

## **Assessing the Psychometric Properties of the Intercultural Competence in Teacher Education Questionnaire (ICTE-Q)**

**Mohd Ali Samsudin<sup>1</sup>, Anna Christina Abdullah<sup>2\*</sup>, Melissa Ng Lee Yen Abdullah<sup>1</sup> and Najeemah Mohd Yusof<sup>1</sup>**

<sup>1</sup>*School of Educational Studies, Universiti Sains Malaysia, 11800 Penang, Malaysia*

<sup>2</sup>*School of Education, Languages and Communications, Wawasan Open University, 10050 Penang, Malaysia*

### **ABSTRACT**

There are limited psychometric instruments that measure intercultural competence in teacher education programmes. Empirical studies that examine the psychometric properties of these instruments are scarce, thus the authors set about to develop the Intercultural Competence in Teacher Education Questionnaire (ICTE-Q). This paper reports the findings on the psychometric properties of the ICTE-Q. Sixty pre-service teachers in their third or final year of study were sampled purposively from three Higher Education Institutions in Malaysia. The data were analysed using the Rasch Model technique to validate the ICTE-Q. The analyses covered properties such as Category Fit, Item Polarity, Item Fit, and Person and Item Reliability. Data obtained from the study was successful in validating the ICTE-Q to be employed to measure the intercultural competence component of

teacher education programmes in preparing pre-service teachers to teach in culturally diverse settings. Polarity Analysis for items towards a construct from the positive Point Measure Correlation (PTMEA Corr) value showed that items in the construct were functioning in the same direction to measure the developed construct. The results of polarity analysis were used to triangulate the item fit result which was considered acceptable to fit the Rasch model framework. For the Category Measure, the measurement functioning was as expected. Finally, both

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#### *E-mail addresses:*

[alisamsudin@usm.my](mailto:alisamsudin@usm.my) (Mohd Ali Samsudin)

[achristi57@gmail.com](mailto:achristi57@gmail.com) (Anna Christina Abdullah)

[melissa@usm.my](mailto:melissa@usm.my) (Melissa Ng Lee Yen Abdullah)

[najineen@usm.my](mailto:najineen@usm.my) (Najeemah Mohd Yusof)

\*Corresponding author

person and item reliability indices were found to be high. It thus can be concluded that the ICTE-Q is a valid and reliable instrument that can be used to measure the intercultural competence component of teacher education programmes.

*Keywords:* Intercultural competence, psychometric properties, Rasch analysis, teacher education

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## INTRODUCTION

Educators around the world are faced with new challenges of balancing local, national, and global norms and values in the process of educating children. Many societies are experiencing cross-boundary migrations of peoples of diverse cultures and backgrounds. The advent of globalisation has further complicated social identities within many nations, which stimulated public debate on how pluralism and multiculturalism are recognised in the curriculum and pedagogy of national school system (Coronel & Gómez-Hurtado, 2015; Gholipour et al., 2015; Sutton, 2005). This is even more so in traditional multicultural societies like Malaysia. There have been enough documented incidents that tell of the challenges of the country in maintaining civil harmony among the different cultural and ethnic communities. Among the tools that have been cited to maintain national cohesion and harmonious relations and indeed the most compelling one is education. Multicultural education (ME) is commonly understood as one that encompasses three components of Gollnick and Chinns' five main goals of ME, namely, the promotion of

the strength and value of cultural diversity, an emphasis on human rights and respect for those who are different from oneself, and the promotion of social justice and equality for all people (Gollnick & Chinn, 1990). Multicultural education is important in multicultural societies and should be part of the DNA of schools. Therefore, it is crucial for all teachers to be equipped with intercultural competence, which is the appropriate knowledge, skills and attitudes necessary to promote and achieve multicultural education goals (Phoon et al., 2012, 2013). A recent synthesis of the research literature by Perry and Southwell (2011) had indicated that intercultural competence was increasingly necessary in our multicultural and globalised world. The role of educators now is not so much as the 'experts' but more as facilitators to create an environment for meaningful discourse between all stakeholders, including parents, to identify goals and approaches that will serve the child's best interest. Culturally responsive pedagogy and curriculum that are designed around the educational needs of learners from diverse cultural backgrounds are particularly crucial. This is because a culturally responsive pedagogy and curriculum allow for the discussion of difficult topics (e.g. racism, discrimination, and prejudice) and offers students of all ages the opportunity to engage in meaningful discussion that enhances learning (Metropolitan Centre for Urban Education, 2008). However, the goals of multicultural education can only be achieved if teachers are equipped with intercultural competence to deliver the curriculum effectively.

Literature reviews show that many teacher education programmes merely infuse multicultural perspectives by simply adding one or two courses in multicultural education and/or requiring pre-service teachers to complete assignments that explore surface level differences in cultures and languages (Assaf et al., 2010; Muchenje & Heeralal, 2014). According to Darling-Hammond et al. (2005), one way to make more lasting changes in the way teachers are trained to work with culturally diverse students is to build a shared vision of good teaching and demonstrate shared knowledge, skills, and common beliefs about multicultural education. Teachers should not be exposed to cultural diversity at the surface level only; they must be trained professionally to manage classrooms which are made up of cultures different from their own (Baldwin et al., 2007).

Teachers should also be trained to examine their own values and assumptions on diversity (e.g., race, culture, class) and reflect on how their perception and attitudes could impact their classroom practices. Furthermore, teachers play an important role in encouraging children to view others as individuals, without preconceived notions through multicultural education practices. Teachers have significant power in guiding children to embrace diversity. Active intervention by teachers through all aspects of teaching and learning processes can change children's negative concepts about other ethnic groups. In order to do so, teachers must be equipped with adequate knowledge and skills to implement multicultural education practices.

The literature shows that while studies that measure intercultural competence have been conducted among respondents in various sectors such as human resource (Bennett, 2008; Stringer & Cassidy, 2003, business (Mahalingam & Levitt, 2007; Moran et al., 2007), social work (Armour et al., 2007; Fong et al., 2006; Lum, 2007) and even education (Coulby, 2006; Cushner & Brennan, 2007; Deardorff, 2006; Holland, 2013; Kadriye & And, 2014; Karabinar & Guler, 2013), there is a dearth of research on the incorporation of intercultural competence in teacher education programmes. It is premature to start measuring teachers' intercultural competence if infusion of such competencies, whether by design or as an incidental learning outcome, in teacher education cannot be certain. In view that there are limited psychometric instruments that gauge intercultural competence in teacher education programmes, this study was conceptualised with the aim to fill in the literature gap. The focus on preparation of pre-service teachers to teach in culturally diverse settings was chosen due to the researchers' concern about the competency of teachers to handle teaching-learning issues that arise when placed in educational settings where the learners comprised students from different cultural backgrounds. As the key person in classrooms, it is of the utmost importance that teachers at the very least be equipped with the knowledge, skills and values that make up intercultural competence. Intercultural competence would ensure that teachers would be able to deal with conflicts or issues related to cultural differences,

as well as serve as role models to impart and nurture the same competence to their charges. Consequently, there is a need to assess the psychometric properties of the instrument in measuring intercultural competence in teacher education program. This instrument would be used to assess the content of teacher education programmes in terms of how much the curriculum actually incorporates intercultural competence education for pre-service teachers. The instrument would be able to indicate the coverage given to the different components of intercultural competence and indirectly the preparedness of pre-service teachers to be able to serve in multicultural educational settings.

In the matter of methodological issues, intercultural experts were asked to indicate their agreement to the various ways of assessing intercultural competence (Deardorff, in Deardorff & Bok, 2009). The different techniques listed included case studies, interviews, mix of qualitative and quantitative measures, solely qualitative measures, narrative diaries, self-report instruments, observations and judgement by self and others. All these methods were highly endorsed, especially case

studies and interviews. The present study utilises both interviews and self-report questionnaires, and the present paper analyses the psychometric properties of the self-report questionnaire, ICTE-Q. Among the many existing self-report intercultural competence instruments compiled by Fantini (in Deardorff & Bok, 2009) are as shown in Table 1. These instruments are designed to tap into the intercultural competence of the respondents through self-report or self-judgement scales. Some of the instruments are designed specifically for students, while a couple of others have been used with teachers or agencies that deal with children and families, as well a third category of instruments that serve as generic instruments that may be used with any group. Once again, there does not seem to be any existing equivalent instrument that examines if and how intercultural competence is incorporated in teacher education programmes or even other human resource training programmes. The ICTE-Q was developed to measure the extent intercultural competence has been incorporated into teacher education programmes, and the target respondents are pre-service teachers.

Table 1  
*Self-report intercultural competence instruments*

Name of Instrument	Year	What It Purports to Measure	Respondents	Author
International Competence Assessment (INCA) Project	2009	Intercultural Competence	Generic	The INCA Project

Table 1 (Continued)

Name of Instrument	Year	What It Purports to Measure	Respondents	Author
Assessment of Intercultural Competence (AIC)	2006	Intercultural Competence including language proficiency	Peers and Teachers	Fantini, A. E.
Cultural Competence Self-assessment Questionnaire (CCSAQ)	1995	Cross-cultural competence	Service agents working with children with disabilities and their families	Mason, J.L.
Cross-cultural Sensitivity Scale (CCSS)	1993	Cross-cultural sensitivity	Undergraduate students	Pruegger, V.J. & Rogers, T.B.
Intercultural Sensitivity Inventory (ICSI)	1992	Intercultural Sensitivity	Undergraduate and graduate students	Bhawuk, D.P.S. & Brislin, R.W.
Intercultural Competency Scale	1987	Intercultural effectiveness	Missionaries and foreign students	Elmer, M.I.
Intercultural Competence Questionnaire	n.d.	Global Literacy	Generic	Trompenaars Hampden-Turner Consulting

Source: Fantini (2009)

### **The Intercultural Competence in Teacher Education Questionnaire (ICTE-Q)**

Based on the above narrative, the ICTE-Q instrument was developed to serve as a tool for data collection in the research that aimed to investigate the intercultural competence component of teacher education programmes in preparing pre-service teachers to teach in culturally diverse settings. Culturally diverse settings in this study refer to environments which include classrooms, schools, neighbourhoods

and communities that comprise learners of different race, ethnicity, culture and language. The first version of the ICTE-Q was developed by the corresponding author in collaboration with academics in the Queensland University of Technology and University Of Sydney.. It was based on a framework developed by Zeichner (1993). The framework proposed critical elements to educate teachers for diversity. According to Zeichner (1993), there are 12 critical elements to consider when educating teachers about cultural diversity (Figure 1).



Figure 1. Elements to educate teachers for diversity (adapted from Zeichner, 1993)

These elements can be sub-divided into three components; (1) cognitive/knowledge; (2) affective/attitudes/values; and (3) behavioural/skills. In the ICTE-Q, there were 12 items that covered these three components in addition to the types of experiential learning that respondents had to respond to in the form of a four-point Likert scale. The option scale for the instrument was worded in terms of the number of courses that they took in a semester that incorporated these competencies.

The ICTE-Q included two other items that required respondents to state the degree to which they agreed on the importance of intercultural competence to be included in teacher education, as well as one other item that asked them to rate their teacher education program in terms of having prepared pre-service teachers to teach in culturally diverse settings. The ICTE-Q

also included eleven open-ended items, but these were not included in the analyses of its psychometric properties as only closed-ended items are appropriate for the Rasch Measurement Model.

When it was decided that the ICTE-Q was to be used for a sample of Malaysian pre-service teachers, the instrument was then translated into the Malay language and back-translated by two different pairs of lecturers from two public universities in Malaysia who were bi-lingual and experts in curriculum studies and teacher education. It was then validated by another four education lecturers, whose expertise was in curriculum evaluation, two from a public university and two from an institute of teacher education. Only changes in terminology to fit Malaysian contexts were recommended by the experts. These changes did not affect the substantive meaning of the items. Finally, the ICTE-Q

was also vetted by four pre-service teachers to ensure that the language was appropriate and comprehensible. The components of ICTE-Q is shown in Table 2.

### THE RASCH MEASUREMENT MODEL

The Rasch model was introduced by George Rasch in 1960 (Bond & Fox, 2001). He suggested a moderate logistic model as the basis to develop an objective measurement in psychometrics due to the problem in defining items which were free from its

population and which were not affected by the sample's individual attributes such as ethnicity and gender. The Rasch model is a measurement model based on the Modern Testing Theory which is one of the parameters in Item Response Theory (IRT). The Rasch Model which is based on IRT has a few advantages compared to the Classical Test Theory (CTT) which are (i) Item statistics do not depend on the sample (Cook & Eignor, 1991; Hambleton & Swaminathan 1985), (ii) the test analysis does not require a strict parallel test to evaluate the reliability,

Table 2  
*ICTE-Q components*

Components	Items	4-Point Likert Scale	No. of Items
Importance of IC	Importance of IC in TE, and Important for all Pre-service Teachers	Agreement	2
Cognitive/Knowledge	Histories and perspectives of various cultures; cultural concepts; various ways culture is manifested	Number of Courses	3
Affective/Attitudes/Values	Open-mindedness, Social justice, Mutual respect	Number of Courses	3
Behaviour/Skills	Re-evaluate own attitudes towards other cultures; deal with prejudice in school; effective communication with families of different cultures	Number of Courses	3
Experiential learning	Field experiences; internship; micro-teaching	Number of Courses	3
Rating of TE Program in IC integration	Equipping pre-service teachers with intercultural competence to teach in culturally diverse settings	Strength	1



and (iii) the ability to diagnose whether each item is measuring the intended construct (Boone et al., 2014).

Rasch modeling is a popular method in the survey research in many areas such as psychology, business, and health sciences and is also common in establishing quality measurement and valid instruments in the social sciences. Rasch models are able to increase functions monotonically as the models are logistic and have latent trait models of probability. Rasch measurement models are static models that are imposed upon data and are not similar to the other statistical models that are developed based on data. Rasch models are invariant and on a linear continuum; Rasch models assume the probability of a respondent agreeing with a particular item is a logistic function of the relative distance between the person and item location. Rasch models require unidimensional data and could be used in both dichotomous and polytomous scenarios, but polytomous models are usually employed in survey research. In a survey that uses a rating scale that is consistent with the number of response options, it is appropriate to apply the Rating Scale Model (Andrich, 1978).

The formulae for the Rating Scale Model are presented below:

$$\ln \left( \frac{P_{nik}}{P_{ni(k-1)}} \right) = B_n - D_i - F_k$$

where,

$P_{nik}$  is the probability that person  $n$  encountering item  $i$  is observed in category  $k$ ,

$P_{ni(k-1)}$  is the probability that the observation (or response) would be

in category  $k-1$ ,

$B_n$  is the “ability” (agreement) measure of person  $n$ ,

$D_i$  is the “difficulty” measure of item  $i$ ,

$F_k$  is the impediment to being observed in category  $k$  relative to

category  $k-1$ .

## RESEARCH OBJECTIVES

The main objectives of the research were:

1. To assess the psychometric properties of the ICTE-Q using the Rasch Model analysis.
2. Based on the above, to determine if the ICTE-Q is a reliable instrument to investigate the extent to which intercultural competence is incorporated in teacher education programmes.

## METHOD

This research employed a survey research design to obtain the data needed to assess the ICTE-Q’s psychometric properties. The research involved a sample of sixty pre-service teachers in their third or final year of studies. The sampling technique used was purposive sampling where the respondents had to be full-time students enrolled in teacher education programmes, and willing participants of the study. The questionnaire was administered to the pre-service teachers in one sitting at their respective institutions that took about 20-25 minutes.

The data was analysed using Rasch Model to validate the ICTE-Q. The analysis



covers the properties of Category Fit, Item Polarity, Item Fit, Item Reliability and Person Reliability. The category fit property refers to a category that fits and functions as expected, meaning the higher the scale value, the more positive the measurement category values. Next the Point Measure Correlation Coefficient (PTMEA Corr) was evaluated. A positive PTMEA Corr value shows that all the items in the construct functions to measure the same construct. While a negative value shows the response relationship for item or person contradicts the variables or construct. Item fit is checked to identify the extent to which items in the ICTE-Q successfully measure the intended things to be measured. The mean squared infit value and mean squared outfit for each item must be within 0.6 to 1.4 (Bond & Fox, 2001). The model analyses the individual and item reliability and, the item and individual discrimination index jointly. Bond and Fox (2001) stated that good item and person reliability values were the ones that approach 1.00 while a good person and item discriminant index value was greater than 2.00.

## RESULTS AND DISCUSSION

### Item Fit & Polarity of Items in the ICTE-Q

The findings show that the item's mean squared infit is between 0.63 to 1.70 and the item mean squared outfit is between 0.62 to 1.67. According to Bond and Fox (2007), for Likert scale items, the item that is compatible with the Rasch model assumption should be in the range of 0.6 to

1.4. This means there are two items that did not fit the Rasch model framework, namely: item B3k and B3j. B3k states "Exposed to internship/teaching practice that aids in development of competence to teach in culturally diverse settings", whereas B3j is "Exposed to field experiences (projects/programmes within the course) that aids in development of competence to teach in culturally diverse settings".

However, before the decision was made to discard these two items from the instrument, point measure correlation (PTMEA *Corr*) was referred. PTMEA *Corr* value is used to determine an item polarity. If the PTMEA *Corr* is high, it means that the item possesses the ability to differentiate the respondents' ability. Items in the questionnaire are able to differentiate between high agreement and low agreement respondents.

Polarity Analysis for item towards a construct from the positive PTMEA *Corr* value shows the items in the construct is functioning in the expected direction to measure the developed construct (Linacre, 2006). A negative value or zero shows that the relationships for response item or the respondents contradict with the variable or the construct (Linacre, 2006). The questionnaire did not have any such items. Thus, these two items had to be reviewed to decide whether they needed modification or if they needed to be eliminated. Based on Table 3, all the items in the instrument showed high positive PTMEA *Corr*. Thus, the decision to discard B3k and B3j was deferred due to the reason that both items

exhibit high positive PTMEA Corr although the infit and outfit value are slightly higher than the maximum cut-off point of 1.4.

Subsequently, after a discussion was carried out with experts in the field, it was decided that the two items should be maintained as they contained pertinent content in measuring the extent to which intercultural competence was incorporated in teacher education programmes.

**Category Fit of the ICTE-Q**

The findings show the category mean squared infit is between 0.92 to 1.46 and the category mean squared outfit is in the range of 0.87 to 1.50. The category measures also displayed a pattern that fits the Rasch model assumption of sequencing from easy to difficult. This can be observed when the category labelled as 1 has a category measure of -5.47 logit, followed by category label of 2 has a measure of -2.12 logit, category label of 3 has a measure of 2.18 logit and finally, category label of 4 has a measure of 5.35 logit. For the Category Measure, the measurement functioning is as expected (i.e. the higher the response scale value, the more positive the category measure value). This shows that the four response scales for each item in the instrument are functioning well. This situation is depicted in Table 4.

**Item and Person Reliability of the ICTE-Q**

The item reliability (Table 5) is the estimation of the consistency of the item placement on the logit scale if the item is answered by a group of different respondents that possess

Table 3  
*Item fit*

Entry NUMBER	Raw SCORE	Count	Measure	MODEL		INFIT		OUTFIT		PTMEA CORR.	ITEM
				S.E.	MNSQ	ZSTD	MNSQ	ZSTD			
13	148	55.0	0.63	0.26	1.70	3.1	1.67	2.9	A 0.66	B3k	
12	149	55.0	0.57	0.26	1.44	2.0	1.44	2.0	B 0.54	B3j	
6	149	55.0	0.57	0.26	1.32	1.6	1.30	1.4	C 0.51	B3d	
7	148	55.0	0.63	0.26	1.07	0.4	1.06	0.4	D 0.62	B3e	
14	152	55.0	0.36	0.26	1.03	0.2	1.04	0.3	E 0.72	B3l	
9	169	55.0	-0.82	0.26	0.96	-0.2	0.95	-0.2	F 0.75	B3g	
5	139	55.0	1.25	0.26	0.92	-0.4	0.93	-0.3	G 0.57	B3c	

Table 3 (Continued)

Entry NUMBER	Raw SCORE	Count	Measure	MODEL		INFIT		OUTFIT		PTMEA		ITEM
				S.E.		MNSQ	ZSTD	MNSQ	ZSTD	CORR.		
15	159	55.0	-0.12	0.26	0.90	-0.5	0.92	-0.4	H	0.64	B4	
1	185	55.0	-1.96	0.27	0.91	-0.5	0.91	-0.5	G	0.47	B1	
11	169	55.0	-0.82	0.26	0.87	-0.7	0.86	-0.8	f	0.76	B3i	
8	154	55.0	0.22	0.26	0.83	-0.8	0.82	-0.9	e	0.82	B3f	
10	168	55.0	-0.75	0.26	0.79	-1.2	0.78	-1.2	d	0.78	B3h	
4	142	55.0	1.04	0.26	0.78	-1.2	0.78	-1.2	c	0.56	B3b	
2	188	55.0	-2.19	0.28	0.76	-1.5	0.77	-1.2	b	0.59	B2	
3	137	55.0	1.38	0.26	0.63	-2.3	0.62	-2.3	a	0.60	B3a	
MEAN	157.1	55.0	0.00	0.26	0.99	-0.1	0.99	-0.10				
S.D.	15.1	0.00	1.05	0.01	0.28	1.4	0.27	1.30				

Table 4

Category fit

CATEGORY LABEL	SCORE	OBSERVED Count	%	OBSVD AVERAGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	STRUCTURE CALIBRATN	CATEGORY MEASURE
2	2	188	26	-0.51	-0.41	0.97	0.98	-4.36	-2.12
3	3	389	54	2.05	2.02	0.92	0.87	0.13	2.18
4	4	126	18	4.17	4.16	1.00	0.99	4.23	5.35

Table 5  
*Item reliability*

	RAW SCORE	COUNT	MEASURE	MODEL ERROR		INFIT		OUTFIT	
				ERROR	SEPARATION	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	158.4	55.0	0.00	0.28	1.22	1.00	-0.1	0.99	-0.1
S.D.	15.8	0.0	1.25	0.00	1.22	0.22	1.2	0.23	1.1
MAX.	188.0	55.0	1.67	0.29	1.22	1.40	1.8	1.45	1.9
MIN.	137.0	55.0	-2.35	0.28	1.22	0.61	-2.5	0.58	-2.5
REAL RMSE	0.29	ADJ.SD	1.22	SEPARATION	4.16	ITEM RELIABILITY	0.95		
MODEL RMSE	0.28	ADJ.SD	1.22	SEPARATION	4.33	ITEM RELIABILITY	0.95		
S.E. OF ITEM MEAN	= 0.36								

the same ability (Bond & Fox, 2001). The analysis result shows the item reliability index is 0.95. The separation index is a separation for the item level of difficulty which is the item strata difficulty count in the construct. The findings show the item separation index is 4.33 which indicates that there are four levels of item difficulty in the ICTE-Q.

Table 6 shows the person reliability for the ICTE-Q. Person reliability is the estimated consistency of an individual ranking on the logit scale if the respondent answers a different set of items to measure the same construct (Wright & Master in Bond & Fox, 2001). The findings show that the person reliability index of an individual is 0.90. The findings of the analysis show that the individual separation index is 2.99 which indicate that there are three levels of respondent ability in the ICTE-Q.

### CONCLUSION AND IMPLICATIONS OF THE STUDY

The strength of the Rasch model lies in its ability to solve the weakness of the Classical Testing Theory (CTT) approach (Prieto et al., 2003). Based on CTT approach, the scale of the instrument is treated as interval scale based on ordinal level item scoring which is not statistically proven. This study showed that more fundamental evidence could be provided when evaluating an instrument with the Rasch model which allowed the use of scale scores in an interval level. Moreover, the use of the Rasch formula allows the data analysis in this study to use expected score information when

Table 6  
Person reliability

Raw SCORE	Count	Measure	Model		INFIT		OUTFIT	
			ERROR	SEPARATION	MNSQ	ZSTD	MNSQ	ZSTD
MEAN	13.0	1.68	0.58		0.99	-0.2	0.99	-0.2
S.D.	0.0	1.83	0.02		0.65	1.6	0.68	1.6
MAX.	13.0	4.96	0.63		3.17	3.8	3.32	3.8
MIN.	13.0	-2.50	0.56		0.22	-2.7	.21	-2.7
REAL RMSE	0.65	ADJ.SD	1.71	SEPARATION	2.63	ITEM RELIABILITY		0.87
MODEL RMSE	0.58	ADJ.SD	1.73	SEPARATION	2.99	ITEM RELIABILITY		0.90
S.E. OF ITEM MEAN	= 0.25							

dealing with missing data. This is due to the fact that the Rasch algorithm compares each observed item score to an expected score based on the overall Rasch scaling model (Nunnally & Bernstein, 1994). The findings have demonstrated that the ICTE-Q possesses the psychometric properties that make it a reliable and valid instrument to be used in investigating the extent to which intercultural competence is incorporated in teacher education programmes. The Rasch model analysis technique used in the study generated evidence to support the properties of Category Fit, Item Polarity, Item Fit, and Person and Item Reliability. All these dimensions are necessary to prove that the ICTE-Q is both a valid and reliable instrument that can be employed to measure the intercultural competence component of teacher education programmes in preparing pre-service teachers to teach in culturally diverse settings.

Indirectly, the findings of this study also serve to validate the framework used in developing the ICTE-Q, namely Zeichner's critical elements to educate teachers for diversity. These elements can be summarised into three crucial components; (1) cognitive/knowledge; (2) affective/attitudes/values; and (3) behavioural/skills components, which were transformed into the items that made up ICTE-Q. The findings of this study not only lend support for the underlying framework of ICTE-Q but also reaffirm the importance of knowledge, attitudes and skills on multicultural competencies in teacher education programmes.

Pre-service teachers should have knowledge of their own ethnic and cultural identities so that they understand the concept of cultures, the variety of ways culture manifests and understand the roles culture plays in their life as well as the life of the students. This knowledge is critical so that teachers would self-reflect and avoid any predetermined biases, particularly when conducting lessons in culturally diverse classrooms. Teacher training programmes also need to address the nature and causes of prejudices and racism and equip the teachers with research-based instructional skills to reduce these attitudes in the classroom. Teachers should also be aware of school practices that could contribute towards the reproduction of societal inequalities. Hence, during the course of training, teachers must be provided with opportunities to gain practical knowledge and skills in exploring equity and inequity issues in the field of education.

Information regarding the characteristics and learning styles of different groups also need to be conveyed to the teachers during their training, to help them identify the instructional strategies that appeal to a wider variety of learners. In line with this emphasis, teachers must have the knowledge on diverse needs of students with different cultural backgrounds and be equipped with skills to apply culturally appropriate pedagogy to conduct lessons.

In addition to knowledge and skills, teacher education curriculum also should include the histories and background of various ethno-cultural groups in

their respective communities so that the contribution and cultural values of each culturally diverse group would be appreciated. In order to be effective teachers, the training programmes have to expose teachers to examples of successful teaching of ethnic and language minority students and how instructions can be embedded in a group setting to provide both intellectual challenge and social support (Zeichner, 1993). Positive teacher attitudes towards culturally responsive education are crucial because “effective teachers would use knowledge of their students’ culture and ethnicity as a framework for inquiry as they organise and implement instruction” (Banks et al., 2001). In order to have an effective multicultural and anti-bias curriculum, teachers must examine their own attitudes such as beliefs and perspective towards various cultural groups (Tarman & Tarman, 2011). To summarise the above, the ICTE-Q have included items that focussed on three main components of intercultural competence, and these were knowledge, skills and values/attitudes. These components correspond to the three dimensions of cognitive, affective and behavioural components that were identified by Matveev and Merz (2013) when they did a meta-analysis of the common constructs found across ten intercultural competence assessment instruments.

The results of the analysis imply that these components have worked well and make up the construct of intercultural competence component in teacher education. Therefore, the ICTE-Q is a viable instrument

to be used for those seeking to investigate if teacher education programmes have incorporated intercultural competence in its curriculum. This is especially appropriate if the respondents of the study are proficient in the Malay language as the ICTE-Q has been developed in the said language. However, since the Malay version is not substantially different from the original English version, it is reasonable to state that the latter would be equally viable to be used among English-speaking respondents. Even with the inclusion of the open-ended questions, the ICTE-Q is a relatively user-friendly instrument as it does not take very long and is easily understood by the respondents.

Future work in refining the instrument would be to triangulate the results obtained from the open-ended items with that of the closed ended items to assess the internal or concurrent reliability of the complete instrument. Additionally, interviews could be conducted using the same items among the same group of respondents to gauge equivalent measures of reliability and validity of the items therein. In conclusion, as the study stands, it has made a significant contribution in providing a valid and reliable tool to investigate the incorporation of intercultural competence in teacher education programmes. Intercultural competence is a vital and increasingly meaningful quality to be nurtured in pre-service teachers, that needs to be mindfully designed into the curriculum of teacher education programmes no matter who the provider is, be it either state-run or privately owned institutions.

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