



Multicultural Personality of Professional Counselor Candidates: Evidence from Rasch DIF Analysis

Suciani Latif¹, M. Fiqri Syahril¹, Muh Ilham Bakhtiar¹, Akbar Na'im Fadhilillah¹, Saltanat Meiramova²

¹ Universitas Negeri Makassar, Indonesia

² A. K. Kussayinov Eurasian Humanities Institute, Kazakhstan

ARTICLE INFO

Article History:

Received 30 December 2025

Accepted 26 April 2026

Available online 15 June 2026

Corresponding Author:

Suciani Latif, Universitas Negeri Makassar, Indonesia

Email: suciani.latif@unm.ac.id

DOI:

[10.18326/pamomong.v7i1.6162](https://doi.org/10.18326/pamomong.v7i1.6162)

How to cite:

Latif, S., Syahril, M. F., Bakhtiar, M. I., Fadhilillah, A. N., & Meiramova, S. (2026). Multicultural Personality of Professional Counselor Candidates: Evidence from Rasch DIF Analysis. *Pamomong: Journal of Islamic Educational Counseling*, 7(1), 43–63.

<https://doi.org/10.18326/pamomong.v7i1.6162>

ABSTRACT

This study examined the multicultural personality profile of professional counselor candidates and the gender fairness of the Multicultural Personality Questionnaire–Short Form (MPQ-SF). Using a quantitative descriptive design with Rasch-based psychometric analysis, the study involved 90 students from the Guidance and Counseling Teacher Professional Education Program (*Pendidikan Profesi Guru Bimbingan dan Konseling [PPG BK]*) at Universitas Negeri Makassar, comprising 20 males and 70 females with a mean age of 25.01 years. Data were collected using the 40-item MPQ-SF, which measures cultural empathy, flexibility, social initiative, emotional stability, and open-mindedness. Descriptive results showed relatively strong cultural empathy, flexibility, and open-mindedness, while social initiative and emotional stability remained moderate. After six misfitting persons were excluded, the final Rasch calibration was conducted with 84 respondents and showed acceptable psychometric quality, including person reliability of .89, item reliability of .96, raw variance explained by measures of 38.0%, and unexplained variance in the first contrast of 8.2%. Gender-based Differential Item Functioning (DIF) analysis indicated that most items functioned comparably across groups, although five items (14, 24, 25, 34, and 36) showed significant DIF. These findings suggest that the MPQ-SF provides a useful multicultural personality profile for counselor candidates, but gender-sensitive items require cautious interpretation. Future studies should involve more diverse samples and examine additional DIF sources, including ethnicity.

Keywords: Gender Fairness; Multicultural Personality; Professional Counselor Candidates; Rasch Analysis; Teacher Professional Education

ABSTRAK

Penelitian ini mengkaji profil *multicultural personality* calon konselor profesional serta mengevaluasi keadilan gender pada *Multicultural Personality Questionnaire–Short Form* (MPQ-SF). Penelitian menggunakan desain deskriptif kuantitatif yang dipadukan dengan analisis psikometrik berbasis Rasch. Partisipan penelitian adalah 90 mahasiswa Program Pendidikan Profesi Guru Bimbingan dan Konseling (PPG BK) Universitas Negeri Makassar, terdiri atas 20 laki-laki dan 70 perempuan, dengan rerata usia 25,01 tahun. Data dikumpulkan menggunakan MPQ-SF yang terdiri atas 40 butir dan mengukur lima dimensi, yaitu *cultural empathy*, *flexibility*, *social initiative*, *emotional stability*, dan *open-mindedness*. Hasil deskriptif menunjukkan bahwa *cultural empathy*, *flexibility*, dan *open-mindedness* relatif kuat, sedangkan *social initiative* dan *emotional stability* berada pada kategori sedang. Penyaringan awal Rasch mengidentifikasi enam responden *misfit*, sehingga kalibrasi final dilakukan terhadap 84 responden. Hasil Rasch final menunjukkan kualitas psikometrik yang memadai, dengan *person reliability* sebesar 0,89, *item reliability* sebesar 0,96, *raw variance explained by measures* sebesar 38,0%, dan *unexplained variance* pada kontras pertama sebesar 8,2%. Analisis *Differential Item Functioning* (DIF) berbasis gender menunjukkan bahwa sebagian besar butir berfungsi sebanding antarkelompok, meskipun lima butir, yaitu butir 14, 24, 25, 34, dan 36, menunjukkan DIF signifikan. Temuan ini menunjukkan bahwa MPQ-SF dapat memberikan profil *multicultural personality* yang berguna bagi calon konselor, tetapi butir yang sensitif gender perlu ditafsirkan secara hati-hati. Penelitian selanjutnya perlu melibatkan sampel yang lebih beragam dan menguji sumber DIF lain, termasuk etnis.

Kata kunci: Analisis Rasch; Calon Konselor Profesional; Keadilan Gender; Kepribadian Multikultural; Pendidikan Profesi Guru

INTRODUCTION

Globalization has intensified intercultural interaction across educational and counseling settings. In counselor education, the capacity to understand cultural differences, recognize personal biases, and adapt to culturally diverse contexts is essential for preparing

future counselors to serve heterogeneous student populations (Azzahrah et al., 2024; Boyer, 2022; Ridley et al., 2021). Multicultural responsiveness is increasingly regarded as a core professional competency because it underpins reflective practice, cultural self-awareness, and ethical support in diverse counseling contexts (Busch et al., 2025; O'Hara et al., 2021; Ridley et al., 2021).

Within this framework, multicultural personality has gained attention as a set of relatively stable psychological dispositions that facilitate effective cross-cultural interaction. It is commonly conceptualized through five dimensions: cultural empathy, open-mindedness, social initiative, emotional stability, and flexibility. These dimensions support affective, cognitive, and behavioral adaptation in culturally diverse environments (Fu et al., 2024; Summerfield et al., 2021). For counselor candidates, multicultural personality is particularly salient because culturally responsive practice requires perspective-taking, ambiguity tolerance, emotional regulation, and constructive engagement in intercultural helping relationships. Rather than a merely descriptive trait profile, multicultural personality may function as a dispositional resource that shapes the quality of counseling practice in diverse school contexts (O'Hara et al., 2021; Vallone et al., 2022).

The Multicultural Personality Questionnaire (MPQ) and its short form (MPQ-SF) are widely used to operationalize these dispositions in educational and professional settings. The MPQ-SF has been applied across countries and respondent groups. Summerfield et al. (2021) examined 392 university students in Spain, Fu et al. (2024) validated the Chinese version with 1,099 university students, and Hofhuis et al. (2024) followed 425 first-year students in an international higher education program over time. This growing body of evidence shows that the MPQ-SF is used not only for trait profiling but also for examining multicultural development and assessing the cross-cultural consistency of multicultural disposition measures in higher education.

The educational significance of multicultural personality is also evident across diverse learning contexts. Multicultural personality has been associated with international career aspirations, intercultural adjustment, and the ability to manage intercultural challenges, while multicultural exposure can strengthen cultural empathy and open-mindedness among learners (Alghizzi & Alshahrani, 2022; Carballal-Broome & Pinillos, 2022). In Indonesian

higher education, students in multicultural learning environments tend to report stronger multicultural dispositions than those in less diverse settings, indicating that structured multicultural experiences may have formative educational value (Marginson, 2022; Roziqi, 2024; Schartner & Young, 2020). Yet, existing evidence remains concentrated in general university populations, with limited attention to professional counselor preparation programs.

This gap is particularly important in Indonesia, where counselor candidates are expected to serve culturally pluralistic schools. Empirical evidence on multicultural personality among students in the national teacher certification program for guidance and counseling (*Pendidikan Profesi Guru Bimbingan dan Konseling [PPG BK]*) remains limited (Banin et al., 2023; Latif et al., 2022; Syahril et al., 2025a). Indonesian studies have primarily examined multicultural counseling services, cultural awareness, culturally responsive group interventions, and cultural intelligence, rather than the psychometric profiling of multicultural personality among counselor candidates (Alamsyah et al., 2024; Fasha et al., 2025; Ramli et al., 2024). As a result, curriculum design and professional preparation still rely on insufficient evidence regarding students' dispositional profiles and multicultural readiness (Budiasa et al., 2024; Rahmah et al., 2024). More critically, previous studies have rarely tested whether the instruments used to profile these dispositions function fairly across demographic groups before being used for educational interpretation, group comparison, or program evaluation.

From a measurement perspective, establishing fairness is essential when psychological constructs are assessed across demographic groups (Bourke et al., 2025; De Los Reyes et al., 2025; Kusano et al., 2025). Differential Item Functioning (DIF) analysis forms part of the validity argument by examining whether items operate equivalently across groups and whether observed score differences can be interpreted responsibly (Aryadoust et al., 2024b; Khalaf & Omara, 2022). Although Rasch modeling has been used to validate instruments in Indonesian educational research, its application to fairness analysis in multicultural personality assessment remains scarce, especially in counselor education (Andrich & Marais, 2019; Farozin et al., 2022; Zamroni et al., 2022). Gender was selected as the initial grouping variable because it is a widely examined demographic category in

measurement fairness research and is directly relevant to the responsible interpretation of group-based educational data.

Addressing both substantive and measurement gaps, this study profiles the multicultural personality of *PPG BK* students at Universitas Negeri Makassar using the MPQ-SF and extends the analysis through Rasch-based gender DIF. By integrating dispositional profiling with measurement fairness evidence, the study strengthens the empirical basis for multicultural counselor education in Indonesia. The findings are expected to inform curriculum design, supervision, reflective learning, and targeted training, while reducing the risk of overinterpreting group differences. In line with the ethical orientation of educational counseling, fair measurement is essential to ensure that multicultural assessment supports equitable interpretation rather than reinforcing unwarranted group-based assumptions (Aryadoust et al., 2024a; Duff et al., 2024; Khalaf & Omara, 2022; Moore & Dorn, 2026; Ramli et al., 2024).

METHODS

This study employed a quantitative descriptive design supplemented with Rasch-based psychometric analysis to strengthen score interpretation and measurement fairness. The design was selected to profile the multicultural personality of students enrolled in *PPG BK* at Universitas Negeri Makassar and to examine the measurement quality of the instrument. To support valid and equitable score interpretation, Rasch-based Differential Item Functioning (DIF) analysis by gender was incorporated because DIF analysis is widely used to detect potential item bias and evaluate measurement invariance across groups (Aryadoust et al., 2024b). Recent studies also emphasize that DIF evaluation is central to establishing fairness as a component of validity in educational and counseling assessment (Pesarin et al., 2024; Zwick, 2025).

The research procedure involved four main stages. First, the Indonesian version of the Multicultural Personality Questionnaire–Short Form (MPQ-SF) was prepared through translation, expert review, and contextual refinement. Second, the instrument was distributed online to students in the 2024 *PPG BK* cohort. Third, the collected responses were screened for completeness and response quality. Fourth, the data were analyzed descriptively and psychometrically using Rasch rating-scale analysis and gender-based DIF

analysis. Ethical principles were observed throughout the study by ensuring voluntary participation, informed consent, confidentiality, and aggregate reporting of the data. The overall research procedure is summarized in Figure 1.

The target population comprised all students enrolled in the 2024 cohort of *PPG BK* program at Universitas Negeri Makassar ($N = 109$). This study used a cohort-census sampling approach, in which all members of the population were invited to participate. Participation was voluntary. Of the 109 students invited, 90 submitted complete and valid responses, resulting in a response rate of 82.6%. This response rate was considered adequate for social science research because rates above 70% are generally viewed as sufficient to reduce nonresponse bias and support representativeness (Holtom et al., 2022).

The inclusion criteria were active enrollment in the 2024 *PPG BK* cohort and willingness to provide informed consent. Before analysis, all submitted questionnaires were screened to identify incomplete responses, duplicate submissions, and clearly non-analyzable response patterns. This screening procedure was applied to improve data quality and strengthen the validity of survey findings (Flick, 2022; Saldaña, 2021). The final descriptive sample consisted of 90 respondents, including 20 male and 70 female students, with a mean age of 25.01 years. The sample also reflected variation in ethnic background and undergraduate academic background. Table 1 presents the demographic characteristics of respondents included in the descriptive analysis.

Multicultural personality was measured using the Multicultural Personality Questionnaire–Short Form (MPQ-SF) (van der Zee et al., 2013). The instrument consists of 40 items representing five dimensions: cultural empathy, open-mindedness, social initiative, emotional stability, and flexibility. Responses were recorded using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

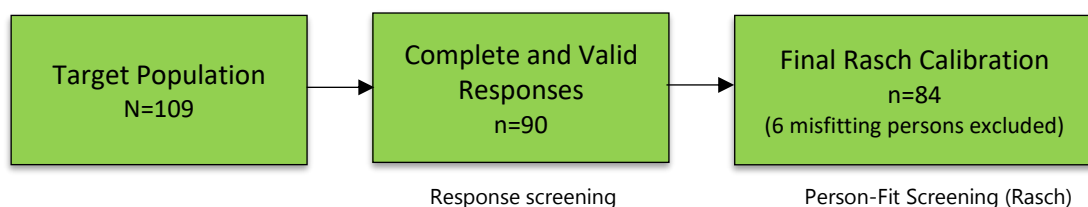


Figure 1. Research Procedure

Table 1.

Demographic Characteristics of the 2024 PPG BK Cohort (Descriptive Sample, n = 90)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	20	22.2
	Female	70	77.8
Age	23–25 years	58	64.4
	26–28 years	25	27.8
	> 28 years	7	7.8
Ethnic Background	Bugis	37	41.1
	Makassar	23	25.6
Ethnic Background	Toraja	8	8.9
	Mandar	7	7.8
Undergraduate Academic Background	Other (Javanese, Minahasan, Butonese, etc.)	15	16.6
	Guidance and Counseling	73	81.1
	Psychology / Other Education	17	18.9

The Indonesian version of the MPQ-SF was developed through forward translation, synthesis, back-translation, expert review, and contextual wording refinement, following contemporary recommendations for translating and culturally adapting self-report instruments. The expert review involved two senior counseling educators and one psychometrician to ensure semantic, conceptual, and contextual equivalence. Minor wording revisions were made based on expert consensus before the instrument was administered. The total scale demonstrated high internal consistency reliability, with Cronbach's alpha of .92.

Data were collected online in May 2025 through a secure survey platform. Participants received information about the study purpose, voluntary participation, confidentiality, and their right to withdraw at any time without consequences. Completing the questionnaire required approximately 15 minutes. The study received administrative and ethical approval from the Faculty of Education, Universitas Negeri Makassar. All participants provided informed consent before completing the questionnaire. To maintain confidentiality, responses were coded and analyzed only in aggregate form.

Data analysis was conducted in three stages to address both descriptive and measurement-based objectives. First, descriptive statistics were calculated to profile students' multicultural personality. Means and standard deviations were computed for each MPQ-SF dimension and for the total score. To support interpretation, theoretical cut-off

points were used to classify scores into low (< 2.5), moderate (2.5–3.5), and high (> 3.5) categories. These categories were used only for descriptive interpretation and were not intended as diagnostic classifications.

Second, Rasch rating-scale analysis was conducted using WINSTEPS version 3.73 to evaluate construct validity and measurement quality. The initial calibration was performed on the 90 complete cases, followed by an examination of person-fit statistics to identify aberrant response patterns. Six respondents were identified as misfitting persons and excluded from the subsequent calibration because their response patterns could reduce measurement stability. The final Rasch analysis was therefore conducted on 84 respondents. Model evaluation included person and item reliability, separation indices, infit and outfit mean-square statistics, and unidimensionality testing through principal component analysis of standardized residuals. Infit and outfit mean-square values between 0.5 and 1.5 were considered productive for measurement, while unidimensionality was evaluated using the raw variance explained by measures and the size of the first residual contrast. In the final calibration, the instrument showed acceptable psychometric quality, with person reliability of .89, item reliability of .96, person separation of 2.82, item separation of 4.94, Cronbach's alpha/KR-20 of .91, raw variance explained by measures of 38.0%, and unexplained variance in the first contrast of 8.2%. This distinction means that the descriptive profile was based on 90 respondents, whereas the final Rasch-based psychometric evaluation was based on 84 respondents after excluding misfitting cases.

Third, Rasch-based DIF analysis by gender was performed to examine measurement equivalence between male and female respondents. Gender was selected because it was sufficiently represented in the sample and substantively relevant to counselor education, whereas other background variables, particularly ethnicity, were unevenly distributed and less suitable for stable group comparison. DIF analysis compared item difficulty estimates across gender groups while controlling for overall levels of multicultural personality. Both DIF contrast and statistical significance were considered when interpreting potential item bias. Most items functioned comparably across gender groups; however, five items, namely items 14, 24, 25, 34, and 36, showed statistically significant DIF and were flagged for further substantive review in the Results and Discussion sections. Overall, the analysis focused on profiling and measurement evaluation rather than hypothesis testing, ensuring

that the resulting scores were descriptively meaningful, psychometrically robust, and reasonably fair across gender groups.

RESULTS AND DISCUSSION

Descriptive analysis of the Multicultural Personality Questionnaire–Short Form (MPQ-SF) revealed a generally strong multicultural personality profile among students in PPG at Universitas Negeri Makassar. As shown in Table 2, three dimensions were classified in the high category: cultural empathy ($M = 3.77$, $SD = .52$), flexibility ($M = 3.74$, $SD = .49$), and open-mindedness ($M = 3.52$, $SD = .43$). By contrast, social initiative ($M = 3.49$, $SD = .55$) and emotional stability ($M = 3.13$, $SD = 0.55$) were in the moderate category. The total MPQ-SF score was also categorized as high ($M = 3.53$, $SD = .51$). These findings indicate that *PPG BK* students demonstrated relatively strong affective-cognitive multicultural dispositions, particularly in understanding cultural differences, maintaining openness to diverse perspectives, and adapting flexibly to culturally varied situations. However, the comparatively lower scores for social initiative and emotional stability suggest that proactive intercultural engagement and emotional regulation remain less developed than the other dimensions.

Rasch rating-scale analysis was conducted to evaluate the measurement quality of the instrument. The descriptive profile was based on the full valid dataset ($n = 90$), whereas the final Rasch-based psychometric evaluation was conducted on 84 respondents after six misfitting persons were excluded from the calibration. This distinction ensured that the descriptive results represented the full valid sample, while the psychometric estimates were derived from a better-fitting Rasch model. As shown in Table 3, the final Rasch calibration demonstrated acceptable measurement quality. Person reliability (.89) and item reliability (.96) indicated good respondent consistency and a stable item hierarchy. Person separation (2.82) suggested that the instrument could distinguish respondents across several levels of multicultural personality, while item separation (4.94) indicated strong differentiation among items. Internal consistency was also satisfactory (KR-20/Cronbach's $\alpha = .91$). The raw variance explained by measures was 38%, and the unexplained variance in the first contrast was 8.2%, supporting acceptable unidimensionality and indicating no dominant secondary dimension.

Table 2.Descriptive Scores of Multicultural Personality among *PPG BK* Students (n = 90)

Dimension	Mean	SD	Category
Cultural empathy	3.77	.52	High
Flexibility	3.74	.49	High
Open-mindedness	3.52	.43	High
Social initiative	3.49	.55	Moderate
Emotional stability	3.13	.55	Moderate
Total score	3.53	.51	High

Note. Category labels were based on theoretical cut-off points: low (< 2.5), moderate (2.5–3.5), and high (> 3.5).

Table 3.

Summary of Rasch Measurement Evidence (Final Calibration, n = 84)

Indicator	Value	Interpretation
Person reliability	.89	Good respondent consistency
Item reliability	.96	Very stable item hierarchy
Person separation	2.82	Several respondent strata
Item separation	4.94	Strong differentiation among items
KR-20 / Cronbach's alpha	.91	Satisfactory internal consistency
Raw variance explained by measures	38%	Acceptable unidimensionality evidence
Unexplained variance in 1st contrast	8.2%	No dominant secondary dimension
Mean person measure	+ .82 logits	Respondents tended to endorse items above average item difficulty
Person measure range	-.64 to +2.72 logits	Adequate spread of respondent ability
Mean infit MNSQ	1.05	Acceptable response fit
Mean outfit MNSQ	1.03	Acceptable response fit
Rating-scale threshold range	-2.21 to +2.73 logits	Ordered category functioning

Note. Rating-scale categories showed monotonically increasing Andrich thresholds, supporting retention of the five-point response scale.

Additional Rasch evidence further supported the adequacy of the instrument for profiling purposes. The mean person measure was +.82 logits, with a range from -.64 to +2.72 logits, indicating that respondents generally endorsed the items above the average item-difficulty level and that the sample showed an adequate spread of multicultural personality measures. Mean infit (1.05) and outfit (1.03) values were within acceptable ranges. The rating-scale threshold range, from -2.21 to +2.73 logits, also indicated ordered category functioning and supported the retention of the five-point response scale.

Table 4.

Flagged Items from Rasch Fit and DIF Analysis

Item	Rasch evidence	DIF evidence	Interpretation
14	Difficult item; misfit attention	Significant DIF, $p = .0143$	Requires review for gender-sensitive interpretation
24	Highest misfit; negative point-measure correlation	Significant DIF, $p = .0482$	Requires substantive wording review
25	Not flagged for misfit	Significant DIF, $p = .0387$	Requires review for gender fairness
32	Difficult item; misfit attention	Not flagged for DIF	Requires review for item clarity or construct alignment
34	Very easy item; misfit attention	Rasch-Welch $p = .0556$; significant by Mantel χ^2	Requires review due to extreme endorsement and DIF indication
36	Not flagged for misfit	Significant DIF, $p = .0205$	Requires review for gender fairness

Note. DIF = Differential Item Functioning. Item 34 was retained as flagged because the study output indicated strong practical DIF contrast and Mantel significance, although the Rasch-Welch probability was marginal

Table 4 presents the items requiring closer substantive review based on Rasch fit and gender-based DIF evidence. Items 14, 24, 32, and 34 were flagged based on Rasch evidence, including item difficulty, misfit, negative point-measure correlation, or extreme ease of endorsement. Items 14, 24, 25, 34, and 36 showed DIF evidence and therefore require caution in gender-based interpretation. Item 34 was retained as flagged because the study output indicated strong practical DIF contrast and Mantel significance, although the Rasch-Welch probability was marginal.

Taken together, the combined descriptive and Rasch evidence suggests that the MPQ-SF captured a meaningful profile of multicultural personality among *PPG BK* students while also revealing specific areas requiring measurement caution. The descriptive findings show relatively strong cultural empathy, flexibility, and open-mindedness, whereas social initiative and emotional stability appear less developed. The Rasch results support the adequacy of the instrument for profiling purposes, as indicated by reliability, separation, unidimensionality, person-measure spread, and ordered rating-scale functioning. However, the flagged items identified through fit statistics and DIF analysis indicate that some items require closer review before the instrument is used for stronger gender-based interpretation or high-stakes educational decisions.

The prominence of cultural empathy indicates that counselor candidates were generally able to recognize and appreciate the feelings, perspectives, and lived experiences of others across cultural differences. This pattern is consistent with recent evidence showing that multicultural learning environments, structured intercultural exposure, and targeted multicultural training can strengthen empathic understanding, awareness, and socially just orientations among university students and counselor candidates (Fu et al., 2024; Huang et al., 2025; Yıldız & Uslu, 2024). In higher education, intercultural learning contributes to broader global competence partly through self-efficacy, suggesting that empathy is not only a desirable disposition but also a functional resource for adaptive engagement in diverse environments (Huang et al., 2025; Ridwan & Pambudi, 2020). For counselor education, this finding is important because cultural empathy underpins accurate listening, perspective-taking, and ethically responsive helping relationships with students whose cultural identities, communication styles, and family norms differ from one another.

Open-mindedness also emerged as one of the stronger dimensions, suggesting that respondents were relatively willing to suspend rigid judgments and remain receptive to unfamiliar values and worldviews. This finding is encouraging because multicultural counseling requires future counselors to engage with difference without premature closure or deficit-based assumptions. Recent studies in higher education and helping professions indicate that dispositional openness and multicultural personality profiles are meaningfully associated with more favorable acculturation orientations, lower exclusionary tendencies, and more adaptive engagement with diversity (Fu et al., 2024; Leanza et al., 2025). The current result suggests that many participants already possess a cognitive-affective foundation that can support reflective judgment in culturally plural school settings, although this openness still needs to be translated into observable counseling behavior through supervised practice, case analysis, and culturally responsive feedback.

Flexibility was likewise found in the high category, indicating that respondents were relatively ready to adjust their behavior, expectations, and interactional strategies when encountering unfamiliar cultural situations. Prior studies have shown that adaptive multicultural personality profiles are associated with more welcoming acculturation orientations and lower anxiety in professional trainees, while real-world multicultural learning tasks deepen students' awareness and action in diverse contexts (Chen, 2024;

Leanza et al., 2025). For counselor candidates, such flexibility is not merely a matter of social convenience; it is a professional necessity because school-based helping frequently requires adjustments in language use, pacing, relational style, and intervention strategy across culturally heterogeneous students and families (Leibowitz-Nelson et al., 2020; Placeres et al., 2022; Syahril et al., 2025b; Tran et al., 2025). In the Indonesian context, where cultural plurality intersects with linguistic, religious, and local value differences, flexibility can be viewed as a practical indicator of readiness for culturally responsive counseling.

By contrast, social initiative and emotional stability remained in the moderate category, suggesting that these dimensions still require intentional strengthening in counselor preparation. Moderate social initiative implies that not all respondents were equally proactive in entering unfamiliar social situations, initiating interaction across differences, or confidently building rapport in culturally diverse contexts. Moderate emotional stability likewise suggests that some respondents may still experience tension or uncertainty when dealing with ambiguity, pressure, or culturally complex interpersonal encounters. This uneven pattern is consistent with international work showing that multicultural competence does not develop uniformly across dimensions and that active engagement, advocacy, and emotionally regulated practice often require sustained experiential learning rather than exposure alone (Nam & Kim, 2025; Yıldız & Uslu, 2024). Counselor education should therefore provide more opportunities for intercultural simulation, guided field experience, reflective supervision, and feedback-based practice to strengthen these less robust dimensions.

The Rasch findings add methodological depth to the descriptive interpretation by showing that the MPQ-SF was sufficiently stable for profiling respondent tendencies in the present sample. After six misfitting persons were excluded, the final calibration on 84 respondents yielded acceptable psychometric indicators, including person reliability of .89, item reliability of .96, person separation of 2.82, item separation of 4.94, raw variance explained by measures of 38.0%, and unexplained variance in the first contrast of 8.2%. The person mean of +0.82 logits further suggests that, overall, respondents tended to endorse multicultural personality items at a level above average item difficulty. At the item level, the analysis revealed meaningful variation, with item 27 being the most difficult item to

endorse, item 34 being the easiest, and several items, especially 24 and 34, showing notable misfit. These findings demonstrate the value of Rasch analysis because they move interpretation beyond total-score description and identify specific items that may require conceptual review or wording refinement in future adaptations.

The gender-based DIF findings require careful and non-binary interpretation. Most items functioned comparably across male and female respondents, but five items—14, 24, 25, 34, and 36—showed statistically significant DIF in the final calibration. This means that the instrument cannot be described as completely invariant across gender in the present sample, even though the differential functioning was localized rather than pervasive. Recent methodological work consistently argues that fairness should not be treated as an all-or-nothing claim; instead, researchers should examine the extent, location, and practical consequence of DIF before making strong statements about equivalence (Asamoah et al., 2025; Chen, 2024). The concentration of DIF in a relatively small subset of items suggests that the MPQ-SF generally performs adequately for profiling purposes, but group-based interpretations should remain cautious, especially for monitoring student development, comparing subgroups, or informing curriculum decisions.

These findings have direct implications for counselor education. First, the profile suggests that *PPG BK* students already possess a promising foundation in empathy, openness, and adaptability, which can be further strengthened through multicultural case analysis, reflective dialogue, supervised practice, and structured encounters with difference. Second, the moderate standing of social initiative and emotional stability points to the need for more deliberate pedagogical designs that require students to initiate contact, tolerate uncertainty, and sustain composure in intercultural helping situations. Third, the psychometric evidence shows that counselor education programs should not rely solely on descriptive score interpretation; fairness-oriented evaluation is also necessary when instruments are used for reflection, program monitoring, or evidence-based curriculum improvement. This broader interpretation is consistent with recent calls in counselor training and higher education to integrate multicultural competence, social justice, and context-sensitive assessment rather than treating them as separate agendas (Bastomi, 2020; Nam & Kim, 2025; Nursyamsiah et al., 2025; Yıldız & Uslu, 2024).

The discussion is also relevant to the orientation of Islamic educational counseling. In Islamic thought, educational and counseling practice is expected to uphold justice (*'adl*), human dignity (*karāmah*), and responsible recognition of difference (*ta'āruf*), values that are highly compatible with culturally responsive and fair assessment. Recent work on Islamic counseling in multicultural contexts emphasizes that effective counseling in Muslim communities requires the integration of religious values with cultural awareness, rather than the reduction of one into the other (Abdul, 2020; Haramain & Afiah, 2025; Jon, 2025; Pahlewi, 2024). Likewise, research in Islamic higher education highlights the urgency of multicultural preparation before counseling roles are enacted, because students may show basic multicultural understanding without yet possessing sufficiently strong commitment or applied competence (Ermalianti et al., 2024; Fakhro et al., 2023; Mani & Mansaray, 2025; Sue et al., 2019). From this perspective, the findings support a counselor education model that joins technical measurement quality with Islamic ethical commitments to fairness, respect, and non-prejudicial judgment.

Theoretically, this study contributes to the literature by positioning multicultural personality as both a dispositional construct and a measurable component of counselor readiness in culturally plural educational settings. It also extends the use of the MPQ-SF by integrating descriptive profiling with Rasch-based measurement fairness evidence in the context of Indonesian Islamic educational counseling. Practically, the findings provide counselor education programs with evidence for designing targeted learning experiences that strengthen social initiative and emotional stability while sustaining students' existing strengths in empathy, openness, and flexibility.

Several limitations should be acknowledged. The participants came from a single institutional context, and the final Rasch calibration was based on 84 respondents after the exclusion of six misfitting persons. In addition, fairness analysis was limited to gender because the ethnic categories in the dataset were more unevenly distributed for stable comparison. Future studies should involve larger and more diverse samples, examine additional sources of DIF such as ethnicity, and revisit the flagged items to determine whether the observed differential functioning reflects wording, content familiarity, or more substantive group-related interpretation patterns.

CONCLUSION

This study profiled the multicultural personality of professional counselor candidates enrolled in *PPG BK* at Universitas Negeri Makassar and examined the gender fairness of the MPQ-SF using Rasch-based Differential Item Functioning analysis. The findings showed that cultural empathy, flexibility, and open-mindedness were relatively strong, whereas social initiative and emotional stability remained less developed. This pattern suggests that respondents had a favorable dispositional foundation for culturally responsive counseling, but still require structured learning experiences that strengthen proactive intercultural engagement and emotional regulation. The study contributes to multicultural counselor education in Indonesia by demonstrating that personality profiling becomes more defensible when supported by fairness-oriented psychometric evidence. In the context of Islamic educational counseling, the findings further underscore the need for culturally sensitive and equitable assessment practices aligned with ethical commitments to dignity, balance, and respect for human difference. Given its single-institution scope and gender-focused DIF analysis, future research should involve more diverse samples, examine additional sources of DIF such as ethnicity, and investigate how multicultural personality relates to actual counseling competence in educational practice.

Ethics Statement

This study was approved by The Institute for Research and Community Service, State University of Makassar with approval number 34/UN36.11/TU/2025. Informed consent was obtained from all participants before data collection. The confidentiality and anonymity of participants were protected throughout the research process.

Declaration of Generative AI Use

The author(s) used Grammarly to assist with language editing and readability improvement. The author(s) have reviewed, edited, and verified all AI-assisted content and accept full responsibility for the accuracy, originality, and integrity of the manuscript.

Conflict of Interest Statement

The author(s) declare that there is no conflict of interest regarding the publication of this article.

REFERENCES

- Abdul, B. (2020). Multicultural Counseling in Islamic Perspective. *Konseling Religi Jurnal Bimbingan Konseling Islam*, 11(1), 113–128. <http://dx.doi.org/10.21043/kr.v11i1.6435>
- Alamsyah, M. N., Muslihati, M., & Peng, Y. (2024). Exploration of Multicultural Counseling Services to Support Adolescents' Cultural Awareness in Schools. *ProGCouns: Journal of Professionals in Guidance and Counseling*, 5(2), 63–77. <https://doi.org/10.21831/progcouns.v5i2.77508>
- Alghizzi, T. M., & Alshahrani, T. M. (2022). An Investigation of Multicultural Personality Traits of EFL Learners in English as a Medium of Instruction Setting: The Case of Saudi Arabia. *Frontiers in Psychology*, 13, <https://doi.org/10.3389/fpsyg.2022.1000235>
- Andrich, D. & Marais, I. (2019). *A Course in Rasch Measurement Theory: Measuring in the Educational, Social and Health Sciences*. Singapore: Springer. <https://doi.org/10.1007/978-981-13-7496-8>
- Aryadoust, V., Soo, Y. X. N., & Zhai, J. (2024a). Exploring the State of Research on Motivation in Second Language Learning: A Review and a Reliability Generalization Meta-Analysis. *International Review of Applied Linguistics in Language Teaching*, 62(2), 1093–1126. <https://doi.org/10.1515/iral-2022-0115>
- Aryadoust, V., Min, S., & Chen, X. (2024b). Investigating Differential Item Functioning Across Interaction Variables in Listening Comprehension Assessment. *Studies in Educational Evaluation*, 80, 101322. <https://doi.org/10.1016/j.stueduc.2024.101322>
- Asamoah, N. A. B., Turner, R. C., Lo, W.-J., Crawford, B. L., & Jozkowski, K. N. (2025). Impacts of DIF Item Balance and Effect Size Incorporation with the Rasch Tree. *Educational and Psychological Measurement*, 86(2), 366–392. <https://doi.org/10.1177/00131644251370605>
- Azzahrah, H., Yusuf, S., Saripah, I., Syahril, M. F., & Abdullah, N. Z. M. (2024). Profil Perbedaan Karakteristik Demografi Subjektive Well-being Siswa SMK Provita Bandung. *Pamomong: Journal of Islamic Educational Counseling*, 5(2), 101–115. <https://doi.org/10.18326/pamomong.v5i2.1932>
- Banin, M. C., Karimah, U., Basit, A., Irfan, A., & Yunus, A. (2023). Collaboration Between Religion Teacher and Counselor in Shaping Student Morals. *Pamomong: Journal of Islamic Educational Counseling*, 4(1), 25–42. <https://doi.org/10.18326/pamomong.v4i1.25-42>
- Bastomi, H. (2020). Integrasi Kompetensi Multikultural dan Keadilan Sosial dalam Layanan Konseling. *KOMUNIKA: Jurnal Dakwah Dan Komunikasi*, 14(2), 241–258. <https://doi.org/10.24090/komunika.v14i2.3308>
- Bourke, M., Cairney, J., Richard, V., Mulcahy, S., Moos, C., & Dopson, S. (2025). Factorial Validity and Measurement Invariance of a Self-Reported Scale of Paradoxical

- Leadership Behaviours: Evidence from Sport Industry Leaders. *Frontiers in Psychology*, 16, 1541891. <https://doi.org/10.3389/fpsyg.2025.1541891>
- Boyer, W. (2022). Cultural Auditing to Enhance Reflective Counseling Practices with Indigenous Families. *Journal of Multicultural Counseling and Development*, 50(3), 151–161. <https://doi.org/10.1002/jmcd.12245>
- Budiasa, I. N., Hajaroh, M., Eliasa, E. I., Azizah, N., & Siswoko, H. (2024). Nilai-Nilai Indigenous Bali dalam Praktik Konseling Multikultural. *QUANTA: Kajian Bimbingan Dan Konseling Dalam Pendidikan*, 8(1), 8–16. <https://doi.org/10.22460/quanta.v8i1.4320>
- Busch, L., Thomson, K., Powless-Lynes, M. Y., Ng, O., & Spiker, S. (2025). Towards Ethical Spaces of Engagement in Behavior Analysis. *Behavior and Social Issues*, 1–21. <https://doi.org/10.1007/s42822-024-00194-1>
- Carballal-Broome, A., & Pinillos, M.-J. (2022). International Career Aspirations: Can Multicultural Personality Traits Predict Interest in Working Abroad?. *Journal of Intercultural Communication*, 22(2), 11-21. <https://doi.org/10.36923/jicc.v22i2.35>
- Chen, A. S. (2024). Study on Teaching Practices of Multicultural Competences: Fostering a Cultural Connection Between New Immigrant Females and Undergraduate Students. *International Journal of Intercultural Relations*, 100, 101968. <https://doi.org/10.1016/j.ijintrel.2024.101968>
- De Los Reyes, A., Oswald, F. L., Racz, S. J., Pina, A., McLeod, B. D., Wang, M., & Charamut, N. R. (2025). Editorial: Fairness, Validity, and Transparency in What Researchers Assume When Testing for Measurement Invariance. *Journal of Clinical Child & Adolescent Psychology*, 54(3), 299–317. <https://doi.org/10.1080/15374416.2025.2484813>
- Duff, J. H., Scarpa, M., Zupluoglu, C., & Prilleltensky, I. (2024). The Development and Initial Validation of the Multidimensional Fairness Scale. *Social Justice Research*, 37(3), 213–238. <https://doi.org/10.1007/s11211-024-00440-2>
- Ermaliani, E., Rahmi, N., & Istati, M. (2024). Exploring Peer Counselors' Multicultural Understanding: Assessing the Urgency of Multicultural Counseling in Islamic Universities. *Jurnal Konseling Pendidikan Islam*, 5(2), 301–311. <https://doi.org/10.32806/jkpi.v5i2.189>
- Fakhro, D., Rujimora, J., Zeligman, M., & Mendoza, S. (2023). Counselor Self-Efficacy, Multicultural Competency, and Perceived Wellness Among Counselors-in-Training During COVID-19: A Pre- and Peri-Analysis. *Journal of Counselor Leadership and Advocacy*, 10(2), 99–111. <https://doi.org/10.1080/2326716X.2023.2229323>
- Farozin, M., Astuti, B., Sanyata, S., Titi, D., Nurmalasari, E., & Sutanti, N. (2022). Rasch Model for the Need Assessment Instrument of Academic Guidance and Counseling Program in Junior High School. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 26(2), 177–185. <https://doi.org/10.21831/pep.v26i2.51816>
- Fasha, A. N., Atmoko, A., Rahman, D. H., & Muslihati, M. (2025). Integration of Gending Sriwijaya Dance Values in Group Counseling to Reduce Microaggression Behaviors of Junior High School Students. *ProGCouns: Journal of Professionals in Guidance and Counseling*, 6(1), 1–12. Retrieved from <https://jurnal.uny.ac.id/index.php/progcouns/article/view/85965>

- Flick, U. (2022). *An Introduction to Qualitative Research*. London: Sage. Retrieved from <https://uk.sagepub.com/en-gb/eur/an-introduction-to-qualitative-research/book278983>
- Fu, H., Nadeem, M. U., & Kulich, S. J. (2024). Multicultural Personality Traits of Chinese University Students and Their Effects on Psychological Adjustment in the Aftermath of COVID-19 in Shanghai: A Scale Validation. *Frontiers in Psychiatry, 15*, 1363809. <https://doi.org/10.3389/fpsy.2024.1363809>
- Haramain, M., & Afiah, N. (2025). Bridging Faith and Therapy: A Systematic Review of Islamic Psychotherapy in Mental Health and Rehabilitation. *Indonesian Journal of Islamic Counseling, 6*(2), 133–150. <https://doi.org/10.35905/ijic.v6i2.10727>
- Hofhuis, J., Jongerling, J., & Jansz, J. (2024). Who Benefits from the International Classroom? A Longitudinal Examination of Multicultural Personality Development During One Year of International Higher Education. *Higher Education, 87*(4), 1043–1059. <https://doi.org/10.1007/s10734-023-01052-6>
- Holtom, B., Baruch, Y., Aguinis, H., & Ballinger, G. A. (2022). Survey response rates: Trends and a validity assessment framework. *Human Relations, 75*(8), 1560–1584. <https://doi.org/10.1177/00187267211070769>
- Huang, Q., Cheung, A. C. K., Xu, J., & Jiang, Y. (2025). Intercultural Learning and Adolescents' Global Competence: The Mediating Effect of Self-Efficacy. *International Journal of Intercultural Relations, 105*, <https://doi.org/10.1016/j.ijintrel.2025.102143>
- Jon, L. A. (2025). Cross-Cultural Counseling in Islamic Education: Paradigm, Contemporary Challenges, and Service Model Based on Multicultural Competence. *Jurnal Penelitian Dan Evaluasi Pendidikan, 12*(3), 236–243. <https://doi.org/10.64540/xan07166>
- Khalaf, M. A., & Omara, E. M. N. (2022). Rasch Analysis and Differential Item Functioning of English Language Anxiety Scale (ELAS) Across Sex in Egyptian Context. *BMC Psychology, 10*(1), 242. <https://doi.org/10.1186/s40359-022-00955-w>
- Kusano, K., Napier, J. L., & Jost, J. T. (2025). The Mismeasure of Culture: Why Measurement Invariance Is Rarely Appropriate for Comparative Research in Psychology. *Personality and Social Psychology Bulletin, 0*(0), 1461672251341402. <https://doi.org/10.1177/01461672251341402>
- Latif, S., Suherman, U., Supriatna, M., & Ilfiandra, I. (2022). Developing a Cultural Intelligence Instrument for Guidance and Counseling Teachers. *Journal of Educational Science and Technology, 8*(1), 9–16. <http://dx.doi.org/10.26858/est.v8i1.19653>
- Leanza, Y., Bernard, G., Demers, V., Brisset, C., Yampolsky, M., Jones-Lavallée, A., Arsenault, S., Giroux, D., Gagnon, R., & Gulfi, A. (2025). Cultural Competence, Acculturation Orientations, and Attachment Dimensions in Future Social Workers and Occupational Therapists Before Entering These Professions: A Comparative Study. *International Journal of Intercultural Relations, 105*, 102113 <https://doi.org/10.1016/j.ijintrel.2024.102113>
- Leibowitz-Nelson, S. B., Baker, S. B., & Nassar, S. C. (2020). Multicultural and Social Justice Counseling Competencies: Institutional Interventions for Professional School Counselors. *Journal of Counselor Leadership and Advocacy, 7*(1), 42–54. <https://doi.org/10.1080/2326716X.2020.1727384>

- Mani, E. K. F., & Mansaray, M. F. (2025). Multicultural Counseling in the 21st Century: Redefining Professional Services in the Era of Globalization. *International Journal of Counseling and Psychotherapy*, 2(3), 154–168. <https://doi.org/10.64420/ijcp.v2i3.367>
- Marginson, S. (2022). Space and Scale in Higher Education: The Glonacal Agency Heuristic Revisited. *Higher Education*, 84(6), 1365–1395. <https://doi.org/10.1007/s10734-022-00955-0>
- Moore, C. M., & Dorn, M. A. (2026). A Step-by-Step Guide for Assessing DIF Using the Rasch Model. *Measurement and Evaluation in Counseling and Development*, 59(2), 176–193. <https://doi.org/10.1080/07481756.2025.2601578>
- Nam, J. K., & Kim, D. (2025). Multicultural Counseling Competence for Addressing the Mental Health Needs of International Students in Korea: A Concept Mapping Study. *Current Psychology*, 44(6), 4634–4648. <https://doi.org/10.1007/s12144-025-07468-w>
- Nursyamsiah, I., Miharja, S., & Asro, M. (2025). Membangun Kepekaan Budaya: Tantangan dan Peluang dalam Konseling Multikultural. *Jurnal Komunitas Online*, 6(1), 40–54. <https://doi.org/10.15408/jko.v6i1.43414>
- O'Hara, C., Chang, C. Y., & Giordano, A. L. (2021). Multicultural Competence in Counseling Research: The Cornerstone of Scholarship. *Journal of Counseling & Development*, 99(2), 200–209. <https://doi.org/10.1002/jcad.12367>
- Pahlewi, R. M. (2024). Integrating Multiculturalism in Islamic Counselling: A Phenomenological Analysis of The Muslim Community in Melaka, Malaysia. *Hisbah: Jurnal Bimbingan Konseling dan Dakwah Islam*, 21(2), 93–107. <https://doi.org/10.14421/hisbah.2024.212-06>
- Placeres, V., Davis, D. E., Williams, N., Shodiya-zeumault, S., Aiello, M., Petion, G., & Mason, E. (2022). School Counselors and Multicultural Counseling Competencies: Are We as Competent as We Think We Are? *Professional School Counseling*, 26(1a), 2156759X221086751. <https://doi.org/10.1177/2156759X221086751>
- Pesarin, M., Rapti, D., Caputo, R., Ghirotti, M., Benvenuti, E., Fabbri, A., Loffredo, G., Minghini, F., Nale, M., & Tralli, A. (2024). Construction Phases Assessment for a Railway Tunnel. *Procedia Structural Integrity*, 62, 1137–1144. <https://doi.org/10.1016/j.prostr.2024.09.150>
- Rahmah, M., Ristianti, D. H., & Harmi, H. (2024). Peran Konseling Multikultural dalam Meningkatkan Komunikasi Lintas Budaya Siswa di SMP 8 Sarolangun. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 10(04), 243–253. Retrieved from <https://journal.stkipsubang.ac.id/index.php/didaktik/article/view/4777>
- Ramli, M., Saputra, N. M. A., & Muhayani, U. (2024). Cultural Intelligence Profile of Junior High School Counsellors and Its Implication on Multicultural Counseling. *Jurnal Kajian Bimbingan Dan Konseling*, 9(1), 47–54. <https://doi.org/10.17977/um001v9i12024p47-54>
- Ridley, C. R., Sahu, A., Console, K., Surya, S., Tran, V., Xie, S., & Yin, C. (2021). The Process Model of Multicultural Counseling Competence. *The Counseling Psychologist*, 49(4), 534–567. <https://doi.org/10.1177/0011000021992339>
- Ridwan, H. A., & Pambudi, Y. E. (2020). Peran Pendidikan Spiritual dalam Perkembangan Masa Adolens di Era Globalisasi 4.0. *Pamomong: Journal of Islamic Educational Counseling*, 1(1), 20–28. <https://doi.org/10.18326/pamomong.v1i1.20-28>

- Roziqi, M. (2024). Bibliometric study: Trends in Multicultural Counselling Competence Research in Indonesia, 2013–2022, and Its Implications. *Counselling and Psychotherapy Research*, 24(2), 692–702. <https://doi.org/10.1002/capr.12706>
- Saldaña, J. (2021). *The coding manual for qualitative researchers*. London: Sage.
- Schartner, S. A. & Young, T. J. (2020). *Intercultural Transitions in Higher Education: International Student Adjustment and Adaptation*. UK: Edinburgh University Press. <https://doi.org/10.1515/9781474431231>
- Sue, D. W., Alsaidi, S., Awad, M. N., Glaeser, E., Calle, C. Z., & Mendez, N. (2019). Disarming Racial Microaggressions: Microintervention Strategies for Targets, White Allies, and Bystanders. *American Psychologist*, 74(1), 128–142. <https://doi.org/10.1037/amp0000296>
- Summerfield, L. P., Prado-Gascó, V., Giménez-Espert, M. D. C., & Mesa-Gresa, P. (2021). The multicultural personality questionnaire (Sf-40): Adaptation and Validation of the Spanish Version. *International Journal of Environmental Research and Public Health*, 18(5), 1–15. <https://doi.org/10.3390/ijerph18052426>
- Syahril, M. F., Krismona, E. B., & Umar, N. F. (2025a). Keterampilan Konseling Guru BK di Era Disrupsi: Tinjauan Supervisi Klinis untuk Praktik Profesional. *Counsellia: Jurnal Bimbingan Dan Konseling*, 15(1), 52–59. <https://doi.org/10.25273/counsellia.v15i1.22328>
- Syahril, M. F., Krismona, E. B., Latif, S., Harum, A., & Abdullah, R. (2025b). Supervisi Klinis dalam Kompetensi Konseling Guru BK pada Praktik Layanan BK di Sekolah. *Psychocentrum Review*, 6(58), 177–181. <https://doi.org/10.26539/pcr.733798>
- Tran, T. S., Rubel, D. J., & Shi, Y. (2025). How Midwestern White School Counselors Experience Developing Cultural Humility in Working with Students of Color: An Interpretative Phenomenological Analysis. *Professional School Counseling*, 29(1), 2156759X251396463. <https://doi.org/10.1177/2156759X251396463>
- Vallone, F., Dell’Aquila, E., Dolce, P., Marocco, D., & Zurlo, M. C. (2022). Teachers’ Multicultural Personality Traits as Predictors of Intercultural Conflict Management Styles: Evidence from Five European Countries. *International Journal of Intercultural Relations*, 87, 51–64. <https://doi.org/10.1016/j.ijintrel.2022.01.006>
- van der Zee, K., van Oudenhoven, J. P., Ponterotto, J. G., & Fietzer, A. W. (2013). Multicultural Personality Questionnaire: Development of a Short Form. *Journal of Personality Assessment*, 95(1), 118–124. <https://doi.org/10.1080/00223891.2012.718302>
- Yıldız, D. G., & Uslu, N. A. (2024). Investigating the Effect of Digital Storytelling on Multicultural Competencies and Social Justice: A Mixed-Method Study in Psychological Counseling Education. *International Journal of Intercultural Relations*, 103, 102065. <https://doi.org/10.1016/j.ijintrel.2024.102065>
- Zamroni, E., Hanurawan, F., Muslihati, Hambali, I., & Hidayah, N. (2022). Trends and research implications of guidance and counseling Services in Indonesia from 2010 to 2020: A bibliometric analysis. *Sage Open*, 12(2), 21582440221091260. <https://doi.org/10.1177/21582440221091260>
- Zwick, R. (2026). Fairness in educational measurement: Theory and concepts. In L. L. Cook & M. J. Pitoniak (Eds.), *Educational measurement* (5th ed.). New York, NY: Oxford Academic. <https://doi.org/10.1093/oso/9780197654965.003.0006>