Decision Support System for Teacher Performance Assessment Using the Weighted Product Method

[1]Rahmat Davitra [2]Dentik Karyaningsih [3]Hendry Gunawan
*[1,2,3] Informatics engineering, Universitas Serang Raya, Banten, INDONESIA
email,[2]karya.tiek@gmail.com, [3]hendrygunawan@unsera.ac.id*

Corresponding Autor: Dentik Karyaningsih

Abstract

The quality of teachers can be seen from the results of their performance assessment whether they have increased or vice versa. Therefore, an objective performance appraisal system is needed, in addition to reviewing performance results, the assessment system can also be a reference for determining the best teacher, so that teachers are more motivated in teaching. In making decisions on teacher performance evaluation at Pelita Insani Special Schools, they still experience problems when the process is done manually and the assessment system is less objective. So we need a Decision Support System that can produce the best alternative, can be done automatically and objectively. Practitioners This study produced a web-based decision support system that can provide alternative decision-making for school principals based on teacher performance results. By using the Weighted Product method. There are six criteria, namely: learning planning, implementing learning, assessing learning outcomes, training and guiding, additional assignments, and developing professional activities, then processed with data on teacher performance results with this method and produces teacher rankings which can be recommendations for decision making for school principals .

Keywords— Teacher Performance, Decision Support System, Web, Weighted Product

1   Introduction

In an effort to improve the quality of education and independence for students, teachers who are competent in providing education to students are needed. Outstanding teachers are teachers who have the ability to carry out tasks, are successful in carrying out tasks, have a personality that is in accordance with the teaching profession and have educational insights so that they can significantly improve the quality of the process and learning outcomes or guidance beyond that achieved by other teachers so that they can be used as role models for students. colleagues, and the local community. Teacher performance has a positive and significant effect on student achievement. Teacher professional development has a positive and significant effect on student learning achievement through teacher performance.[1]

At the Pelita Insani Special School there are students from elementary to high school consisting of children who are blind (visual impairment), deaf (hearing disability), mentally retarded (intelligence development retarded), physically disabled (limited body movement/disability) and autistic (developmental disorders of the nervous system). The total number of students in the Pelita Insani Special School is 52 students. Teachers of children with special needs are required to be more extra to provide better teaching and are also very necessary in improving optimal performance and are required to meet progress every year so that students become successful and independent. Teacher quality can be seen from the results of performance appraisal, whether it has increased every year or vice versa. Therefore it is necessary to have an objective teacher performance appraisal system.

The Pelita Insani Special School periodically evaluates the performance of teachers in each semester, which is once a year, which is carried out by the school principal. The process of assessing teacher performance is carried out by referring to the main task of the teacher. In the teacher's main duties there are six assessment programs namely, lesson planning, implementation of learning, assessment of learning outcomes, training and guiding students, additional assignments, and developing professional activities. Of the six assessment programs there are several components that are assessed, if added together there are 40 component points that must be assessed. In the

performance appraisal process it is done manually so that it creates obstacles if it is done manually because the assessment process is quite a lot and complicated, and there is no information system that is precise and accurate for assessing teacher performance, an effective performance appraisal process is needed and information is not available. about teacher performance using technology. To solve this problem, a decision support system was created that can help schools, especially school principals, in making teacher performance decisions, be it the best teacher or evaluation of the teacher who gets the lowest ranking. decision support system is an interactive information system which provides information, modeling, and manipulating data. Decision support systems provide specialized interactive support for the decision-making processes of managers and other businesses.[2]

The method used in this decision support system is the WP or Weighted Product method. Multiple Attribute Decision Making (MADM) is to determine the weight value for each attribute, then proceed with a ranking process that will select the alternatives that have been given. Basically, there are 3 approaches to find attribute weight values, namely subjective approaches, objective approaches and integration approaches between subjective and objective. Each approach has strengths and weaknesses. In the subjective approach, the weight value is determined based on the subjectivity of the decision maker, so that several factors in the alternative ranking process can be determined freely. Whereas in the objective approach, the weight value is calculated mathematically so that it ignores the subjectivity of the decision maker.[3][4][5]

The research conducted included Application Of The Weighted Product Method Of Teacher Performance Assessment In Providing Lessons 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.[6] Decision Support System for Teacher Performance Assessment at SMP Negeri 1 Talang Padang Using the Weight Product Method. From the results of the tests carried out, it can be concluded that the teacher performance assessment using the Weight Product can be done well by taking the top number of teachers from the Weight Product ranking process which can then be reported in the form of a teacher performance assessment report.[7] Decision Support System for Teacher Performance Assessment Using the Weighted Product Method (Case Study: Madrasah Ibtidaiyah Condong). a decision support system by applying the Weighted Product method, the process of teacher performance appraisal data is more effective so that schools and assessors can get information on teacher performance assessments more quickly.[8] and Implementation of the Weighted Product Method in the decision support system for the feasibility of granting advanced teacher professional allowances at the Ogan Komering Ilir district education office. The method applied in building a decision support system for assessing the eligibility of awarding teacher certification allowances is the Weighted Product Method which is able to determine the results of an appropriate teacher assessment in the provision of teacher professional allowances effectively, quickly and precisely.[9]

2 Research methods

Decision Support System is a system intended to support managerial decision makers in semi-structured decision situations. DSS is intended to be a tool for decision makers to expand their capabilities, but not to replace their judgment.[10] A decision support system is a decision-making process with the help of computer media in the decision-making process by using certain data and models to solve some unstructured problems.[11]

The system development method aims to help produce quality devices or systems. Software or system development method is a development strategy that combines processes, methods, and tools (tools). In this study, researchers used the waterfall model system development method. The waterfall model uses a systematic and sequential approach. The stages of the waterfall model include requirements, design, implementation, verification, and maintenance. The advantage of using the waterfall method in developing information systems is that the quality of the resulting system will be good because the implementation is carried out in stages, while the drawback is that the system development process takes a long time so the costs required are also expensive. The waterfall method is suitable for projects making new systems and also developing large-scale systems or software.[12]
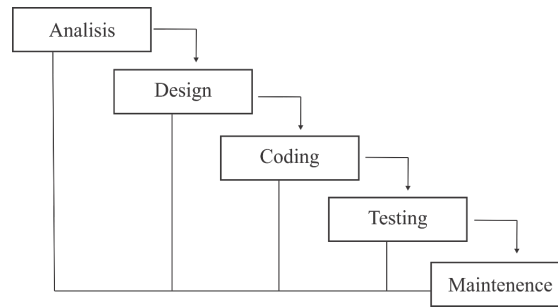
Figure 1. Waterfall Model

Software requirements analysis, software requirements needed by researchers in designing or building a web-based decision support system. To build a web, you need a code editor as a place to write every line of program code, then a server program as a liaison between the program and the database, and a web browser as a place to run or implement the program itself. Next is design, after analyzing the next stage is design or design. This design will be a guideline for writing source code. Screen layout or user interface design so that the program can be attractive and easily understood by the user. After that, the database design process is carried out by paying attention to the relationship between tables so that it is in accordance with the program flow, database modeling here uses the Unified Modeling Language (UML) model. One of the advantages of using UML diagrams is flexibility and being able to describe software systems in more detail and detail.[13] UML (Unified Modeling Language) is a graphical/image-based language for visualizing, specifying, constructing, and documentation of an OO (Object-Oriented) based software development system.[14]

The next stage is Coding or it can be called writing program code, in writing program code the flow of each program must be in accordance with the design that was made at the design stage. And at this coding stage the researcher uses the PHP programming language, which is a programming script that is located and executed on the server. One of them is to receive, process, and display data from and to a site, code editor to write each code using visual studio code.[15] after coding is complete, Testing and Integration is carried out, at this stage the code modules that have been made are combined and testing is carried out by parties who are experts in the field of software. System testing is carried out using black box testing which is a software quality test that focuses on software functionality [16]. The next stage is Maintenance (maintenance) this is necessary because it is possible for a software to experience changes or requests for increased features by the user, namely the school principal. Changes or updates may occur due to adjusting to changes in the program environment.

3 Results and Discussion

The performance appraisal document contains six assessment programs. Namely, lesson planning, implementation of learning, assessment of learning outcomes, training and mentoring, additional assignments, and developing professional activities. From each program there are several assessment components in each program. The total number of assessment components is 40, as follows:

1) KP1 = Using an educational calendar
2) KP2 = Developing an annual program
3) KP3 = Develop semester program
4) KP4 = Improving the syllabus according to the student's context analysis
5) KP5 = Using lesson plans according to student characteristics
6) KP6 = Establish KKM
7) KP7 = Using the teacher's daily agenda
8) KP8 = Have a face-to-face schedule
9) KP9 = Manage student attendance books
10) KP10 = Manage grade books
11) KP11 = Conditioning the class (preliminary activity)
12) KP12 = Facilitating students to explore information (core activities)
13) KP13 = Develop experience in elaborating information (core activity)
14) KP14 = Developing learning experiences to confirm information (core activity)
15) KP15 = Carry out process assessment (core activity)
16) KP16 = Assessing students' knowledge, character, and skills (core activity)
17) KP17 = Carry out reflection activities, measure target achievement (closing)

18) KP18 = Using a list of values according to the assessment standard
19) KP19 = Carrying out tests in the form of Daily Deuteronomy, UTS, UAS/UKK
20) KP20 = Conducting an assessment of noble character and personality
21) KP21 = Carry out an assessment of student skills
22) KP22 = Assessing students' creativity and innovation
23) KP23 = Perform daily test analysis
24) KP24 = Remedial and enrichment
25) KP25 = test instrument for each KD
26) KP26 = Compile a question bank
27) KP27 = Using question cards
28) KP28 = Carry out an assessment analysis
29) KP29 = Train and guide students in remedial and enrichment
30) KP30 = Guiding students to achieve achievement targets in extra-curricular activities
31) KP31 = Provide guidance in student scientific work activities
32) KP32 = Being a vice principal of the school
33) KP33 = Become a homeroom teacher
34) KP34 = Become an extracurricular coach
35) KP35 = Carrying out picket duties
36) KP36 = Become a student council supervisor
37) KP37 = Conducting classroom action research
38) KP38 = Participating in education/seminars, etc.
39) KP39 = Using information and communication technology
40) KP40 = Improving mastery of foreign languages

This system is designed to be able to complete a data calculation using the Weighted Product method so that the results of teacher performance calculations are more dynamic and objective. Before calculating using the Weighted Product method, it is done first to find the average value of each assessment program from each teacher. The result is as follows:

Tabel1. The Average Score of Each Assessment Program

Criteria	Rating Points	Alternative					
		A1	A2	A3	A4	A5	A6
C1	PP1	3	3	3	3	3	3
	PP2	4	4	1	4	3	4
	PP3	4	4	1	4	3	4
	PP4	3	3	2	2	3	3
	PP5	3	3	2	3	3	3
	PP6	4	4	2	4	3	3
	PP7	4	4	3	4	3	3
	PP8	4	4	3	4	3	3
	PP9	4	4	3	4	4	3
	PP10	4	4	2	4	4	3
The average value of C1		92.55	92.55	55	90	80	80
C2	PP11	4	4	3	4	4	3
	PP12	3	3	3	3	3	3

	PP13	3	3	2	2	3	3
	PP14	3	3	2	2	3	3
	PP15	3	3	3	3	3	3
	PP16	2	2	3	2	2	2
	PP17	2	3	2	2	2	3
The average value of C2		71.43	75	64.29	67.86	71.43	71.43
C3	PP18	3	3	1	3	3	3
	PP19	4	4	3	4	4	4
	PP20	4	4	3	4	4	4
	PP21	3	3	3	3	3	3
	PP22	3	3	3	3	3	3
	PP23	3	3	2	3	3	4
	PP24	3	3	1	3	3	4
	PP25	3	3	1	3	3	2
	PP26	3	3	4	3	3	2
	PP27	3	3	2	3	3	2
	PP28	3	3	2	3	3	3
The average value of C3		79.55	79.55	56.82	79.55	79.55	77.27
C4	PP29	3	3	2	3	3	3
	PP30	3	3	2	3	3	3
	PP31	4	4	1	3	2	4
The average value of C4		83.33	83.33	41.67	75	66.67	83.33
C5	PP32	4	4	0	0	4	4
	PP33	4	4	4	4	4	4
	PP34	0	0	4	3	3	0
	PP35	4	3	3	4	4	4
	PP36	0	0	0	4	0	0
The average value of C5		60	60	55	75	75	60
C6	PP37	1	1	1	1	1	1

	PP38	3	3	4	4	3	4
	PP39	2	2	2	1	2	2
	PP40	1	1	1	1	1	1
The average value of C6		43.75	43.75	50	43.75	43.75	50

Table 2. Continued Average Score of Each Assessment Program

Criteria	Rating Points	Alternative					
		A7	A8	A9	A10	A11	A12
C1	PP1	3	3	3	3	2	4
	PP2	3	3	3	3	3	4
	PP3	3	3	3	3	3	4
	PP4	3	3	3	4	3	3
	PP5	3	3	3	3	4	3
	PP6	3	3	3	4	3	2
	PP7	3	3	3	3	3	3
	PP8	3	3	3	3	3	3
	PP9	4	4	3	4	4	3
	PP10	4	4	3	4	4	3
The average value of C1		80	80	75	85	80	77.50
C2	PP11	4	4	3	4	3	3
	PP12	3	3	3	2	3	3
	PP13	3	3	3	3	3	2
	PP14	3	3	3	3	3	3
	PP15	3	3	3	3	3	3
	PP16	2	2	2	2	3	3
	PP17	2	2	2	2	3	2
The average value of C2		71.43	71.43	67.86	67.86	75	67.86
C3	PP18	3	3	3	3	4	3
	PP19	4	4	4	4	4	2
	PP20	4	4	4	4	3	3

	PP21	3	3	3	3	3	2
	PP22	3	3	3	4	3	3
	PP23	3	3	3	3	4	3
	PP24	3	3	3	3	3	3
	PP25	3	3	3	3	3	3
	PP26	3	3	3	3	2	3
	PP27	3	3	3	3	3	3
	PP28	3	3	3	3	3	3
The average value of C3		79.55	79.55	79.55	81.82	79.55	70.45
C4	PP29	3	3	3	3	3	3
	PP30	3	3	3	3	4	3
	PP31	2	2	2	3	3	3
The average value of C4		66.67	66.67	66.67	75	83.33	75
C5	PP32	0	0	3	0	0	0
	PP33	4	4	3	3	3	3
	PP34	4	0	0	0	3	0
	PP35	4	4	3	3	3	2
	PP36	0	0	0	0	4	2
The average value of C5		60	40	45	30	65	35
C6	PP37	3	1	1	3	4	3
	PP38	3	3	3	3	3	3
	PP39	4	4	2	2	2	2
	PP40	1	1	1	2	2	1
The average value of C6		68.75	56.25	43.75	62.50	68.75	56.25

Table 3. Assessment criteria

Code	Criteria Name	Categori
C1	Learning Planning	Benefit
C2	Implementation of Learning	Benefit
C3	Assessment of Learning Outcomes	Benefit

C4	Train and Mentor	Benefit
C5	Additional Tasks	Benefit
C6	Developing Professional Activities	Benefit

Table 3 is an assessment program that will be the criteria in carrying out the calculation process so that the best teacher alternative will be obtained.

Table 4. Teacher Performance Value Data

No.	Code	Alternative	Criteria					
			C1	C2	C3	C4	C5	C6
1	A1	Eha Widia	92.5	71.43	79.55	83.33	60	43.75
2	A2	Nurbaeti	92.5	75	79.55	83.33	60	43.75
3	A3	Sumiyati	55	64.29	56.82	41.67	55	50
4	A4	Suhena	90	67.86	79.55	75	75	43.75
5	A5	Makiyah	80	71.43	79.55	66.67	75	43.75
6	A6	Retno Palupi	80	71.43	77.27	83.33	60	50
7	A7	Fadli	80	71.43	79.55	66.67	60	68.75
8	A8	Satimudin	80	71.43	79.55	66.67	40	56.25
9	A9	Nani R	75	67.86	79.55	66.67	45	43.75
10	A10	Rukmaja	85	67.86	81.82	75	30	62.50
11	A11	M.Nurcholis	80	75	79.55	83.33	65	68.75
12	A12	Yurina N	77.50	67.86	70.45	75	35	56.25

Table 4 is data that is ready to be processed using the weighted product method, which contains the teacher's average score in each assessment program. Following are the steps for completing the Weight product method.

1. First, weighting is carried out on each existing criterion, the weight value used is from the results of the principal's decision to determine the ideal quality of teacher performance according to needs. As in the following table:

Table 5. Weighting of Each Criterion

Criteria	Weight
C1	3
C2	5
C3	4
C4	6
C5	2
C6	1

After determining the criteria and weights, look for which ones are worth the benefits and costs. If it is worth the profit then the attribute value is positive if it is worth the cost then the attribute value is negative. In this study all the attributes are profitable or positive. The next step is to correct the weight from the initial weight value. With the following results:

$$C1 = \frac{3}{3+5+4+6+2+1} = 0.1429$$

$$C2 = \frac{5}{3+5+4+6+2+1} = 0.2381$$

$$C3 = \frac{4}{3+5+4+6+2+1} = 0.1905$$

$$C4 = \frac{6}{3+5+4+6+2+1} = 0.2857$$

$$C5 = \frac{2}{3+5+4+6+2+1} = 0.0952$$

$$C6 = \frac{1}{3+5+4+6+2+1} = 0.0476$$

2. After correcting the weights, the next step is to calculate the S vector. The results are as follows:

$S1 = (92.5^{0.1429})(71.43^{0.2381})(79.55^{0.1905})(83.33^{0.2857})(60^{0.0950})(43.75^{0.0476})$
= 1.9093 x 2.7631 x 2.3016 x 3.5384 x 1.4769 x 1.1971
= 75.9613

$S2 = (92.5^{0.1429})(75^{0.2381})(79.55^{0.1905})(83.33^{0.2857})(60^{0.0950})(43.75^{0.0476})$
= 1.9093 x 2.7954 x 2.3016 x 3.5384 x 1.4769 x 1.1971
= 76.8489

$S3 = (55^{0.1429})(64.29^{0.2381})(56.82^{0.1905})(41.67^{0.2857})(55^{0.0950})(50^{0.0476})$
= 1.7727 x 2.6947 x 2.1587 x 2.9027 x 1.4647 x 1.2048
= 52.8158

$S4 = (90^{0.1429})(67.86^{0.2381})(79.55^{0.1905})(75^{0.2857})(75^{0.0950})(43.75^{0.0476})$
= 1.9019 x 2.7296 x 2.3016 x 3.4335 x 1.5086 x 1.1971
= 74.0874

$S5 = (80^{0.1429})(71.43^{0.2381})(79.55^{0.1905})(66.67^{0.2857})(75^{0.0950})(43.75^{0.0476})$
= 1.8701 x 2.7631 x 2.3016 x 3.3198 x 1.5086 x 1.1971
= 71.3081

$S6 = (80^{0.1429})(71.43^{0.2381})(77.27^{0.1905})(83.33^{0.2857})(60^{0.0950})(50^{0.0476})$
= 1.8701 x 2.7631 x 2.2889 x 3.5384 x 1.4769 x 1.2048
= 74.4644

$S7 = (80^{0.1429})(71.43^{0.2381})(79.55^{0.1905})(66.67^{0.2857})(60^{0.0950})(68.75^{0.0476})$
= 1.8701 x 2.7631 x 2.3016 x 3.3198 x 1.4769 x 1.2232
= 71.3253

$S8 = (80^{0.1429})(71.43^{0.2381})(79.55^{0.1905})(66.67^{0.2857})(40^{0.0950})(56.25^{0.0476})$
= 1.8701 x 2.7631 x 2.3016 x 3.3198 x 1.4209 x 1.2115
= 67.9709

$S9 = (75^{0.1429})(67.86^{0.2381})(79.55^{0.1905})(66.67^{0.2857})(45^{0.0950})(43.75^{0.0476})$
= 1.8530 x 2.7296 x 2.3016 x 3.3198 x 1.4370 x 1.1971
= 66.4798

$S10 = (85^{0.1429})(67.86^{0.2381})(81.82^{0.1905})(75^{0.2857})(30^{0.0950})(62.50^{0.0476})$
= 1.8864 x 2.7296 x 2.3139 x 3.4335 x 1.3825 x 1.2176
= 68.8662

$S11 = (80^{0.1429})(75^{0.2381})(79.55^{0.1905})(83.33^{0.2857})(65^{0.0950})(68.75^{0.0476})$
= 1.8701 x 2.7954 x 2.3016 x 3.5834 x 1.4882 x 1.2232
= 77.4976

$S12 = (77.50^{0.1429})(67.86^{0.2381})(70.45^{0.1905})(75^{0.2857})(35^{0.0950})(56.25^{0.0476})$
= 1.8617 x 2.7296 x 2.2490 x 3.4335 x 1.4030 x 1.2115
= 66.6964

Total value of Vector S
Stot = 75.9613 + 74.8489 + 53.8158 + 72.0874 + 70.3060 + 72.4644 + 71.3253 + 67.9709 + 66.4798 + 68.8662 + 77.4976 + 66.6964
= 844.3198

3. After the value of the vector S is obtained, it is continued by determining the value of the vector V. That is, by dividing the value of the vector S by the total number of vectors S, the results are as follows:

$$V1 = \frac{75.9613}{844.3198} = 0.0900$$

$$V2 = \frac{76.8489}{844.3198} = 0.0910$$

$$V3 = \frac{52.8158}{844.3198} = 0.0626$$

$$V4 = \frac{74.0874}{844.3198} = 0.0877$$

$$V5 = \frac{71.3060}{844.3198} = 0.0845$$

$$V6 = \frac{74.4644}{844.3198} = 0.0882$$

$$V7 = \frac{71.3253}{844.3198} = 0.0845$$

$$V8 = \frac{67.9709}{844.3198} = 0.0805$$

$$V9 = \frac{66.4798}{844.3198} = 0.0787$$

$$V10 = \frac{68.8662}{844.3198} = 0.0816$$

$$V11 = \frac{77.4976}{844.3198} = 0.0918$$

$$V12 = \frac{66.6964}{844.3198} = 0.0790$$

4. After all stages have been carried out, the largest value of the vector V is sought. The biggest V value is the best alternative, the following are the results of the calculations:

Table 6. Table of Ranking Results

No.	Code	Alternative	C1	C2	C3	C4	C5	C6	V grade	Rank
1	A1	Eha Widia	92.5	71.43	79.55	83.33	60	43.75	0.0900	3
2	A2	Nurbaeti	92.5	75	79.55	83.33	60	43.75	0.0910	2
3	A3	Sumiyati	55	64.29	56.82	41.67	55	50	0.0626	12
4	A4	Suhenah	90	67.86	79.55	75	75	43.75	0.0877	5
5	A5	Makiyah	80	71.43	79.55	66.67	75	43.75	0.0845	6
6	A6	Retno Palupi	80	71.43	77.27	83.33	60	50	0.0882	4
7	A7	Fadli	80	71.43	79.55	66.67	60	68.75	0.0845	7
8	A8	Satimudin	80	71.43	79.55	66.67	40	56.25	0.0805	9
9	A9	Nani R	75	67.86	79.55	66.67	45	43.75	0.0787	11
10	A10	Rukmaja	85	67.86	81.82	75	30	62.50	0.0816	8
11	A11	M.Nurcholis	80	75	79.55	83.33	65	68.75	0.0918	1
12	A12	Yurina N	77.50	67.86	70.45	75	35	56.25	0.0790	10

Table 6 contains the teacher's performance scores along with the final V score for each teacher. From the data above, the system will select the highest V value as the best performance in evaluating teacher performance. Based on the manual calculation above, the ranking order obtained is M. Nurcholis, Nurbaeti, Eha Widia, Retno

Palupi, Suhenah, Makiyah, Fadli, Rukmaja, Satimudin, Yurina N, Nani R and Sumiyati according to the highest order value of Vi. In this teacher performance assessment study using the weighted product method. By using 12 data from teacher performance assessment results and the six criteria used, namely: lesson planning, implementation learning, assessment of learning outcomes, training and mentoring, additional assignments, and developing professional activities. The calculation of the teacher's performance assessment using the weighted product method is first done manually so that later it becomes a comparison with the results of the system calculations. With the manual calculation process that gets the highest score is alternative A11 (M. Nurcholis) with a final score of V 0.0918, while the calculation process using the highest score system is alternative A11 (M. Nurcholis) with a final score of V 0.0918.

The following is an overall comparison of the final V value after manual and system calculations. The results in the following table:

Table 7. Comparison of the Final Score of the System V Value with the Manual

Rank	Teacher name	Final Score Calculation of System V value	Calculation of Final Score Manual V value
1	M. Nurcholis	0.0918	0.0918
2	Nurbaeti	0.0910	0.0910
3	Eha Widia	0.0900	0.0900
4	Retno Palupi	0.0882	0.0882
5	Suhenah	0.0877	0.0877
6	Makiyah	0.0845	0.0845
7	Fadli	0.0845	0.0845

Table 8 Comparison of the Final Score of the Value of System V with the Manual (continued)

Rank	Teacher name	Final Score Calculation of System V value	Calculation of Final Score Manual V value
8	Rukmaja	0.0816	0.0816
9	Satimudin	0.0805	0.0805
10	Yurina N	0.0790	0.0790
11	Nani R	0.0787	0.0787
12	Sumiyati	0.0626	0.0626

Table 8 above is a comparison of the results of calculating the final score of value V as a result of system calculations with the results of manual calculations used to determine whether the system built using the weighted product method is valid or not, the validation process carried out shows that the calculations from system and manual results are exactly the same which states that the designed system is valid.

4 Conclusion

The results of the implementation of this decision support system show that the Weighted Product method can be applied properly and correctly as expected, so that a ranking of teacher performance results is obtained which becomes a reference for school principals to give awards to the best teachers and also carry out evaluations in the future.

To design a decision support system to help schools determine or solve teacher performance appraisal problems, this is by means of each teacher performance assessment indicator being given a weight according to the level of importance of each indicator, then calculating the indicator value with the weight value, after that an assessment ranking can be obtained the teacher's performance.

5   Suggestion

This application can only process data with six indicators so it is hoped that in the future development will be carried out to add additional indicators or remove indicators.

There needs to be research using other methods as a comparison to get the best alternative

BIBLIOGRAPHY

[1]   Asmuni, "Jurnal Paedagogy : Jurnal Paedagogy :," *ikanJurnal Paedagogy J. Penelit. dan Pengemb. Pendid*, vol. 7, no. 4, pp. 281–288, 2020, [Online]. Available: https://e-journal.undikma.ac.id/index.php/pedagogy.

[2]   J. Tam *et al.*, "Jurnal TAM (Technology Acceptance Model) MODEL DEVELOPMENT IN DECISION MAKING ON VILLAGE APPARATUS PERFORMANCE MEASUREMENT AFTER," vol. 13, pp. 57–63, 2022.

[3]   A. Khrisna Wardhani and E. Lutfina, "Application Culinary decision support system in Kudus city with weighted product method based on mobile phone," *J. Comput. Sci. Eng.*, vol. 1, no. 1, pp. 10–16, 2020, doi: 10.36596/jcse.v1i1.17.

[4]   Oktafianto *et al.*, "Determining housing location using weighted product," *Int. J. Eng. Technol.*, vol. 7, no. 4, pp. 3563–3568, 2018, doi: 10.14419/ijet.v7i4.18838.

[5]   M. Ahsan and N. Indawati, "Implementation weighted product method to determine multiple intelligence child," *J. Phys. Conf. Ser.*, vol. 1375, no. 1, 2019, doi: 10.1088/1742-6596/1375/1/012038.

[6]   A. S. Nurdilla Khoirunnisa, Bachtiar Efendi, "APPLICATION OF THE WEIGHTED PRODUCT METHOD OF TEACHER PERFORMANCE ASSESSMENT IN PROVIDING LESSONS," *JURTEKSI (Jurnal Teknol. dan Sist. Inf.*, vol. VIII, no. 2, pp. 141–146, 2022.

[7]   D. Tosary and L. Elfianty, "Decision Support System for Teacher Performance Assessment at SMP Negeri 1 Talang Padang Using the Weight Product Method," vol. 1, no. 2, pp. 239–245, 2021.

[8]   D. Erwandi, E. D. S. Mulyani, and A. S. Senjaya, "Sistem Pendukung Keputusan Untuk Penilaian Kinerja Guru Menggunakan Metode Weighted Product (Studi Kasus : Madrasah Ibtidaiyah Condong)," *Konf. Nas. Sist. Inf. 2018*, pp. 870–876, 2018, [Online]. Available: http://jurnal.atmaluhur.ac.id/index.php/knsi2018/article/view/463.

[9]   P. Rahma, M. Nasir, and A. Putra, "Implementasi Metode Weighted Product dalam Sistem Pendukung Keputusan Kelayakan Pemberian Tunjangan Profesi Guru Lanjutan pada Dinas Pendidikan Kabupaten Ogan Komering Ilir (OKI) Bina Darma Conference on Computer Science 2019," *Fak. Ilmu Komput. Univ. Bina Darma*, pp. 263–269, 2019.

[10]   H. A. Septilia and Styawati, "Sistem Pendukung Keputusan Pemberian Dana Bantuan Menggunakan Ahp," *J. Teknol. dan Sist. Inf.*, vol. 1, no. 2, pp. 34–41, 2020, [Online]. Available: http://jim.teknokrat.ac.id/index.php/sisteminformasi/article/view/369.

[11]   A. Mubarok, H. D. Suherman, Y. Ramdhani, and S. Topiq, "Sistem Pendukung Keputusan Kelayakan Pemberian Kredit Dengan Metode TOPSIS," *J. Inform.*, vol. 6, no. 1, pp. 37–46, 2019, doi: 10.31311/ji.v6i1.4739.

[12]   A. A. Wahid, "Analisis Metode Waterfall Untuk Pengembangan Sistem Informasi," *J. Ilmu-ilmu Inform. dan Manaj. STMIK*, no. November, pp. 1–5, 2020.

[13]   R. Abdillah, "Pemodelan Uml Untuk Sistem Informasi Persewaan Alat Pesta," *J. Fasilkom*, vol. 11, no. 2, pp. 79–86, 2021, doi: 10.37859/jf.v11i2.2673.

[14]   A. Mubarak, "Rancang Bangun Aplikasi Web Sekolah Menggunakan Uml (Unified Modeling Language) Dan Bahasa Pemrograman Php (Php Hypertext Preprocessor) Berorientasi Objek," *JIKO (Jurnal Inform. dan Komputer)*, vol. 2, no. 1, pp. 19–25, 2019, doi: 10.33387/jiko.v2i1.1052.

[15]   R. Kurniawan and S. Marhamelda, "Sistem Pengolahan Data Peserta Didik Pada Lkp Prima Tama Komputer Dumai Dengan Menggunakan Bahasa Pemrograman Php," *I N F O R M a T I K a*, vol. 11, no. 1, p. 37, 2019, doi: 10.36723/juri.v11i1.140.

[16]   D. Karyaningsih, D. Susandi, and E. Safaah, "Implementasi Mobile Learning Berbasis Android Kearifan Lokal Baduy Kabupaten Lebak Untuk Anak Usia Dini," *J. Tek. Inform. Unis*, vol. 9, no. 2, pp. 99–110, 2021.