (Vi) given as:

Information:

r_ij	= normalized performance rating value
x_ij	= attribute value owned by each criterion
Max x_ij	= the greatest value of each criterion $_i$
Min x_ij	= the smallest value of each criterion $_i$
benefit	= if the greatest value is the best
cost	= if the smallest value is best.

3. METHOD

In conducting the research, the method used in this study was the Simple Additive Weighting (SAW) method

A. Criteria

The criteria in this research, including:
1. Attendance / Attendance
2. Completeness of Learning Tools
3. Additional Tasks
4. Responsibility and Care for the School
5. The suitability between educational background and the subject being taught

B. Analysis of SAW Method Calculation

In the selection process to get the best teacher using the SAW method, the steps that must be taken to determine the best teacher at SMKN 3 Terbanggi Besar Lampung Tengah were as follows:
1. Determining the criteria used, the criteria are as follows:
   C1 = Attendance / Attendance [with priority scale of 5]
   C2 = completeness of learning tools [with a priority scale of 5]
   C3 = Additional Tasks [with priority scale 3]
   C4 = Responsibility and Concern for Schools[with a priority scale of 4]
   C5 = Conformity between educational background and subject matter supervised [with priority scale 5]

C. Match Rating Result

Table 2. Match Rating Result

Case: Best Honorary Teacher							
R	NO		Assessment criteria				
		NAME/Alternative	C1	C2	C3	C4	C5
R1	1	Rosmanita .,S.Pd	80	79	79	80	80
R2	2	Bari S.Pd.i	70	70	76	70	70
R3	3	Ari Tri Wijayanti.,M.Pd	80	71	70	70	70
R4	4	Cristianan Purnamasari.,S.Pd	70	69	75	69	69
R5	5	Faisal Amin.,S.Pd	85	75	70	65	65
R6	6	Vendri Rama A.,S.Pd	79	80	79	79	75
R7	7	Sri Mulyono.,S.Pd	70	70	70	70	70
R8	8	Khoirul M.,S.Pd.i	71	80	71	71	79
R9	9	Suryadi.,S.Sn	69	70	69	69	70
R10	10	Sri Sudarni.,BA	75	85	75	75	71
R11	11	Nugroho P.,S.Pd	9	70	80	79	69
R12	12	Yovi Septiria.,SS	76	71	70	76	75
R13	13	Meyriska Dwi Angraini.,S.Pd	70	69	80	70	80
R14	14	Yuliana Eka Putri.,S.Pd	75	80	70	76	70
R15	15	Herlina Endang S.,S.Pd	70	70	85	80	80
R16	16	Atika febriana Sari.,Spd	70	70	79	85	75

4. RESULT AND DISCUSSION

This method required the process of normalizing the decision matrix (X) to a scale that be compared to all existing alternative rankings. This method had two attributes with profit and cost criteria. The profit criteria called the cost criteria. The difference between these two criteria was in the selection of criteria when making decisions.

4. 1 The Implementation Software

The implementation software in this research seen in figure 3.

Figure.3 Front Web Software

Figure 3. showed the start page after logging in. This page contained the front page with several menus that supported the processing of data on the performance of the best honorary teachers at Vocational School 3 Terbanggi Besar

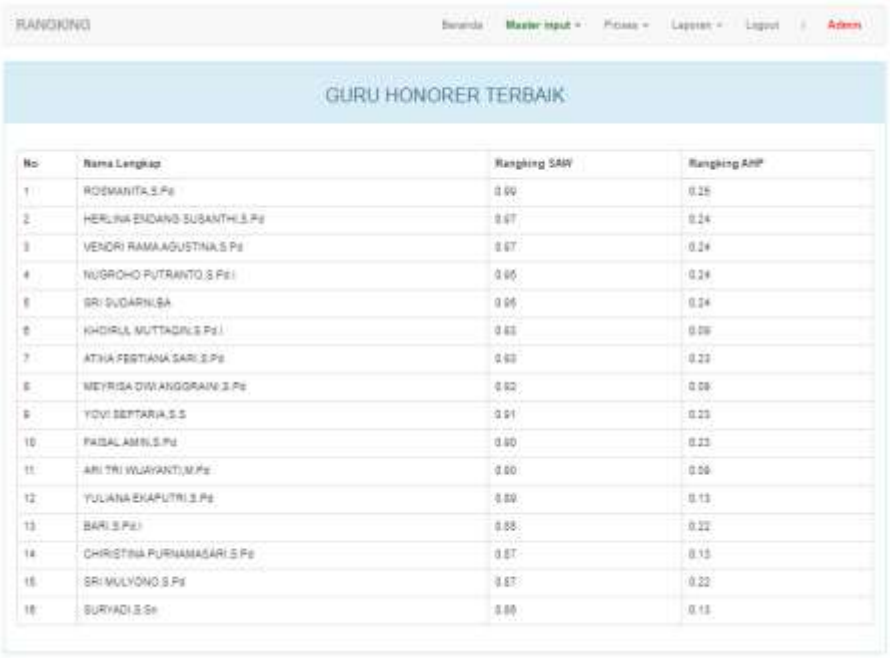

Figure.4 Implementation

Multiplication Matrix Results and Weights display showed the results of the alternative assessment or the teacher being assessed, and the result was the multiplication of the matrix and the addition with a weight of 100 (W * R). The result was the highest score and the lowest score.

5. CONCLUSIONS

1. Decision support system using the Simple Additive Weighting (SAW) method was used as the determination of the value per criterion that had been agreed upon by the school to conduct an honorarium teacher performance assessment
2. In this decision support system, the input of component names was still static so it expected that this system was able to develop in the future so that it was dynamic and the input of components and the value limitations could been adjusted to the wishes of the user.

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