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EVALUATION OF LEARNING PROGRAMS AND COMPUTER CERTIFICATION AT COURSE INSTITUTE IN BALI USING CSE-UCLA BASED ON SAW SIMULATION MODEL

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ABSTRACT

One form of competence held namely computer certification for his protégé, which was carried out after the students finish carry out training/learning. The main reason was held at the Institute of computer certification courses is to prepare graduates into the workforce that have a high competence and ready to compete in search of work. That is because the competition work in the era of the AEC (*ASEAN Economic Community*), the seekers workers cannot just rely on a certificate of learning, but is most needed is a competence that can be demonstrated by the presence of a certificate of competence. In the implementation of a computer certification program is a form of educational service organized by the course institute was still found to be constraints. To be able to find the constraints and improvements/refinements against obstacles that have been found, then it needs to be implemented evaluation of the program. This research aims to know the effectiveness of the implementation of the program of learning and computer certification at Institute courses. This research belongs to the evaluative research using CSE-UCLA model. The subject of this research consists of: teachers, program manager, and a team of students. Method of data collection is done by questionnaires, observation, interviews, and documentation. Technique of data analysis in this research is descriptive quantitative percentage to analyze the effectiveness of every component in CSE-UCLA (*Center for the Study of Evaluation-University of California in Los Angeles*) model and qualitative descriptive for analyzing constraints that lead to results not in accordance with the standards of the evaluation of its success. In addition, the dominant constraints affecting the implementation of the program based on the results obtained using the method of calculation of the SAW (*Simple Additive Weighting*) simulation model. The results of the evaluation of the implementation of the program as a whole shows the effectiveness of 80.44%, this indicates that the implementation of the program belongs to the category of good. The dominant constraints affecting the program implementation is empowerment of technical personnel for operational management.

Keywords: *Evaluation, Learning, Computer Certificate, CSE-UCLA, SAW*

1. INTRODUCTION

The implementation of the *ASEAN Economic Community* (AEC), greatly impacted on increasingly tight competition in the world of work. To be able to excellent in competition work in the era of AEC, then it takes the hard efforts. One effort that can be done to cope with the competitive pressure is to prepare a workforce that has high competence. To get a competent workforce, then the learning process can be done via the formal education, non formal education, as well as the certification of competencies [1].

The path of formal education through the educational diploma, bachelor, master, and doctoral degrees. Non formal education path through training/courses. Competency certification path through competence/expertise. Various agencies of the course, particularly in Bali, which is a non formal educational institution striving to improve the competence of graduates, by way of organizing

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learning and competence. One form of competence held namely computer certification for his protégé, which was carried out after the students finish carry out training/learning. The main reason was held at the Institute of computer certification courses is to prepare graduates into the workforce that have a high competence and ready to compete in search of work. That is because the competition work in the era of the AEC, the seekers workers cannot just rely on a certificate of learning, but is most needed is a competence that can be demonstrated by the presence of a certificate of competence. In the implementation of a computer certification program is a form of educational service organized by the institute of the course was still found to be constraints. To be able to find the constraints and improvements/refinements against obstacles that have been found, then it needs to be implemented evaluation of the program.

One form of evaluation CSE-UCLA model. The reason for using this model because the CSE-UCLA model is suitable for evaluating the educational service program [2], one of which, namely the program of learning and certification of the computer. Aspects of the learning programs and computer certification at courses institute evaluated using five components of the evaluation of the CSE-UCLA: System Assessment, Program Planning, Program Implementation, Program Improvement, and Program Certification.

As for the aspects evaluated on component system assessment, include: the purpose of the implementation of the program, the legal basis for the implementation of the program, and guidelines for the implementation of the program. The aspects evaluated on components of the program include: planning, preparation of hardware, software, setup and preparation of human resources. The aspects evaluated on components of program planning, including: hardware planning and preparation, planning and preparation of software, and the planning and preparation of human resources. The aspects evaluated on components of program implementation, includes: mounting hardware, software installation, training provided in human resources. The aspects evaluated on components of program improvement, include: program management by the developer, by operational technical empowerment. The aspects evaluated on components of program certification, include: external certificates and the impact inflicted on students after they followed a program organized by course institute. Based on the results of the evaluation of these aspects will then be retrieved some of the constraints that affect program implementation. To obtain the most dominant constraints affecting the implementation of programs then need to look for an accurate calculation of the results using the method of SAW (*Simple Additive Weighting*).

Based on that statement, there are several problems that must be investigated, among others: 1) How much the percentage rate of effectiveness of implementation of learning and computer certification at course institute?, 2) What are the constraints that are found in the implementation of learning and computer certification at course institute? What are the dominant constraints affecting the implementation of the program learning and computer certification at course institute?

The research result behind this research is the research done by Divayana and Dessy in 2016 [1] about the evaluation of computer certification program at Universitas Teknologi Indonesia using CSE-UCLA model, where the result of that research is only able to show the effectiveness level of the computer certification program implementation from system assessment components, program planning, program implementation, program improvement and program certification, but not yet able to accurately display the most dominant constraints affecting the effectiveness of the implementation of computer certification program. Therefore, in this research, it is necessary to make a breakthrough that can determine the most dominant constraints affecting the implementation of the program that is in the form of utilization of SAW method to find the results of accurate calculations.

Based on the above problems, the main objectives of this research are: 1) To know the percentage of effectiveness level of the implementation of computer learning and certification program at the course institute in Bali; 2) To know the constraints found in the implementation of the computer learning and certification program at the course institute in Bali; 3) To know the most dominant constraints that affect the implementation of the computer learning and certification program at the course institute in Bali.

From the results of evaluation of implementation of the program of learning and computer certification at courses institute, will be used to decide whether the program is still eligible to be forwarded or whether it needs to be stopped.

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2. LITERATURE REVIEW

2.1 Evaluation

Evaluation is an activity to collect, analyze, and present information about the quality level of a particular object under study based on predetermined criteria or goals and the results can be used for consideration in making a decision [2]. Evaluation is an activity for collecting, analyzing, and presenting, information about a particular object to be used for a consideration in making an appropriate and accurate decision[3].

The definition of evaluation is also similar to the opinion of Divayana in 2017 which focuses on the main objective of evaluation is to obtain consideration to take a decision on the object being evaluated [4]. Evaluation is an activity for collecting, analyzing, and explaining comprehensively information about a particular object/program/policy being studied and the results of an evaluation can be used for the consideration in making a decision to continue or to stop the object/program/policy [5].

Evaluation is an activity for data collecting, data analyzing and data presenting into information about a particular object under study so that the results can be used to take a decision [6]. Evaluation is an activity in collecting, analyzing, and presenting information about a research object and its results can be used to make a decision [7]. Evaluation is an activity that consists of the process of gathering, describing, and explaining various pieces of information about the effectiveness of something that can be used later as the consideration for making a decision and a recommendation [8].

Evaluation is an activity for collecting, understanding, and reporting the result of analysis of a particular program/object in such a way that the result can be used as the consideration in making a decision as to whether the program will be continued or stopped [1]. Evaluation is an activity for collecting, analyzing, and presenting information about a particular object being evaluated to be used as the consideration in making a decision [9]. Evaluation is an activity to collect, analyze, and present information about an object to be evaluated, where the results of these evaluations are used for consideration in making a decision that is precise, accurate, and reliable [10].

Evaluation is an activity of data collection, data processing, data analysis, presentation of data into information that used as a recommendation in taking a right decision [11]. Evaluation is an activity conducted by an evaluator in collecting, analyzing, and presenting information related to the program/object/policy that the results can be used to take a decision [12]. Evaluation is an activity conducted by the evaluator to collect, analyze, and present complete and accurate information about a particular object/program/service/policy being studied, thus the results could be used as a recommendation in making a decision [13]. Evaluation is an activity that collects, analyzes, and presents data into useful information in making decisions based on recommendations obtained from these activities [14]. Evaluation is an activity to collect, analyse, and present an information about a particular object being studied and the result of an evaluation could be used as an aspect of consideration to make a decision [15]. Evaluation is one of the measurement activities conducted through the process of data collection, data analysis, and interpret it into an information so that the results can be used as recommendations for decision making [16]. Evaluation is an important activity undertaken in measuring the quality of learning through the process of data collection, data analysis, and presentation of information that the results can be used for consideration in taking a decision in the improvement of learning process towards a better quality [17].

From several definitions of evaluation above, then the evaluation is an activity to collect, process, analyze data accurately and depth into a useful information as a recommendation in decision making.

2.2 CSE-UCLA (Center for the Study of Evaluation-University of California in Los Angeles) Evaluation Model

CSE-evaluation model developed by Alkin, UCLA as a process of convincing decision, choosing the right information, collect, and analyze the information so that it can report the summary data that is useful to decision makers and choose some alternative [18]. The evaluation CSE-UCLA model developed by Alkin evaluate program in five stages: system assessment, program planning, program implementation, program improvement, and program certification [19]. Stages of system assessment aims to give information about the State of the system. At this stage will be conducted needs assessment. The existence of needs showed a gap between what is with what ought to exist. The existence of the gap shows that there is a problem. Furthermore, the existing problems will be used to determine the purpose of the program. At the stage of program planning aims to help select effective programs to meet the needs identified from the

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system assessment. The focus at this stage is on the creation of program planning to meet the needs identified at the first stage. At the stage of program implementation to provide information as to whether the program has been carried out correctly in accordance with the plan. At the stage of program improvement has a major issue i.e. how large programs can reach the main attention is given to products that are developed, and on the stages of the program certification provide information on the achievement of overall program goals and information about the potential of the program to be used elsewhere.

Alkin's UCLA model of evaluation involves parallel aspects to the CIPP model. Alkin defined evaluation as "the process of ascertaining the decision areas of concern, selecting appropriate information and collecting and analyzing information in order to report summary data useful to decision-makers in selecting among alternatives" [20]. In his research found the CSE-UCLA model includes aspects similar to the CIPP model, among others: 1) *systems assessment* (context evaluation in the CIPP model); 2) *program planning* (very similar to input evaluation); 3) *program implementation*, to provide information about whether a program was introduced to the appropriate group in the manner intended, 4) *program improvement* (similar to process evaluation); 5) *program certification* (similar to product evaluation).

CSE-UCLA model is a model of evaluation that has five dimensions of evaluation (system assessment, program planning, program implementation, program improvement, program certification) and is suitable for evaluating program services that help human life, such as: program library, banks, cooperatives, e-government, e-learning and other [9].

CSE-UCLA model evaluation was accomplished in several phases, namely: system assessment, planning program, implementation program, improvement program, and certification program [21]. CSE-UCLA model is an evaluation model that has five evaluation dimensions, which include system assessment, program planning, program implementation, program improvement, and program certification that is suitable to be used to evaluate service programs that help human life [22].

The CSE-UCLA model is an evaluation model that has five dimensions of evaluation (system assessment, program planning, program implementation, program improvement, and program certification) and suitable to evaluate service programs that help human life, such as: library programs, banks, e-government, e-learning and others [23].

From some of the opinions above it can be concluded that in general the evaluation of the CSE-UCLA is an evaluation that emphasizes on five aspects, namely: the giving of information about the State of the program being evaluated, the selection of effective programs to meet the needs of the program, the grant information/introduction of the program to the specific groups that have been specified on the implementation of the program in accordance with the plan, the giving of information about program performance, giving information about the results/benefits of the program.

2.3 SAW (Simple Additive Weighting) Simulation Model

SAW (Simple Additive Weighting) simulation model is often also known the term weighted summation method. The basic concept of the method is to find a weighted summation of the SAW of rating performance on any alternative on all attributes. The method of matrix the normalization process requires SAW decision (X) to a scale that can be compared with all the alternative rating [24].

Formula for doing normalization are as follows:

$$r_{ij} = \begin{cases} \dfrac{x_{ij}}{\underset{i}{Max}\ x_{ij}} & \text{if j is benefit attribute} \\ \dfrac{\underset{i}{Min}\ x_{ij}}{x_{ij}} & \text{if j is cost attribute} \end{cases} \quad \ldots\ldots (1)$$

With a performance rating of normalization (r_{ij}) is the alternative of A_i on the attributes of C_j; i = 1,2, ..., m and j = 1,2, ..., n.

The value of the preference for each alternative (V_i) provided as follows:

$$V_i = \sum_{j=1}^{n} w_j r_{ij} \quad \ldots\ldots (2)$$

The values V_i larger alternative A_i indicated that more elected.

An example of the SAW method can be follows illustrated [25].

In a country named College of Universitas Pendidikan Ganesha, a clerk who will be elected will be promoted as head of the information technology unit. There are four criteria used to conduct the assessment, namely:

C_1 = tests the knowledge and capabilities of information technology

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C_2 = practice installation PC computer and network
C_3 = personality test
C_4 = religious knowledge test

Decision makers provide the weights for each assessment criteria, namely as follows: C_1 = 35%; C_2 = 25%; C_3 = 20%; dan C_4 = 20%. There are six employees who became a candidate to be promoted as head of the information technology unit, namely:

A_1 = Nyoman Ribek,
A_2 = Wayan Artanayasa,
A_3 = Dewa Sanjaya,
A_4 = Pasek Nugraha,
A_5 = Agus Adiarta, dan
A_6 = I Made Sundayana.

If for instance the data obtained as follows.

Table 1: Alternative Values in Any Criteria in Selection of Head of Information Technology Unit

Alternative	Criteria			
	C_1	C_2	C_3	C_4
Nyoman Ribek	85	63	92	72
Wayan Artanayasa	65	72	91	84
Dewa Sanjaya	95	74	93	86
Pasek Nugraha	92	83	78	94
Agus Adiarta	85	85	96	83
I Made Sundayana	82	65	83	91

Specify employee who was promoted as the head of the information technology unit at the Universitas Pendidikan Ganesha!

Solution:

Determine the category of each criterion.

C_1 criteria (tests the knowledge and capabilities of information technology) is the criteria of profitability; C_2 criteria (the practice of installing PC computers and network) are the criteria of profitability; C_3 criteria (personality test) is the criteria of profitability; C_4 criteria (religious knowledge test) is the criteria of profitability.

Determine the normalization.

$$r_{11} = \frac{85}{\max\{85;65;95;92;85;82\}} = \frac{85}{95} = 0.895$$

$$r_{21} = \frac{65}{\max\{85;65;95;92;85;82\}} = \frac{65}{95} = 0.684$$

$$r_{31} = \frac{95}{\max\{85;65;95;92;85;82\}} = \frac{95}{95} = 1.000$$

$$r_{41} = \frac{92}{\max\{85;65;95;92;85;82\}} = \frac{92}{95} = 0.968$$

$$r_{51} = \frac{85}{\max\{85;65;95;92;85;82\}} = \frac{85}{95} = 0.895$$

$$r_{61} = \frac{82}{\max\{85;65;95;92;85;82\}} = \frac{82}{95} = 0.863$$

$$r_{12} = \frac{63}{\max\{63;72;74;83;85;65\}} = \frac{63}{85} = 0.741$$

$$r_{22} = \frac{72}{\max\{63;72;74;83;85;65\}} = \frac{72}{85} = 0.847$$

$$r_{32} = \frac{74}{\max\{63;72;74;83;85;65\}} = \frac{74}{85} = 0.871$$

$$r_{42} = \frac{83}{\max\{63;72;74;83;85;65\}} = \frac{83}{85} = 0.976$$

$$r_{52} = \frac{85}{\max\{63;72;74;83;85;65\}} = \frac{85}{85} = 1.000$$

$$r_{62} = \frac{65}{\max\{63;72;74;83;85;65\}} = \frac{65}{85} = 0.765$$

$$r_{13} = \frac{92}{\max\{92;91;93;78;96;83\}} = \frac{92}{96} = 0.958$$

$$r_{23} = \frac{91}{\max\{92;91;93;78;96;83\}} = \frac{91}{96} = 0.948$$

$$r_{33} = \frac{93}{\max\{92;91;93;78;96;83\}} = \frac{93}{96} = 0.969$$

$$r_{43} = \frac{78}{\max\{92;91;93;78;96;83\}} = \frac{78}{96} = 0.813$$

$$r_{53} = \frac{96}{\max\{92;91;93;78;96;83\}} = \frac{96}{96} = 1.000$$

$$r_{63} = \frac{83}{\max\{92;91;93;78;96;83\}} = \frac{83}{96} = 0.865$$

$$r_{14} = \frac{72}{\max\{72;84;86;94;83;91\}} = \frac{72}{94} = 0.766$$

$$r_{24} = \frac{84}{\max\{72;84;86;94;83;91\}} = \frac{84}{94} = 0.894$$

$$r_{34} = \frac{72}{\max\{72;84;86;94;83;91\}} = \frac{86}{94} = 0.915$$

$$r_{44} = \frac{94}{\max\{72;84;86;94;83;91\}} = \frac{94}{94} = 1.000$$

$$r_{54} = \frac{83}{\max\{72;84;86;94;83;91\}} = \frac{83}{94} = 0.883$$

$$r_{64} = \frac{91}{\max\{72;84;86;94;83;91\}} = \frac{91}{94} = 0.968$$

The normalization result, then convert into matrix form as follows.

$$R = \begin{bmatrix} 0.895 & 0.741 & 0.958 & 0.766 \\ 0.684 & 0.847 & 0.948 & 0.894 \\ 1.000 & 0.871 & 0.969 & 0.915 \\ 0.968 & 0.976 & 0.813 & 1.000 \\ 0.895 & 1.000 & 1.000 & 0.883 \\ 0.863 & 0.765 & 0.865 & 0.968 \end{bmatrix}$$

The Ranking Process

Ranking process by using weights that have been granted by the decision maker:w = [0.35 0.25 0.20 0.20]. Results obtained are as follows:

V_1 = (0.35)(0.895) + (0.25)(0.741) + (0.20)(0.958) + (0.20)(0.766) = 0.843

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V_2 = (0.35)(0.684) + (0.25)(0.847) + (0.20)(0.948) + (0.20)(0.894) = 0.820
V_3 = (0.35)(1.000) + (0.25)(0.871) + (0.20)(0.969) + (0.20)(0.915) = 0.944
V_4 = (0.35)(0.968) + (0.25)(0.976) + (0.20)(0.813) + (0.20)(1.000) = 0.946
V_5 = (0.35)(0.895) + (0.25)(1.000) + (0.20)(1.000) + (0.20)(0.883) = 0.940
V_6 = (0.35)(0.863) + (0.25)(0.765) + (0.20)(0.865) + (0.20)(0.968) = 0.860

Determination Decisions

The greatest value is in V_4 so A4 that the alternative is an alternative that was selected as the best alternative. In other words, Pasek Nugraha elected as head of information technology unit.

3. RESEARCH METHODOLOGY

3.1 Research Design

The research design used in this research is qualitative research because in the implementation of the evaluation of the program will find information in the broad and comprehensive to get an overview of a program. The method used is the evaluative study, with design research namely CSE model-assisted method with UCLA SAW in finding a level of accuracy of calculation result evaluation of some aspects of being evaluated, so the most dominant constraints of each aspect can be found. Basically the same approach this study with research assessment performed by Lule-Mert, only her used screening models [26], whereas in this study using CSE-UCLA models.

3.2 Research Sample

Sample of this research consists of: teachers, team learning and certification program manager, as well as students. The determination of subjects of such research using a Purposive Sampling technique, i.e. parties associated with organizing the learning programs and computer certification at course institute. Purposive sampling technique is the reason for using this technique is very appropriate because used to get accurate information from parties who have knowledge and experience about the program that is being evaluated. This is in line with the Dantes's statement that the purposive sampling is an engineering sample withdrawal based on traits or characteristics (destination) set by previous researchers [27].

3.3 Research Instrument and Procedure

Research instrument in this research consist of: questionnaire sheets, observation sheets, interview guides, and documentations. This research object is a study program and certification of the computer.

3.4 Validity and Reliability

The validity test of the content is done by 2 education expert and 2 information technology expert towards the evaluated aspects in the implementation of the program. The reliability test is done by 5 teachers, 3 program manager team, and 7 students.

3.5 Research Location

The location of this research at several Institute course in Bali.

3.6 Data Analysis

Analysis of data on the implementation of the evaluation of the learning programs and computer certification at course institute in terms of system assessment components, program planning, program implementation, program improvement, and program certification using analytical techniques descriptive quantitative and qualitative descriptive for analyzing constraints in the implementation of the evaluation.

4. RESULTS AND DISCUSSION

4.1 Results

4.1.1 The Effectiveness Standard of the implementation of Learning Programs and Computer Certification at Course Institute Using CSE-UCLA Model

Implementation of the program is said to succeed, if at least meets the standards of effectiveness that have been set. The effectiveness standard used as the basic reference to know the success standard of the implementation of learning program and computer certification at the course institute, can be shown in table 2 below.

Table 2: The Success Standard of the Implementation of Learning Programs and Computer Certification at Course Institute in Bali

No	Evaluation Components	The Aspect of Evaluated	The Standard of Effectiveness
1.	*System Assesment*	The purpose of Implementation	>=85
		Legal basis of program implementation	>=85
		Guideline of program implementation	>=85
2.	*Program Planning*	Hardware Preparation	>=80

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No	Evaluation Components	The Aspect of Evaluated	The Standard of Effectiveness
		Software Preparation	>=80
		Human Resources Preparation	>=75
3.	*Program Implementation*	Hardware Installation	>=80
		Software Installation	>=80
		Human Resources Training	>=75
4.	*Program Improvement*	Program management by developer	>=80
		Empowerment of technical personnel for operational management	>=75
5.	*Program Certification*	Certificates Output	>=80
		The impact after program implementation	>=80

The categories of the effectiveness scala are:
Very Good : 90%-100%
Good : 80%-89%
Enough : 70%-79%
Less : 60%-69%
Very Less : 0%-59%

4.1.2 Evaluation Results of the implementation of Learning Programs and Computer Certification at Course Institute Using CSE-UCLA Model

Based on the evaluation that was performed at several course institutes in Bali, then obtained the results of the evaluation of the implementation of learning program and computer certification at course institute using CSE-UCLA evaluation model, shown in table 3 below.

Table 3: Evaluation Results of the Implementation of Learning Program and Computer Certification at Course Institute in Bali Using CSE-UCLA Evaluation Model

No	Evaluation Components	The Aspect of Evaluated	The Evaluation Result (%)
1	*System Assesment*	The purpose of the implementation	85.30
		Legal basis of program implementation	86.60
		Guidelines of program implementation	81.30
The percentage of average of *System Assesment* components			**84.40**
2	*Program Planning*	Hardware preparation	84.00
		Software preparation	85.30
		Human resources preparation	72.00
The percentage of average of *Program Planning* components			**80.40**
3	*Program Implementation*	Hardware installation	86.60
		Software installation	84.00
		Human Resources training	69.30
The percentage of average of *Program Implementation* components			**80.00**
4	*Program Improvement*	Program management by developer	81.33
		Empowerment of technical personnel for operational management	74.60
The percentage of average of *Program Improvement* components			**78.00**
5	*Program Certification*	Certificates output	82.60
		The impact after program implementation	76.00
The percentage of average of *Program Certification* component			**79.30**
The overall average percentage of *CSE-UCLA component*			**80.44**

Recap of the evaluation results of the implementation of learning program and computer certification at courses institute using CSE-UCLA model that have shown in table 3 can be more clearly understood if visualized to Figure-1.

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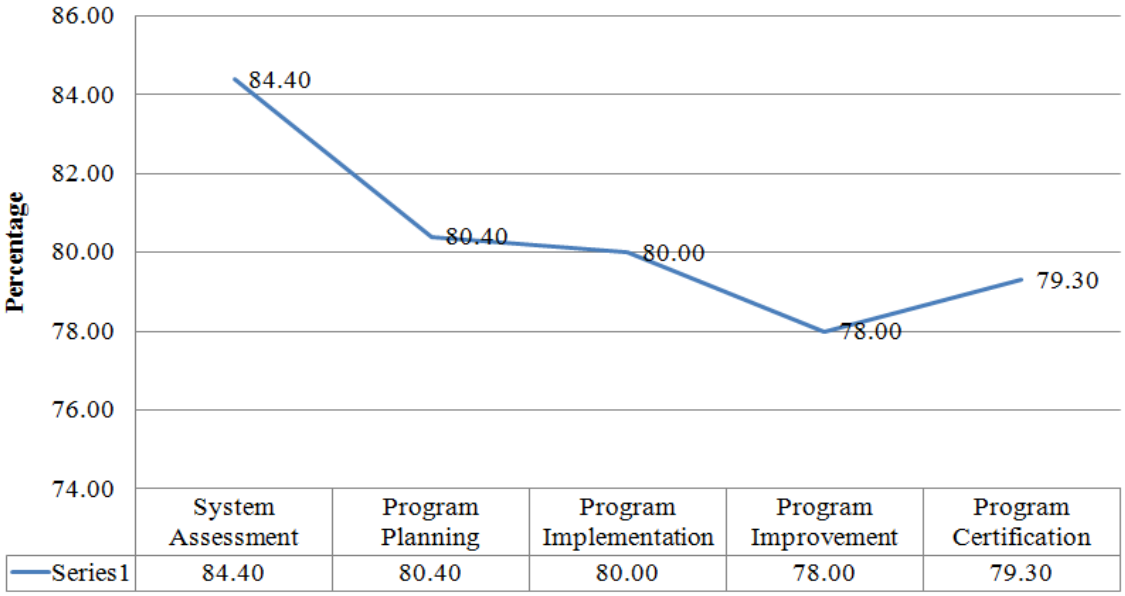

Figure 1: Pie Chart Recap of the Results of the Evaluation of the Implementation of the Program of Learning and Computer Certification at Course Institute by Using the CSE-UCLA Model

The evaluation results are also visualized through Desktop Application using Borland Delphi which can be seen in Figure 2 below.

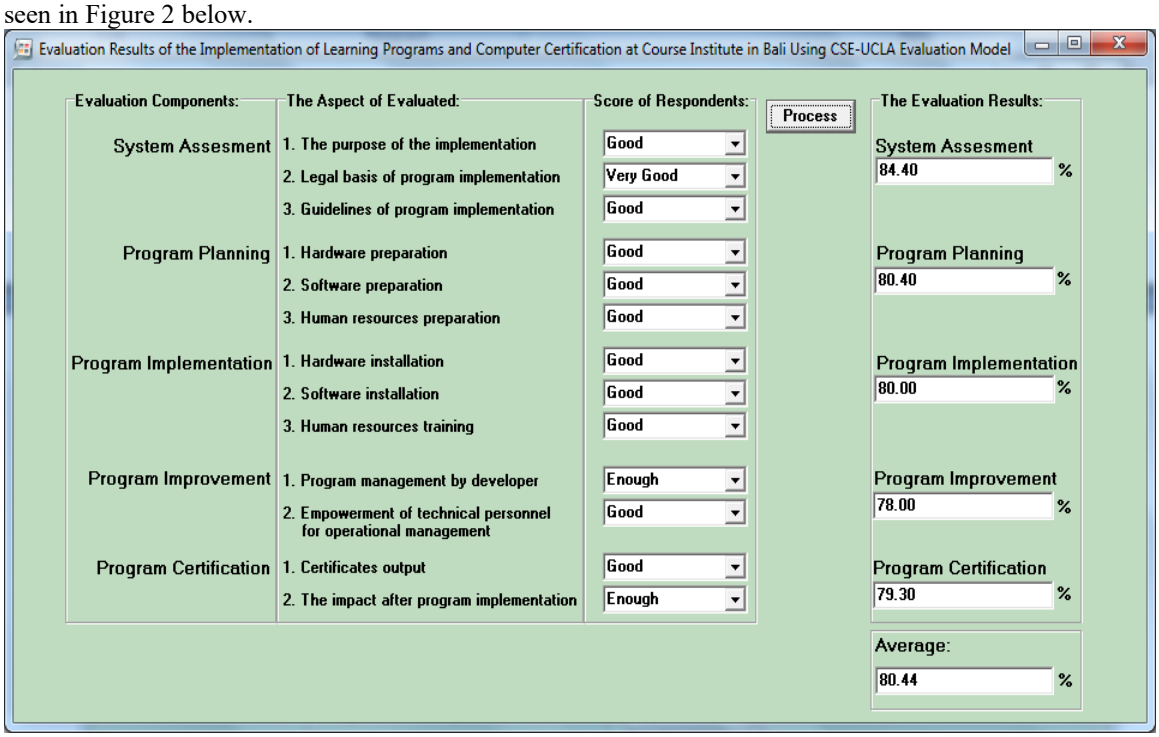

Figure 2: Vizualitation of Evaluation Results of the Implementation of Learning Program and Computer Certification Courses Institute using CSE-UCLA Model through Desktop Application

4.1.3 The Calculation Results of the SAW (Simple Additive Weighting) Method to Determined of the Dominant Constraint

The calculation results of the SAW method used to obtain dominant values as obstacles most affect the smooth implementation of the Program of learning and computer certification at courses institue using CSE-UCLA model. The dominant value retrieved from the value of the preference for each alternative (V) the most minimum. As for the results of the calculation method of the SAW can be seen in the following table 4.

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Table 4: The Calculation Results of the SAW Method to Determined of the Dominant Constraint

No	Evaluation Components	The Aspect of Evaluated	Effectiveness Criteria					V
			C_1	C_2	C_3	C_4	C_5	
1.	*System Assesment*	The purpose of the implementation	0.86	0.87	0.85	0.79	0.87	0.982
		Legal basis of program implementation	0.89	0.86	0.89	0.80	0.82	0.986
		Guidelines of program implementation	0.81	0.75	0.82	0.74	0.75	0.896
Minimum V value of System Assesment component								**0.896**
The dominant constraint on component of System Assesment is: "Guidelines of program implementation"								
2.	*Program Planning*	Hardware preparation	0.92	0.88	0.86	0.87	0.86	0.980
		Software preparation	0.85	0.89	0.90	0.88	0.89	0.985
		Human Resources preparation	0.81	0.85	0.78	0.75	0.80	0.891
Minimum V value of Program Planning component								**0.891**
The dominant constraint on component of Program Planning is: "Human Resources preparation"								
3.	*Program Implementation*	Hardware Installation	0.89	0.86	0.82	0.85	0.87	0.977
		Software Installation	0.82	0.84	0.88	0.89	0.82	0.968
		Human Resources Training	0.78	0.82	0.75	0.78	0.72	0.877
Minimum V value of Program Implementation component								**0.877**
The dominant constraint on component of Program Implementation is: "Human Resources Training"								
4.	*Program Improvement*	Program management by developer	0.85	0.88	0.84	0.83	0.82	0.995
		Empowerment of technical personnel for operational management	0.83	0.89	0.85	0.78	0.80	0.978
Minimum V value of Program Improvement component								**0.978**
The dominant constraint on component of Program Improvement is: "empowerment of technical personnel for operational management"								
5.	*Program Certification*	Certificates output	0.87	0.88	0.89	0.82	0.80	0.983
		The impact after program implementation	0.84	0.82	0.84	0.86	0.83	0.968
Minimum V value of Program Certification component								**0.968**
The dominant constraint on component of Program Certification is "the impact after program implementation"								

Notes:
C_1 = Tangibles C_2 = Reliability C_3 = Assurance C_4 = Responsiveness C_5 = Empathy

Establishment of effectiveness standard of implementation of learning programs and computer certification at course institute using CSE-UCLA model that have shown in table 2, compiled based on test result of content validity conducted by 2 educational experts and 2 experts of information technology to evaluated aspects in the implementation of the program.

The evaluation result of the implementation of learning programs and computer certification at course institute using CSE-UCLA Model that have shown in table 3, obtained from quantitative analysis of the result of questioning data by the respondents (teacher, program manager team, and student) on the evaluation component of the system assessment, program planning, program implementation, program improvement, and program certification. The complete results of the data filling questionnaire can be explained through table 5 below.

Table 5: The Results of Data Filling Questioner by the Respondent to All Components of CSE-UCLA Evaluation Model

Respondent	The Rated Aspects												
	System Assessment			Program Planning			Program Implementation			Program Improvement		Program Certification	
	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	A_{11}	A_{12}	A_{13}
R1	4	4	5	5	4	3	4	5	4	4	3	4	4
R2	5	4	5	5	5	3	4	5	3	5	4	4	4
R3	4	5	4	4	5	4	4	4	4	4	4	4	3
R4	4	4	4	4	4	3	5	5	4	4	4	4	4
R5	4	5	4	4	5	4	5	4	3	4	4	4	4
R6	4	4	4	4	4	3	4	4	4	4	4	4	4
R7	4	4	5	4	4	4	4	4	3	4	3	4	3
R8	4	5	4	4	4	3	5	4	3	4	4	4	3
R9	5	4	4	4	4	4	4	4	4	4	4	4	4
R10	4	4	4	4	4	4	4	4	3	4	3	4	4
R11	4	5	4	5	5	3	5	4	3	4	4	5	4
R12	4	4	3	4	4	4	4	4	4	4	4	4	4

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Respondent	The Rated Aspects												
	System Assessment			Program Planning			Program Implementation			Program Improvement		Program Certification	
	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	A_{11}	A_{12}	A_{13}
R13	5	5	4	4	4	4	5	4	3	4	3	4	4
R14	4	4	4	4	4	4	4	4	4	4	4	4	4
R15	5	4	3	4	4	4	4	4	3	4	4	5	4
N	15	15	15	15	15	15	15	15	15	15	15	15	15
Σ	64	65	61	63	64	54	65	63	52	61	56	62	57
Average	4.266	2.166	2.033	2.100	2.133	1.800	2.166	2.100	1.733	2.033	1.866	2.066	1.900
Effectiveness (Dec)	0.853	0.866	0.813	0.840	0.853	0.720	0.866	0.840	0.693	0.813	0.746	0.826	0.760
Effectiveness (%)	85.30	86.60	81.30	84.00	85.30	72.00	86.60	84.00	69.30	81.33	74.60	82.60	76.00
Average of Components	(Dec)		0.844	(Dec)		0.804	(Dec)		0.800	(Dec)	0.780	(Dec)	0.793
	(%)		84.40	(%)		80.40	(%)		80.00	(%)	78.00	(%)	79.30

Notes:
A_1 = The purpose of Implementation
A_2 = Legal basis of program implementation
A_3 = Guideline of program implementation
A_4 = Hardware Preparation
A_5 = Software Preparation
A_6 = Human Resources Preparation
A_7 = Hardware Installation
A_8 = Software Installation
A_9 = Human Resources Training
A_{10} = Program Management by Developer
A_{11} = Empowerment of Technical Personnel for Operational Management
A_{12} = Certificates Output
A_{13} = The Impact After Program Implementation

Calculation of results the determination of the dominant constraints in the evaluation of the implementation of the learning program and computer certification at courses institute using CSE-UCLA model that have shown in table 5, obtained through the following steps:

a) Determine the Category of Each Criterion

Criteria C_1 (Tangibles, that describe the physical form and the service will be accepted by users) is the criteria of profitability. Criteria C_2 (Reliability, i.e. the ability to deliver the promised services with reliable and accurate) is the criteria of profitability. Criteria C_3 (Assurance, i.e. the knowledge and ability to evoke confidence and trust) is the criteria of profitability. Criteria C_4 (Responsiveness, i.e. consciousness and a desire to help the user and deliver services quickly) is the criteria of profitability. Criteria C_5 (Empathy, demonstrating to the customer through the service provided that the customer was special, and their needs can be understood) is the criteria of profitability.

b) Determine the Normalization

Based on data obtained from the results of questionnaires by respondents against the charging of all components of the evaluation, it can be determined the normalization, with a full explanation as follows.

Table 6: The Results of Questionnaire Filling on System Assessment Components Based on the Effectiveness Criteria

Evaluation Components	Evaluation Aspects	Effectiveness Criteria				
		C_1	C_2	C_3	C_4	C_5
System Assesment	A_1	0.86	0.87	0.85	0.79	0.87
	A_2	0.89	0.86	0.89	0.80	0.82
	A_3	0.81	0.75	0.82	0.74	0.75

From the Table 6 above, it can be calculated normalized as follows:

$$r_{11} = \frac{0.86}{\max\{0.86;0.89;0.81\}} = \frac{0.86}{0.89} = 0.966$$

$$r_{21} = \frac{0.89}{\max\{0.86;0.89;0.81\}} = \frac{0.89}{0.89} = 1.000$$

$$r_{31} = \frac{0.81}{\max\{0.86;0.89;0.81\}} = \frac{0.81}{0.89} = 0.910$$

$$r_{12} = \frac{0.87}{\max\{0.87;0.86;0.75\}} = \frac{0.87}{0.87} = 1.000$$

$$r_{22} = \frac{0.86}{\max\{0.87;0.86;0.75\}} = \frac{0.86}{0.87} = 0.989$$

$$r_{32} = \frac{0.75}{\max\{0.87;0.86;0.75\}} = \frac{0.75}{0.87} = 0.862$$

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$$r_{13} = \frac{0.85}{\max\{0.85;0.89;0.82\}} = \frac{0.85}{0.89} = 0.955$$
$$r_{23} = \frac{0.89}{\max\{0.85;0.89;0.82\}} = \frac{0.89}{0.89} = 1.000$$
$$r_{33} = \frac{0.82}{\max\{0.85;0.89;0.82\}} = \frac{0.82}{0.89} = 0.921$$
$$r_{14} = \frac{0.79}{\max\{0.79;0.80;0.74\}} = \frac{0.79}{0.80} = 0.988$$
$$r_{24} = \frac{0.80}{\max\{0.79;0.80;0.74\}} = \frac{0.80}{0.80} = 1.000$$
$$r_{34} = \frac{0.74}{\max\{0.79;0.80;0.74\}} = \frac{0.74}{0.80} = 0.925$$
$$r_{15} = \frac{0.87}{\max\{0.87;0.82;0.75\}} = \frac{0.87}{0.87} = 1.000$$
$$r_{25} = \frac{0.82}{\max\{0.87;0.82;0.75\}} = \frac{0.82}{0.87} = 0.943$$
$$r_{35} = \frac{0.75}{\max\{0.87;0.82;0.75\}} = \frac{0.75}{0.87} = 0.862$$

The normalization result of system assesment component based on efectiveness criteria, then convert into matrix form as follows:

$$R = \begin{bmatrix} 0.966 & 1.000 & 0.955 & 0.988 & 1.000 \\ 1.000 & 0.989 & 1.000 & 1.000 & 0.943 \\ 0.910 & 0.862 & 0.921 & 0.925 & 0.862 \end{bmatrix}$$

Table 7: The Results of Questionnaire Filling on Program Planning Components Based on the Effectiveness Criteria

Evaluation Components	Evaluation Aspects	Effectiveness Criteria				
		C_1	C_2	C_3	C_4	C_5
Program Planning	A_4	0.92	0.88	0.86	0.87	0.86
	A_5	0.85	0.89	0.90	0.88	0.89
	A_6	0.81	0.85	0.78	0.75	0.80

From the Table 7 above, it can be calculated normalized as follows:

$$r_{11} = \frac{0.92}{\max\{0.92;0.85;0.81\}} = \frac{0.92}{0.92} = 1.000$$
$$r_{21} = \frac{0.85}{\max\{0.92;0.85;0.81\}} = \frac{0.85}{0.92} = 0.924$$
$$r_{31} = \frac{0.81}{\max\{0.92;0.85;0.81\}} = \frac{0.81}{0.92} = 0.880$$
$$r_{12} = \frac{0.88}{\max\{0.88;0.89;0.85\}} = \frac{0.88}{0.89} = 0.989$$
$$r_{22} = \frac{0.89}{\max\{0.88;0.89;0.85\}} = \frac{0.89}{0.89} = 1.000$$
$$r_{32} = \frac{0.85}{\max\{0.88;0.89;0.85\}} = \frac{0.85}{0.89} = 0.955$$
$$r_{13} = \frac{0.86}{\max\{0.86;0.90;0.78\}} = \frac{0.86}{0.90} = 0.956$$
$$r_{23} = \frac{0.90}{\max\{0.86;0.90;0.78\}} = \frac{0.90}{0.90} = 1.000$$
$$r_{33} = \frac{0.78}{\max\{0.86;0.90;0.78\}} = \frac{0.78}{0.90} = 0.867$$
$$r_{14} = \frac{0.87}{\max\{0.87;0.88;0.75\}} = \frac{0.87}{0.88} = 0.989$$
$$r_{24} = \frac{0.88}{\max\{0.87;0.88;0.75\}} = \frac{0.88}{0.88} = 1.000$$
$$r_{34} = \frac{0.75}{\max\{0.87;0.88;0.75\}} = \frac{0.75}{0.88} = 0.852$$
$$r_{15} = \frac{0.86}{\max\{0.86;0.89;0.80\}} = \frac{0.86}{0.89} = 0.966$$
$$r_{25} = \frac{0.89}{\max\{0.86;0.89;0.80\}} = \frac{0.89}{0.89} = 1.000$$
$$r_{35} = \frac{0.80}{\max\{0.86;0.89;0.80\}} = \frac{0.80}{0.89} = 0.899$$

The normalization result of program planning component based on efectiveness criteria, then convert into matrix form as follows:

$$R = \begin{bmatrix} 1.000 & 0.989 & 0.956 & 0.989 & 0.966 \\ 0.924 & 1.000 & 1.000 & 1.000 & 1.000 \\ 0.880 & 0.955 & 0.867 & 0.852 & 0.899 \end{bmatrix}$$

Table 8: The Results of Questionnaire Filling on Program Implementation Components Based on the Effectiveness Criteria

Evaluation Components	Evaluation Aspects	Effectiveness Criteria				
		C_1	C_2	C_3	C_4	C_5
Program Implementation	A_7	0.89	0.86	0.82	0.85	0.87
	A_8	0.82	0.84	0.88	0.89	0.82
	A_9	0.78	0.82	0.75	0.78	0.72

From the Table 8 above, it can be calculated normalized as follows:

$$r_{11} = \frac{0.89}{\text{Max}\{0.89;0.82;0.78\}} = \frac{0.89}{0.89} = 1.000$$
$$r_{21} = \frac{0.82}{\text{Max}\{0.89;0.82;0.78\}} = \frac{0.82}{0.89} = 0.921$$
$$r_{31} = \frac{0.78}{\text{Max}\{0.89;0.82;0.78\}} = \frac{0.78}{0.89} = 0.876$$
$$r_{12} = \frac{0.86}{\text{Max}\{0.86;0.84;0.82\}} = \frac{0.86}{0.86} = 1.000$$
$$r_{22} = \frac{0.84}{\text{Max}\{0.86;0.84;0.82\}} = \frac{0.84}{0.86} = 0.977$$
$$r_{32} = \frac{0.82}{\text{Max}\{0.86;0.84;0.82\}} = \frac{0.82}{0.86} = 0.953$$
$$r_{13} = \frac{0.82}{\text{Max}\{0.82;0.88;0.75\}} = \frac{0.82}{0.88} = 0.932$$
$$r_{23} = \frac{0.88}{\text{Max}\{0.82;0.88;0.75\}} = \frac{0.88}{0.88} = 1.000$$
$$r_{33} = \frac{0.75}{\text{Max}\{0.82;0.88;0.75\}} = \frac{0.75}{0.88} = 0.852$$
$$r_{14} = \frac{0.85}{\text{Max}\{0.85;0.89;0.78\}} = \frac{0.85}{0.89} = 0.955$$
$$r_{24} = \frac{0.89}{\text{Max}\{0.85;0.89;0.78\}} = \frac{0.89}{0.89} = 1.000$$
$$r_{34} = \frac{0.78}{\text{Max}\{0.85;0.89;0.78\}} = \frac{0.78}{0.89} = 0.876$$
$$r_{15} = \frac{0.87}{\text{Max}\{0.87;0.82;0.72\}} = \frac{0.87}{0.87} = 1.000$$
$$r_{25} = \frac{0.82}{\text{Max}\{0.87;0.82;0.72\}} = \frac{0.82}{0.87} = 0.943$$
$$r_{35} = \frac{0.72}{\text{Max}\{0.87;0.82;0.72\}} = \frac{0.72}{0.87} = 0.828$$

The normalization result of program planning component based on efectiveness criteria, then convert into matrix form as follows:

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$$R = \begin{bmatrix} 1.000 & 1.000 & 0.932 & 0.955 & 1.000 \\ 0.921 & 0.977 & 1.000 & 1.000 & 0.943 \\ 0.876 & 0.935 & 0.852 & 0.876 & 0.828 \end{bmatrix}$$

Table 9: The Results of Questionnaire Filling on Program Improvement Components Based on the Effectiveness Criteria

Evaluation Components	Evaluation Aspects	Effectiveness Criteria				
		C_1	C_2	C_3	C_4	C_5
Program Improvement	A_{10}	0.85	0.88	0.84	0.83	0.82
	A_{11}	0.83	0.89	0.85	0.78	0.80

From the Table 9 above, it can be calculated normalized as follows:

$$r_{11} = \frac{0.85}{\text{Max}\{0.85;0.83\}} = \frac{0.85}{0.85} = 1.000$$

$$r_{21} = \frac{0.83}{\text{Max}\{0.85;0.83\}} = \frac{0.83}{0.85} = 0.976$$

$$r_{12} = \frac{0.88}{\text{Max}\{0.88;0.89\}} = \frac{0.88}{0.89} = 0.989$$

$$r_{22} = \frac{0.89}{\text{Max}\{0.88;0.89\}} = \frac{0.89}{0.89} = 1.000$$

$$r_{13} = \frac{0.84}{\text{Max}\{0.84;0.85\}} = \frac{0.84}{0.85} = 0.988$$

$$r_{23} = \frac{0.85}{\text{Max}\{0.84;0.85\}} = \frac{0.85}{0.85} = 1.000$$

$$r_{14} = \frac{0.83}{\text{Max}\{0.83;0.78\}} = \frac{0.83}{0.83} = 1.000$$

$$r_{24} = \frac{0.78}{\text{Max}\{0.84;0.85\}} = \frac{0.78}{0.83} = 0.940$$

$$r_{15} = \frac{0.82}{\text{Max}\{0.82;0.80\}} = \frac{0.82}{0.82} = 1.000$$

$$r_{25} = \frac{0.80}{\text{Max}\{0.82;0.80\}} = \frac{0.80}{0.82} = 0.976$$

The normalization result of program planning component based on efectiveness criteria, then convert into matrix form as follows:

$$R = \begin{bmatrix} 1.000 & 0.989 & 0.988 & 1.000 & 1.000 \\ 0.976 & 1.000 & 1.000 & 0.940 & 0.976 \end{bmatrix}$$

Table 10: The Results of Questionnaire Filling on Program Certification Components Based on the Effectiveness Criteria

Evaluation Components	Evaluation Aspects	Effectiveness Criteria				
		C_1	C_2	C_3	C_4	C_5
Program Certification	A_{12}	0.87	0.88	0.89	0.82	0.80
	A_{13}	0.84	0.82	0.84	0.86	0.83

From the Table 10 above, it can be calculated normalized as follows:

$$r_{11} = \frac{0.87}{\text{Max}\{0.87;0.84\}} = \frac{0.87}{0.87} = 1.000$$

$$r_{21} = \frac{0.84}{\text{Max}\{0.87;0.84\}} = \frac{0.84}{0.87} = 0.966$$

$$r_{12} = \frac{0.88}{\text{Max}\{0.88;0.82\}} = \frac{0.88}{0.88} = 1.000$$

$$r_{22} = \frac{0.82}{\text{Max}\{0.88;0.82\}} = \frac{0.82}{0.88} = 0.932$$

$$r_{13} = \frac{0.89}{\text{Max}\{0.89;0.84\}} = \frac{0.89}{0.89} = 1.000$$

$$r_{23} = \frac{0.84}{\text{Max}\{0.89;0.84\}} = \frac{0.84}{0.89} = 0.944$$

$$r_{14} = \frac{0.82}{\text{Max}\{0.82;0.86\}} = \frac{0.82}{0.86} = 0.953$$

$$r_{24} = \frac{0.86}{\text{Max}\{0.82;0.86\}} = \frac{0.86}{0.86} = 1.000$$

$$r_{15} = \frac{0.80}{\text{Max}\{0.80;0.83\}} = \frac{0.80}{0.83} = 0.964$$

$$r_{25} = \frac{0.83}{\text{Max}\{0.80;0.83\}} = \frac{0.83}{0.83} = 1.000$$

The normalization result of program planning component based on efectiveness criteria, then convert into matrix form as follows:

$$R = \begin{bmatrix} 1.000 & 1.000 & 1.000 & 0.953 & 0.964 \\ 0.966 & 0.932 & 0.944 & 1.000 & 1.000 \end{bmatrix}$$

c) The Ranking Process

Based on the results of normalization that convert to form a matrix that has been obtained in advance for each component of the CSE-UCLA evaluation model and by administering the assessment weighting for each criterion as follows: C_1 = 20%; C_2 = 20%; C_3 = 20%; C_4 = 20%, and C_5 = 20%, then the ranking process may be determined as follows:

The ranking process on the *system assessment* component

V_1 = (0.20)(0.966) + (0.20)(1.000) + (0.20)(0.955) + (0.20)(0.988) + (0.20)(1.000) = 0.982

V_2 = (0.20)(1.000) + (0.20)(0.989) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(0.943) = 0.986

V_3 = (0.20)(0.910) + (0.20)(0.862) + (0.20)(0.921) + (0.20)(0.925) + (0.20)(0.862) = 0.896

The ranking process on the *program planning* component

V_1 = (0.20)(1.000) + (0.20)(0.989) + (0.20)(0.956) + (0.20)(0.989) + (0.20)(0.966) = 0.980

V_2 = (0.20)(0.924) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(1.000) = 0.985

V_3 = (0.20)(0.880) + (0.20)(0.955) + (0.20)(0.867) + (0.20)(0.852) + (0.20)(0.899) = 0.891

The ranking process on the *program implementation* component

V_1 = (0.20)(1.000) + (0.20)(1.000) + (0.20)(0.932) + (0.20)(0.955) + (0.20)(1.000) = 0.977

V_2 = (0.20)(0.921) + (0.20)(0.977) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(0.943) = 0.968

V_3 = (0.20)(0.876) + (0.20)(0.953) + (0.20)(0.852) + (0.20)(0.876) + (0.20)(0.828) = 0.877

The ranking process on the *program improvement* component

V_1 = (0.20)(1.000) + (0.20)(0.989) + (0.20)(0.988) + (0.20)(1.000) + (0.20)(1.000) = 0.995

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V_2 = (0.20)(0.976) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(0.940) + (0.20)(0.976) = 0.978

The ranking process on the *program certification* component

V_1 = (0.20)(1.000) + (0.20)(1.000) + (0.20)(1.000) + (0.20)(0.953) + (0.20)(0.964) = 0.983

V_2 = (0.20)(0.966) + (0.20)(0.932) + (0.20)(0.944) + (0.20)(1.000) + (0.20)(1.000) = 0.968

d) Process of Decision Determination

The desired results in the evaluation is able to determine aspects that become an obstacle in the implementation of the program, so surely if used ranking process the most dominant values to appeal to a decision then the results obtained would not fit in with the desired decision. Based on these reasons, the decision is based on the value of rank to the most minimum. This is a development and modifications are done with still use basic theory of SAW. As for the aspects that become an obstacle in the implementation of the program for each component of the CSE-UCLA evaluation model, can be explained as follows:

1) Process of determining the decision on component of *system* assessment

Based on the minimum value obtained in the ranking process on the component system assessment in V_3 = 0.896, then aspect that becomes the most dominant constraints on component of *system assessment* is "guidelines of program implementation".

2) Process of determining the decisions on components of *program planning*

Based on the minimum value obtained in the ranking process on components of program planning in V_3 = 0.891, hence the aspect that becomes the dominant constraint on components of *program planning* was "human resources preparation".

3) Process of determining the decisions on components of *program implementation*

Based on the minimum value obtained in the ranking process on components of program implementation in V_3 = 0.877, then aspect that becomes the dominant constraint on components of *program implementation* is "human resources training".

4) Process of determining the decisions on components of *program improvement*

Based on the minimum value obtained in the ranking process on components of program improvement in V_2 = 0.978, then aspect that becomes the dominant constraint on components of *program improvement* is "empowerment of technical personnel for operational management".

5) Process of determining the decisions on components of *program certification*

Based on the minimum value obtained in the ranking process on components of program certification that V_2 = 0.968, then aspect that becomes the dominant constraint on components of *program certification* is "the impact after program implementation".

4.2 Discussion

From the results described, this research has similarities with the research has been done before by Divayana in 2017 [4], namely in terms of determining the effectiveness of the implementation of a program in terms of system assessment, program planning, program implementation, program improvement, and certification program. While the difference lies in the object under research, which in previous studies examines the program of blended learning with the result of the effectiveness of a system assessment component amounted to 86.7%, program planning amounted to 85.6%, program implementation amounted to 87.5%, programs improvement amounted to 88.5%, and the program certification amounted to 88.9%. While this study examines learning programs and computer certification with the results of the effectiveness of the system assessment components amounted to 84.40%, program planning amounted to 80.40%, program implementation amounted to 80.00%, program improvement program amounted to 78.00% and program certification amounted to 79.30%.

Other studies have similarities with this study is to research conducted by Divayana and Sugiharni in 2016 [1], in use of the model CSE-UCLA in evaluating the effectiveness of program. But the difference lies in the object being evaluated that previous studies evaluated the implementation of computer certification course, with the average results of the overall evaluation amounted to 84.55%, whereas in this study to evaluate the implementation of the learning process and computer certification with average results of the overall evaluation is amounted of 80.44%. This shows that the research results have been better than the previous studies that have been carried out using the same evaluation model.

There are several constraints found in this study, among others can be explained as follows: Based on the standard of effectiveness of program implementation is shown in tables 2 and the results of the evaluation of the implementation of the program is shown in table 3, then through

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quantitative analysis can be explained on assessment system components still found constraints on aspects of the implementation of the guidelines of the program because the value of evaluation results (81.30%) smaller than the default value of effectiveness (> = 85%). It also strengthened and demonstrated the results of qualitative analysis based on data collected through interviews and observation i.e. There are constraints on the implementation of the guidelines of the program, as most course institutes existing in the area of Bali not so despite the importance of the guidelines for the implementation of the program for the quality of the institution and the quality of graduates it produces.

In addition to the constraints that are found on the component system assessment, there are also constraints that are found on other components of the evaluation of CSE-UCLA model. Based on the results of the analysis of quantitative, on the components of the program are also still found planning constraints on aspects of human resources preparation because the value of evaluation results (72.00%) smaller than the default value of effectiveness (> = 80%). It also strengthened the results of qualitative analysis i.e. There are constraints on the preparation of human resources, since many still don't have human resource expertise as appropriate and are assigned to a place that does not comply with his expertise.

On the components of the program implementation, quantitatively still found aspects of training constraints on human resources because the value of the results of the evaluation (80%) is smaller than the default value of effectiveness (> = 75%). This is evidenced from the results of the qualitative analysis i.e. There are constraints on human resource training aspects, because it is still a bit found the existence of training/workshop that was given to the person who manages the program, so there are still many human resources who are not yet professional managing the program.

On the component program improvement, quantitative constraints on still found aspects of the operational management of the technical workforce Empowerment because the value of evaluation results (74.60%) smaller than the default value of effectiveness (> = 75%). This is evidenced from the results of the qualitative analysis i.e. There are constraints on empowerment of technical personnel for operational management, because there are still many technical personnel who have not mastered the operational management optimally, so still a dependency to the developers of the program.

On the components of program certification, quantitatively still found constraints on aspects of the impact inflicted after the implementation of the program was completed, because the value of evaluation results (76.00%) smaller than the default value of effectiveness (> = 80%). This is evidenced from the results of the qualitative analysis i.e. There are constraints on aspects of the impact inflicted after the implementation of the program was completed, because there are still many graduates of course that is not absorbed directly into employment.

5. CONCLUSIONS

Based on the results of previous research and discussion, so some conclusions can be drawn: a) the effectiveness of the implementation of learning programs and computer certification at course institute in Bali review of all components of the evaluation on the CSE-UCLA model of 80.44%, thus including good categories; b) based on the results of analysis in quantitative descriptive, qualitative, and through calculation SAW method retrieved constraints in the implementation of learning programs and computer certification at courses institute, among others: aspects of program implementation guidelines, preparation of human resources, the training of human resources, empowerment of the operational management for technical personnel, and the impact caused after the implementation of the program; c) the dominant constraints affecting the implementation of the program is "empowerment of technical personnel for operational management" on program improvement.

Based on the constraints that are found in the results of the evaluation of the implementation of learning programs and computer certification at course institute, then there are some recommendations that could be given as a follow-up to the refinement of the program, among other things: a) should an course institute provides guidelines for the implementation of the program to the program's direction and purpose can be achieved with a good and clear; b) should an institute capable of setting up the course of skilled human resources and in accordance with the field of his expertise; c) should an courses institute more often organizes management training program management for program managers, so that they are more professional in their work; d) should the course institute also more frequently conducts operational management training for technical personnel empowerment, so they understand are mature about the operation of the program;

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e) should the course institute more often approach and cooperation with business and industry in the preparation of the curriculum and the learning process, so that the graduates of the course institute can be more absorbed in accordance with the needs of the world of work and industry.

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