

ASSESSING CONTENT VALIDITY OF PRESCHOOL TEACHER'S CREATIVE TEACHING INSTRUMENT FOR CHILDREN'S LANGUAGE ARTS: A STUDY BASED ON CFTI (CREATIVITY FOSTERING TEACHER INDEX) USING THE CONTENT VALIDITY RATIO (CVR)

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Abstract

Creative teaching is one of the important aspects in the process of teaching and learning language arts in preschool. Accordingly, this study aims to test the aspect of content validity of preschool teachers' creative teaching instrument for children's language arts in Malaysia using the Content Validity Ratio (CVR) method. The goal is to ensure that the measurement instrument is suitable for use in the context of children's language arts. The study was conducted through written and online questionnaire surveys. Fifteen experts consisting of professional experts and field experts were selected through a purposive sampling technique. These experts possess expertise in early childhood education and children's language arts. The validity process of the instrument involved 56 items with three main constructs. Based on the quantitative findings of the study, it was found that the instrument has good content validity with 50 items reaching the minimum level of CVR value ($N=15$, $CVR_{critical} = 0.506$). Six items that do not reach the minimum CVR value improved. All 56 remaining items were refined as the final instrument. The findings of the study also demonstrated that this instrument is relevant and has the potential to be an effective tool for measuring creative teaching among preschool teachers. It is recommended that a pilot study be conducted and the data analyzed using statistical analysis such as the Rasch Model, to provide a more in-depth analysis of the items.

Keywords: Instrument, Creative teaching of preschool teachers, Content Validity Ratio, Expert

INTRODUCTION

Preschool education is an important early experience for students in the world of education. An effective, meaningful, and enjoyable schooling and learning experience at preschool level can provide students with the skills, self-confidence, and positive attitude required for further learning. The National Preschool Curriculum Standard is the main tool that guides teachers in their efforts to realize the nation's noble desire to provide world-class preschool education to current and future generations. The details in this document are expected to help teachers plan and implement teaching and learning effectively (National Preschool Curriculum Standard, 2017).

Preschool teachers are encouraged to be creative when choosing, arranging, processing, and diversifying activities according to their students' capabilities and guided by the teaching and learning standards of National Preschool Curriculum. A teacher's creative teaching practice is considered good and effective if the teacher is able to master various teaching methods, provide teaching aids, and deepen the content to be taught. In other words, creative teaching involves a teacher's ability to teach with the teaching style that implements certain teaching methods or techniques that are individual in nature.

Creativity in teaching practices is more directed to the efforts made by the teacher so that the learning process is interesting and the desired learning outcomes can be achieved. Such teaching practices depend on the teachers' creativity and their ability to deliver their lessons. For example, there are teachers who like using humor to attract students' attention, others who like to give prizes to students who answer questions correctly, use clear and simple language, conduct surprises, and adopt various interesting ways to teach so that students can focus and progress in learning, as well as achieve the desired learning outcomes (Muhamad Zaki Samsudin et al., 2013).

Creative teaching can be understood as a combination of existing knowledge to produce new, useful, and meaningful knowledge. It is a method of teaching that is flexible, open, and can be continuously improved. This article will focus on the development of creative teaching instruments for preschool teachers based on the Teacher's Creativity Fostering Index (CFTI) using the Content Validity Ratio (CVR). The agreement of experts in the construction of each item of this instrument will serve as a guide, reference, and support material to strengthen the quality of teaching in a more creative direction, thus helping preschool teachers to realize the potential of their creativity and practice it in their teaching.

LITERATURE REVIEW

The development of Preschool Teacher's Creative Teaching Instrument for Children's Language Arts based on the Teacher's Creativity Fostering Index (CFTI) uses CVR as the approach to measure content validation. Measurement of content validity in the instrument is one crucial facet in instrument development (Ramli, Talib, Manaf, & Hassan, 2018). Content validity ensures that the instrument is measuring what it wants to measure. Content validity is an important topic for researchers which requires high measurement quality (Polit, Beck, & Owen, 2007) and type of validity which must first be implemented when building a new instrument (Ebel, 1967). This validity gives confidence to researchers and readers about the instrument (Yaghmaie, 2003). While content validity is subjective, it can enhance objectivity in research (Rubio et al., 2003).

Validity content functions to analyze the extent of the dimensions and elements of a concept successfully defined (Sekaran & Bougie, 2011). Content validity refers to the extent to which a test covers the content to be assessed (Ariffin, 2008). Typically, it is the initial step in establishing the validity of a tool measure (Marican, 2009). It works to confirm the items on the test representing each construct to be measured (Miller, Lovler, & McIntire, 2013). Past researchers have explained content validity as the extent to which an instrument represents the content that should be measured (Bush, 1985), representation of instrument content (Kerlinger, 1986), and content scales (Yaghmaie, 2003).

Content validity is obtained from three sources which are existing literature, representatives from the relevant population, and a panel of experts (Burns & Grove, 1993). However, content validity in the evaluation phase (judgment) is meant to be based on quantitative evidence (Wilson, 1989). Evaluation phase means that an assessment from a professional is needed to ensure that the scale is designed to measure true traits (Nunnally, 1978). It also refers to the evaluation for each item so that the item is suitable with the instrument's development purpose. During the content validation process, two elements that are focused on are the item's representativeness and its suitability in measuring what the researcher intends to measure (Kamaluddin & Nasir, 2017). This study gives emphasis to one of the important steps in instrument development, which is assessing content validity using Content Validity Ratio (CVR).

PROBLEM STATEMENTS

Studies by Davies, Jindal-Snape, Digby, Howe, Collier, and Hay (2014) found that teachers play an important role in the development of a creative learning environment to foster the creativity of students. Preschool teachers can do this by building positive relationships, modelling creative behavior, planning long-term curriculum, creating balance between freedom and structure, allowing the use of flexible space, understanding the needs of students and their learning styles, creating opportunities for collaboration and peer assessment, and using resources effectively. Other than this, it is also very

important for teachers to know about the role of each pillar in National Preschool Curriculum Standard so that the teaching process can carry on smoothly.

One of the most important pillars in this curriculum is the Communication Pillar. The Communication Pillar emphasizes on oral and non-oral language skills during interaction. This Pillar contains language knowledge discipline that is compulsory to be learned by all preschoolers. Among the key objectives of this pillar is to give students the chance to use language to communicate effectively. Therefore, teachers are encouraged to use creativity to choose, organise, modify, and diversify activities guided by the Learning Standard according to students' suitability as preparation to continue their education later at primary school level (National Preschool Curriculum Standard, 2017).

It is suggested for teachers to conduct teaching and learning of language skills through various activities and fun language games during learning (National Preschool Curriculum Standard, 2017). However, the National Preschool Curriculum Standard does not detail out how the process of teaching and learning through such play activities during class can enhance the children's language skills (Aliza & Zamri, 2015). Therefore, there is a need for a valid and trusted instrument to see and know about the aspect of teachers' creative teaching that is subjective to be measured, but not impossible to envision.

This issue is very important to study as it is closely related with the development of preschool children. In their study, Abdullah et al. (2021) found that there are a handful of teachers who prefer to adopt a teaching approach which is centered on himself or herself. Teachers' initiatives to come up with more creative lessons is aligned with the government policy to develop creativity and innovation (Ab. Jawas & Zulkifli, 2022). This is in line with the findings of a study conducted by Mokhlis (2019), which is that in order to foster creativity, preschool teachers need to more closely approach and understand the differing problems and needs of children. In this context, the key action that a teacher should take is to ensure that the planned PdPc activities are suited to the children's interests and level of ability, taking into account individual differences, giving suitable incentives and not making excessive comparisons.

The guide and assessment of creative teaching in this study is based on the creative assessment criteria proposed by Soh (2015), a lecturer from Singapore who introduced the Creativity Fostering Teacher Index (CFTI) instrument. This instrument has nine elements, which are to encourage students to learn freely, collaborate with other students in their learning, often motivating students, hold back judgement towards a creative idea, encourage flexible thinking, encourage students to conduct self-assessment towards ideas produced, take into account all suggestions and questions put forward by students, offer students the chance to do assignments, and help them in handling disappointment when they fail upon trying something new.

Based on the discussion put forth, each element has its own strengths in being an important aspect of a teacher's creative teaching. The use of domains in the construction of this instrument is a preliminary step in ensuring the viability of teaching that fosters creativity, and in contributing to the efforts towards producing creative and innovative new generations, particularly in children's language arts. Although this CFTI is standardized and used by many countries around the world, its suitability in the context of preschool teachers' teaching, especially in the aspect of language arts, is still open for discussion.

Although largely applicable in the context of creative teaching, some aspects of CFTI are too general and less suitable for measuring preschool teachers' creative teaching of children's language arts. The need to re-evaluate something related to language arts (the appropriateness of the index) should be considered so that in parallel with the teaching and learning of children's language arts, it can be used among preschool teachers. Therefore, in order to fill the void, the researcher has modified the CFTI instrument, refined it with elements of children's language arts, and made it an instrument in a new version which is the Development of a CFTI-Based Teacher's Creative Teaching Instrument (Creativity Fostering Teacher Index) Regarding Children's Language Arts.

OBJECTIVE

The objective of the study is to determine the expert validity of preschool teachers' creative teaching instrument based on the Creativity Fostering Teacher Index (CFTI) regarding children's language arts. Specifically, the purpose of the study is as follows:

1. To test the aspect of content validity of preschool teachers' creative teaching instruments for children's language arts in Malaysia using the CVR method.
2. To ensure that the measurement instrument is suitable for use in the context of children's language arts.

METHODOLOGY

The study uses a quantitative approach through a written questionnaire in the form of an online survey. The study population consists of two types of experts, namely professional experts (professional or content experts) and field experts (lay experts). They are also referred to as the Content Evaluation Panel (Lawshe, 1975). The sampling technique used is one of purposive sampling, known as judgment sampling. This type of sampling is explained through a sample selected based on their expertise of the subject being studied. This sampling is used to obtain the necessary information from certain knowledgeable individuals (Sekaran & Bougie, 2011). Therefore, evaluation sampling is the most suitable to be used in this study because a panel of experts was selected to provide certain justifications and to obtain confirmation about the contents of items related to creative teaching of children's language arts.

Experts are persons who possess the expertise and skills in a particular field. Their function is to properly review each of the proposed items before making any decision whether to retain or remove each of them (Abu Bakar & Hassan, 2009). There are two types of experts who are normally consulted in content validation: professional experts and lay experts (Rubio et al., 2003; Zamanzadeh et al., 2015). Professional experts are experts who have published or worked in the field while lay experts are people who are skilled in the topic studied (Rubio et al., 2003). Among the selection criteria for the experts are having background in the research area, possessing related work experience, being diverse in giving opinion, and having up-to-date knowledge regarding the topic (Powell, 2003). Rubio et al. (2003) also suggested considering the number of recent publications as one of the criteria for expert selection.

In this research, one professional expert from a university in Malaysia, one professional experts from a Institutes of Teacher Education and one professional expert from a Vocational College were selected based on the aforementioned criteria. Apart from that, nine preschool teachers from preschools in Malaysia and three language arts coach were also selected as the lay experts for this content validation process. The lay group will help to address issues such as phrasing and unclear terms and will recommend other salient items (Rubio et al., 2003). The selection of these lay experts was based on their expertise in preschool teaching, years of teaching experience, language arts knowledge, and in-service and language arts training that they have attended before. The selection of the panel for both professional experts and lay experts was based on purposive sampling method.

For the purpose of data collection, this study uses various approaches, namely face to face (direct approach), by post (post survey), and online (email/internet survey) according to the convenience and needs of the experts (Brinkman, 2009). At the initial stage, experts are contacted via email to explain the purpose and procedure of the study, and to get their approval to participate. Overall, 15 experts participated as the content experts in this study. This is a bigger number than Lawshe's suggested number, which is four. This study followed the suggestions of Rubio et al. (2003), which is to have at least three experts in each group of experts.

The questionnaire used has four sections, namely Sections A, B, C and D. Section A is a questionnaire regarding demographic profile. Section B is regarding the knowledge of preschool teachers regarding the aspect of language arts. Meanwhile, Section C is concerned with teaching by preschool teachers relating to the aspect of language arts, while Section D is about preschool teachers' domain for creative teaching on the aspect of language arts, has 45 items in nine domains regarding teachers'

creative teaching which have been identified and adapted from CFTI. Each of the experts will check all items by assessing the level of importance of each item based on a 3-point scale, namely 1 (very important), 2 (useful but not important) and 3 (unnecessary).

For each item, the number of raters who choose “essential” is calculated. Then, the following formula is used to calculate the CVR:

$$CVR = \frac{ne - (N/2)}{(N/2)}$$

where CVR = content validity ratio, ne = number of panelists indicating “essential”, and N = total number of panelists

CVR value ranges from -1 to +1, where a value inclining toward +1 shows the mutual agreement of the experts on the respective items. On the other hand, a negative CVR value may be obtained when less than half of the experts indicate the item as “essential” (Cohen, Swerdlik, & Sturman, 2010). Lawshe also created the accepted CVR value table as the reference to get the CVR critical value (Lawshe, 1975), which was then revised and improved by Wilson et al. (2012). Based on the table, with a total number of 15 experts, the minimum CVR critical value for each item is .506. Therefore, if the items obtain less than this value, they need to be refined or considered for deletion from the instrument.

A feedback column was made available for each item, in order to provide space for the experts to make corrections or give suggestions for improvement. At the end of the section, there is also a dedicated space for the experts to make an overall summary about the instrument and the items, whether suitable to be used or otherwise. All the experts were given two months to evaluate the 56 items in the Preschool Teacher's Creative Teaching Instrument Based On CFTI (Creativity Fostering Teacher Index) Regarding Children's Language Arts.

RESULTS AND DISCUSSION

Findings for Research Questions 1:

The research findings have been determined through psychometric testing using the CVR value fixed according to a panel of 15 experts, namely 0.506 (Lawshe, 1975). After testing has been carried out, a total of 50 items were identified to be maintained, while it was proposed for six other items which have value below 0.506 to be improved.

Table 1.1 shows a statistical summary that measures the assessment by 15 panel experts and 56 question items regarding teachers' creative teaching of language arts according to the Content Validity Ratio (CVR) technique by Lawshe (1975). **Table 1.1** below shows the value of CVR obtained by the panel experts for each item according to the construct received and refined.

Table 1.1 Comparison of CVR Value for Items by Panel of Experts (N = 15)

	Total (N=15)	Item Status		Total (N=15)	Status Item
CVRcrit	.506		CVRcrit	.506	
B1	1.000	Accepted	D18	1.000	Accepted
B2	0.866	Accepted	D19	1.000	Accepted
B3	0.866	Accepted	D20	1.000	Accepted
B4	1.000	Accepted	D21	0.866	Accepted
B5	1.000	Accepted	D22	0.866	Accepted
C1	1.000	Accepted	D23	1.000	Accepted
C2	1.000	Accepted	D24	0.866	Accepted
C3	1.000	Accepted	D25	0.466	Refine
C4	1.000	Accepted	D26	1.000	Accepted
C5	1.000	Accepted	D27	1.000	Accepted
C6	1.000	Accepted	D28	0.466	Refine
D1	1.000	Accepted	D29	1.000	Accepted
D2	1.000	Accepted	D30	1.000	Accepted
D3	1.000	Accepted	D31	1.000	Accepted
D4	1.000	Accepted	D32	0.866	Accepted
D5	1.000	Accepted	D33	0.866	Accepted
D6	1.000	Accepted	D34	0.466	Refine
D7	1.000	Accepted	D35	0.866	Accepted
D8	1.000	Accepted	D36	1.000	Accepted
D9	0.466	Refine	D37	1.000	Accepted
D10	1.000	Accepted	D38	1.000	Accepted
D11	1.000	Accepted	D39	0.466	Refine
D12	1.000	Accepted	D40	0.866	Accepted
D13	1.000	Accepted	D41	0.466	Refine
D14	0.866	Accepted	D42	1.000	Accepted
D15	1.000	Accepted	D43	1.000	Accepted
D16	1.000	Accepted	D44	1.000	Accepted
D17	0.866	Accepted	D45	1.000	Accepted

There is a total of 50 items which are above the value of 0.506, based on the assessment of content expert panel. Meanwhile, based on the assessment of the content experts, a total of six items are found to be below the value of 0.506. The overall findings show that only six items are below the critical value. **Table 1.2** shows the distribution of CVR value obtained for each item.

Table 1.2 CVR Item Distribution

CVR	Total Item	No. Item	Status Item
1.000	39	B1, B4, B5 C1, C2, C3, C4, C5, C6 D1, D2, D3, D4, D5, D6, D7, D8, D10 D11, D12, D13, D15 D16, D18, D19, D20, D23, D26, D27, D29, D30 D31, D36, D37, D38 D42, D43, D44, D45	Accepted
0.866	11	B2, B3, D14, D17, D21, D22, D24 D32, D33, D35, D40	Accepted
<0.506	6	D9, D25, D28, D34, D39, D41	Refine

Table1.3 List of items that do not fulfil CVR critical value

Item	Statement	CVR	Recommendation
D9	I encourage all students to work together when carrying out language arts activities.	0.466	To be improved
D25	I encourage students to do something different than what is instructed.	0.466	To be improved
D28	I encourage my students to think from a different angle although the idea may not seem to be a good one.	0.466	To be improved
D34	I don't mind if my students try out their own ideas and deviate from what I have shown to them.	0.466	To be improved
D39	In my class, students have a chance to know for themselves whether they are correct or wrong.	0.466	To be improved
D41	Students who feel disappointed can come and see me.	0.466	To be improved

The feedback from experts shows that the six items in **Table 1.3** with low CVR value have the tendency to be problematic. The expert panel raised two main issues which require attention. The first is regarding items D9 and D28 which are repetitive of the other measurement items. Although these items are different in terms of construct, a majority of the experts opined that all two of these items are concerned with the same thing, with only the sentence structure differentiating them.

The second feedback highlighted by the experts is regarding the items which are vague and difficult to understand. The items D25, D31, D41 are acknowledged by the experts as being fairly important, but some improvements need to be made if these items are to be maintained, so that the instrument remains to be of good quality. For item D34, a majority of the experts were of the opinion that this item is double-barreled because it touches upon two separate issues with only one response to be given. According to the experts, usage of the word "and" in the item should be avoided, especially when involving two related things. Thus, for item D34, the experts proposed for one of the words "try out their own ideas" or "deviate" to be deleted from the existing sentence, and that should be split if the item is to be maintained in the instrument.

Findings for Research Questions 2:

Is the said instrument appropriate and relevant to be used in the context of preschool teachers in Malaysia? Feedback from the experts showed that all 15 of them were generally of the view that the items for the instrument which measure creative teaching of language arts are suitable to be used in the study. The experts' consensus on the suitability of the instrument can be seen when all of them agreed that all of the domains and items in the instrument are within the targeted context of the study. A total of ten experts comprising three professional experts and seven field experts had proposed for this instrument to be administered to the next phase, which is a pilot study to obtain the instrument's reliability value. The remaining five experts suggested for the problematic items to be assessed before the pilot study is carried out. However, generally, they are still in agreement that this instrument is suitable and relevant in the context of the study that will be carried out. This finding clearly shows that the item in the instrument to measure the creative teaching of preschool teachers is suitable and relevant to be used in Malaysia.

IMPLICATION OF FINDINGS

The findings of this study lead to several implications that bring impact from a practical and methodological viewpoint. The clearest practical implication is the construction of an instrument which combines the original item from the CFTI instrument with the items on elements of creative teaching and children's language arts as constructed by the researcher. The incompatibility of CFTI with creative teaching of language arts made it necessary for modification and addition of items to be made, based on the research context suitability.

The CVR method used in this study also offers a guarantee of quality in the process of validating content, made pursuant to the variation in terms of the number of experts and their backgrounds. The variety of experts involved in this study indirectly guarantees the validity process carried out and gives confidence to others that the instrument is valid, has clarity, and reflects the measurement to be made (George et al., 2015).

The use of CVR is able to clearly show the strengths and weaknesses of items through the consensus of experts. The strength of CVR is reflected in this study when the differences between experts' consensus can be easily and clearly seen (Mohd Matore et al., 2017). The CVR method has also helped to analyse quantitative data on the experts' consensus more efficiently, in order to give strong evidence for decision-making on whether to maintain or drop items in the instrument. Problematic items can be easily identified and supported by strong evidence. Thus, this study contributes a suitable instrument to measure the fostering of teachers' creativity, to be assessed from the perspective of creative teaching.

CONCLUSION

The main objective of this study is to measure and report the content validity of an instrument. Measurement of content validity in the instrument is one crucial facet in instrument development (Ramli, Talib, Manaf, & Hassan, 2018). Content validity ensures that the instrument is measuring what it wants to measure. Content validity is an important topic for researchers which requires high measurement quality (Polit, Beck, & Owen, 2007) and type of validity which must first be implemented when building a new instrument (Ebel, 1967). This validity gives confidence to researchers and readers about the instrument (Yaghmaie, 2003). While content validity is subjective, it can enhance objectivity in research (Rubio et al., 2003).

This study is concerned with the calculation of the CVR value of the newly developed Preschool Teacher's Creative Teaching Instrument Based On CFTI (Creativity Fostering Teacher Index) Regarding Children's Language Arts instrument items. Based on the calculated CVR value from the thorough judgement of 15 experts, only six out of 56 items fall under the set critical value. It shows that Preschool Teacher's Creative Teaching Instrument Based On CFTI (Creativity Fostering Teacher Index)

Regarding Children's Language Arts has the potential to be a valid and reliable instrument to measure the creative teaching of preschool teachers. The items will be refined based on experts' advice before being included in the pilot test instrument that will involve science teachers. The results of the test will then be tested using advanced measurement model such as Rasch Model. This is to ensure the quality of the items based on information from various tests such as uni-dimensionality, item fit, item polarity, and differential item functioning.

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