



Evaluating the face and content validity of a Teaching and Learning Guiding Principles Instrument (TLGPI): A perspective study of Malaysian teacher educators

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Abstract

Teaching and Learning Guiding Principles (TLGP) describes an organization's beliefs and philosophy pertaining to quality assurance and performance improvement which guides the 'what', 'why' and 'how' of its activities. It is also a statement on the scholarship of teaching and learning and a reference guide to good practice specifically for teacher education institutions. The purpose of this study was to evaluate the face and content validity of a Teaching and Learning Guiding Principles Instrument (TLGPI). An expert panel of nine academicians in the field of teacher education reviewed and rated the TLGPI for the relevance and representativeness of each item based on a dichotomous rating of favourable or unfavourable. Their ratings were used to seek an agreement between the two or more raters in Cohen's Kappa Index (CKI) and also to calculate the Content Validity Index (CVI) values of each final item. The percentage inter-rater agreement yielded at 70% of agreement in CKI. Items with CVI greater than 0.78 were included in the final instrument. The final instrument contained 67 items of 5-point Likert scale multiple choice options, categorised under six thematic domains namely (1) intellectual excitement; (2) quality learning spaces; (3) constructive alignment; (4) international and cultural diversity; (5) climate of inquiry and critical reflection; and finally (6) nurture good values, attitude and behaviour. The finding supports the face and content validity of this 67-item questionnaire, hence could be further researched on construct validity.

Keywords: content validity, face validity, instrument, teacher education, teacher educators, teaching and learning guiding principles

Introduction

Teaching and learning guiding principles

Guiding principle is defined as an idea that influences an organization or someone when making a decision or considering a matter (Cambridge Dictionary Online, 2014). The Business Dictionary (2015) defines guiding principles are any principles or precepts that guide an organization throughout its life in all circumstances, irrespective of changes in its goals, strategies, type of work, or the top management. In Black's Law Dictionary also mentioned that guiding principles are any ideas that give an organization guidance in circumstances even if goals change and work changes.

Teaching and Learning Guiding Principles (TLGP) describes the organization's beliefs and philosophy pertaining to quality assurance and performance improvement, which guides what the organization does, reasons for doing it and how to achieve it. It is also a statement on the scholarship of teaching and learning and a reference guide to good practice specifically for teacher education institutions (Tajudin et al., 2014). Therefore, the guiding principles for teaching and learning is the essential idea attending

teaching and learning in the direction of teacher education programme irrespective of changes in curriculum and assessment clinical internship.

These principles represent the shared view within the universities of the processes and conditions that contribute to first-class higher education. The principles also represent a blueprint for achieving immediate priorities and for assuring premium quality learning and teaching experiences at the universities in the long term. In addition, the principles are informed by a strong evidence base and internationally recognised standards of learning and teaching in higher education.

Six themes of TLGP were elected in this paper provide the structure and methodology of institutional teaching and learning quality which are interrelated and interdependent. Essentially, these principles are based on the National Philosophy of Education, the Philosophy of Teacher Education as well as the National Education Transformation Plan (Adnan et al., 2015).

Instrument validation

Reliability and validity are important aspects of a quantitative research inquiry. Reliability and validity of the instrument is a vital analysis to consider as a good instrument (Popham, 1990; Kaplan & Saccuzzo, 2005; McIntire & Miller, 2007). Most teaching evaluation questionnaires have not presented sufficient evidence of validity. If an instrument provides a measure of what it actually measures, validity is established.

As teaching evaluation becomes more essential in higher educational institutions in assessing teaching effectiveness, the extent of the reliability and validity of Teaching and Learning Guiding Principles Instrument (TLGPI) has important implications to the various stakeholders of an institution or university. Thus there is a need to have a valid, reliable and comparable performance data for the teaching quality improvement (Wilson et al., 1997). Therefore, this study is aimed to examine the validity and reliability of the TLGPI administered in the Malaysian teacher education programme institutions. In addition, this study also aims to explore a further statistical analysis in validating the TLGPI.

Background of the study

The instrument employed by the study was used by Niche Research Grant Scheme (NRGS) project of Teaching and Learning (University Education Research Laboratory, 2014) to assess the importance of Teaching and Learning Guiding Principles (TLGP) for Malaysian Teacher Education Programmes practitioner tendency to adopt their views. The questionnaire items to explore an importance approach in the classroom atmosphere that proposed a new standard of student-centered curriculum with the best of educational deliverance for students.

The strength of a research study design is strongly dependent on how precisely the identified variables are measured; this is known as validity (Kelly, 1999). Validity denotes the extent to which specific items on a tool accurately assess the concept being measured in the research study. Validity ensures that the questions being asked allow valid inferences to be made. The four types of validity in educational research are (1) face validity; (2) content validity; (3) construct validity; and (4) criterion-related validity (Kaplan & Bush, 1976; Oluwatayo, 2012) as shown in Figure 1. This study addressed face and content validity. We sought to ensure that the items in our questionnaire addressed each thematic domain that will be explored.



Figure 1. *Types of validity in educational research*

Face validity refers to researchers' subjective assessments of the presentation and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear (Oluwatayo, 2012). Content validity refers to whether the content of the questions or items measured in the instrument are representative and adequate when attempting to measure phenomena (Waltz, Strickland & Lenz, 1991; Sangoseni et al., 2013). It is arguable that in some testing, some questions in the questionnaires are not related to the intended subject of testing. Brennan & Hays (1992) recommended to report both the proportion agreement, as an indication of data variability for a better understanding of inter-rater agreement and to increase confidence in the content validity of new instruments. The content validity would become a trivial issue if the questionnaires contain sufficient questions to address the construct to be tested or measured (Fox 1994; Polit & Beck, 2004).

The important of rigorous process to ascertain face and content validity of an instrument has been emphasized in several studies as follows (Haynes et al., 1995):

- Content validity is essential to predict the efficacy of the tool in order to minimize or eliminate measurement errors that may arise when multiple measures are required.
- Content validity allows the study tool to be effectively captured all the aspects of the construct and variable that may be outside the thematic domain by highlighting the degree of covariance.
- Content validity is an important component of construct validity because it provides evidence about the degree to which the elements of the assessment instrument are relevant to and representative of the targeted construct.

The adoption of thorough content validation approach in this study allowed to demonstrating this instrument is comprehensive enough with regards to conciseness and completeness required to establish the tool's credibility at the preliminary stages (Lynn, 1986).

The expert panel member must possess extensive knowledge and demonstrate a good grasp of the subject being explored. The adequacy of the final content of the test instrument would be based on the collective opinion of these experts based on their professional assurance (Sangoseni et al., 2013). The instrument is evaluated to determine the extent to which each item appear to be a valid measure of the attribute it is meant to measure. This study aimed to appraise the face and content validity of a TLGPI.

Methodology

Description and development of the instrument

The type of validity used in this study is the face and content validity. Most of the initial 67 items for this instrument were adopted from the previous study (University Education Research Laboratory, 2014). The six main themes were (1) intellectual excitement; (2) quality learning spaces; (3) constructive alignment; (4) international and cultural diversity; (5) climate of inquiry and critical reflection; and finally (6) nurture good values, attitude and behaviour were included.

Scale

For face validity, the dichotomous scale was used with categorical option of “Yes” and “No” which indicate a favourable and unfavourable item respectively. Where favourable item means that the item was objectively structured and could be positively classified under the thematic category. The criteria of face validity assessment for this study are based on Oluwatayo (2012) namely:

- Appropriateness of grammar.
- The clarity and unambiguity of items.
- The correct spelling of words.
- The correct structuring the sentences.
- Appropriateness of font size.
- The structure of the instrument in terms of construction and well- thought out format.

In addition, the panel experts were also requested to gives a qualitative comment and additional suggestion to improve the instrument (Wynd & Schaefer, 2002).

For content validity, the dichotomous scale was used with categorical option of “Agree” and “Disagree” which indicate a favourable or unfavourable item respectively. The favourable item means that the item fairly and comprehensive coverage of the domain of items that it purports to cover (Oluwatayo, 2012). According to Sangoseni et al. (2013), a favourable rating meant that the item was objectively structured and could be positively classified under the thematic category indicated any perceived inconsistency or potential difficulties regarding the clarity and succinctness of the individual items. In addition, the panel experts were also requested to identify deficient areas and provide recommendations or suggestions on ways to improve the sentence structure to ensure clarity and conciseness based on any difficulties encountered in deciphering the instructions for filling out the instrument (Lynn, 1986).

Administration procedure for face and content validity

Based on suggestion by experts in the field of content validation (Lynn, 1986), nine experts were identified and invited to review the instrument for face and content validity as shown in Table 1. Specific guidelines, used for selection and inclusion of the experts included:

- Experienced academicians (≥ 10 years)
- Familiarity with the thematic domains/concept in evidenced-based practice (teaches or publishes peer-reviewed papers in the field of teacher education practice)

Table 1. Expertise and years of experience of the panels

Panel	Expertise	Experience (years)
1	Statistical Data Analysis, Implementation and Evaluation Program	33
2	Basic Education, Education Leadership, Education Management, Language in Education	22
3	Science Education	28
4	Engineering Education	23
5	Mathematics Education, Curriculum Development	35
6	Business Education	15
7	Business Management, Statistic and Research	15
8	Mathematics Education	32
9	Physics Education, Teacher Education, Physics Problem Solving	13

The instruments were self-distributed with an introductory cover letter to each panelist/reviewer. The completed instruments were returned to the researcher via the same medium or mailed. The panelists were

provided with detailed instruction. The experts were also requested to identify deficient areas and provide recommendations or suggestions on ways to improve the sentence structure to ensure clarity and conciseness based on any difficulties encountered in deciphering the instructions for filling out the instrument.

The response of the panel of experts were indicated by using “Yes” and “No” scale and analysed used Cohen’s Kappa Index (CKI) in determining the face validity of the instrument introduced by Cohen (2013). According to him "the procedure which suggests itself is that of having two (or more) judges independently categorize a sample of units and determine the degree, significance, and sampling stability of their agreement". Thus, the analysis of CKI is to seek the degree of agreement with the theme or unit of analysis constructs studied and validated by two or more experts that agree for similar or the same rates (Atkins, 1996; Oluwatayo, 2012). According to Bowling (2009), the simplest level of calculating inter-rater agreement is using percentage.

For the content validity of the instrument were established based on the magnitude of the Content Validity Index (CVI) values as it related to degree of agreement among the panelists (Lynn, 1986). The cumulative average of the level of agreement among the experts is assigned a numerical value and the proportion of items on an instrument that achieved a relevant rating by the content experts (Polit & Beck, 2006). In a panel consisting of nine experts, a CVI index of greater than 80% or 0.80 is a high value which denotes a high level of agreement. Likewise, a low CVI of less than 80% means the items on the instrument does not adequately address the thematic domains being explored because it raises the issue of objectivity and appropriateness (Sangoseni et al., 2013). Such an instrument must be significantly revised before it can proceed onto the next stage in determining the validity and reliability of the instrument.

Data analysis

A value of Kappa equal to +1 implies perfect agreement between two or more raters, while that of -1 implies perfect disagreement used as data analysis of face validity (Suen & Ary, 1989; Wynd & Schaefer, 2003). If Kappa assumes the value 0, then this implies that there is no relationship between the ratings of the two raters, and any agreement or disagreement is due to chance alone (Brennan & Hays, 1992).

The content validity of the instrument were established based on the magnitude of the content validity index (CVI) values as it related to degree of agreement among the panelists (Lynn, 1986). Based on recommendations from previous studies, the minimum level of agreement between nine panellists at ≥ 0.78 at 0.05 level of significance was set (Lawshe, 1975). This meant that five of the seven panels for content validity must agree in order for the items to be part of the final instrument. Item CVI score of less than 0.78 means the item was considered either not relevant to the thematic domain, or that the item required verbiage revision to remove ambiguity and ensure an accurate response.

A dichotomous rating of favourable (content valid) or unfavourable (content invalid) was used for the quantification of content validity (Wynd & Schaefer, 2003). Favourable (F+) denoted items that were deemed either as relevant, needed minor rewording for relevance, succinct and concise as it is. These items were assigned a score of +1.0. Unfavourable (F-) denoted items that were deemed either not relevant or unable to determine their relevance based on current sentence structure. These items were given a score of +0.0 (Sangoseni et al., 2013).

A favourable rating by seven or more members of the expert panel yielded a CVI of greater than 78% or 0.78 denoted a high level agreement is a high value. This meant that if significant majority of the panel’s opinions agree, items were considered relevant to concepts being investigated. Responses were imputed to a spreadsheet and checked for missing values.

Results

All members of the panel were academicians who have worked in the field of education as educators/authors/researches (nine panelists). The number of years in practice ranged from 13 to 35 years, mean years of experience for all the panelists were 24 years, $SD \pm 6.4$ ($n=9$).

Cohen's Kappa index for face validity

The instrument, after panel review was consolidated and analysed. The percentage inter-rater agreement yielded at 70% [Kappa value = 0.70, $p = .000 < .005$] is a fair to good category (Fleiss et al., 2003). Gelfand and Hartmann (1975) recommended a minimally acceptable Kappa of 0.60 for inter-rater agreement. A Kappa value of 0.70 is generally considered to be satisfactory (Explorable Psychology Experiments, 2012). In addition, some amendments of the instrument also done based on feedback received. Comments and suggestions by the panels are shown in Table 2.

Table 2. Panel comments for face validity

Panel	Comment
1, 2, 5, 6, 7 and 8	Format acceptable.
1	Assign a code in demographic section.
4	Enlarge the font size.
6	Reduce the number of item.
5	Split the double-barrel questions.
6	Choose the suitable items only.
7	Need to do a correction in sentence structure.
7	Improve the language use for respondent.
7 and 8	Improve the sentence structure to be more consistent.

Content validity index for content validity

The instrument, after panel review was consolidated and analysed, contained 67 items. All the 67 items agreed by panellists on the relevance of the items to their thematic domains as shown in Table 3. In addition, sentence structure of items 12, 14, 15, 16, 17, 18, 19, 23, 34, 36, 44, 51, 55, 57, 59 and 64 were also restructured based on feedback received.

Table 3. Content Validity Indices (CVI)

Item No	Item	Number in Agreement	CVI	Item No	Item	Number in Agreement	CVI
1	having students complete a problem solving game in class.	7	0.78	36	I ensure that students from different cultural backgrounds are represented when engaging in group work.	9	1.00
2	assigning small group discussions.	9	1.00	37	I use examples relevant to different cultures when explaining a topic in class.	9	1.00
3	having students do small group presentations through plays or panel discussions.	9	1.00	38	I give tasks or assignments that encourage my students to draw from their own experiences.	9	1.00
4	encouraging my students to debate on issues related to the topics covered in the course.	9	1.00	39	I encourage my students to share their views and ideas from their own cultural perspectives.	9	1.00

Item No	Item	Number in Agreement	CVI	Item No	Item	Number in Agreement	CVI
5	using role-plays and simulations .	9	1.00	40	I use books and materials produced by writers from different countries in my course.	9	1.00
6	having students present their work in class.	9	1.00	41	I use resources available in the internet to connect my students to students from other countries.	9	1.00
7	having students to critically evaluate the work of their peers.	9	1.00	42	I encourage students to participate in exchange student programmes.	8	0.89
8	encouraging students to challenge ideas and those of their classmates or other people.	9	1.00	43	I ensure that students from different cultural backgrounds are represented when engaging in group work.	9	1.00
9	assigning small research projects.	9	1.00	44	I use examples relevant to different cultures when explaining a topic in class.	9	1.00
10	using real-life situations as examples.	9	1.00	45	I give tasks or assignments that encourage my students to draw from their own experiences.	9	1.00
11	having students analyse and discuss real-life situations related to the topics covered in the course.	9	1.00	46	I assign small research projects for my course.	8	0.88
12	having students compare theories relevant to the course.	9	1.00	47	I include a question that requires my students to reflect on what they have done or learned and to suggest ways for improvement in my assignments.	9	1.00
13	having students write critical reviews about a reading text.	9	1.00	48	I prepare experiments or investigative assignments for relevant topics.	9	1.00
14	asking questions that require higher order thinking (e.g. applying, analysing, synthesising, creating, evaluating, reasoning).	9	1.00	49	I ask my students to write a critical reflection on their own experiences.	8	0.89
15	having students involve in multidisciplinary project teams and/or inter-professional practice setting.	8	0.89	50	I plan hands-on experience for my students through the tasks and assignments for each topic.	9	1.00
16	having students engage in knowledge transfer activities in communities, professions and/or industries.	8	0.89	51	I demonstrate a willingness to revise my own views and admit error, and encourage this attitude in students.	9	1.00
17	I ensure that the books required for my courses are available in the library.	9	1.00	52	I use evidence-based teaching practices in my classroom.	9	1.00
18	I check the technological equipment before I start my lessons.	9	1.00	53	I encourage students to ask questions.	9	1.00

Item No	Item	Number in Agreement	CVI	Item No	Item	Number in Agreement	CVI
19	I use the technological equipment provided in the classroom to my students' and my own advantage.	9	1.00	54	I ask questions which are open and reflective in nature.	9	1.00
20	I ensure that my lessons are conducted in spacious and comfortable rooms.	9	1.00	55	I provide opportunities for students to critically evaluate and contribute to the scholarly discourse on practice.	8	0.89
21	I upload the course outline or instructional plan online before the course begins.	9	1.00	56	I conduct research in teaching and learning to inform my own practices.	9	1.00
22	I provide the necessary references for the topics covered in my course.	9	1.00	57	I demonstrate a commitment to improving my practice through critical reflection and professional development.	9	1.00
23	I tell my students where to get the books and course materials needed for the course.	8/9	0.89	58	I get students to cooperate with each other through pair work or small group work.	8	0.89
24	I encourage students to use the technological equipment provided for learning purposes during my lessons.	9	1.00	59	I model good working habits when conducting my lessons.	8	0.89
25	I use web based tools to manage my course.	9	1.00	60	I employ the procedure for dealing with absenteeism prescribed by my institution.	8	0.89
26	I assign tasks that include the use of web based tools.	9	1.00	61	I make clear to my students the level of quality that I value in their work.	9	1.00
27	I make use of web based resources as part of the materials for independent student learning .	9	1.00	62	I show genuine enthusiasm when teaching the topics in my course.	9	1.00
28	I assist students in developing the skills to use learning resources to their greatest advantage.	9	1.00	63	I use positive language to encourage my students to improve.	9	1.00
29	I relate new content to previously-learned content.	7	0.78	64	My students and I set a procedure for managing bad behaviour.	9	1.00
30	I use the learning outcomes that I have set for my students to guide me in planning the teaching content and activities for each lesson.	9	0.89	65	I plan and carry out charity and volunteering activities for the community with my students.	8	0.89
31	I ensure that the content and activities for each lesson are appropriate to the topic of the lesson.	9	1.00	66	I remind my students not to plagiarise.	9	1.00
32	I provide appropriate tasks and activities to assess my students' learning in every lesson.	9	1.00	67	I encourage my students to fall back on their beliefs when they feel discouraged in their studies.	9	1.00

Item No	Item	Number in Agreement	CVI	Item No	Item	Number in Agreement	CVI
33	I use a variety of assessment materials in my lessons.	9	1.00		Total		65.1
34	I ask my students to relate the theories learned to real-life situations.	9	1.00		<u>Total favorable = 100</u>		
35	I assign tasks which require my students to apply what they have learned to real-life situations.	9	1.00		<u>Propotion favorable = (65.1 / 67) 0.971</u>		

Discussion

This study established the face and content validity of TLGPI designed to assess the important of Teaching and Learning Guiding Principles (TLGP) for Malaysian Teacher Education Programmes in the point of view of teacher educators. The Cohen's Kappa Index delineates chance agreement. However, Content Validity Index used in this study does not indicate the level of agreement; rather it measures the proportion of agreement among a group of experts. The characteristic makes the CVI very robust in that eliminates ambivalence and allows straightforward interpretation, which helps in constructing more reliable and valid data concerning content validity. The items on the final instrument strongly represented the thematic domains as shown in Table 4.

Table 4. Set of items in Teaching and Learning Guiding Principles Instruments (TLGPI)

Theme	Name of construct	Amount of item	Number of item
1	Intellectual excitement (IE)	16 items	Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16
2	Quality learning spaces, resources and technologies (QL)	12 items	Nos. 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28
3	Constructive alignment between an evolving knowledge base, students learning outcomes, learning experiences, actual practice and assessment (CA)	7 items	Nos. 29, 30, 31, 32, 33, 34 and 35
4	International and culturally diverse learning environment (IC)	10 items	Nos. 36, 37, 38, 39, 40, 41, 42, 43, 44 and 45
5	Climate of inquiry and critical reflection (CI)	12 items	Nos. 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56 and 57
6	Nurture good values, attitude and behaviours (NV)	10 items	Nos. 58, 59, 60, 61, 62, 63, 64, 65, 66 and 67
Total	6	67 items	67 items

All the items retained from the original version were deemed relevant to the thematic domains based on the high CVI. All the comments and corrections suggested by the panels been considered for revision. The future study will evaluate the construct validity of TLGPI. Construct validity is considered as the

most important aspect of validity studies as items measured must be related to variables, but if they are not related, it will lead to potential biases in the construct (Marsh, 1984).

Conclusion

This new instrument, in its entirety, has been found to demonstrate an adequate and acceptable measurement performance needed for a future descriptive study to assess the importance of Teaching and Learning Guiding Principles (TLGP) for Malaysian Teacher Education Programmes in the point of view of teacher educators. The TLGP appeared to have adequate face and content validity and can be further arranged for the next study.

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