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Utilization of the Weighted Product-Based *CIPP* Evaluation Model in Determining the Best Online Platform

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Abstract

Since the COVID-19 pandemic, there have been many free online platforms that can be used to support the online learning process at health colleges in Bali. However, it is difficult to determine the best online platform from the various choices of free online platforms that are scattered on the internet. Therefore, it needs innovations that contribute to helping solve these problems. One model as an innovation that can be used and contributes to solving problems is the *Weighted Product*-based *CIPP* evaluation model. The model needs to be measured for the quality of its calculations to ensure success in determining the best online platform. Therefore, this research aimed to show the quality of the *Weighted Product* method calculation integrated with the *CIPP* (*Context-Input-Process-Product*) model in determining the best platform used in health colleges during the *COVID-19* pandemic. The instrument used to assess the quality of that calculation was a questionnaire consisting of eight questions. The subjects involved in the assessment were 20 experts. The research was carried out at several health colleges in Bali. The analytical technique used in analyzing the research data was descriptive-quantitative. The analysis was carried out by comparing the quality percentage of the calculation simulation with the quality standard based on an eleven-point scale. The study results showed the quality percentage of calculation simulation was 87.250%, so it was included in the very good category. This research has a significant impact on the progress of the educational evaluation field through research findings in the form of the appearance of the combination of the *Weighted Product* method with the *CIPP* evaluation model. The novelty of this research is the combination of the *Weighted Product* method and the *CIPP* model, which makes it easier for educational evaluators to determine the best online platform that supports online learning during the COVID-19 pandemic and even post-COVID-19.

Keywords: Weighted Product; COVID-19 Pandemic*; CIPP*; Online Platform; Online Learning.

1. Introduction

Online learning during the COVID-19 pandemic is the most suitable strategy to use to minimize the spread of the coronavirus in college environments. Many online platforms can be used to realize online learning. Some of those

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platforms include *Kelase*, *Schoology*, *Moodle*, *SEVIMA EdLink*, *Edmodo*, *Quipper School*, etc. [1-4]. However, reality showed that not all of those platforms were able to effectively make the learning process run well. This also occurs specifically in several health colleges in Bali. At several health colleges in Bali, the use of online platforms is only used to upload materials, transfer materials, upload assignments, and answer exams. The assessment process is also limited to an assessment in the cognitive domain, even though, in reality, an attitude and psychomotor assessment are also very much needed.

Therefore, it is necessary to conduct a comprehensive evaluation to determine the best platform that can be used in online learning, especially in health colleges. The evaluation carried out should combine evaluation components in the field of education with decision-support methods in the field of computers so that the evaluation results become more accurate. Based on those needs, new innovations are needed to realize comprehensive evaluation activities. The innovation can be in the form of utilizing the *CIPP* evaluation model integrated with the *Weighted Product* method.

Referring to that innovation, the purpose of this study was to show the use of the *Weighted Product* method combined with the *CIPP* evaluation model in determining the best online platform used in health colleges during the COVID-19 pandemic. The research problem was, "How to calculate the *Weighted Product* method combined with the *CIPP* model to determine the best online platform used in health colleges during the COVID-19 pandemic?"

Several previous research results that baseline this research include Purwaningsih and Dardjito's research [5], which showed the use of the *CIPP* evaluation model to evaluate the effectiveness of e-learning during the COVID-19 pandemic. The limitation of Purwaningsih and Dardjito's research was that it had not shown a combination of decision support system methods with educational evaluation models to obtain accurate evaluation results of the e-learning platform suitable implemented during the COVID-19 pandemic.

Damayanti et al.'s research [6] only showed the *CIPP* model used to evaluate the effectiveness of online learning in universities. Damayanti et al. had not implemented a decision support method combined with the *CIPP* model in determining the best platform for supporting the effectiveness of online learning. Anh & Pang's [7] showed the application of the *CIPP* model to evaluate the implementation of online-based English language teaching. The limitation of Anh & Pang's research was that it had not shown the best online platform that was able to be used to support English language teaching.

Prayogo et al. [8] focused on determining the evaluation results of the implementation of online-based distance learning, which refers to the *CIPP* evaluation component. Prayogo's et al. research had not shown any combination of the *CIPP* model with decision support methods in determining the best online platform that supports distance learning. Research by DeCoito & Estaiteyeh [9] showed the use of the *CIPP* model in evaluating the curriculum and assessment of science/STEM teachers in online learning in Canada during the COVID-19 pandemic. The limitation of DeCoito & Estaiteyeh's research was that it did not show the best online platform that supports the implementation of a quality curriculum and assessment in online learning during the COVID-19 pandemic. Therefore, in DeCoito & Estaiteyeh's research, a combination of decision support methods and the *CIPP* model is needed to perform accurate calculations in determining the best online platform to support learning during the COVID-19 pandemic.

Toan et al. [10] showed the use of decision support methods in assessing and selecting the best e-learning platform to support the learning process. The limitation of Toan et al.'s research was that it had not shown an educational evaluation model integrated with the decision-making method used in the research, so the platform chosen had not been able to comprehensively facilitate the needs of the learning process in the field. Ong et al. [11] showed an analysis of the accuracy of selecting online learning attributes by students during the COVID-19 pandemic. The limitation of Ong et al.'s research was that it did not show an accurate calculation process in determining the selection of online learning attributes assisted by decision support methods and educational evaluation models. Nguyen & Nguyen [12] showed that the Schoology platform is suitable for improving student learning abilities. The limitation of Nguyen and Nguyen's research was that it did not show detailed calculation processes in determining the choice of the Schoology platform as the best platform. Research by Shashiprabha et al. [13] showed the results of an analysis of e-learning platforms, but the best platform that can be used to support e-learning has not yet appeared. Cabual & Cabual [14] showed the students challenges in implementing learning using online platforms during COVID-19. The limitation of the Cabual & Cabual's research was that it had not been shown what the best platform certainty was for the learning process during COVID-19.

Based on some of the limitations of those previous studies, the idea of this research is very appropriate to be expressed to overcome the limitations of previous research related to selecting the best platform for online learning. The idea of this research is to show the calculation of the *Weighted Product* method combined with the *CIPP* model to determine the best platform to use in supporting online learning during the COVID-19 pandemic and even post-COVID-19.

2. Method

2.1. Research Approach

The approach of this research was development with a focus on the calculation simulation of the *Weighted Product* integrated with the *CIPP* model and the quality assessment of the calculation simulation of the *Weighted Product* method integrated with the *CIPP* model. The *Weighted Product* calculation simulation is more focused on the correctness of the process and the quality stages of the calculation of the three formulas in the *Weighted Product*, while the quality assessment is focused on the validity of the simulation results of the calculation of the *Weighted Product* integrated with the *CIPP* model. The simulation stages for calculating the *Weighted Product* in this study can be seen in Figure 1. The stages for evaluating the simulation quality for the calculation of the *Weighted Product* method integrated with the *CIPP* model can be seen in Figure 2.

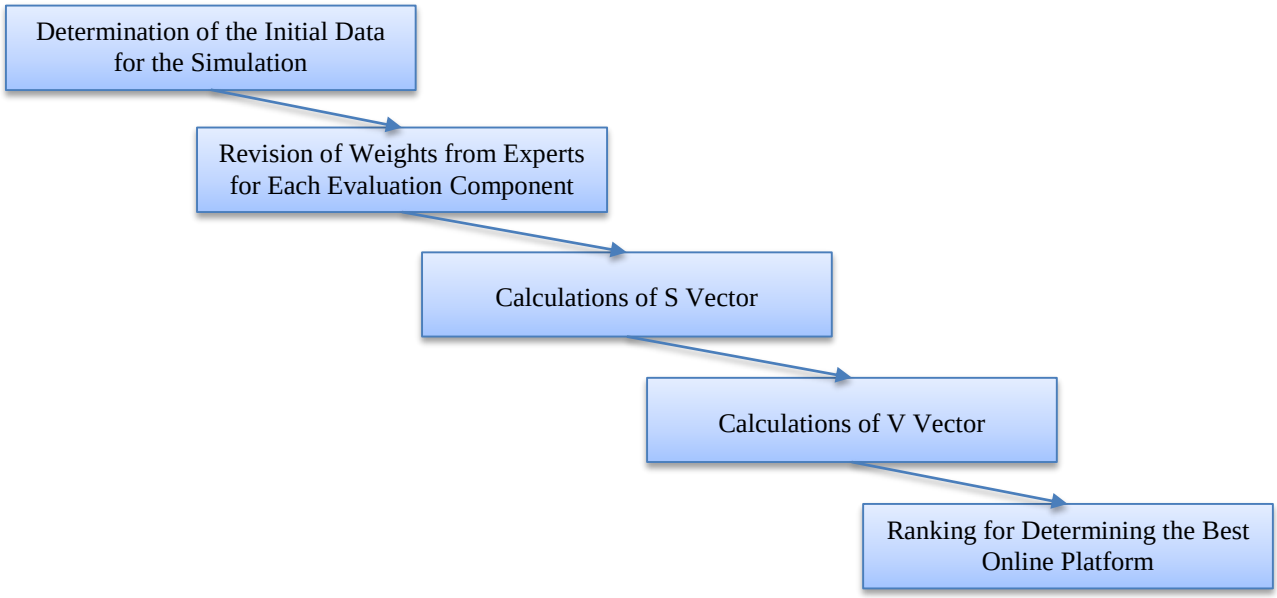

Figure 1. The Simulation Stages for Calculating the *Weighted Product*

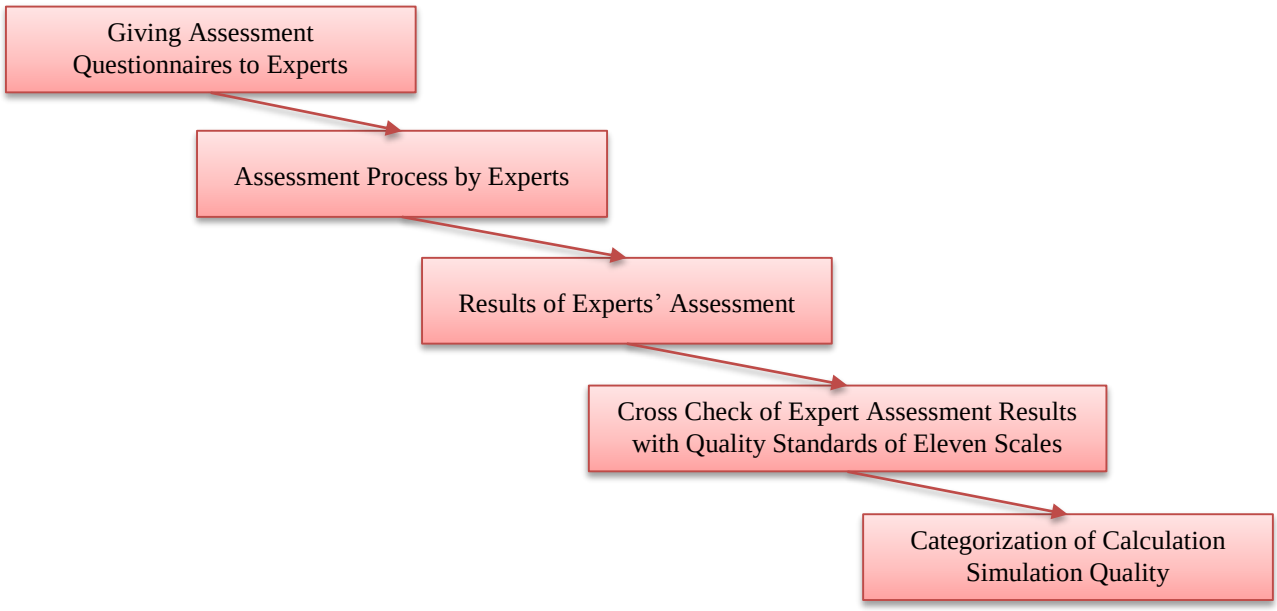

Figure 2. The Stages of Quality Assessment of Simulation Calculation of the *Weighted Product* Method integrated with the *CIPP* Model

Figure 1 shows the five stages that must be passed in the *Weighted Product* calculation simulation. Stage-1 is the determination of the initial data for simulation. Initial data for simulation were obtained from the average of interest rating scores given by respondents to each aspect of the *CIPP* evaluation model. Stage-2 is the revision of weights by experts for each *CIPP* evaluation component. Stage-3 is the calculation of the S vector using the formula shown in

Equation 2. Stage-4 is the calculation of the V vector using the formula shown in Equation 3. Stage-5 is ranking to determine the best online platform based on the highest V-vector score.

Figure 2 shows the five stages in assessing the simulation quality of the *Weighted Product* calculation combined with the *CIPP* model. Stage-1 is giving assessment questionnaires to experts. The questionnaires are used as a tool to obtain an assessment score from experts on the quality of calculation simulations. Stage-2 is the assessment process carried out by experts. Stage-3 is the activity of regularly collecting and compiling all the scores that have been obtained from the results of expert's assessment. Stage-4 is an activity to cross-check between the score from the expert's assessment and the quality standard of the calculation simulation which refers to eleven's scale. Stage-5 is the categorization of the quality of the calculation simulation process by reference to the quality standards of the eleven's scale.

2.2. Simulation Formula

There are three formulas for simulating the calculation of the *Weighted Product* method. The first formula for the weighting improvement process. The first formula is shown in Equation 1 [15–18]. The second formula is to determine the S vector. The second formula is shown in Equation 2 [19–23]. The third formula for determining the V vector. The third formula is shown in Equation 3 [24–32].

$$w_j = \frac{w_j}{\sum w_j} \tag{1}$$

$$S_i = \prod_{j=1}^{n} x_{ij}{}^{w_j} \qquad where: i = 1,2, \dots, m \tag{2}$$

S is the criteria preference which is often called the S vector. x is the criterion value. w_i is a positive weight for the profit attribute and a negative weight for the cost attribute. $\sum w_j$ must be valuable of 1.

$$V_i = \frac{s_i}{\sum s} \qquad where: i = 1,2, \dots, n \tag{3}$$

V is an alternative preference for determining rank. This is often called a V vector.

2.3. Subject, Object, and Location of Research

The subjects involved in the quality assessment of the simulation results of *Weighted Product* calculations were 20 experts. The 20 experts consisted of 10 education experts and 10 informatics experts. The subjects involved in the weight improvement process were six experts, consisting of three education experts and three informatics experts. Determination of subjects for this research was carried out based on the purposive sampling technique. The reason for using this technique is because if you choose another sampling technique, it will be difficult to determine a subject that is truly sensitive and understands in depth about the online platform used in learning. In general, this purposive sampling technique makes it easier for researchers to obtain data from sources that are indeed appropriate and have in-depth experience with the object under research. All subjects involved in this research had in-depth knowledge and experience of the role of online platforms in supporting learning. The advantage of using this purposive sampling technique is that it increases the sensitivity of the assessments made by the subjects involved in this research, because the subjects will provide an assessment according to their experience.

The object of this research was a *Weighted Product* method combined with the *CIPP* model to determine the best online platform. The object of this research was the research focus because it was based on ideas raised to overcome problems found in the field related to difficulties in determining the best online platform to support the online learning process.

The research was conducted at several health universities in Bali. The universities are located in several regencies, including: Tabanan, Badung, Denpasar, Klungkung, Buleleng, and Gianyar. The reason for selecting several health colleges as research locations was to obtain differences in the characteristics of online platform users. The existence of differences in the characteristics of online platform users is very good, because it will provide a more objective sensitivity to the assessment results and a variety of perspectives on the online platform being assessed.

2.4. Data Collection Instrument

The instrument used to assess the quality of the calculation simulation was a questionnaire consisting of eight questions. Question-1 about the initial data conditions for the simulation. Question-2 about the results of the weight improvement from the expert. Question-3 about the accuracy of the calculation results for the S vector. Question-4 about the accuracy of the V vector calculation results. Question-5 about the accuracy of the ranking results in the context component. Question-6 about the accuracy of the ranking results in the input component. Question-7 about the accuracy of the ranking results in the process component. Question-8 about the accuracy of the ranking results in the product component.

2.5. Data Analysis Technique

The results of the analysis of the calculation quality assessment using the quantitative descriptive technique. This analysis technique was carried out by comparing the quality of the calculation simulation results with quality standards that refer to the eleven's scale. The formula for calculating the quality percentage is shown in Equation 4 [33–39], while the quality standard, which refers to the eleven's scale, is shown in Table 1 [40–44].

$$P = \frac{f}{N} \times 100\% \quad (4)$$

where P is percentage of quality, f is total of the acquisition value, and N is total of maximum value.

Table 1 shows the eleven quality standard scales used as the basis for categorizing the quality of the calculation simulation of the *Weighted Product* method, which is integrated with the *CIPP* model. If the quality percentage range is 75%–100%, then the quality of the average calculation simulation is good, so there is no need to repeat the calculation. If the range of quality percentages is less than 75%, then the quality of the calculation simulation is generally classified as poor, so a re-simulation is necessary.

Table 1. Quality Standards Based on Eleven's Scale

Classification of Quality	Range of Quality Percentage
Excellent	95 to 100
Very Good	85 to 94
Good	75 to 84
More than Enough	65 to 74
Enough	55 to 64
Almost Enough	45 to 54
Minus	35 to 44
Very Minus	25 to 34
Poor	15 to 24
Very Poor	5 to 14
Highly Poor	0 to 4

3. Results and Discussion

3.1. Online Platforms used in Health Colleges in Bali

Several online platforms used at health colleges in Bali to support the online learning process during the COVID-19 pandemic, including: *Microsoft Teams*, *Kelase*, *Moodle*, and *SEVIMA EdLink*. The display of some of these platforms can be seen in Figure 3 to 6.

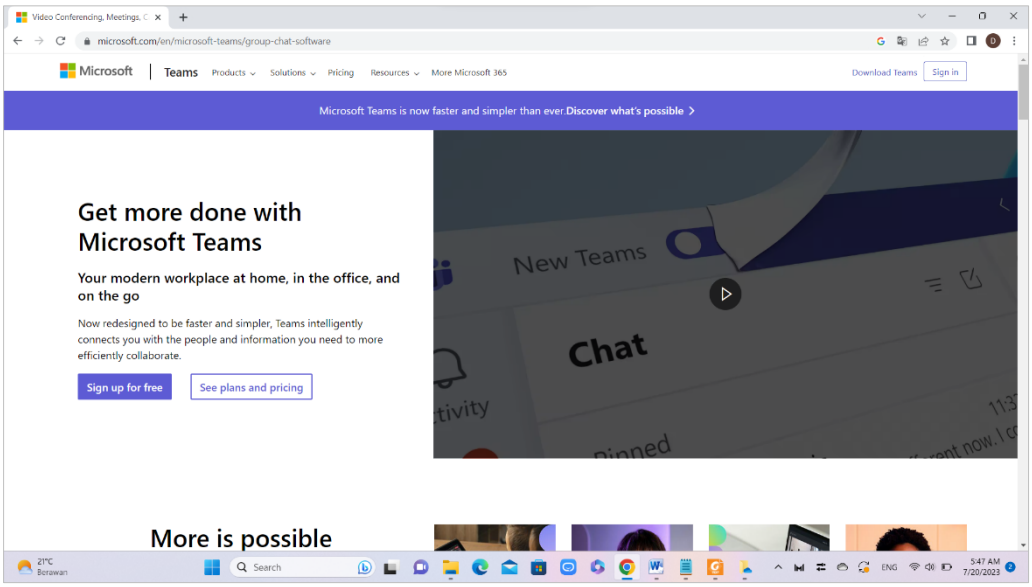

Figure 3. Display of *Microsoft Teams*

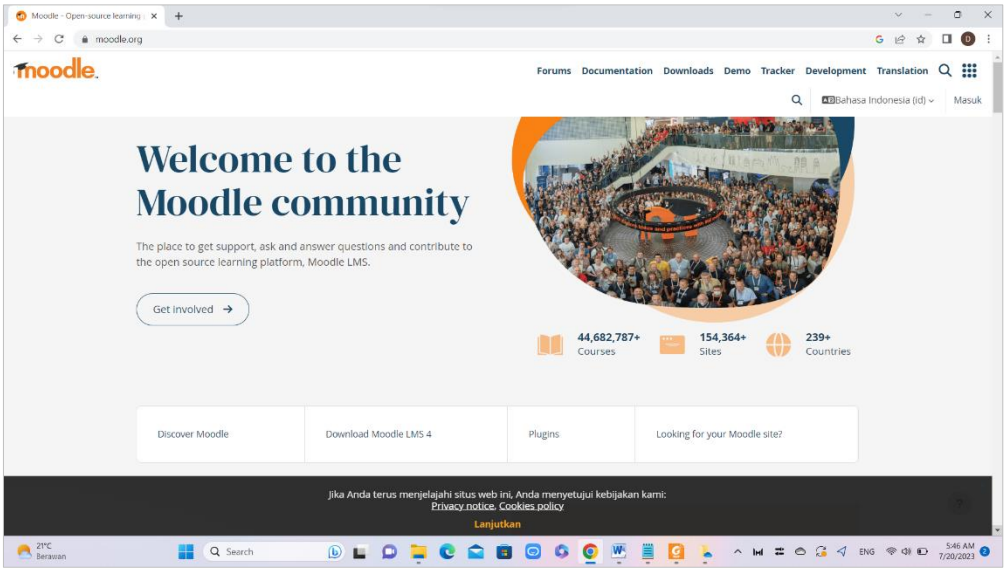

Figure 4. Display of *Moodle*

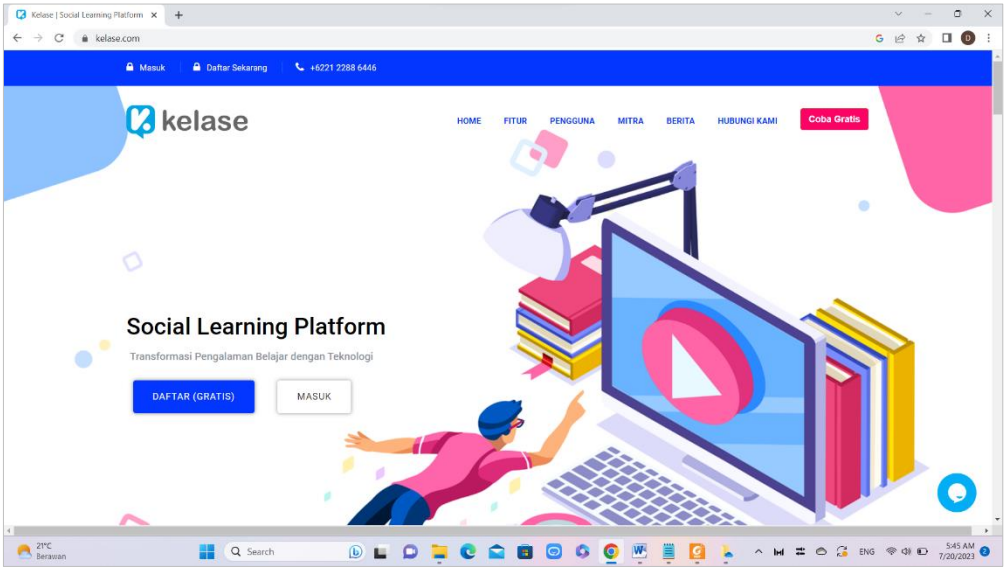

Figure 5. Display of *Kelase*

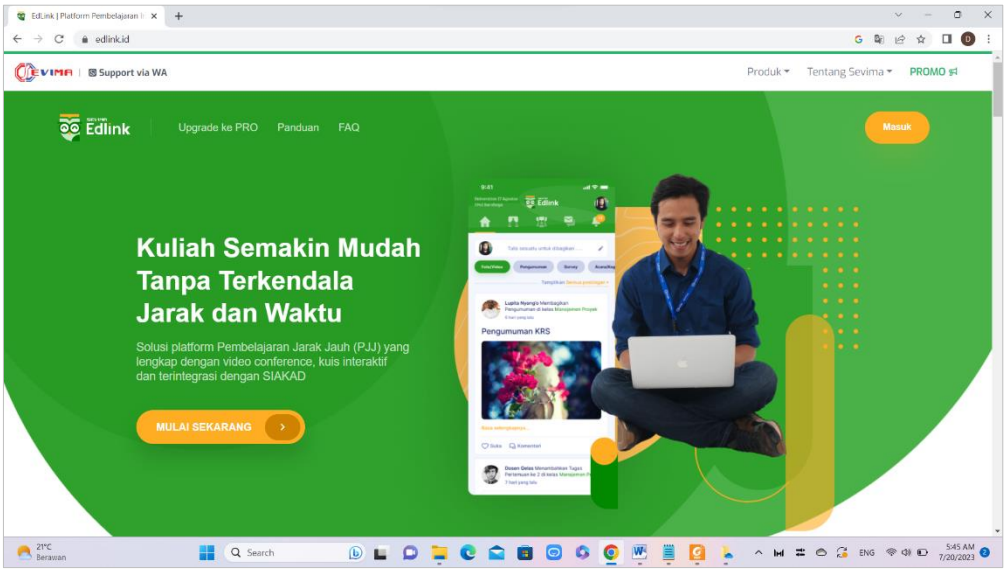

Figure 6. Display of *SEVIMA EdLink*

Microsoft Teams is a modern application offered by *Microsoft*. This application is a hub for a team, both in small or large-scale organizations that allow users to collaborate and communicate easily whenever and wherever they are. *Microsoft Teams* can be accessed through this URL: *https://www.microsoft.com/en/microsoft-teams/group-chat-software*.

*Moodle i*s a web-based service that assists in online learning activities. *Moodle* is an acronym for *Modular Object-Oriented Dynamic Learning Environment* which can be said to be a dynamic learning place using models and object-oriented. *Moodle* can be accessed through this URL: *https://moodle.org/*.

The *Kelase* application is an application developed by *PT. Edukasi Satu Nol Satu* from Indonesia helps education organizations provide online services so they can collaborate, learn, and exchange knowledge with various features and ease of access. *Kelase* can be accessed through this URL: *https://www.kelase.com/*.

SEVIMA EdLink is an online learning platform made by Indonesians which has several facilities, including online presence, remote video conferencing, notifications of online lecture schedules, interactive quizzes with attractive packaging, discussion forums for material that is easy but still interactive, and recapitulation of each student's presence. *SEVIMA EdLink* can be accessed through this URL: *https://edlink.id/*.

3.2. Calculation Simulation of *Weighted Product* Method

Based on those online platforms, it was necessary to determine the best platform that was able to be used in the learning process during the COVID-19 Pandemic. Therefore, in this research, calculation simulation was carried out to determine the best online platform using the *CIPP* model based on *Weighted Product*. The calculation simulation process can be shown as follows.

1) Determination of Initial Data for Simulation

The initial data used for the calculation simulation of the *Weighted Product* method consists of the average score of the interest rating given by the respondents to each *CIPP* evaluation aspect. The respondents involved were 10 experts. The initial data intended can be seen in Table 2.

Table 2. Initial Data for *Weighted Product* Calculation Simulation

Evaluation Aspects	Platforms	Evaluation Components			
		Context	Input	Process	Product
Vision and mission of organizing online learning	Microsoft Teams	3.90	1.00	1.00	1.00
	Kelase	3.80	1.00	1.00	1.00
	Moodle	4.40	1.00	1.00	1.00
	SEVIMA EdLink	3.70	1.00	1.00	1.00
The purpose of organizing online learning	Microsoft Teams	4.10	1.00	1.00	1.00
	Kelase	3.70	1.00	1.00	1.00
	Moodle	4.60	1.00	1.00	1.00
	SEVIMA EdLink	3.50	1.00	1.00	1.00
Support from the academic community for the implementation of online learning	Microsoft Teams	3.60	1.00	1.00	1.00
	Kelase	3.40	1.00	1.00	1.00
	Moodle	4.40	1.00	1.00	1.00
	SEVIMA EdLink	3.20	1.00	1.00	1.00
The ability of the development teams to install and control the supporting devices for the realization of online learning	Microsoft Teams	1.00	3.40	1.00	1.00
	Kelase	1.00	2.90	1.00	1.00
	Moodle	1.00	4.10	1.00	1.00
	SEVIMA EdLink	1.00	2.80	1.00	1.00
Funding support from college	Microsoft Teams	1.00	3.60	1.00	1.00
	Kelase	1.00	3.20	1.00	1.00
	Moodle	1.00	4.30	1.00	1.00
	SEVIMA EdLink	1.00	3.30	1.00	1.00
Lecturer’s knowledge about online learning platforms	Microsoft Teams	1.00	3.20	1.00	1.00
	Kelase	1.00	2.60	1.00	1.00
	Moodle	1.00	3.70	1.00	1.00
	SEVIMA EdLink	1.00	2.70	1.00	1.00

Student's knowledge about online learning platforms	Microsoft Teams	1.00	3.30	1.00	1.00
	Kelase	1.00	2.90	1.00	1.00
	Moodle	1.00	4.20	1.00	1.00
	SEVIMA EdLink	1.00	3.20	1.00	1.00
Lecturer skills in using online learning platforms	Microsoft Teams	1.00	1.00	3.10	1.00
	Kelase	1.00	1.00	2.50	1.00
	Moodle	1.00	1.00	3.60	1.00
	SEVIMA EdLink	1.00	1.00	2.60	1.00
Student skills in using online learning platforms	Microsoft Teams	1.00	1.00	3.20	1.00
	Kelase	1.00	1.00	2.70	1.00
	Moodle	1.00	1.00	3.90	1.00
	SEVIMA EdLink	1.00	1.00	2.90	1.00
The reporting mechanism for the use of supporting funds for the realization of online learning	Microsoft Teams	1.00	1.00	2.80	1.00
	Kelase	1.00	1.00	2.60	1.00
	Moodle	1.00	1.00	3.70	1.00
	SEVIMA EdLink	1.00	1.00	2.80	1.00
Lecturer satisfaction in using online learning platforms	Microsoft Teams	1.00	1.00	1.00	3.10
	Kelase	1.00	1.00	1.00	2.90
	Moodle	1.00	1.00	1.00	3.60
	SEVIMA EdLink	1.00	1.00	1.00	2.70
Student satisfaction in using online learning platforms	Microsoft Teams	1.00	1.00	1.00	3.30
	Kelase	1.00	1.00	1.00	3.10
	Moodle	1.00	1.00	1.00	3.80
	SEVIMA EdLink	1.00	1.00	1.00	2.90
Satisfaction of the development teams in managing the online learning platform	Microsoft Teams	1.00	1.00	1.00	3.50
	Kelase	1.00	1.00	1.00	3.70
	Moodle	1.00	1.00	1.00	4.20
	SEVIMA EdLink	1.00	1.00	1.00	3.30
Quality of online learning using online platforms	Microsoft Teams	1.00	1.00	1.00	3.70
	Kelase	1.00	1.00	1.00	3.90
	Moodle	1.00	1.00	1.00	4.40
	SEVIMA EdLink	1.00	1.00	1.00	3.40

Table 2 shows the evaluation aspects used to measure the quality of several online platforms in view of the *CIPP* evaluation component. There were four platforms whose quality was measured, including Microsoft Teams, Kelase, Moodle, and SEVIMA EdLink. The average importance rating score shown for each evaluation component in Table 2 was obtained from the assessment scores given by 20 respondents, consisting of 10 informatics experts and 10 education experts.

2) Determination of Weights from Experts that had been Revised for Each Evaluation Component

Based on Equation 1, it can be determined the weight given by the experts that had been corrected/improved for each *CIPP* evaluation component. The results of the weights that had been corrected can be seen in Table 3.

Table 3. Weights from Experts that had been Revised

Evaluation Components	Weight Value from Each Expert						Σ	Weights from Experts that had been Revised
	Expert- 1	Expert- 2	Expert- 3	Expert- 4	Expert-5	Expert- 6		
Context	5	4	5	5	5	5	29	0.257
Input	4	5	5	5	4	4	27	0.239
Process	5	5	4	5	5	4	28	0.248
Product	5	5	5	4	5	5	29	0.257
Total							**113**	**1**

Table 3 shows the weighted repair scores for each evaluation component. Giving a weight repair score was carried out by six experts. The weight repair score for the *Context* component is obtained by the following calculation: Σ *Context* component / Σ Total, so the weight repair score for the context component = 29/113 = 0.257. And so on, the same calculation is performed for *Input*, *Process*, and *Product* components. Weight repair score for the *Input* component = 27/113 = 0.239. Weight repair score for the *Process* component = 28/113 = 0.248. Weight repair score for the *Product* component = 29/113 = 0.257. The total weight repair for all *CIPP* evaluation components must be valuable of 1, to comply with the conditions set out in Equation 2, where $\sum w_j$ must be valuable of 1.

3) Calculation of S Vector

Referring to Equation 2, the data in Tables 2 and 3 can be calculated of normalization to get the S vector. The calculation of the S vector can be shown as follows.

$S_1 = (3.90^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.418$; $S_2 = (3.80^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.409$

$S_3 = (4.40^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.463$; $S_4 = (3.70^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.399$

$S_5 = (4.10^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.436$; $S_6 = (3.70^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.399$

$S_7 = (4.60^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.479$; $S_8 = (3.50^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.379$

$S_9 = (3.60^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.389$; $S_{10} = (3.40^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.369$

$S_{11} = (4.40^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.463$; $S_{12} = (3.20^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.348$

$S_{13} = (1.00^{0.257}) \times (3.40^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.340$; $S_{14} = (1.00^{0.257}) \times (2.90^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.290$

$S_{15} = (1.00^{0.257}) \times (4.10^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.401$; $S_{16} = (1.00^{0.257}) \times (2.80^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.279$

$S_{17} = (1.00^{0.257}) \times (3.60^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.358$; $S_{18} = (1.00^{0.257}) \times (3.20^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.320$

$S_{19} = (1.00^{0.257}) \times (4.30^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.417$; $S_{20} = (1.00^{0.257}) \times (3.30^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.330$

$S_{21} = (1.00^{0.257}) \times (3.20^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.320$; $S_{22} = (1.00^{0.257}) \times (2.60^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.256$

$S_{23} = (1.00^{0.257}) \times (3.70^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.367$; $S_{24} = (1.00^{0.257}) \times (2.70^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.268$

$S_{25} = (1.00^{0.257}) \times (3.30^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.330$; $S_{26} = (1.00^{0.257}) \times (2.90^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.290$

$S_{27} = (1.00^{0.257}) \times (4.20^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.409$; $S_{28} = (1.00^{0.257}) \times (3.20^{0.239}) \times (1.00^{0.248}) \times (1.00^{0.257}) = 1.320$

$S_{29} = (1.00^{0.257}) \times (1.00^{0.239}) \times (3.10^{0.248}) \times (1.00^{0.257}) = 1.324$; $S_{30} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.50^{0.248}) \times (1.00^{0.257}) = 1.255$

$S_{31} = (1.00^{0.257}) \times (1.00^{0.239}) \times (3.60^{0.248}) \times (1.00^{0.257}) = 1.374$; $S_{32} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.60^{0.248}) \times (1.00^{0.257}) = 1.267$

$S_{33} = (1.00^{0.257}) \times (1.00^{0.239}) \times (3.20^{0.248}) \times (1.00^{0.257}) = 1.334$; $S_{34} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.70^{0.248}) \times (1.00^{0.257}) = 1.279$

$S_{35} = (1.00^{0.257}) \times (1.00^{0.239}) \times (3.90^{0.248}) \times (1.00^{0.257}) = 1.401$; $S_{36} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.90^{0.248}) \times (1.00^{0.257}) = 1.302$

$S_{37} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.80^{0.248}) \times (1.00^{0.257}) = 1.291$; $S_{38} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.60^{0.248}) \times (1.00^{0.257}) = 1.267$

$S_{39} = (1.00^{0.257}) \times (1.00^{0.239}) \times (3.70^{0.248}) \times (1.00^{0.257}) = 1.383$; $S_{40} = (1.00^{0.257}) \times (1.00^{0.239}) \times (2.80^{0.248}) \times (1.00^{0.257}) = 1.291$

$S_{41} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.10^{0.257}) = 1.337$; $S_{42} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (2.90^{0.257}) = 1.314$

$S_{43} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.60^{0.257}) = 1.389$; $S_{44} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (2.70^{0.257}) = 1.290$

$S_{45} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.30^{0.257}) = 1.359$; $S_{46} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.10^{0.257}) = 1.337$

$S_{47} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.80^{0.257}) = 1.409$; $S_{48} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (2.90^{0.257}) = 1.314$

$S_{49} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.50^{0.257}) = 1.379$; $S_{50} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.70^{0.257}) = 1.399$

$S_{51} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (4.20^{0.257}) = 1.445$; $S_{52} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.30^{0.257}) = 1.359$

$S_{53} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.70^{0.257}) = 1.399$; $S_{54} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.90^{0.257}) = 1.418$

$S_{55} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (4.40^{0.257}) = 1.463$; $S_{56} = (1.00^{0.257}) \times (1.00^{0.239}) \times (1.00^{0.248}) \times (3.40^{0.257}) = 1.369$

$$\Sigma S = S_1 + S_2 + S_3 + S_4 + S_5 + S_6 + S_7 + S_8 + S_9 + S_{10} + S_{11} + S_{12} + S_{13} + S_{14} + S_{15} + S_{16} + S_{17} + S_{18} + S_{19} + S_{20} + S_{21} + S_{22} + S_{23} + S_{24} + S_{25} + S_{26} + S_{27} + S_{28} + S_{29} + S_{30} + S_{31} + S_{32} + S_{33} + S_{34} + S_{35} + S_{36} + S_{37} + S_{38} + S_{39} + S_{40} + S_{41} + S_{42} + S_{43} + S_{44} + S_{45} + S_{46} + S_{47} + S_{48} + S_{49} + S_{50} + S_{51} + S_{52} + S_{53} + S_{54} + S_{55} + S_{56} = 75.993$$

4) Calculation of V Vector

Based on Equation 3 and the value of the S vector from each evaluation aspect, so can be determined the V vector. The calculation of the V vector can be shown as follows.

$V_1 = S_1 / \Sigma S = 1.418/75.993 = 0.0187$; $V_2 = S_2 / \Sigma S = 1.409/75.993 = 0.0185$; $V_3 = S_3 / \Sigma S = 1.463/75.993 = 0.0192$

$V_4 = S_4 / \Sigma S = 1.399/75.993 = 0.0184$; $V_5 = S_5 / \Sigma S = 1.436/75.993 = 0.0189$; $V_6 = S_6 / \Sigma S = 1.399/75.993 = 0.0184$

$V_7 = S_7 / \Sigma S = 1.479/75.993 = 0.0195$; $V_8 = S_8 / \Sigma S = 1.379/75.993 = 0.0181$; $V_9 = S_9 / \Sigma S = 1.389/75.993 = 0.0183$

$V_{10} = S_{10} / \Sigma S = 1.369/75.993 = 0.0180$; $V_{11} = S_{11} / \Sigma S = 1.463/75.993 = 0.0192$; $V_{12} = S_{12} / \Sigma S = 1.348/75.993 = 0.0177$

$V_{13} = S_{13} / \Sigma S = 1.340/75.993 = 0.0176$; $V_{14} = S_{14} / \Sigma S = 1.290/75.993 = 0.0170$; $V_{15} = S_{15} / \Sigma S = 1.401/75.993 = 0.0184$

$V_{16} = S_{16} / \Sigma S = 1.279/75.993 = 0.0168$; $V_{17} = S_{17} / \Sigma S = 1.358/75.993 = 0.0179$; $V_{18} = S_{18} / \Sigma S = 1.320/75.993 = 0.0174$

$V_{19} = S_{19} / \Sigma S = 1.417/75.993 = 0.0186$; $V_{20} = S_{20} / \Sigma S = 1.330/75.993 = 0.0175$; $V_{21} = S_{21} / \Sigma S = 1.320/75.993 = 0.0174$

$V_{22} = S_{22} / \Sigma S = 1.256/75.993 = 0.0165$; $V_{23} = S_{23} / \Sigma S = 1.367/75.993 = 0.0180$; $V_{24} = S_{24} / \Sigma S = 1.268/75.993 = 0.0167$

$V_{25} = S_{25} / \Sigma S = 1.330/75.993 = 0.0175$; $V_{26} = S_{26} / \Sigma S = 1.290/75.993 = 0.0170$; $V_{27} = S_{27} / \Sigma S = 1.409/75.993 = 0.0185$

$V_{28} = S_{28} / \Sigma S = 1.320/75.993 = 0.0174$; $V_{29} = S_{29} / \Sigma S = 1.324/75.993 = 0.0174$; $V_{30} = S_{30} / \Sigma S = 1.255/75.993 = 0.0165$

$V_{31} = S_{31} / \Sigma S = 1.374/75.993 = 0.0181$; $V_{32} = S_{32} / \Sigma S = 1.267/75.993 = 0.0167$; $V_{33} = S_{33} / \Sigma S = 1.334/75.993 = 0.0176$

$V_{34} = S_{34} / \Sigma S = 1.279/75.993 = 0.0168$; $V_{35} = S_{35} / \Sigma S = 1.401/75.993 = 0.0184$; $V_{36} = S_{36} / \Sigma S = 1.302/75.993 = 0.0171$

$V_{37} = S_{37} / \Sigma S = 1.291/75.993 = 0.0170$; $V_{38} = S_{38} / \Sigma S = 1.267/75.993 = 0.0167$; $V_{39} = S_{39} / \Sigma S = 1.383/75.993 = 0.0182$

$V_{40} = S_{40} / \Sigma S = 1.291/75.993 = 0.0170$; $V_{41} = S_{41} / \Sigma S = 1.337/75.993 = 0.0176$; $V_{42} = S_{42} / \Sigma S = 1.314/75.993 = 0.0173$

$V_{43} = S_{43} / \Sigma S = 1.389/75.993 = 0.0183$; $V_{44} = S_{44} / \Sigma S = 1.290/75.993 = 0.0170$; $V_{45} = S_{45} / \Sigma S = 1.359/75.993 = 0.0179$

$V_{46} = S_{46} / \Sigma S = 1.337/75.993 = 0.0176$; $V_{47} = S_{47} / \Sigma S = 1.409/75.993 = 0.0185$; $V_{48} = S_{48} / \Sigma S = 1.314/75.993 = 0.0173$

$V_{49} = S_{49} / \Sigma S = 1.379/75.993 = 0.0181$; $V_{50} = S_{50} / \Sigma S = 1.399/75.993 = 0.0184$; $V_{51} = S_{51} / \Sigma S = 1.445/75.993 = 0.0190$

$V_{52} = S_{52} / \Sigma S = 1.359/75.993 = 0.0179$; $V_{53} = S_{53} / \Sigma S = 1.399/75.993 = 0.0184$; $V_{54} = S_{54} / \Sigma S = 1.418/75.993 = 0.0187$

$V_{55} = S_{55} / \Sigma S = 1.463/75.993 = 0.0192$; $V_{56} = S_{56} / \Sigma S = 1.369/75.993 = 0.0180$

5) Determination of the Best Platform

Based on the value of the V vector in each evaluation aspect, so can be carried out the process of determining the best online platform. The best platform is determined based on the highest score of the V vector. Recapitulation of the V vector for each online platform based on evaluation aspects can be seen in Table 4.

Table 4. Recapitulation of the V Vector for each Online Platform Based on Evaluation Aspects

Evaluation Aspects	Platforms	V vector
Vision and mission of organizing online learning	Microsoft Teams	0.0187
	Kelase	0.0185
	Moodle	0.0192
	SEVIMA EdLink	0.0184
The purpose of organizing online learning	Microsoft Teams	0.0189
	Kelase	0.0184
	Moodle	0.0195
	SEVIMA EdLink	0.0181
Support from the academic community for the implementation of online learning	Microsoft Teams	0.0183
	Kelase	0.0180
	Moodle	0.0192
	SEVIMA EdLink	0.0177
The ability of the development teams to install and control the supporting devices for the realization of online learning	Microsoft Teams	0.0176
	Kelase	0.0170
	Moodle	0.0184
	SEVIMA EdLink	0.0168

Funding support from college	Microsoft Teams	0.0179
	Kelase	0.0174
	Moodle	0.0186
	SEVIMA EdLink	0.0175
Lecturer's knowledge about online learning platforms	Microsoft Teams	0.0174
	Kelase	0.0165
	Moodle	0.0180
	SEVIMA EdLink	0.0167
Student's knowledge about online learning platforms	Microsoft Teams	0.0175
	Kelase	0.0170
	Moodle	0.0185
	SEVIMA EdLink	0.0174
Lecturer skills in using online learning platforms	Microsoft Teams	0.0174
	Kelase	0.0165
	Moodle	0.0181
	SEVIMA EdLink	0.0167
Student skills in using online learning platforms	Microsoft Teams	0.0176
	Kelase	0.0168
	Moodle	0.0184
	SEVIMA EdLink	0.0171
The reporting mechanism for the use of supporting funds for the realization of online learning	Microsoft Teams	0.0170
	Kelase	0.0167
	Moodle	0.0182
	SEVIMA EdLink	0.0170
Lecturer satisfaction in using online learning platforms	Microsoft Teams	0.0176
	Kelase	0.0173
	Moodle	0.0183
	SEVIMA EdLink	0.0170
Student satisfaction in using online learning platforms	Microsoft Teams	0.0179
	Kelase	0.0176
	Moodle	0.0185
	SEVIMA EdLink	0.0173
Satisfaction of the development teams in managing the online learning platform	Microsoft Teams	0.0181
	Kelase	0.0184
	Moodle	0.0190
	SEVIMA EdLink	0.0179
Quality of online learning using online platforms	Microsoft Teams	0.0184
	Kelase	0.0187
	Moodle	0.0192
	SEVIMA EdLink	0.0180

The highest score of the V vector shown in Table 4 was 0.0195. This clearly showed that the best online platform that was able to be used to support online learning during the COVID-19 pandemic was *Moodle* (shown by green block in Table 4). The score of 0.0195 was obtained from the evaluation aspect of the "purpose of implementing online learning". This indicates that the *Moodle* platform is very appropriate to use supporting the realization of the goals of organizing online learning.

3.3. Quality Assessment of the *Weighted Product* Method Simulation Calculation

The quality of the *Weighted Product* calculation simulation was assessed by 20 experts. The tool used by the expert to assess was a questionnaire consisting of eight questions. The quality assessment results of the *Weighted Product* method simulation calculation can be seen in Table 5.

Table 5. The Quality Assessment Results of the *Weighted Product* Method Simulation Calculation

No	Respondents	Items-								Σ	Percentage of Quality (%)
		I1	I2	I3	I4	I5	I6	I7	I8		
1	Educational Expert-1	5	5	4	5	4	4	4	5	36	90.000
2	Educational Expert-2	4	5	4	4	5	5	4	4	35	87.500
3	Educational Expert-3	5	5	5	4	4	4	5	4	36	90.000
4	Educational Expert-4	4	4	4	4	4	5	4	4	33	82.500
5	Educational Expert-5	4	4	5	5	4	5	4	5	36	90.000
6	Educational Expert-6	4	4	5	4	5	4	5	4	35	87.500
7	Educational Expert-7	4	4	4	5	5	5	4	4	35	87500
8	Educational Expert-8	4	5	4	4	4	4	4	4	33	82.500
9	Educational Expert-9	4	5	5	4	4	4	4	4	34	85.000
10	Educational Expert-10	4	4	4	5	4	4	4	4	33	82.500
11	Informatics Expert-1	4	4	5	5	4	4	5	4	35	87.500
12	Informatics Expert-2	4	4	5	4	5	5	4	4	35	87.500
13	Informatics Expert-3	5	5	4	4	4	4	4	4	34	85.000
14	Informatics Expert-4	5	5	5	4	4	4	4	4	35	87.500
15	Informatics Expert-5	5	5	5	5	4	5	4	4	37	92.500
16	Informatics Expert-6	4	4	5	4	5	4	5	4	35	87.500
17	Informatics Expert-7	5	4	4	4	5	4	4	5	35	87.500
18	Informatics Expert-8	5	4	4	4	5	4	4	4	34	85.000
19	Informatics Expert-9	5	4	4	4	5	4	5	4	35	87.500
20	Informatics Expert-10	4	5	5	4	5	5	4	5	37	92.500
Average											**87.250**

Based on the average percentage of quality shown in Table 5, it was able to be stated that the quality of the *Weighted Product* calculation simulation was categorized as very good when viewed from the quality standard refers to eleven's scale. In addition, when viewed from the simulation results of the *Weighted Product* calculation, it was found that the best online platform that was able to be used to support the online learning process during the COVID-19 pandemic was Moodle.

If the results of this research are compared with Vydia et al.'s [45] research, there are certainly similarities and differences. The similarity between this research and Vydia et al.'s research is that both use decision-support methods in choosing an online platform. The difference is that this study combines the educational evaluation model "*CIPP*" with a decision support method "*Weighted Product*" in determining the best online platform to support the learning process. Meanwhile, research by Vydia et al. only uses decision support methods (F-MADM/Fuzzy Multiple Attribute Decision Making) in determining online platforms to support the learning process.

In principle, this research has similarities with the research of Ouadoud et al. [46], which shows several online platforms that can be used to support the learning process. However, the difference is that Ouadoud et al.'s research does not show in detail the best online platform that can be used to support online learning. Meanwhile, this research has shown that there is a best online platform; there is even complete evidence of a calculation process to get the best online platform.

Satria's [47] research shows the best online platform can be used for learning in the new normal era. In principle, Satria's research and the results of this study have similarities in determining the best platform. However, the difference is the mechanism or method used to get the best online platform. The results of this research have an advantage when compared to Satria's research results, namely in the calculation process used to make decisions about the best online platform. This research uses a combination of educational evaluation models and decision support methods to obtain accurate calculation results in determining the best online platform. Meanwhile, Satria's research only used respondents' perception scores, which were obtained using an instrument in the form of questionnaires.

The results of this research were strengthened by several other studies, such as the research of Kurniawan & Septiana [25], Ardinengtyas & Himawan [48], Sirwan et al. [49], Simanjuntak & Perwira [50], Quansah & Essiam [51], Amin et al. [52], Putri et al. [53], Makruf et al. [54], Dascalu et al. [55], and Mpungose [56], which principle stated that Moodle was an online platform that was suitable for use during the COVID-19 pandemic to support online learning.

Based on the several advantages of the results of this research and the existence of strengthening support from several previous studies, the novelty of this research is the existence of an educational evaluation model that is combined with one of the methods in a decision support system called the *Weighted Product*. This model can be used to determine the best online platform to support the online learning process in the education field generally and in health colleges specifically. The limitation of this research is that it is difficult to determine the best online platform if there are V vectors that have the same value.

4. Conclusion

Generally, the results of this research showed a very good simulation of the *Weighted Product* method calculation. The results of this categorization show the positive significance of this results study which are useful for convincing the public regarding the best online platforms that can be used to support the learning process in health colleges. This positive significance is confirmed by the result of a quality percentage of 87.250% in the range of 85–94% when referring to the eleven-scale quality standard. Theoretically, the results of this research make a positive contribution to science and technology by demonstrating a combination of knowledge between educational evaluation models combined with decision support system methods. The combination of two pieces of knowledge produces an accurate calculation process for determining the best online platform that is useful in supporting a better learning process for the advancement of education. Practically, future work can be done by researchers, the academic community, or educational observers to overcome the obstacle of this research, which is to determine the best online platform based on platform priority if the V vector values are the same. In addition to referring to the V vector value, it is better if the evaluation aspect that is a priority to support the success of the online learning implementation also needs to be used as a determinant of the best online platform selection. The novelty of this research is the combination of the *Weighted Product* method and the *CIPP* model, which can produce accurate recommendations to make it easier for educational evaluators to determine the best online platform that supports online learning during the COVID-19 pandemic and after the COVID-19 pandemic. The impact of these research results on the field of education is new knowledge for education evaluators to use the product weighted method combined with the educational evaluation model in conducting an evaluation.

5. Declarations

5.1. Author Contributions

Conceptualization, D.G.H.D. and P.W.A.S.; methodology, D.G.H.D.; formal analysis, D.G.H.D., P.W.A.S., N.S., M.S.L.A., I.M.S., I.N.D.A., N.W.R.M., and G.A.D.S.; investigation, D.G.H.D.; data curation, D.G.H.D., P.W.A.S., N.S., M.S.L.A., I.M.S., I.N.D.A., N.W.R.M., and G.A.D.S.; writing—original draft preparation, D.G.H.D.; writing—review and editing, D.G.H.D. All authors have read and agreed to the published version of the manuscript.

5.2. Data Availability Statement

The data presented in this study are available in the article.

5.3. Funding

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5.5. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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