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APPLICATION OF THE WEIGHTED PRODUCT METHOD OF TEACHER PERFORMANCE ASSESSMENT IN PROVIDING LESSONS

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Abstract: A system designed to assist decision-makers in semi-structured situations. Teacher performance appraisal is a technique that will result in better learning using a decision support system. Evaluating teacher performance in providing lessons at SMK Negeri 1 Setia Janji is still carried out conventionally and not in detail. With an assessment that is not detailed, it is feared that there will be a subjective assessment that will result in social jealousy for teachers who have not received learning recommendations. Evaluation at SMK Negeri 1 Setia Janji is still done manually and has not been detailed for teachers who have not received recommendations. So to overcome these problems, a decision support system was designed using the Weighted Product (WP) method. This study uses 6 criteria. The final result of this research is that the decision support system with the Weighted Product (WP) method can handle problems in teacher performance assessment.

Keywords: Decision Support System; Teacher Performance Assessment; Weighted Product

Abstrak: Sistem yang dirancang agar membantu pembuat keputusan pada situasi semi-terstruktur. Penilaian kinerja guru ialah teknik yang akan menghasilkan pembelajaran yang lebih baik menggunakan sistem pendukung keputusan. Proses evaluasi kinerja guru dalam memberikan pelajaran di SMK Negeri 1 Setia Janji masih dilaksanakan secara konvensional dan tidak terperinci. Dengan penilaian yang tidak terperinci dikhawatirkan akan adanya penilaian yang bersifat subjektif yang akan mengakibatkan kecemburuan sosial bagi guru yang belum menerima rekomendasi pembelajaran. Evaluasi di SMK Negeri 1 Setia Janji masih dilakukan secara manual dan belum detail untuk guru yang belum mendapatkan rekomendasi. Maka untuk mengatasi permasalahan tersebut, dirancanglah suatu sistem pendukung keputusan menggunakan Metode *Weighted Product* (WP). Adapun dalam penelitian ini memakai 6 kriteria. Hasil akhir dari penelitian ini didapatkan bahwa sistem pendukung keputusan dengan metode *Weighted Product* (WP) dapat menangani permasalahan pada penilaian kinerja guru.

Kata Kunci: Penilaian Kinerja Guru; Sistem Pendukung Keputusan*; Weighted Product* (WP)

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INTRODUCTION

The teacher is the most extraordinary element in ensuring learning activities' success and failure and cannot be separated from the learning process. Teachers are an important component in the world of education [1], [2].

The assessment of each element of the teacher's main obligations in career development plans, levels, and positions is called teacher performance assessment. Teachers who acquire knowledge and apply the knowledge and skills required by the Minister of National Education Regulation Number 16 of 2007 concerning Education Standards and qualifications of teacher abilities[3].

Some research on decision support systems that have been carried out previously include research on Decision Support Systems for Choosing the Best Teacher with the Weighted Product Method at MAN 1 Pariaman [4]. This study aims to determine the best teachers in MAN 1 Pariaman. Decision Support System Research for Teacher Performance Assessment Using the Weighted Product Method (Case Study: Madrasah Ibtidaiyah Condong)[5], This study aims to determine the assessment of teacher performance at Madrasah Ibtidaiyah Condong, Research on Decision Support Systems for Teachers with Achievements Using the Weighted Product Method[6], This study aims to determine the outstanding teachers at Mts Nafidatunnajah Islamic Boarding School. Research on Decision Support Systems for Choosing the Best Lecturers Using the Weighted Product (WP) Method at Stmik Royal[7]; this study aims to determine the best lecturers at the STMIK Royal Kisaran campus. Decision Support System Research Using Weighting Products to Find the Best Teacher at Barunawati Elementary School 4 [8]; this study aims to determine the best teachers at Barunawati 4 Elementary School.

Determination of teacher performance evaluation at SMK Negeri 1 Setia Prestasi is still done conventionally using an evaluation form due to the absence of an assessment aspect in PKG. Thus, a PKG Decision Support System will be created to help select outstanding teachers. The Decision Support System is designed to assist decision-makers in making semi-structured decisions using the Weighted Product method [9] [10].

A decision support system for assessing teacher performance in providing lessons aims to help speed up, simplify, and reduce the subjectivity of teacher performance assessments in carrying out the decision-making process using the Weighted Product method.

METHOD

Several things were done in collecting data used for the research process of teacher performance appraisal in providing lessons at SMK Negeri 1 Setia Janji.

Observation

Conducting direct observations at the research location to find out what is in the school with 30 people.

Interview

In the research process, interviewing the school to find information and collecting data are needed**.**

Literature review

Conducting library research to find references for previous research through

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journals[11].

The method used in this research is qualitative. Qualitative methods are methods that focus on in-depth observations. Because qualitative methods in research can produce a more comprehensive study of a phenomenon. In the qualitative method, the researcher used a questionnaire to determine the respondents' responses to the teacher's performance assessment in giving lessons at SMK Negeri 1 Setia Janji. The reason for using qualitative research is that the data obtained were not calculated using statistical calculations.

The Weighted Product (WP) method uses multiplication in linking the value of each criterion and then squares the value of the criteria with the weight of the criteria from each category. The process is the same as normalization. The WP method helps decide teacher performance assessments in providing lessons at SMK Negeri 1 Setia Janji. Calculating using the weighted product method will give the maximum value chosen as the best option.[12].

The steps to calculate it is:

1. Multiply all criteria for all alternatives based on their weight by the positive power of the criteria.
2. The result of the multiplication will get the next alternative value.
3. Divide the value of V and the value of S for each alternative value.
4. Produce the best assessment ranking to be the final decision. [13].

Preference Ai using the formula (1):

$$S_i = \prod_{j=1}^{n} X_{ij\ wj} \text{.....(1)}$$

WJ is the range of positive values for the profit criteria and negative values for the cost attribute.

The formula used as the relative preference of the options (2):

$$V_i = \frac{\prod_{j=1}^{n} X_{ij} wj}{\prod_{j=1}^{n} (X_{j*})wj} \quad \text{…….(2)}$$

RESULTS AND DISCUSSION

A method is obtained from the results of data collection, field observations, and previous research studies to assess teacher performance in providing lessons at SMK Negeri 1 Setia Janji. Then, the data from the questionnaire and the information received will be processed into the best decision using the Weighted Product (WP) Method.

Several stages of the process of getting to produce PKG decisions are:

1) Determine the criteria, weight, and value of each of these criteria.
2) Collecting Research Samples for 10 Teachers as Alternative Data to be assessed by 30 students.

The criteria needed to make a decision are:

Table 1. Criteria Data

Code	Criteria Name	Weight
K1	Mastering the characteristics of students	20 %
K2	Mastering learning theory and educational learning principles	20 %
K3	The suitability of learning materials with the curriculum	15 %
K4	Educational learning activities	15 %
K5	Development of student potential	15 %
K6	Communication with students	15 %

The alternative is the Teacher activity that the Students will choose. There are 10 (ten) alternatives used. Based on the above criteria, each Alternative (*AI*)

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in the specific criteria has been determined by the weight table of all criteria.

Table 2. Criteria for Mastering the Characteristics of Students

Mastering the Characteristics of Learners	
Category	Score
Expert	5
Dominate	4
Enough	3
Less Mastery	2
Not Mastering	1

Table 3. Mastering Learning Theory and Educational Learning Principles

Mastering Learning Theories and Educational Learning Principles	
Category	Score
Expert	5
Dominate	4
Enough	3
Less Mastery	2
Not Mastering	1

Table 4. The Suitability of Learning Materials With Curriculum

Suitability of Learning Materials With Curriculum	
Category	Score
Very Suitable	5
In accordance	4
Enough	3
Not suitable	2
is not accordance	1

Table 5. Educational Learning Activities

Educational Learning Activities	
Category	Score
Very good	5
Good	4
Enough	3
Less Good	2
Not Good	1

Table 6. Development of Student Potential

Development of Student Potential	
Category	Score
Highly Developed	5
Develop	4
Enough	3
Less Developed	2
Undeveloped	1

Table 7. Communication with Learners

Communication With Learners	
Category	Score
Very good	5
Good	4
Enough	3
Less Good	2
Not Good	1

3) Calculation Results

The results obtained from the calculation of the teacher's performance assessment in providing lessons can be seen in table 8.

Table 8. Calculation Results

Alternative Code	S Value	V Value	Ranking
A01	3,49	0,10	6
A02	3,58	0,10	3
A03	3,55	0,10	5
A04	3,56	0,10	4
A05	3,40	0,10	10
A06	3,47	0,10	7
A07	3,60	0,10	2
A08	3,85	0,11	1
A09	3,44	0,10	8
A10	3,43	0,10	9

Application Menu Display

The stage of the results contains the display interface (user interface) in a system.

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Main Menu Display

When the program is run, it will enter the main menu display. This page contains Home, Respondent List, and Log in. The main menu display can be seen in Image 1.

Image 1. Main Menu Display

Log In Menu Display

Then, go to the login page; the login can be Admin, Principal, and Respondents (Students). The login menu display can be seen in Image 2.

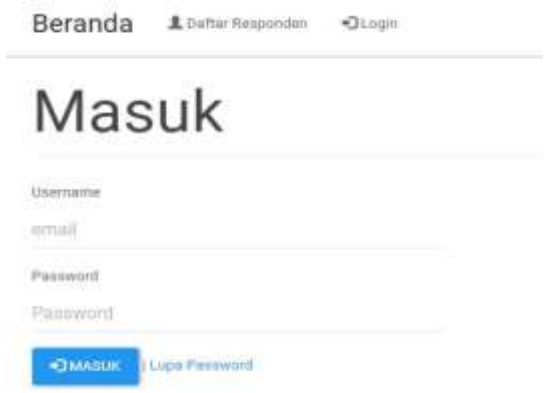

Image 2. Login Menu Display

CONCLUSION

The Weighted Product (WP) method can produce a teacher's performance appraisal decision in providing lessons with the teacher who gets the best score is the teacher who has the alternative code A08 on behalf of Rapita Putri, S.Pd with an S vector value of 3.85 and a V vector value of 0.11. The decision-making system for assessing teacher performance in providing lessons at SMK Negeri 1 Setia Janji implements the Weighted Product method more efficiently for principals, teachers, administration, and respondents (students) can receive teacher performance assessments quickly.

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