Content validity determination of the countenance-tri kaya parisudha model evaluation instruments using lawshe’s CVR formula

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Abstract. Good Instruments that are used as measurement instruments in evaluation process should be valid instruments. An attempt that is made to obtain a valid instrument is to calculate the instrument content validity correctly by using the right formula. One formula that can be used to test the content validity of the Countenance-Tri Kaya Parisudha model evaluation instruments is Lawshe’s CVR. Based on those statements, the main objective of this study was to explain how to use the Lawshe’s CVR formula to determine the content validity of a Countenance-Tri Kaya Parisudha model evaluation instruments. Subjects that were involved in conducting the trial of the instruments were 15 panellists. The tool that was used to test the instrument was a questionnaire consisting of 30 questions. Analysis of the instruments was done by comparing the results of validation to Guilford standards so that that instrument classification could be determined. These study results indicate that the Countenance-Tri Kaya Parisudha model evaluation instruments were at a high level of validation with the average of content validity ratio 0.644.

1. Introduction
Blended learning is one of the learning models, which is suitable to be used in the era of industrial revolution 4.0. It is because through this learning model, students and teachers can do quick interaction without decreasing the quality and learning process meaning. The blended learning model facilitates an integrated learning process both through face-to-face meeting directly inside the classroom or indirectly outside the classroom through internet access. However, it cannot be denied that blended learning in several vocational schools in Bali is not feasible, yet it is certainly considered as a success determinant benchmark of the learning process in the psychomotor, affective, and cognitive domains. Therefore it is necessary to evaluate the blended learning execution in several schools of vocational in Bali. The evaluation model is expected to be able to clearly measure all aspects, including the cognitive, affective, and psychomotor domains.

Referring to those problems, one of the ways that can be used in evaluating the blended learning execution in schools of vocational in Bali is to use the Countenance-Tri Kaya Parisudha Evaluation Model. In general, the Countenance model is one of the evaluation models in educational field consisting of a description matrix and judgment matrix as an evaluation component [1]. Tri Kaya Parisudha is a basic teaching in Hinduism which regulates human behavior so that it be a guidance for human to behave well by doing 3 good things including, thinking well (manacika), saying well
IConVET 2019
Journal of Physics: Conference Series 1516 (2020) 012047 doi:10.1088/1742-6596/1516/1/012047

(wacika) and acting well (kayika) [2]. In learning, manacika concepts can be used to measure learning outcomes in the cognitive domain, wacika concepts are used to measure affective domains, and kayika concepts are used to measure psychomotor domains.

The evaluation model of Countenance-Tri Kaya Parisudha can be used to evaluate the overall dimensions of blended learning implementation based on two matrixes (judgment matrix and description matrix). The description matrix includes aspects that are sourced from cognitive, affective, and psychomotor components, while the judgment matrix contains aspects that are sourced from the Tri Kaya Parisudha components (manacika, wacika, and kayika). Those are used as a judgment standard in determining the minimum standards from the success of blended learning implementation in realizing effective learning outcomes in the psychomotor, affective, and cognitive domains.

The innovation of that evaluation model can be used well, if it has good evaluation tools. The evaluation tools needed are evaluation instruments. The evaluation instruments needed in evaluating blended learning must be valid. This is because there are still invalid instruments used to evaluate the effectiveness of blended learning, so that the impact on evaluation results is not optimal. Based on these conditions, researchers were interested in conducting research on content validity of the Countenance-Tri Kaya Parisudha model evaluation instruments which can later be used as an evaluation tool of blended learning execution at vocational schools in Bali in general and tourism vocational schools at Regency of Gianyar in particular. Specifically, the problem formulation of this research is how is the content validity of the Countenance-Tri Kaya Parisudha model evaluation instruments used to measure the effectiveness of blended learning execution at tourism vocational schools in Regency of Gianyar?

This research was based on the results of several previous studies. The research that was conducted by Ghazali et al. in 2017 [3] demonstrated the used of Lawshe’s CVR formula to determine the content validity of measurement instrument for implementing Massive Open Online Course (MOOC)-based learning. The research by Ghazali et al. had similarities with this research in terms of the use of Lawshe’s CVR formula to determine the content validity of the measurement instruments for implementing information technology-based learning. The research that also showed the use of Lawshe’s CVR formula in determining content validity of instrument are the research that was conducted by Yudiana et al. in 2017 [4], the research that was conducted by Ikhsanudin and Subali in 2018 [5], and the research that was conducted by Aziz, Yusof, and Mokhtar in 2019 [6].

2. Method
This research was an instrument development research, which focused on determining the content validity of instruments. The steps to test the instruments content validity in this study consist of several stages including: 1) panellist trials of instrument items, 2) tabulating data from panellist trials, 3) performing validity calculations using Lawshe’s CVR formula, 4) interpretation of the calculation results by using the instrument validity categorization table reference. Lawshe’s CVR formula can be shown in equation (1) [7], while the categorization of instrument validation can be seen in Table 1 [8].

\[
CVR = \frac{N_c \times (N/2)}{N/2}
\]

*Note:
\(CVR\) = Content Validity Ratio
\(N_c\) = a number of experts who declare an item of importance
\(N\) = the total number of experts

| Validation Category | Validity Score Range |
|---------------------|----------------------|
| Very high validity  | \(r_{xy} \leq 1.00\) and \(r_{xy} > 0.80\) |
| High validity       | \(r_{xy} \leq 0.80\) and \(r_{xy} > 0.60\) |
3. Results and Discussion

Based on the stages of instrument development that focus on determining the content validity of instrument, there were a number of things that were presented as a result of this research which need further discussion. Those things are explained as follows.

3.1. Panellist Trial Results against Instrument Grains

The number of items of Countenance-Tri Kaya Parisudha model evaluation instruments were 30 items. There were 15 panellists which were involved to test the instrument item. The results of panellist trials on instrument items can be seen in Table 2.

Table 2. Test Results of Instrument Items by Panelists

| Items | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 1     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 2     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 3     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 4     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 5     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 6     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 7     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 8     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 9     | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 10    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 11    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 12    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 13    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 14    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 15    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 16    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 17    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 18    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 19    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 20    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 21    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 22    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 23    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 24    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 25    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 26    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 27    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 28    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 29    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |
| 30    | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓  | ✓  | ✓  | ✓  | ✓  | ✓  |

Notes:
✓: Important, -: Not Important
3.2. Tabulation of Panellist Trial Results on Instrument Items

Based on the data shown in Table 2, the next step was data tabulation for finding out the number of panellists who provide “important” and “not important” assessments so that it would later be easier to calculate the validity of the contents of each instrument item. The tabulation data of the results of the panellist trial on the item of Countenance-Tri Kaya Parisudha model evaluation instruments can be seen in Table 3.

Table 3. Tabulation Data of Panelist Trial Results.

| Items | Important | Not Important |
|-------|-----------|---------------|
| 1     | 13        | 2             |
| 2     | 12        | 3             |
| 3     | 14        | 1             |
| 4     | 11        | 4             |
| 5     | 13        | 2             |
| 6     | 12        | 3             |
| 7     | 11        | 4             |
| 8     | 11        | 4             |
| 9     | 12        | 3             |
| 10    | 12        | 3             |
| 11    | 11        | 4             |
| 12    | 12        | 3             |
| 13    | 12        | 3             |
| 14    | 12        | 3             |
| 15    | 13        | 2             |
| 16    | 12        | 3             |
| 17    | 12        | 3             |
| 18    | 13        | 2             |
| 19    | 11        | 4             |
| 20    | 12        | 3             |
| 21    | 12        | 3             |
| 22    | 13        | 2             |
| 23    | 13        | 2             |
| 24    | 13        | 2             |
| 25    | 12        | 3             |
| 26    | 13        | 2             |
| 27    | 13        | 2             |
| 28    | 13        | 2             |
| 29    | 13        | 2             |
| 30    | 14        | 1             |

3.3. Calculation Results from Content Validity of Instrument

Referring to the data that had been shown in Table 3, the instrument content validity could be calculated by using Lawshe’s CVR Formula. The calculating results from contents validity of Countenance-Tri Kaya Parisudha model evaluation instruments can be seen in Table 4.

Table 4. The Calculating Results from Contents Validity of Instrument.

| Items | \( N_e \) | \( N \) | \( N/2 \) | \( N_e - (N/2) \) | CVR  |
|-------|----------|--------|---------|------------------|------|
| 1     | 13       | 15     | 7.5     | 5.5              | 0.733|
| 2     | 12       | 15     | 7.5     | 4.5              | 0.600|
| 3     | 14       | 15     | 7.5     | 6.5              | 0.867|
| 4     | 11       | 15     | 7.5     | 3.5              | 0.467|
| 5     | 13       | 15     | 7.5     | 5.5              | 0.733|
Based on the CVR values shown in Table 4 which are compared to the instrument validity categorization shown in Table 1, in general, the items of Countenance-Tri Kaya Parisudha model evaluation instruments had been classified as good validation because the CVR value was in the range of $0.60 < r_{xy} < 0.80$. However, there were also some items that were still classified as medium validity because the CVR value was in the range of $0.40 < r_{xy} < 0.60$. The items that were classified as the medium validity included the items of 4, 7, 8, 11 and 19.

Although in general the results of the study had been able to show the categorization of instrument validity appropriately by using Lawshe’s CVR Formula, problems were still encountered in this study. The problem was that the content validity value had not been shown for the entire evaluation instrument and it was still limited to the content validity of each instrument item.

4. Conclusions
The contents validity of Countenance-Tri Kaya Parisudha model evaluation instruments had been categorized as good validation on 15 item instruments and categorized as medium validity on five instrument items, so in general, it was appropriate to be used as a tool to evaluate the effectiveness of blended learning implementation at tourism vocational schools in Regency of Gianyar. Future work that can be done to overcome obstacles in this study is to use the Gregory formula to determine the content validity of the overall evaluation instruments.

Acknowledgments
The researchers highly thank to the Rector of Universitas Pendidikan Ganesha and Head of the Research and Community Service Institute of Universitas Pendidikan Ganesha, which had supported the research by funding this research as proofed by the contract of research grant number 364/UN48.16/LT/2019.
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