The Development and Validation of a Multicultural Competence Scale among Indonesian College Students

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A counsellor needs a multicultural view in order to deal with cases relating to the culture of a society. The composition of Indonesian society across various ethnic and cultural groups often causes conflicts in the interaction between communities. Based on that, students, especially guidance and counselling students, do well to have this multicultural focus. An instrument was developed to measure students' multicultural competencies. This research is a quantitative study using Rasch Model analysis. The subjects of this study were 403 college students in Indonesia. The subjects of this study were selected using Cluster Random Sampling. The instrument used in this study is the student multicultural competency instrument developed from the theory of Constantine & Sue. Research data were analysed using the Rasch Model. The results showed that this instrument was suitable for the study because it had fulfilled the instrument's validity and reliability requirements.

**Keywords**: Multicultural Competence, Guidance, and Counselling, Validation Instruments, Rasch Model Analysis

**Introduction**

Each country has a diverse ethnicity and culture. This diversity often affects communication, which causes mis-communication and may trigger a conflict (Gerring, Hoffman, & Zarecki, 2018). People may have difficulty opening up tolerantly to diversity in relation to countries, cultures, languages, ethnicities, and religions. According to Chao, Paiko, Zhang, & Zhao (2017), stated that the current wave of globalisation would encourage an increasingly free cultural contact. Cultural differences are highlighted and experienced through free cultural contact. Cultural contact occurs when each individual and ethnic group meet in a place or region by carrying out their behaviour in a way that is unique. This can lead to shifts in the habits and characteristics of the individual or group and conflicts. People who live in multicultural concepts will do well to respect differences, the spirit of nationalism, tolerance, empathy, and respect for local wisdom.
Conflict can become triggered during interactions between people who live in multicultural settings (Gerring et al., 2018). The existence of various conflicts where there is diversity hints toward a ‘multicultural competence’ that is crucial. According to Murrell (2017), to overcome the very complex ethnic and racial problems of the 21st century, knowledge of diversity will be needed, one of which is counsellors gaining mastery over multicultural competencies (Sahal, Musadad, & Akhyar, 2018). A person with ‘multicultural competence’ considers how he or she acts, interprets, and maintains group differences, and the psychological consequences of those differences. Multicultural competence arguably reduces individual prejudice toward others (Vervaet, Van Houtte, & Stevens, 2018).

Betancourt et al (2003) describe cultural competencies as behaviours to interact in cross-cultural situations. The term culture is used to signify human behaviour which includes thoughts, communication, actions, habits, beliefs, values, and institutions of racial, ethnic, religious, and social groups (Bonvillain, 2019). The word competency is used because it means it can function effectively (Sherwood & Russell-Mundine, 2017). When an individual (or organization) is culturally competent, they recognise the importance of culture in shaping one’s personality, possessing the cultural knowledge of others, and being able to relate effectively in a cross-cultural sphere. Whereas Ratts et al (2016) and Curtis et al (2019) define ‘multicultural competence’ as the ability to understand, communicate, interact with people across cultures, or with different social and economic backgrounds.

According to Zoch (2017) ‘multicultural competence’ is crucial. It relates to what we see, how we understand what we see, and how we express ourselves. Lack of understanding of cultural identity, and how it can affect various aspects of life can be a source of conflict and a significant obstacle in one’s interpersonal relationships. Furthermore, Zoch (2017) states that we are often not aware that culture influences us. Sometimes we don’t even realise that we have cultural values or assumptions different from others.

We need multicultural competence not only to understand how other people's cultures operate but as a skill required to interact with people of different cultures (cross-cultural interactions) (Ratts, et al., 2016; Soto, Smith, Griner, Domenech Rodriguez, & Bernal, 2018). It reinforces this statement of Rats by Barker (2016) that individuals of a third culture are more likely to have a lot of confusion about the cultural identity they face. They do not have a sense of belonging and they experience a lot of confusion in interacting with people around them.

One of the important agendas in efforts to overcome the signal of the nation's collapse is through education, especially the development of a sense of humanity and a sense of respect through the cultivation of values and mutual respect. This value investment can be realized from formal, informal, and non-formal education. Starting from elementary school and extending into college. In their research, Hladik & Jadama (2016) stated that universities have a bigger influence on the formation of student multicultural competencies than State programs.
Whereas Wells, Fox, & Cordova-Cobo (2016) stated that the changing demographics of global society are happening so fast, demanding educators in the university environment to interact with diverse backgrounds. Multicultural education programs are offered by several universities to overcome the impact of the potentially negative effects of diverse cultural population interactions. After a few decades, this multicultural education program then increased to multicultural competence. Multicultural competence is believed to be the best way to prepare students to work with heterogeneous demographic populations.

Johnson & Lambie (2012) states that a multicultural personality is an effective strategy for promoting college graduates. This multicultural person may answer the needs of the field, solving complex problems caused by the diversity challenges faced. Multicultural competence must be a fundamental aspect. It must be prepared by universities so that graduates are ready to interact with increasingly different socio-economic and inter-cultural populations. Students need a deep understanding of diversity and identity for their development as individuals and for their interpersonal capacity when working with people from different backgrounds. They also need knowledge and to develop the ability to overcome social problems (Hernandez & Kose, 2012).

Multicultural competence becomes very important for students, especially when they have graduated from college and work in a diverse environment. The results of the study by Alsubaie (2015) explain the problems faced in multicultural classes for college graduates. First, low academic achievement occurs when teachers and students have different cultural backgrounds. Teachers cannot teach and motivate by using multicultural learning, so students experience low learning motivation. The second problem is the change for teachers and students when they enter a new cultural environment such that they may feel unable to interact effectively while the new environment feels unusual. They may have problems communicating and interacting in an intercultural setting. And the third problem is a lack of self-confidence, emotional issues, trust in new people or individuals.

The importance of multicultural competence for students is also stated by Odağ, Wallin, & Kedzior (2016), which states that university graduates must be equipped with intercultural competency skills to work in a diverse world successfully. Also, Buckley & Foldy (2010) argue that this competency must be a faculty program in tertiary institutions. The faculty has a role to play in instilling education with a multicultural perspective and creating a safe learning environment. This competency is important to master for students. They are prone to anxiety due to tertiary demands (Milfayetty et al., 2019; Sin, Fadli, & Ifdil, 2019).

According to Ben-David (2017), equipping students with multicultural competencies has become the mission of most universities in England, France, Germany, the United States. This competency is not only framed within the goals of multicultural education but also the provision of specialised training. Their aim is to increase awareness, knowledge, and skills for
interacting with individuals from diverse backgrounds. This training is a pre-requisite before graduation and students will gain 6 credits on completion. A lack of multicultural competence can affect student self-regulation, affect the development of cognitive styles, affect communication styles with those from different cultures, overcome stereotypes, and increase cross-cultural competence (Caligiuri & Lundby, 2015; Gushue & Hinman, 2018 Chao, Takeuchi, & Farh, 2017; Hummert, 2017).

One difficulty faced by tertiary institutions, in particular for the counsellors, is in increasing students’ multicultural competencies. This is due to the absence of valid data collection instruments that can be used by counsellors to measure the level of multicultural competencies of students, so that multicultural competency improvement programs can focus on the right target. To determine the level of multicultural competence in students, counsellors need a scale of student multicultural competencies. There are several reasons for the development of student multicultural competencies including: 1) the unavailability of inventories, measuring instruments or instruments that can reveal the multicultural competencies of students in Indonesia; 2) Inventory is very effective, practical, efficient and easy to use; 3) students fill their multicultural competencies according to their circumstances so that students can know the level of multicultural competence and counsellors can provide services that suit their needs. If this can be achieved, it can help students in developing creativity in tertiary institutions (Alizamar, Afdal, Ifdil, & Syahputra, 2019).

Therefore, researchers are interested in developing a multicultural competency scale for students. The researcher hopes that counsellors can use the results of the research to develop a student multicultural competency scale as a basis for providing guidance and counselling services, with the aim of increasing students' multicultural competencies. The multicultural competency scale of students in this study was developed based on theory from Constantine & Sue (2005), who state that there are three important components in developing multicultural competence in a person, namely: multicultural awareness, multicultural knowledge, and multicultural skills.

**Methods**

**Respondent**

Respondents were 403 tertiary and private university students in Indonesia selected by the Cluster Random Sampling Technique. According to Azwar (2017), a sample size of over 60 people has been adequate, and the need for measurement and statistical strength has been met.
Measurement and Procedure

The multicultural competency scale of students in this study was developed based on theory (Constantine & Sue, 2005). In this study, the development of the instrument was carried out to adjust to Indonesian culture while still referring to the source. The student's multicultural competency scale was developed by following the inventory development procedures (Azwar, 2017) namely: 1) Identifying objectives of measuring instruments; 2) operationalizing aspects (compiling indicators, grids, blueprints); 3) reviewing items by involving experts; 4) field trials (failed tests); 5) broad field trial/item analysis; 6) Final format. Validation procedures are carried out using Rasch analysis where these measurements can accurately check the condition of component reliability, validity, validity rating scale, separation index, item fit, item difficulty, and information function tests. The Item Response Theory (IRT) method in the Rasch analysis has the advantage of being able to provide linear measurements, expose missing data, accurately measure items, calculate outliers data, and provide instruments independent of the parameters studied (Daharnis et al., 2018).

Data Analysis

The study was analysed using the Rasch model, which uses Winstep Software Version 3.72

Results and Discussion

The Results of the development of the instrument

This research produces 85 statement items that can measure students’ multicultural competence. The statements that have been developed have a match between variables with indicators, indicators with descriptors, and descriptors with statements that are developed based on theory (Constantine & Sue, 2005).

Reliability

The reliability of an instrument refers to the stability of a measure and consistency in measurement. To get information about the reliability of the person and the reliability of items can be displayed in a statistical summary. The statistical summary results are explained further in the following Table 1.
In Table 1, the reliability score of the person is 0.92, and the item reliability score is 0.99. This shows that the quality of the answers given by the person is good, and the quality of the items used in the measurement is very good. Cronbach's alpha value (KR-20) is 0.93, which indicates that the interaction between person and item is good.

Furthermore, person and item grouping can be determined from the separation value by using the strata person formula, H, with the formula $H = \frac{4 \times \text{separation} + 1}{3}$ (Sumintono & Widhiarso, 2015). The separation person value is 3.44, then $H = \frac{4 \times 3.44 + 1}{3}, H = 4.92$ (rounded to 5). This shows 5 groups of respondents (very high, high, medium, low, and very low ability). Judging from the value of separation items 8.22, then $H = 11.29$ (rounded up to 11) can be concluded that the items can reach low, medium, high, and very high ability individuals. Furthermore, the real RMSE and RMSE models on items have the same value, meaning that the model approaches the variation in the value of obesity. In contrast to the real RMSE and RMSE model, people show that the observed value is higher than the model, meaning that the ability of people to answer the instrument is high.

Validity

Construct validity explains how well the measurements are following theoretical expectations (Sumintono & Widhiarso, 2015). The point is that various measures exist in different theoretical contexts, all of which must show relationships with other concepts that can be predicted and interpreted in that context. Analysis of construct validity uses Principal Component Analysis (PCA) of residuals, which measures the extent to which the diversity of resilience instruments measures what should be measured. PCA analysis uses 2 parameters, the first is the total raw variance in observation (minimum 20%), and the second is the total raw unexplained variance (minimum 15%) (Linacre, 2012; Sumintono & Widhiarso, 2015). Further information is presented in Table 2.
Table 2. Standardized Residual Variance

<table>
<thead>
<tr>
<th></th>
<th>Empirical</th>
<th>Modeled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total raw variance in observations</td>
<td>119.8</td>
<td>100.0 %</td>
</tr>
<tr>
<td>Raw variance explained by measures</td>
<td>34.8</td>
<td>29 %</td>
</tr>
<tr>
<td>Raw unexplained variance (total)</td>
<td>85</td>
<td>71 %</td>
</tr>
<tr>
<td>Unexplained variance in 1st contrast</td>
<td>14.6</td>
<td>12.2 %</td>
</tr>
<tr>
<td>Unexplained variance in 2nd contrast</td>
<td>5.2</td>
<td>4.3 %</td>
</tr>
<tr>
<td>Unexplained variance in 3rd contrast</td>
<td>3.6</td>
<td>3.0 %</td>
</tr>
<tr>
<td>Unexplained variance in 4th contrast</td>
<td>2.7</td>
<td>2.3 %</td>
</tr>
<tr>
<td>Unexplained variance in 5th contrast</td>
<td>2.4</td>
<td>2.0 %</td>
</tr>
</tbody>
</table>

In Table 2, we can see that the total raw variance is 29%, with an expected value of 29.7%. This shows that the construct of the instrument is good, meaning the items already represent measurements for students' multicultural abilities, and the minimum uni-dimensional requirements of 20% have been valid (Linacre, 2012). All unexplained variance results (1st to 5th) are below 15% and shows the level of independence of items in a good instrument. Thus, this condition states that the instrument’s uni-dimensionality requirements fulfilled for 85 items in the student's multicultural ability instrument are valid.

Based on the results of the standardised residual variance, the instrument is very good, and the items available on the instrument already appear to measure the multicultural ability of students. Each measurement consistently produces information about the measurement results, meaning that the measurement results here are not informed based on the individual being measured, but the focus of measurement information. Measurement information depends on the relationship between the test and the individual being measured (Sumintono & Widhiarso, 2015). More details are conveyed through figures about the function of measurement information as follows:
Figure 1 describes measurement information. The leftward sloping curve shows that the effective measurements instrument measures normal multicultural abilities but that a very high respondent ability is not effectively measured with this instrument. The instrument increasingly forms normal and high curves and usefully, it can measure students’ multicultural abilities ranging from very low to very high. Vice versa, the smaller and lower the curve, the less able the instrument is to measure from very low to very high (Sumintono & Widhiarso, 2015).

**Validity Instrument**

Person and item validity using variable maps can show the distribution of students’ abilities on the left and the level of difficulty items on the right (Sumintono & Widhiarso, 2015). Further, it is conveyed in Figure 2.
Figure 2 shows the variable maps regarding the measurement of multicultural abilities of students. On the right, the variable map shows the condition of the items. There are 3 items (P54, P79, and P12) that have been circled in red. This condition indicates that this instrument exceeds two standard deviations meaning a need to improve this item or listen to other words in this item that do not fit. However, because these measurements are performance tests, these items are not a problem for the measurement conditions, so they are still used in the presence...
of improved statements. Furthermore, the variable maps on the left show the condition of the respondent’s answer. The average respondent has the ability to relate across cultures, or it can be stated that the respondent's ability to relate multiculturally is higher than the ability to measure. Furthermore, this study also discussed the validity of each item, and whether it is fit and appropriate for the measurement conditions as follows.

**Item Validation**

Analysing item measures can reveal statistical fit. The parameter used to indicate conformity is the outfit of the mean square with a middle square value of 1.0 or with an ideal range $0.5 > \text{MNSQ} < 1.5$ and Z-standardised values with a middle square value of 0.0 or with an ideal range $-2.0 > \text{ZSTD} < +2.0$ (Bond & Fox, 2015; Boone, Staver, & Yale, 2013; Sumintono & Widhiarso, 2015). Further information is presented in Table 3.

<table>
<thead>
<tr>
<th>#Code</th>
<th>Item</th>
<th>OUTFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MNSQ</td>
</tr>
<tr>
<td>P51</td>
<td></td>
<td>1.89</td>
</tr>
<tr>
<td>P52</td>
<td></td>
<td>1.73</td>
</tr>
<tr>
<td>P53</td>
<td></td>
<td>1.67</td>
</tr>
<tr>
<td>P1</td>
<td></td>
<td>1.62</td>
</tr>
<tr>
<td>P5</td>
<td></td>
<td>1.57</td>
</tr>
<tr>
<td>P15</td>
<td></td>
<td>1.50</td>
</tr>
</tbody>
</table>

Table 3 shows the misfit order items on the multicultural ability instrument. Six items are misfit. Judging from the MNSQ outfit values, the ideal range $(-1.5 > \text{MNSQ} < +1.5)$, standardised values (ZSTD) have passed the ideal range $(-2.0 > \text{ZSTD} < +2.0)$, and PT. Measure CORR. the minimum value (.40) so that the item needs to be changed to meet the suitability statement.

**The Functionality of Differential Items (DIF)**

Measurement instruments and items can be biased because of differences where certain items will favour one particular type (e.g. gender, religion, occupation, education, family background, etc.). Table 4 shows the results of the DIF analysis, which can be seen with the probability value below (0.05), indicating biased items (Sumintono & Widhiarso, 2015).
Table 4. The functionality of differential items (DIF)

<table>
<thead>
<tr>
<th>#Code Item</th>
<th>PROB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2</td>
<td>.02</td>
</tr>
<tr>
<td>P16</td>
<td>.00</td>
</tr>
<tr>
<td>P21</td>
<td>.00</td>
</tr>
<tr>
<td>P28</td>
<td>.01</td>
</tr>
<tr>
<td>P51</td>
<td>.00</td>
</tr>
<tr>
<td>P55</td>
<td>.00</td>
</tr>
<tr>
<td>P59</td>
<td>.04</td>
</tr>
<tr>
<td>P76</td>
<td>.04</td>
</tr>
<tr>
<td>P81</td>
<td>.02</td>
</tr>
</tbody>
</table>

In Table 4 above, the multicultural ability instrument shows that 9 items are biased, the statements contained in the 9 items are more favourable to one of the respondents, so students are reluctant to give answers (for example: questions that are more favourable to women, so that shy men give answers). For this reason, it is necessary to correct statements on 9 items that are biased or considered for use in measurement.

**Rating Scale Validation**

A good instrument to use is an instrument that does not confuse respondents in choosing answers provided by the instrument itself. The rating scale given must be well understood by the respondent. The instrument uses a 5-point Likert scale presented in Figure 3.
Figure 3 shows the response point used by the measurement is good seen in the way all the response points appear to have a hill or form its curve. Meaning that the response point provided by the measurement is easily understood by respondents, in other words, the respondent is not confused about determining the choice of answers provided by measures. The findings show that the four options given were valid in the student's multicultural ability instrument. From the results above, it can be stated that the four response points are easily understood by the Indonesian people, meaning that the respondent is not confused by the choice of answers provided by the instrument and this creates good results. The findings are supported by previous research by Alizamar (2019), response point 4 is easily understood by the people of Indonesia related to internet FoMO ratting scale validation.

Conclusions

The research findings show that the scale instrument of multicultural competence of students is consistently reliable. Namely, the reliability of the person ranges from 0.92 and the reliability of items 0.99. The instrument's validity has also been fulfilled. Furthermore, the analysis of variable maps show that the ability of respondents is higher than the ability of measurement. As for the analysis of bias items, 9 items tend to be biased. So that the 9 items need to be improved statement on the instrument. Then, the response analysis of the respondents showed that the four alternative answers given did not confuse the respondents. Based on these results, it can be concluded that the students’ multicultural competency instruments meet the validity and reliability requirements based on the Rasch Model analysis, and these instruments can be widely used.
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