Instruments Development of *Tri Kaya Parisudha*-Based *Countenance* Model in Evaluating the Blended Learning

Dewa Gede Hendra Divayana (✉), Agus Adiarta, I Gede Sudirtha
Universitas Pendidikan Ganesha, Singaraja, Indonesia
hendra.divayana@undiksha.ac.id

Abstract—This study intended to develop the *Countenance* model evaluation instruments that were integrated with the *Tri Kaya Parisudha* concept as a blended learning evaluation tool for Tourism Vocational Schools in *Gianyar* Regency. This study approach was the instrument development, by several development stages, including evaluation components determination, evaluation aspects determination, instrument items determination, instrument items trial, instrument items analysis, and final items determination. The instruments which were used in data collection were questionnaires and documentation. Subjects those were involved in instrument trial on the content validation process were two experts (experts in informatics engineering education and educational evaluation), while the reliability testing process were 48 respondents (teachers and students). The instruments analysis technique during the content validation process used the *Gregory* formula, while during the reliability test process using the *Cronbach Alfa* formula. This study produced 122 items with very high validity and very high reliability categories, as evidenced by the r-scores of 0.938 and 0.961, respectively.

Keywords—Instruments, *Countenance, Tri Kaya Parisudha*, Blended Learning

1 Introduction

Nowadays, it almost every high school and vocational high school in the Bali province has implemented an information technology-based learning process [1]. That statement shows how important the role of ICT in supporting the teaching and learning process in various areas, levels, and models of education [2],[3],[4]. The technology-based learning emergence as an impact of euphoria and can also be said as a necessity to face the challenges of the industrial revolution 4.0 appearance [1]. Some forms of learning models or supporting facilities information technology-based learning processes that have been implemented in high school or vocational schools, including blended learning, e-learning, virtual learning, digital libraries, digital books, and others [5]. One form of learning model that is currently popularly used in supporting the learning process, especially in high school and vocational school is blended learning [6]. The reason for choosing blended learning is used by some in the high school/vocational school as a learning model because this model is easy to apply when it is compared to other models such as e-learning which requires high-specification hardware, software that requires special settings, and IT personnel specifically to install and perform maintenance regularly.

Blended learning can be stated as a learning model that combines conventional learning with information technology-assisted learning. This matter is in principle following the statements of Machumu, Zhu, and Sesabo [7] which stated that blended learning is a combination of face to face learning (which is conventionally done through workshops, lectures, and seminars) with e-learning (independent online learning and online in classroom activities). Conventional learning through blended learning can be done by direct face-to-face meetings between teachers and students in a class, while information technology-assisted learning through blended learning can be done with communication/interaction of learning between teachers and students through online learning facilities that available free and easy to be accessed via the internet, so learning can be done anywhere both in the classroom or outside of the school. Besides, Lalima and Dangwal stated that blended learning is an innovative learning model that combines the learning process carried out directly in the classroom with IT-based learning that is carried out both online and offline [8]. Based on those statements, so blended learning is a learning model that integrates face-to-face learning in the classroom with IT-based learning (both online and offline) that can be done inside or outside of the classroom.

Generally, the blended learning model has been widely used at several high schools or vocational in information technology fields that there are in Bali province. In particular, the blended learning model has also been widely used in Tourism Vocational Schools that there are in *Gianyar* Regency. The application of blended learning at Tourism Vocational Schools in *Gianyar* Regency is very appropriate and suitable because it will indirectly provide knowledge for students about the utilization of information technology which is very important to support tourism activities.

Nowadays, the utilization of blended learning in several Tourism Vocational Schools in *Gianyar* Regency can generally be said to have normally been running. However, based on the interview results that researchers have done with the Principal in one of the Tourism Vocational Schools in *Gianyar* Regency, the information was obtained that the implementation of blended learning in their schools had not run optimally due to the limited of teacher's capability in preparing the digital teaching materials that needed as supporting materials of learning based on blended learning. Besides, students and some teachers also had not the minimum facilities (such as computer and internet) that must be prepared to be able to hold blended learning.

Based on that situation, it is necessary to conduct a comprehensive evaluation of the implementation of blended learning at Tourism Vocational Schools in *Gianyar* Regency, so that later it can be obtained appropriate recommendations in making improvements to the blended learning implementation. The evaluation model that can be used to evaluate the implementation of blended learning at Tourism Vocational Schools in *Gianyar* Regency is the *Countenance* model based on *Tri Kaya Parisudha*. Through this model, it can be obtained appropriate recommendations based on the consideration result with the attention of the *Tri Kaya Parisudha* concept in answering the weaknesses which are found in the blended learning implementation through the *Countenance* model aspects.

According to Dewantara [9], the countenance model is an educational evaluation model that has two matrix components, including the description matrix and the

judgment matrix. The description matrix consists of three aspects, including antecedents, transactions, and outcomes. The judgment matrix consists of three aspects, including antecedents' standards, transaction standards, and outcomes standards. According to Ariah, Jalal, and Supena [10], the antecedent's aspect is used to assess the context of the program being evaluated; the transaction aspect is used to assess the implementation process of the program being evaluated; and the outcome aspect is used to assess the output of the program being evaluated. Antecedents standard, transaction standard, and outcomes standard is a standard used to determine the feasibility of an evaluated program. Based on those statement, the countenance model is one of the educational evaluation models that can be used to evaluate a program by referring to the component of description matrix (explaining the real conditions that occur in the program being run) and the component of the judgment matrix (measuring the success of the program based on the minimum standards set).

According to Sukraandini [11], *Tri Kaya Parisudha* are three basic daily behaviors in Hinduism that must be purified. *Tri Kaya Parisudha* consists of three parts, namely *manacika* (think in a good way), *wacika* (speak in a good way), and *kayika* (act in a good way). According to Ardhana [12], *Tri Kaya Parisudha* is a Hindu concept that teaches for people to think about good things (often called *manacika*), talk about good things (often called *wacika*), and do about good things (often called *kayika*). Based on those definitions, so the *Tri Kaya Parisudha* is a Hindu teaching that teaches for humanity to be able to think well, speak well, and act well. Specifically, if the *Tri Kaya Parisudha* concept is associated with learning outcomes, then the cognitive domain can be measured through the implementation of *manacika*, the affective domain can be measured through the implementation of *wacika* and psychomotor can be measured through the implementation of *kayika*.

Tri Kaya Parisudha-based *Countenance* evaluation model can be used optimally in evaluating the effectiveness of blended learning, provided that it is supported by a valid and reliable instrument while still referring to the evaluation component. Through a valid and reliable instrument, the evaluation process can be carried out optimally so that the results of the recommendations given will also be on target. In principle, the statement is following the opinion of Kember and Leung [13] which essentially stated that the existence of a valid and reliable questionnaire design can determine success in obtaining information and providing recommendations that are appropriate to the evaluation purpose.

Based on those situations, it is necessary to develop *Tri Kaya Parisudha*-based *Countenance* evaluation model instruments to obtain optimal evaluation results on the blended learning implementation at Tourism Vocational Schools in *Gianyar* Regency. The importance of carrying out the evaluation instrument development raises research problems that need to be solved. The problems statement of this research, including:

- What were the evaluation components of the *Tri Kaya Parisudha*-based *Countenance* model which were used to measure the effectiveness of blended learning implementation at Tourism Vocational Schools in *Gianyar* Regency?

- What were the evaluation aspects of the *Tri Kaya Parisudha*-based *Countenance* model, which were used to measure the effectiveness of blended learning implementation at Tourism Vocational Schools in *Gianyar* Regency?
- What were the items in the *Tri Kaya Parisudha*-based *Countenance* model evaluation instrument which were used to measure the blended learning implementation effectiveness at Tourism Vocational Schools in *Gianyar* Regency?
- How was the validation of *Tri Kaya Parisudha*-based *Countenance* model evaluation instrument that was used to measure the effectiveness of blended learning implementation at Tourism Vocational Schools in *Gianyar* Regency?
- How was the reliability of the *Tri Kaya Parisudha*-based *Countenance* model evaluation instrument that was used to measure the effectiveness of blended learning implementation at Tourism Vocational Schools in *Gianyar* Regency?

The long-term aim of this study was to find the right evaluation instrument to measure the effectiveness of blended learning implementation that was applied to vocational high schools in *Gianyar* Regency. The specific target/short-term aim to be obtained in this research was to be able to develop a Countenance model evaluation instrument based on *Tri Kaya Parisudha* that was valid and reliable in measuring the effectiveness of blended learning implementation in Tourism Vocational Schools in *Gianyar* Regency.

Some of the research behind this study include:

- Research that was conducted by Bowyer and Chambers in 2017 [14] showed a framework that was used to evaluate blended learning, which consists of evaluation levels, evaluation variables, evaluation elements, and forms the measurements. The limitations which were found in the Bowyer and Chambers's research was it had not been explained in detail the validity and reliability of each indicator that was used to measure the blended learning evaluation process
- Research in 2012 that was conducted by Naaj, Nachouki, and Ankit [15] showed the validity and reliability result of instruments that were used to measure the user's satisfaction level of blended learning based on gender and experience following the course. The research limitations of Naaj, Nachouki, and Ankit was that it had not yet shown the calculation process of instrument validity and reliability that was used to evaluate blended learning in terms of cognitive, affective and psychomotor aspects because the research which they conducted only focused on showing the validity and reliability of blended learning user satisfaction evaluation instruments reviewed from five elements, such as class management, technology, interaction, instruction, and instructor
- Research in 2018 that was conducted by Sugiharni *et al*. [16] showed the validity and reliability of the *Alkin* model instruments that were used to evaluate blended learning on Discrete Mathematics subject. The limitation of Sugiharni *et al*.'s research was that it had not shown the details of the items that measured cognitive, affective, and psychomotor domains in evaluating Discrete Mathematics learning using blended learning.

2 Research Methodology

2.1 Approaches and stages of research

This study was development research with a focus on the study of the evaluation instruments development. The evaluation instruments developed was an instrument that combined the *Countenance* evaluation model with the *Tri Kaya Parisudha* concept so that it could be used to measure the blended learning effectiveness in the cognitive, affective and psychomotor domains. The stages of developing the instrument can be seen in Figure 1.
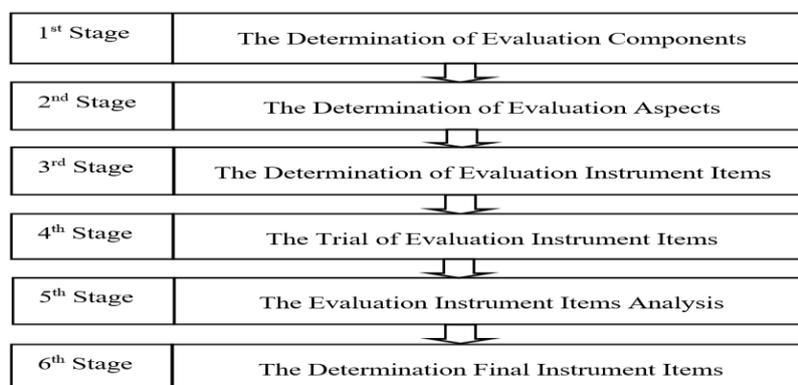

1st Stage	The Determination of Evaluation Components
2nd Stage	The Determination of Evaluation Aspects
3rd Stage	The Determination of Evaluation Instrument Items
4th Stage	The Trial of Evaluation Instrument Items
5th Stage	The Evaluation Instrument Items Analysis
6th Stage	The Determination Final Instrument Items

Fig. 1. Development Stage of *Tri Kaya Parisudha*-based *Countenance* Model Evaluation Instruments

In stage 1, activity was carried out to determine the evaluation components in the description matrix dimension and judgment matrix dimension that had by the *Countenance* model. Evaluation components determination in the description matrix referred to the measurement of cognitive, affective, and psychomotor domains toward blended learning implementation. Evaluation components determination in the judgment matrix referred to the standard of successful implementation of the *Tri Kaya Parisudha* concept in the blended learning implementation. In stage 2, it was carried out the evaluation aspects determination that was derived from the evaluation components. In stage 3, it was carried out the evaluation instrument items determination that will be used later as a measuring tool of evaluation activities in the field. In stage 4, it was carried out the evaluation instrument item trial to obtain an assessment from experts and respondents on the quality of the items. In stage 5, the evaluation instrument item analysis was carried out to ensure that the items were valid and reliable. In stage 6, it was carried to determine the final item that was ready to be used in the field as a measurement tool in the evaluation process.

2.2   Research subjects

The subjects who were involved in validity testing of the instrument content were two experts (one expert in the field of informatics engineering and one expert in the field of educational evaluation). Subjects were involved in the instrument reliability test were eight teachers who were able to teach the computer courses and 40 students who used blended learning, especially for computer courses. Teachers and students who were involved in this reliability test came from four Tourism Vocational Schools scattered in *Gianyar* Regency.

2.3   Object and location of research

The object in this study was the *Tri Kaya Parisudha*-based *Countenance* model instrument that was used to measure the effectiveness of blended learning in the cognitive, affective, and psychomotor domains. The location of this research was carried out on four Tourism Vocational Schools in *Gianyar* Regency.

2.4   Data collection instruments

The instrument that was used to obtain the data in this research could be a questionnaire consisting of *Countenance* model evaluation instrument items based on *Tri Kaya Parisudha* that would be tested. In addition to the questionnaire, the documentation in the form of photos of judges testing process that was conducted by experts and photos of the questionnaire distribution process to the respondents was used as authentic evidence that showed the research process had been carried out.

2.5   Data analysis techniques

The The instrument validity in this research was analyzed using content validity techniques through expert tests using the *Gregory* formula. The reliability testing of the evaluation instruments in this study used the *Cronbach Alpha* coefficient because this instrument was a non-test instrument that used a *Likert* scale. The categorization of the instrument validity and reliability in this research referred to the classification of *Guilford*, which can be seen in Table 1[16].

Table 1. Guilford Classification for Validity and Reliability Scores of Evaluation Instruments

Validity Category	Reliability Category	Score Range
Very High	Very High	$0.80 < r_{xy} \leq 1.00$
High	High	$0.60 < r_{xy} \leq 0.80$
Enough	Enough	$0.40 < r_{xy} \leq 0.60$
Low	Low	$0,20 < r_{xy} \leq 0.40$
Poor	Poor	$0.00 < r_{xy} \leq 0.20$
Invalid	Unreliable	$r_{xy} \leq 0.00$

3 Results and Discussion

Based on the existing problems and research methods which were used to solve these problems, then there were several research results need to be showed and discussed more deeply. The results of this study include several things in the following.

3.1 Evaluation component

This evaluation component of the *Tri Kaya Parisudha*-based *Countenance* model was spread in two dimensions of the matrix, including description matrix and judgment matrix. The description matrix consists of three evaluation components, including cognitive component, affective component, and psychomotor component. The judgment matrix consists of three evaluation components, including manacika components, wacika components, and kayika components.

3.2 Evaluation aspects

Evaluation aspects which were used to measure the effectiveness of blended learning could be determined based on each evaluation component in the description matrix, and judgment matrix described earlier. The evaluation aspects intended can be seen fully in Table 2 and Table 3.

Table 2. Aspects of Evaluation on Evaluation Components that are Spread in the Description Matrix

No.	Evaluation Components	Aspects Code	Evaluation Aspects
1	Cognitive components	A-1	Vision, mission, and purpose of implementing blended learning
		A-2	Regulation and law legality for the blended learning implementation
		A-3	The hardware that was used for the blended learning implementation
		A-4	The platform (software) that was used for the blended learning implementation
		A-5	The features that were provided in blended learning
		A-6	Material content that was provided in blended learning
		A-7	The readiness of the teacher's ability in the blended learning implementation
		A-8	The readiness of students' abilities in the blended learning implementation
		A-9	The readiness of the development team's ability to prepare all devices for the blended learning realization
2	Affective components	A-10	User interest in the physical appearance of the blended learning platform
		A-11	The enthusiasm of users in the blended learning implementation
		A-12	User satisfaction in the blended learning implementation
3	Psychomotor components	A-13	Installation and setting of all devices that are used in realizing blended learning
		A-14	Material content preparation
		A-15	The blended learning platform operation

Table 3. Aspects of Evaluation in the Evaluation Components that are Spread in the Judgment Matrix

No.	Evaluation Components	Aspects Code	Evaluation Aspects
1	*Manacika* components	A-16	User understanding level standard towards the vision, mission, and objectives of the blended learning implementation
		A-17	User understanding level standard towards regulation and law legality in blended learning implementation
		A-18	User understanding level standard towards hardware that was used for blended learning implementation
		A-19	User understanding level standard towards the platform (software) that was used for blended learning implementation
		A-20	User understanding level standard towards the features that were provided in blended learning
		A-21	User understanding level standard towards the material content that was provided in blended learning
		A-22	Teacher's abilities readiness level standard in blended learning implementation
		A-23	Student's abilities readiness level standard in blended learning implementation
		A-24	Development team's abilities readiness level standard to prepare all devices for blended learning realization
2	*Wacika* components	A-25	User interest level standard towards the physical appearance of the blended learning platform
		A-26	User enthusiasms' level standard in blended learning implementation
		A-27	User satisfaction level standard in blended learning implementation
3	*Kayika* components	A-28	Success level standard of the installation and set overall devices which were used in realizing blended learning
		A-29	Success level standard in preparing material content
		A-30	Success level standard for operating the blended learning platform

3.3 Evaluation instrument items that had not be judged

The evaluation instrument item was derived from evaluation aspects. The *Tri Kaya Parisudha*-based *Countenance* model evaluation instrument items were derived from the aspects which were described in Tables 2 and 3. The *Countenance* evaluation instrument items based on *Tri Kaya Parisudha* that intended can be seen in Table 4.

Table 4. The Tri Kaya Parisudha-based Countenance Evaluation Model Instrument Items

No.	Aspects Code	Items Code	Instrument Items
1	A-1	I-1	The blended learning vision had been relevant to the school's vision
		I-2	The blended learning vision had been following the future education development direction
		I-3	Blended learning vision was clear and easily understood by teachers and students
		I-4	The blended learning mission had been relevant to the school's mission
		I-5	The blended learning mission adapts trends and technological developments for now
		I-6	The blended learning mission was clear and easily understood by teachers and students
		I-7	The blended learning purpose had been relevant to school goals
		I-8	The blended learning purpose referred to meeting school needs for technology
		I-9	The blended learning purpose was clear and easily understood by teachers and students
2	A-2	I-10	There was a Decree of the Principal as the legal basis for the blended learning implementation
		I-11	There was a decree of each homeroom teacher as law legality that was recognizing the blended learning implementation
		I-12	There was a letter of approval from the school committee regarding the blended learning implementation
3	A-3	I-13	Personal computer specifications which were sufficient and suitable for use
		I-14	Adequate computer network specifications
		I-15	Specifications for adequate internet access requirements
4	A-4	I-16	Platforms type introduction that had the potential to can used to make blended learning in schools
		I-17	A detailed description of the platform specifications that had been used to make blended learning in schools
5	A-5	I-18	Features introduction that was used to create classes
		I-19	Features introduction that was used to enter material content
		I-20	Features introduction that was used to create a community/forum
		I-21	Features introduction that was used to create learning schedules
		I-22	Features introduction that was used to discussion
		I-23	Features introduction that was used to assign assignments
		I-24	Features introduction that was used to provide quizzes/exams
		I-25	Features introduction that was used to make an assessment
		I-26	Features introduction that was used to determine graduation
6	A-6	I-27	Details explanation of material content that needs to be prepared
		I-28	Explanation of material file size that needs to be prepared
		I-29	Explanation of material file formats that need to be prepared
		I-30	Explanation to the teacher about how to make the material content to be taught
7.	A-7	I-31	Knowledge and ability of teachers to operate computers
		I-32	Knowledge and ability of teachers to access websites through internet facilities
		I-33	The teacher's knowledge and ability in operating every feature available in the blended learning platform
		I-34	Knowledge and ability of teachers in creating digital format material content
8	A-8	I-35	Knowledge and ability of students in operating computers
		I-36	Knowledge and ability of students in using the internet

		I-37	Students' knowledge and ability in operating each feature which was available in the blended learning platform
		I-38	Knowledge and ability of students in making answers the assignments that were given by the teacher in digital format
9	A-9	I-39	Developer team's knowledge on how to assemble computers
		I-40	Knowledge of the development team about how to install computer networks
		I-41	Knowledge of the development team about how to install the internet
		I-42	Developer team's knowledge about how to install and set the blended learning platform
		I-43	Knowledge of the development team about how to create material content
10	A-10	I-44	Teachers often see and operate the features available in the blended learning platform
		I-45	Students often see and operate the features available in the blended learning platform
11	A-11	I-46	Teachers actively discuss with students through forums/communities available in blended learning
		I-47	The teacher actively shares material and assignments through blended learning
		I-48	The teacher actively conducts assessments through blended learning
		I-49	Students on time when complete the tasks that were given through blended learning
		I-50	Students often discuss with teachers and colleagues through forums/communities
12	A-12	I-51	Students were satisfied with the convenience that was provided in accessing material through blended learning
		I-52	Students were satisfied with the convenience that was provided in sending assignments through blended learning
		I-53	Students were satisfied with the convenience that was provided in the following quiz/exams through blended learning
		I-54	Students were satisfied with the convenience that was provided in conducting discussions through blended learning
		I-55	The teacher was satisfied with the convenience that was provided in incorporating material content into blended learning
		I-56	The teacher was satisfied with the convenience that was provided in conducting discussions with students through the forums available in blended learning
		I-57	The teacher was satisfied with the convenience that was provided in conducting assessments through blended learning
13	A-13	I-58	The development team was able to assemble personal computers properly
		I-59	The development team was able to install computer networks properly
		I-60	The development team can properly install the internet
		I-61	The development team was able to install and set the blended learning platform properly
14	A-14	I-62	Teachers were able to create digital format material content properly
		I-63	Teachers were able to incorporate material content into the blended learning platform properly
15	A-15	I-64	Teachers were able to properly operate the features which were contained in the blended learning platform to input material, conduct discussions, and assess
		I-65	Students were able to properly operate the features which were contained in the blended learning platform for the purpose of accessing material, sending assignments, and conducting discussions
16	A-16	I-66	The user understanding effectiveness level toward the relevance of blended learning vision with school vision $\geq 80\%$

		I-67	The user understanding effectiveness level toward the suitability of the blended learning vision with the future education development direction ≥ 80%
		I-68	The user understanding effectiveness level toward clarity and ease of understanding blended learning vision ≥ 85%
		I-69	The user understanding effectiveness level toward the relevance of the blended learning mission with the school mission ≥ 80%
		I-70	The user understanding effectiveness level toward the adjustment of the blended learning mission to trends and technological developments, for now ≥ 85%
		I-71	The user understanding effectiveness level toward understanding the blended learning mission clearly and easily ≥ 85%
		I-72	The user understanding effectiveness level toward the relevance of blended learning objectives with school goals ≥ 80%
		I-73	The user understanding effectiveness level toward the success of blended learning objectives in meeting school needs for technology ≥ 85%
		I-74	The user understanding effectiveness level with blended learning purpose ≥ 85%
17	A-17	I-75	The effectiveness level of user understanding to the Principal's decree existence as the legal basis for implementing blended learning ≥ 90%
		I-76	The effectiveness level of user understanding to the decree existence of each homeroom teacher as law legality from the recognition in holding blended learning ≥ 90%
		I-77	The user understanding effectiveness level to the existence of the school committee's approval letter regarding the blended learning implementation ≥ 90%
18	A-18	I-78	The user understanding effectiveness level to the personal computer's specifications that were sufficient and appropriate to be used for the blended learning implementation ≥ 82%
		I-79	The effectiveness level of user understanding to the computer networks specifications which adequate for the blended learning implementation ≥ 85%
		I-80	The effectiveness level of user understanding to the internet access requirements specifications which adequate for the blended learning implementation ≥ 85%
19	A-19	I-81	The introduction effectiveness level of platforms types that can potentially to be used to make the blended learning in schools ≥ 90%
		I-82	The detailed description effectiveness level of the platform specifications that had been used to make the blended learning in schools ≥ 90%
20	A-20	I-83	The effectiveness level of user understanding to features which were used to make classes ≥ 85%
		I-84	The effectiveness level of user understanding to features which were used to enter material content ≥ 85%
		I-85	The effectiveness level of user understanding to features which were used to make the community/forum ≥ 85%
		I-86	The effectiveness level of user understanding to features which were used to create learning schedules ≥ 85%
		I-87	The effectiveness level of user understanding to features which can be used for discussion ≥ 85%
		I-88	The effectiveness level of user understanding to features which were used to assign tasks ≥ 85%
		I-89	The effectiveness level of user understanding to features which were used to provide quizzes ≥ 85%
		I-90	The effectiveness level of user understanding to features which were used to make an assessment ≥ 85%
		I-91	The effectiveness level of user understanding to features which were used to determine graduation ≥ 85%
21	A-21	I-92	The effectiveness level of user understanding of the material content details that need to be prepared ≥ 86%

		I-93	The effectiveness level of user understanding of the material file size that needs to be prepared $\geq$ 86%
		I-94	The effectiveness level of user understanding to material file formats that need to be prepared $\geq$ 86%
		I-95	The effectiveness level of user understanding of how teachers make material content to be taught $\geq$ 86%
22	A-22	I-96	The effectiveness level of teachers' knowledge and abilities in operating computers $\geq$ 87%
		I-97	The effectiveness level of teachers' knowledge and abilities in accessing websites through internet facilities $\geq$ 87%
		I-98	The effectiveness level of teachers' knowledge and abilities in operating each feature that available in a blended learning platform $\geq$ 86%
		I-99	The effectiveness level of teachers' knowledge and abilities in making digital format material content $\geq$ 88%
23	A-23	I-100	The effectiveness level of students' knowledge and abilities in operating computers $\geq$ 88%
		I-101	The effectiveness level of students' knowledge and abilities in using the internet $\geq$ 88%
		I-102	The effectiveness level of students' knowledge and abilities in operating each feature available in the blended learning platform $\geq$ 88%
		I-103	The effectiveness level of students' knowledge and abilities in making answers to assignments which were given by teachers in digital format $\geq$ 88%
24	A-24	I-104	The effectiveness level of the developer team's knowledge on how to assemble computers $\geq$ 90%
		I-105	The effectiveness level of the developer team's knowledge on how to install computer networks $\geq$ 90%
		I-106	The effectiveness level of the developer team's knowledge about how to install the internet $\geq$ 90%
		I-107	The effectiveness level of the development team's knowledge about how to install and set the blended learning platform $\geq$ 90%
		I-108	The effectiveness level of the development team's knowledge on how to make material content $\geq$ 90%
25	A-25	I-109	The effectiveness level of teacher routines in viewing and operating features available in a blended learning platform $\geq$ 85%
		I-110	The effectiveness level of student routines in viewing and operating the features available in a blended learning platform $\geq$ 85%
26	A-26	I-111	The effectiveness level of teacher activity in discussing with students through the forum/community that available in blended learning $\geq$ 85%
		I-112	The effectiveness level of teacher activity in sharing material and assignments through blended learning $\geq$ 85%
		I-113	The effectiveness level of teacher activity in conducting assessments through blended learning $\geq$ 85%
		I-114	The effectiveness level of student activity on time when completing tasks which were given through blended learning $\geq$ 85%
		I-115	The effectiveness level of students in discussing with teachers and colleagues through forums/communities $\geq$ 83%
27	A-27	I-116	The effectiveness level of student satisfaction about the convenience that was provided in accessing material through blended learning $\geq$ 85%
		I-117	The effectiveness level of student satisfaction about the convenience that was provided in sending assignments through blended learning $\geq$ 85%
		I-118	The effectiveness level of student satisfaction about the convenience that was provided in the following quiz/exams through blended learning $\geq$ 85%

		I-119	The effectiveness level of student satisfaction about the convenience that was provided in conducting discussions through blended learning $\geq 85\%$
		I-120	The effectiveness level of teacher satisfaction about the convenience that was provided in incorporating material content into blended learning $\geq 85\%$
		I-121	The effectiveness level of teacher satisfaction about the convenience that was provided in conducting discussions with students through the forums available in blended learning $\geq 85\%$
		I-122	The effectiveness level of teacher satisfaction about the convenience that was provided in conducting assessments through blended learning $\geq 82\%$
28	A-28	I-123	The effectiveness level of the development team in assembling personal computers $\geq 88\%$
		I-124	The effectiveness level of the development team in installing computer networks $\geq 85\%$
		I-125	The effectiveness level of the development team in installing the internet $\geq 86\%$
		I-126	The effectiveness level of the development team in installing and setting the blended learning platform $\geq 86\%$
29	A-29	I-127	The effectiveness level of the teacher's ability to create content in digital format material $\geq 88\%$
		I-128	The effectiveness level of the teacher's ability to incorporate material content into the blended learning platform $\geq 88\%$
30	A-30	I-129	The effectiveness level of the teacher's ability to operate the features which were contained in the blended learning platform to input material, discussions, and assess $\geq 88\%$
		I-130	The effectiveness level of students' ability to operate the features which were contained in the blended learning platform to access material, send assignments and conducting discussions $\geq 88\%$

3.4 Trial of tri kaya parisudha-based countenance evaluation instrument

There were two forms of trials which were carried out on this evaluation instrument to obtain the instrument validity and reliability, including the instrument content validity test and instrument reliability testing. In the content validity trial involved two experts (education evaluation experts and informatics engineering education experts), while the instruments reliability trial test involved 48 respondents (40 students and eight teachers). The full data for the trial results of content validity can be seen in Table 5, while for results data of reliability trial test can be seen in Table 7.

Table 5. The Content Validity Trial Results of the Tri Kaya Parisudha-Based Countenance Model Evaluation Instrument which were Conducted by Two Experts

1st Expert		2nd Expert	
Less Relevant (Score 1 - 2)	*Most Relevant (Score 3 - 4)*	*Less Relevant (Score 1 - 2)*	*Most Relevant (Score 3 - 4)*
11, 26, 30, 43, 76, 91, 95, 108	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130	11, 26, 30, 43, 76, 91, 95, 108	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130

The trial results data then were entered into cross tabulation. The full description of the cross-tabulation process can be seen in Table 6.

Table 6. Cross Tabulation Data from Tri Kaya Parisudha-Based Countenance Evaluation Instrument Test Results which were conducted by Two Experts

		2nd Expert	
		Less Relevant (Skor 1-2)	*Most Relevant (Skor 3-4)*
	Less Relevant (Skor 1-2)	A 11, 26, 30, 43, 76, 91, 95, 108 (8)	B - (0)
1st Expert	*Most Relevant (Skor 3-4)*	C - (0)	D 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130 (122)

From the tabulation data, then it was carried out the content validity calculation toward the *Tri Kaya Parisudha*-based *Countenance* evaluation instruments used the *Gregory* formula. The calculation process of content validity by using the *Gregory* formula [16] can be run using reference data in Table 6. The calculation process of content validity can be explained in full as follows.

The content validity $= \dfrac{D}{A+B+C+D}$

$= \dfrac{122}{8+0+0+122}$

$= \dfrac{122}{130} = 0.938$

After calculating the instrument content validation, the next step was to calculate the instrument reliability. The complete data on instrument reliability results can be seen in Table 7.

Table 7. Reliability Test Results Data of Tri Kaya Parisudha-Based Countenance Evaluation Instruments

Items	σ_i^2		Items	σ_i^2		Items	σ_i^2		Items	σ_i^2		Items	σ_i^2
1	0.250		27	0.248		53	0.229		79	0.250		105	0.250
2	0.250		28	0.222		54	0.250		80	0.250		106	0.243
3	0.250		29	0.250		55	0.250		81	0.243		107	0.250
4	0.329		30	0.234		56	0.250		82	0.250		108	0.239
5	0.250		31	0.306		57	0.243		83	0.250		109	0.243
6	0.239		32	0.248		58	0.250		84	0.243		110	0.250
7	0.243		33	0.292		59	0.250		85	0.250		111	0.243
8	0.250		34	0.250		60	0.243		86	0.243		112	0.250
9	0.250		35	0.246		61	0.250		87	0.250		113	0.243
10	0.248		36	0.243		62	0.250		88	0.243		114	0.250
11	0.234		37	0.248		63	0.243		89	0.250		115	0.250
12	0.215		38	0.207		64	0.250		90	0.243		116	0.243
13	0.229		39	0.250		65	0.250		91	0.234		117	0.250
14	0.248		40	0.250		66	0.250		92	0.250		118	0.243
15	0.215		41	0.239		67	0.243		93	0.250		119	0.250
16	0.250		42	0.250		68	0.250		94	0.250		120	0.250
17	0.248		43	0.234		69	0.250		95	0.234		121	0.243
18	0.250		44	0.250		70	0.250		96	0.248		122	0.250
19	0.246		45	0.246		71	0.246		97	0.243		123	0.243
20	0.250		46	0.248		72	0.250		98	0.250		124	0.250
21	0.246		47	0.246		73	0.250		99	0.248		125	0.243
22	0.234		48	0.222		74	0.243		100	0.250		126	0.250
23	0.250		49	0.248		75	0.250		101	0.243		127	0.250
24	0.250		50	0.250		76	0.229		102	0.250		128	0.250
25	0.243		51	0.188		77	0.250		103	0.243		129	0.457
26	0.239		52	0.250		78	0.250		104	0.250		130	0.234
												$\sum \sigma_i^2$	**32.205**

Based on the calculation using Microsoft Excel to determine the reliability of non-test instruments with *Likert* scale scoring, then were obtained some data, including $\sum$

$\sigma_i^2 = 32.205$; n = 48; $\sigma_t^2 = 541.822$; so that the following steps [16] obtained the calculation results of reliability coefficient.

$$\alpha = \frac{n}{n-1} * \left\{ 1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right\}$$

$$\alpha = \frac{48}{48-1} * \left\{ 1 - \frac{32.205}{541.822} \right\}$$

$$\alpha = \frac{48}{47} * \left\{ 1 - \frac{32.205}{541.822} \right\}$$

$$\alpha = 1.021 * 0.941$$

$$\alpha = 0.961$$

3.5 Instrument item analysis

Based on the calculation result of instrument content validity, the content validity value was 0.938 which showed that in general the instrument contents were classified as very high validity when it was viewed from the classification of Guilford in the range $0.80 < r_{xy} \leq 1.00$. However, those eight items must be discarded if seen from the results shown in Table 5, because according to experts' assessment, those eight items were irrelevant.

Based on the calculation results of instrument item reliability, it was gotten the reliability value of 0.961 which showed that the instrument item reliability was classified as very high reliability based on Guilford's classification in the range $0.80 < r_{xy} \leq 1.00$. Therefore, generally, the items of the *Tri Kaya Parisudha*-based *Countenance* model evaluation instrument were reliable and steady, to be used as a measuring tool in the evaluating process of blended learning implementation effectiveness level.

3.6 Final items

The final item of the evaluation instrument was determined based on the instrument content validity results. Items which were considered relevant from the expert evaluations results will still be used, while irrelevant items were discarded. Following the results of the instrument content validity shown in Table 5 and the tabulations shown in Table 6, the final instrument items which used were 122 items, because those items received a "very relevant" assessment from the experts.

This research results had been able to provide answers to the research limitations of Bowyer and Chambers by showing valid and reliable evaluation indicators as a measuring tool of the blended learning evaluation process in the tourism vocational schools in *Gianyar* Regency. The limitations of Sugiharni *et al.*'s research, and The Naaj, Nachouki, and Ankit research had been answered through this research by showing the existence of an accurate calculation process to determine the reliability and validity of blended learning evaluation instruments in terms of the aspects from psychomotor, affective and cognitive.

This research novelty was that there was a valid and reliable evaluation instrument as a measuring tool of the blended learning evaluation process in Tourism Vocational Schools by adopting a *Countenance* model that was integrated with the *Tri Kaya*

Parisudha concept. The evaluation aspects which were contained in the description matrix in the *Countenance* model were used as a reference to determine the evaluation instruments items that measured by three education domains (cognitive, psychomotor and affective) in the blended learning implementation. The evaluation instrument items development that could be used to measure the three domains was also in accordance with the research result that was conducted by Rovai *et al*. [17] by showing the development and validation of instruments to obtain instruments that could be used to measure the the learning process effectiveness in affective, cognitive and psychomotor domains. Other researches which also in principle reinforce Rovai *et al*.'s statement about the instrument items development to measure several educational domains were research that was conducted by Saptono, Suparno, and Najah [18]and also research by Syamsudin, Budiyono, and Sutrisno [19] which basically showed the valid and reliable instruments development to measure the learning process in the affective domain. The research that was conducted by Paidi *et al*. [20] and also Großschedl, Mahler, and Harms [21] strengthen statements about the evaluation instrument items development in the cognitive domain. The research that was conducted by Gregory and Noto [22] strengthens statements about the development of valid and reliable instruments item to evaluate the affective and cognitive domains.

The evaluation aspect that adopts the *Tri Kaya Parisudha* concept that was found in the judgment matrix in the *Countenance* model was used as a reference in determining the evaluation standard instrument items. The items of the affective, psychomotor and cognitive domains which were indicated in the description matrix were integrated with the evaluation standard in the judgment matrix by referring to the *Tri Kaya Parisudha* concept, which included the *manacika* instrument items to control cognitive aspects, *wacika* to control affective aspects, and *kayika* to control psychomotor aspects.

Manacika instrument items could be used to control cognitive aspects because they were based on the *manacika* concept philosophy as part of *Tri Kaya Parisudha* which means thinking well so that through good thinking they can certainly hone cognitive abilities. The *wacika* concept philosophy means to speak well, so that through good speech, it is reflected by a good and strong person to sharpen affective skills. *Kayika* concept philosophy which means they act on the right path so that through good actions, it will be easier to hone psychomotor skills. The philosophical explanation of each part from *Tri Kaya Parisudha* that was described above was basically in accordance with the Dewi and Suputra explanation [23] which stated that thoughts, words, and actions which were carried out properly can make it easier for people to practice the cognitive, affective and psychomotor ability that they had in a better and optimal.

The obstacle that was still found in this research was that it had not shown the validity of the contents of the evaluation instruments validated by more than two experts. Besides that, the validation calculation process that detail for each instrument had also not been explained.

4 Conclusion

The development of *Tri Kaya Parisudha*-based *Countenance* evaluation model instruments has produced three components of evaluation (affective, cognitive, and psychomotor components) in the description matrix and three components of evaluation (*manacika*, *wacika*, *kayika* component) on judgment matrix. Besides that, 15 evaluation aspects on the description matrix and 15 evaluation aspects on judgment matrix were also had been produced. In this evaluation, instrument development was produced 130 evaluation instruments items before expert validation was carried out, and eight items were invalid after expert validation was carried out. Overall there were 122 the valid and reliable instruments final so that they were ready to be used as a measuring tool of the evaluation process in determining the effectiveness level of blended learning implementation in Tourism Vocational Schools throughout *Gianyar* Regency.

5 Acknowledgement

6 References

[1] Ramadhani, M. (2018). Bali officially launches virtual classroom learning. Denpasar: Republika.

[2] Demertzi, E., Voukelatos, N., Papagerasimou, Y., & Drigas, A. (2018). Online learning facilities to support coding and robotics courses for youth. *International Journal of Engineering Pedagogy*, 8(3),69-80. https://doi.org/10.3991/ijep.v8i3.8044

[3] Svetsky, S., Moravcik, O., Tanuska, P., & Markechova, I. (2018). The personalized computer support of teaching. *International Journal of Engineering Pedagogy*, 8(4), 56-69. https://doi.org/10.3991/ijep.v8i4.8149

[4] Dávideková, M., & Hvorecký, J. (2017). ICT collaboration tools for virtual teams in terms of the SECI model. *International Journal of Engineering Pedagogy*, 7(1), 95-116. https://doi.org/10.3991/ijep.v7i1.6502

[5] Virkus, S., Alemu, G.A., Demissie, T.A., Kokollari, B.J., Estrada, L.M.M., & Yadav, D. (2009). Integration of digital libraries and virtual learning environments: A literature review. *New Library World*, 110, 136-150. https://doi.org/10.1108/03074800910941338

[6] Akkoyunlu, B., & Soylu, M.Y. (2008). A Study of student's perceptions in a blended learning environment based on different learning styles. *Educational Technology & Society*, 11 (1), 183-193.

[7] Machumu, H.J., Zhu, C., & Sesabo, J.K. (2016). Blended learning in the vocational education and training system in Tanzania: understanding vocational educators' perceptions. *International Journal of Multicultural and Multireligious Understanding*, 3(2), 30-45. https://doi.org/10.18415/ijmmu.v3i2.46

[8] Lalima, & Dangwal, K.L. (2017). Blended learning: An innovative approach. *Universal Journal of Educational Research*, 5(1), 129-136. https://doi.org/10.13189/ujer.2017.050116

[9] Dewantara, I.P.M. (2017). Stake evaluation model (countenance model) in learning process bahasa indonesia at Ganesha university of educational. *International Journal of Language and Literature*, 1(1), 19-29. https://doi.org/10.23887/ijll.v1i1.9615

[10] Ariah, Jalal, F., & Supena, A. (2018). Evaluation of school culture in character building at Ummul Quro elementary school in Bogor, Indonesia. *International Journal of Advances in Scientific Research and Engineering*, 4(7), 136-139. https://doi.org/10.31695/ijasre.2018.32785

[11] Sukraandini, N.K. (2016). Hindu nurses' lived experiences of caring for patients at the end of life in intensive care unit in Indonesia. Songkhla: Prince of Songkla University. https://doi.org/10.5176/2345-718x_4.2.144

[12] Ardhana, I.K. (2017). Religious teachings on sustainability in the context of hinduism in Bali. *Istanbul Journal of Sociological Studies*, 56(2), 21-41. https://doi.org/10.18368/iusoskon.328516

[13] Kember, D., & Leung, D.Y.P. (2008). Establishing the validity and reliability of course evaluation questionnaires. *Assessment & Evaluation in Higher Education*, 33(4), 341-353.https://doi.org/10.1080/02602930701563070

[14] Bowyer, J., & Chambers, L. (2017). Evaluating blended learning: Bringing the elements together. *Research Matters*, 23, 17-26

[15] Naaj, M.A., Nachouki, M., & Ankit, A. (2012). Evaluating student satisfaction with blended learning in a gender-segregated environment. *Journal of Information Technology Education: Research*, 11, 185-200. https://doi.org/10.28945/1692

[16] Sugiharni, G.A.D., Setiasih, N.W., Mahendra, I.W.E., Ardana, I.M., & Divayana, D.G.H. (2018). Development of alkin model instruments as evaluation tools of blended learning implementation in discrete mathematics course on STIKOM Bali. *Journal of Theoretical and Applied Information Technology*, 96(17), 5803-5818. https://doi.org/10.30738/indomath.v1i2.2626

[17] Rovai, A.P., Wighting, M.J., Baker, J.D., & Grooms, L.D. (2009). Development of an instrument to measure perceived cognitive, affective, and psychomotor learning in traditional and virtual classroom higher education settings. *Internet and Higher Education,* 12(1), 7-13.https://doi.org/10.1016/j.iheduc.2008.10.002

[18] Saptono, A., Suparno, & Najah, S. (2018). Development of an assessment instrument of affective domain for entrepreneurship in senior high school. *Journal of Entrepreneurship Education*, 21(4), 1-12.

[19] Syamsudin, A., Budiyono, & Sutrisno. (2016). Model of affective assessment of primary school students. *Research and Evaluation in Education*, 2(1), 25-41. https://doi.org/10.21831/reid.v2i1.8307

[20] Paidi, Djukri, Yulaikah, S., & Alfindasari, D. (2017). Development of instrument to assess cognitive process and product in biology senior high school. *International Journal of Environmental & Science Education*, 12(8), 1719-1735.

[21] Großschedl, J., Mahler, D., & Harms, U. (2018). Construction and evaluation of an instrument to measure content knowledge in biology: The CK-IBI. *Education Sciences*, 8(145), 1-25. https://doi.org/10.3390/educsci8030145

[22] Gregory, J.L., & Noto, L.A. (2018). Attitudinal instrument development: Assessing cognitive, affective, and behavioral domains of teacher attitudes toward teaching all students. *Cogent Education*, 5, 1-12. https://doi.org/10.1080/2331186x.2017.1422679

[23] Dewi, I.G.P.E.R. & Suputra, I.D.G.D. (2018). Philosophy tri kaya parisudha as moderators the effect of equity sensitivity and ethical sensitivity on auditor's ethical behavior in financial audit board of republic Indonesia (BPK RI) representatives of Bali province. *International Journal of Research Publications*, 10(1), 1-15. https://doi.org/10010182018321

7   Authors

Dewa Gede Hendra Divayana is an associate professor in the field of information technology education at Faculty of Technical and Vocational, *Universitas Pendidikan Ganesha*. He obtained his Doctoral Degree in Measurement and Evaluation in Education from *Universitas Negeri Jakarta*, at Jakarta in 2016. His research interest areas are information technology education, evaluation in education, and artificial intelligence in education. (email: hendra.divayana@undiksha.ac.id).

Agus Adiarta is an associate professor in the field of electrical education at Faculty of Technical and Vocational, *Universitas Pendidikan Ganesha*. He obtained his Doctoral Degree in Measurement and Evaluation in Education from *Universitas Negeri Jakarta*, at Jakarta in 2016. His research interest areas are evaluation in education, and electrical education. (email: agus.adiarta@undiksha.ac.id).

I Gede Sudirtha is an associate professor in the field of vocational education at Faculty of Technical and Vocational, *Universitas Pendidikan Ganesha*. He obtained his Doctoral Degree in Measurement and Evaluation in Education from *Universitas Negeri Jakarta*, at Jakarta in 2016. His research interest areas are evaluation in education, and vocational education. (email: gede.sudirtha@undiksha.ac.id).