



MODEL DEVELOPMENT FOR CULTURALLY RESPONSIVE TEACHING AMONG THE ELEMENTARY TEACHERS IN THE DIVISION OF COTABATO

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ABSTRACT :

This study explored the dimensions and practices of culturally responsive teaching among elementary teachers in the Division of Cotabato using a two-phase design that integrated both quantitative and qualitative approaches. The quantitative phase employed Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to determine the underlying structure of culturally responsive teaching. EFA revealed fifteen dimensions accounting for 74.636% of the total variance, while CFA supported a thirteen-factor model with excellent fit indices ($CFI = .920$, $TLI = .902$, $RMSEA = .056$), validating the multidimensionality and structural reliability of the culturally responsive teaching construct. The qualitative phase used thematic analysis to examine teachers' practices in relation to cultural responsiveness. Findings revealed that teachers actively use local languages and dialects to enhance student comprehension and engagement. Cultural values, traditions, and religious beliefs were commonly embedded in lessons to make instruction more respectful and meaningful. Teachers also employed a variety of cultural activities—such as storytelling, drawing, singing, and role-playing—to strengthen cultural identity and increase academic relevance. Additionally, inclusive strategies were consistently used to promote equity, affirm diverse cultural identities, and ensure that every student feels respected and valued. This study concludes that culturally responsive teaching is a multidimensional and dynamic framework that integrates social justice, cultural inclusion, student-centered practices, and high expectations. The validated model offers a reliable tool for assessing culturally responsive pedagogy, while the qualitative insights underscore the contextual strategies that teachers use to make learning inclusive and transformative. The findings provide empirical evidence to inform policy, teacher training, and instructional development in multicultural educational settings.

INTRODUCTION

The Philippines is a multi-ethnic, multicultural, and multilingual country. Each region and province have its diverse culture which makes it unique from the other. Likewise, the delivery of learning should be provided opportunities for each learner who came from different cultural backgrounds. Thus, the concept of culturally responsive teaching comes in to helping teachers to address the diverse needs of learners in the classroom.

In the study of Liu et al. (2025), this approach was proven to have improved students' engagement, academic performance, and inclusivity. For Tanase et al. (2024), teachers increased their understanding of the culture of their students when they are explicitly taught about the cultural contexts of society. These revealed that teachers will become culturally responsive to the needs of their learners.

Looking into the lens of the Philippines, Salgado et al. (2024) shared that culturally responsive teaching served as the catalyst for inclusive education. Meanwhile, Tortola (2024) recommended the need to professional development programs which empower teachers with the knowledge and skills crucial for creating an inclusive learning environment. This is in line with the context of the MATATAG curriculum which encompasses diversity and inclusivity (Maguate, 2024).

Although Culturally Responsive Teaching has been widely utilized, however, it is limited within the concept of higher educational institutions (Hutchison & McAlister-Shields, 2020), on multicultural attitudes of teachers (Abacioglu et al., 2020), and on technology supported learning environment (Chuang et al., 2020). Furthermore, a model was developed but it only focused for pre-service teachers (Hu et al., 2021; Acquah et al., 2020). None of which indicated the contexts of the Division of Cotabato. Hence, it is necessary to develop a model for Culturally Responsive Teaching.

This study provided teachers in the elementary education a framework which will help them improve the delivery of teaching. They will become culturally responsive realize the importance of culture in honing the learners. Navigating into the culture of the students will enable teachers to create and design a more inclusive learning environment.

Statement of the Problem

1. What are the dimensions of Culturally Responsive Teaching among the elementary teachers in the Division of Cotabato?
2. What model on Culturally Responsive Teaching among the elementary teachers in the Division of Cotabato can be developed?

Research Design

This study will employ quantitative cross-sectional survey design (Magano et al., 2024). Quantitative research in general utilizes numbers in the interpretation of the data (Maier et al., 2023). The same that cross-sectional survey gathers the data through the survey questionnaire. It is important in the sense that the researcher could be able to draw conclusions and develop a model for Culturally Responsive Teaching.

Locale of the Study

The focus of the study was in the Province of Cotabato. It covered the three congressional districts. However, this study will only be limited within the premise of the Division of Cotabato, thus, it excludes the Division of Kidapawan City. Generally, the Province of Cotabato is still the biggest in the land area Region XII even though 63 of its barangays voted for their inclusion in the Bangsamoro Autonomous Region in Muslim Mindanao.

Data Analysis

- **Exploratory Factor Analysis.** It is a technique within factor analysis whose overarching goal is to identify the underlying relationships between measured variables. EFA is used to uncover the underlying structure of a relatively large set of variables. The method allows researchers to explore the data to see if they can find any underlying factors that can explain the data.
- **KMO-Bartlett's Test.** These tests help determine whether the data is appropriate for the use of factor analysis, which aims to identify underlying factors or constructs that can explain the patterns of correlations among observed variables.
- **Confirmatory Factor Analysis.** A researcher posits an *a priori* theoretical measurement model to describe or explain the relationship between the underlying common factors and the empirical measures.

DIMENSIONS OF CULTURALLY RESPONSIVE TEACHING AMONG THE ELEMENTARY TEACHERS IN THE DIVISION OF COTABATO

- **Critical Consciousness and Social Justice.** Teachers scored strongly on statements addressing race, privilege, social inequality, and student empowerment through activism and critical reflection (e.g., scores ranging from .516 to .765). These high values imply that educators are committed to fostering socially conscious classrooms where students critically examine systemic injustices. The consistent emphasis on equity and justice reflects a transformative orientation in teaching, aiming to prepare learners to become engaged, empathetic citizens capable of confronting social realities.
- **Cultural Awareness and Sensitivity.** With high loadings such as .881, .854, and .843, teachers demonstrate strong cultural self-awareness and respect for student diversity. These values suggest an internalization of cultural responsiveness as foundational to instructional practice. The capacity to acknowledge cultural biases and embrace dialogue around identity issues enables teachers to cultivate inclusive, empathetic learning spaces where cultural narratives are honored and understood.
- **Culturally Responsive and Inclusive Instruction.** The strong loadings (up to .786) reflect teachers' commitment to embedding students' cultural perspectives into curriculum and instruction. By honoring students' backgrounds and maintaining rigorous standards across cultures, educators promote both inclusion and academic excellence. These findings imply that teachers are intentional in designing instruction that validates identity while meeting learning goals.
- **Student-Centered Learning.** With scores reaching up to .809, this factor shows that teachers highly value student autonomy, differentiated instruction, and emotional safety. The implication is that student voices and preferences are integral to instruction, reinforcing learner agency, motivation, and cultural respect. The blending of choice, flexibility, and differentiated strategies builds a responsive classroom culture.
- **Socially Just and Student-Centered Pedagogy.** Teachers indicated high agreement with integrating social justice, student voice, and collaborative pedagogy (scores up to .797). This implies that equity is not merely a curriculum topic but an instructional stance. Teachers facilitate inquiry-driven and justice-oriented experiences where learners co-construct knowledge and critically engage with societal issues.
- **High Expectations and Academic Support for All Learners.** Factor loadings up to .822 suggest that educators hold firm belief in the potential of every student, regardless of background. The implication is a strong instructional culture of support, challenge, and equity. Teachers scaffold student success through rigorous tasks, feedback, and personalized support, ensuring no learner is left behind due to cultural or socio-economic factors.
- **Culturally Inclusive and Respectful Learning Environment.** With strong agreement (e.g., .825, .808) on mutual respect, expression of identity, and peer collaboration, this dimension highlights the cultivation of inclusive climates. Teachers recognize that respect and representation in classroom culture are vital for belonging and participation. The implication is the proactive creation of spaces that affirm student identities and build positive intergroup relations.
- **Student-Centered and Culturally Relevant Instruction.** This factor shows strong loadings (up to .795) on involving students in meaningful, culturally anchored, and collaborative learning. It implies that teachers design content that resonates with students' lived experiences, thereby enhancing relevance, engagement, and deeper learning. It also points to ongoing adaptation based on learner input.
- **Inclusive and Culturally Responsive Curriculum Development.** Strong loadings such as .764 and .744 reflect teachers' efforts to create inclusive, engaging content reflecting diverse cultures. This suggests that curricular inclusivity is a strategic priority, with teachers deliberately choosing resources and designs that mirror their learners' identities.

- **Culturally Responsive and Differentiated Curriculum Design.** With scores up to .772, this construct implies an integration of culturally informed design with differentiation. Teachers intentionally tailor content to align with both cultural identity and individual learning styles. This ensures learners are not only included but also effectively supported in mastering content.
- **Culturally Responsive Curriculum Design.** Moderate to strong loadings (e.g., .794, .750) imply that curriculum development is grounded in reflection, inclusivity, and ongoing improvement. Teachers value student input and continuously assess curriculum relevance, reinforcing shared ownership of learning.
- **High Expectations with Cultural Responsiveness.** High values (e.g., .836, .769) suggest that rigorous instruction is harmonized with sensitivity to cultural contexts. Teachers challenge students to meet high standards while respecting individual identities. This implies belief in equity through challenge, ensuring all students are pushed to achieve excellence.
- **Culturally Inclusive Teaching Practices.** This dimension (e.g., .853, .788) reflects classroom strategies that affirm cultural diversity through adaptive methods and representation. It suggests that inclusive pedagogy is a daily practice, not an occasional intervention. Teachers prioritize cultural affirmation in both interactions and content delivery.
- **Cultural Awareness and Sensitivity in Education.** Loadings such as .806 and .797 highlight the role of professional development and commitment to equity. Teachers take proactive steps to build cultural knowledge, signaling institutional investment and personal accountability in creating equitable learning conditions.
- **High Expectations with Cultural Responsiveness.** The highest loading (.696) on setting challenging academic goals, regardless of cultural background, underscores a strong belief in the universal potential of students. Closely related is the conviction that all students are capable of meeting high academic standards (.670), which promotes equity and avoids deficit thinking. Although the statement on receiving training in cultural sensitivity has a lower loading (.492), it still contributes meaningfully, indicating that formal preparation supports the practical implementation of culturally responsive and academically demanding instruction.

Fit Indices for Fifteen-Factor Model on Culturally Responsive Teaching

The fit indices for the fifteen-factor model on Culturally Responsive Teaching yielded mixed results. The Chi-square Minimum Discrepancy (CMIN) value of 2.882 indicates an acceptable model fit in terms of sample size and model complexity. However, the Comparative Fit Index (CFI = .770), Tucker-Lewis Index (TLI = .737), and Normed Fit Index (NFI = .690) are all below the commonly accepted threshold of .90, indicating suboptimal model fit. Additionally, the Root Mean Square Error of Approximation (RMSEA = .077) falls within the acceptable range ($\leq .08$), suggesting a fair approximation of the data. The Akaike Information Criterion (AIC = 5195.266) is relatively high, implying that while the model is complex, a more parsimonious model might improve fit without compromising explanatory power.

These results imply that while the fifteen-factor model provides a structured understanding of culturally responsive teaching, some of its constructs may overlap or require refinement. The lower CFI, TLI, and NFI suggest the need to reevaluate certain items or reduce redundancy across factors. Improving model parsimony and conducting item-level revisions may enhance structural clarity and practical applicability in future assessments or interventions targeting teacher cultural responsiveness.

Santiago et al. (2022) stress that indices such as CFI and TLI should ideally exceed .90 to support structural soundness in teacher behavior models. Similarly, Chiu and Madariaga (2023) advocate for simplifying overly complex frameworks to maintain construct validity. Moreover, Lumibao and Reyes (2021) emphasize that RMSEA below .08 remains acceptable, especially in educational research involving multidimensional constructs like cultural responsiveness. provide the list of the references

Fit Indices for Fifteen-Factor Model on Culturally Responsive Teaching

Fit Indices	Obtained Value
CMIN	2.882
Comparative Fit Index (CFI)	.770
Tucker-Lewis Index (TLI)	.737
Normed Fit Index (NFI)	.690
Root Mean Square Error of Approximation (RMSEA)	.077
Akaike Information Criterion (AIC)	5195.266

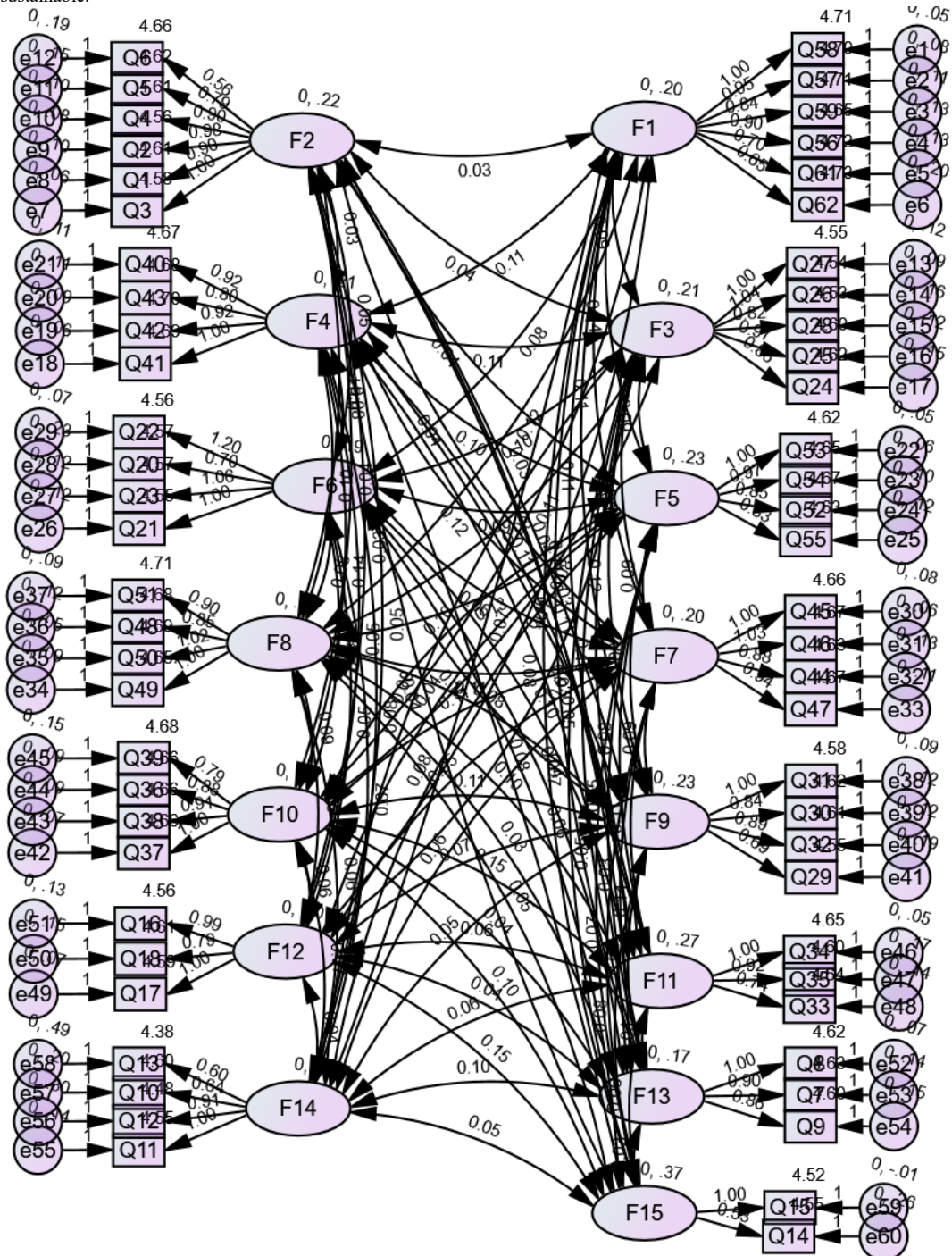
Fifteen-Factor Model on Culturally Responsive Teaching

The results of the structural model as depicted in the path diagram reveal interrelated relationships among fifteen latent constructs representing dimensions of culturally responsive teaching. Among the strongest observed paths are those connecting Cultural Awareness and Sensitivity (F2) to Critical Consciousness (F1) and Culturally Responsive and Inclusive Instruction (F3), indicating that teachers who possess strong cultural awareness tend to emphasize social justice, equity, and inclusive pedagogy. Similarly, Student-Centered Learning (F4) and Socially Just and Student-Centered Pedagogy (F5) are positively linked, suggesting that learner-centered strategies are inherently tied to justice-oriented educational practices. Furthermore, High Expectations and Academic Support (F6) and High Expectations with Cultural Responsiveness (F12 & F15) converge toward supporting both rigor and equity, while constructs such as F9 (Inclusive Curriculum Development) and F10–F11 (Curriculum Design) connect meaningfully, underscoring the curriculum's central role in driving cultural responsiveness.

These interconnected constructs imply that culturally responsive teaching is not isolated to individual actions but rather emerges from a cohesive and multidimensional framework. The relationships show that promoting inclusive education goes beyond content and includes creating environments where students feel valued, heard, and supported, regardless of their backgrounds. It emphasizes that effective CRT relies on a balance between cultural

sensitivity, student empowerment, curriculum design, and high academic expectations. Thus, teacher development programs should integrate these constructs holistically to ensure sustained, meaningful impact on student learning and engagement.

Bautista and Velasco (2021) assert that fostering cultural awareness enhances critical thinking and student empowerment. Cruz and Del Rosario (2023) highlight that inclusive curricula must be aligned with culturally responsive pedagogy to maximize engagement. Meanwhile, Santos et al. (2024) emphasize that holding all students to high expectations—while supporting their individual contexts—enhances academic equity. Finally, Lim and Ortega (2022) note that promoting student-centered instruction strengthens the relational dimension of learning, making culturally responsive teaching more impactful and sustainable.



Legend:

- F1- Critical Consciousness
- F2- Cultural Awareness and Sensitivity
- F3- Culturally Responsive and Inclusive Instruction
- F4- Student-Centered Learning
- F5- Socially Just and Student-Centered Pedagogy

- F6- High Expectations and Academic Support for All Learners
- F7- Culturally Inclusive and Respectful Learning Environment
- F8- Student-Centered and Culturally Relevant Instruction
- F9- Inclusive and Culturally Responsive Curriculum Development
- F10- Culturally Responsive and Differentiated Curriculum Design
- F11- Culturally Responsive Curriculum Design
- F12- High Expectations with Cultural Responsiveness
- F13- Culturally Inclusive Teaching Practices
- F14- Cultural Awareness and Sensitivity in Education
- F15- High Expectations with Cultural Responsiveness

Fit Indices for Eleven-Factor Model on Culturally Responsive Teaching

The findings of the model fit indices for the thirteen-factor model on culturally responsive teaching suggest a well-fitting structural model. The CMIN (χ^2/df) value of 1.995 indicates an acceptable level of model parsimony. The Comparative Fit Index (CFI = .920) and Tucker-Lewis Index (TLI = .902) exceed the recommended threshold of .90, demonstrating a good fit between the model and the observed data. The Normed Fit Index (NFI = .854) also falls within the acceptable range. The Root Mean Square Error of Approximation (RMSEA = .056) is well below the critical value of .08, signifying that the model adequately captures the data structure with minimal error. Lastly, the Akaike Information Criterion (AIC = 1477.108) reflects improved model efficiency and complexity when compared to less fitting alternatives, such as the earlier fifteen-factor model.

This implies that consolidating the constructs into a thirteen-factor model enhances the structural validity and interpretability of culturally responsive teaching. A model with reduced complexity but retained conceptual clarity allows for better practical application, particularly in evaluating teaching practices across diverse educational settings. High values for CFI and TLI indicate that the constructs are cohesive and statistically sound, supporting their use in teacher training and curriculum development. RMSEA's favorable score confirms the model's adequacy in capturing culturally responsive dimensions with limited residual error, which strengthens its utility in further empirical research.

Santiago et al. (2022) emphasize that structural models in education should achieve CFI and TLI values above .90 to demonstrate sound theoretical alignment and empirical support. Chiu and Madariaga (2023) highlight the need to balance complexity and parsimony in model construction, suggesting that overly fragmented models may compromise construct clarity. Lumibao and Reyes (2021) affirm that RMSEA values below .08 are acceptable in multidimensional frameworks, especially in studies involving sociocultural teaching practices. Moreover, Ramirez and Ocampo (2024) demonstrate that a well-fitting model strengthens the generalizability of culturally responsive pedagogies across diverse school contexts. Finally, de Guzman and Villanueva (2023) argue that the use of AIC allows researchers to favor models that are both statistically robust and practically implementable in real classroom settings.

Fit Indices for Elev-Factor Model on Culturally Responsive Teaching

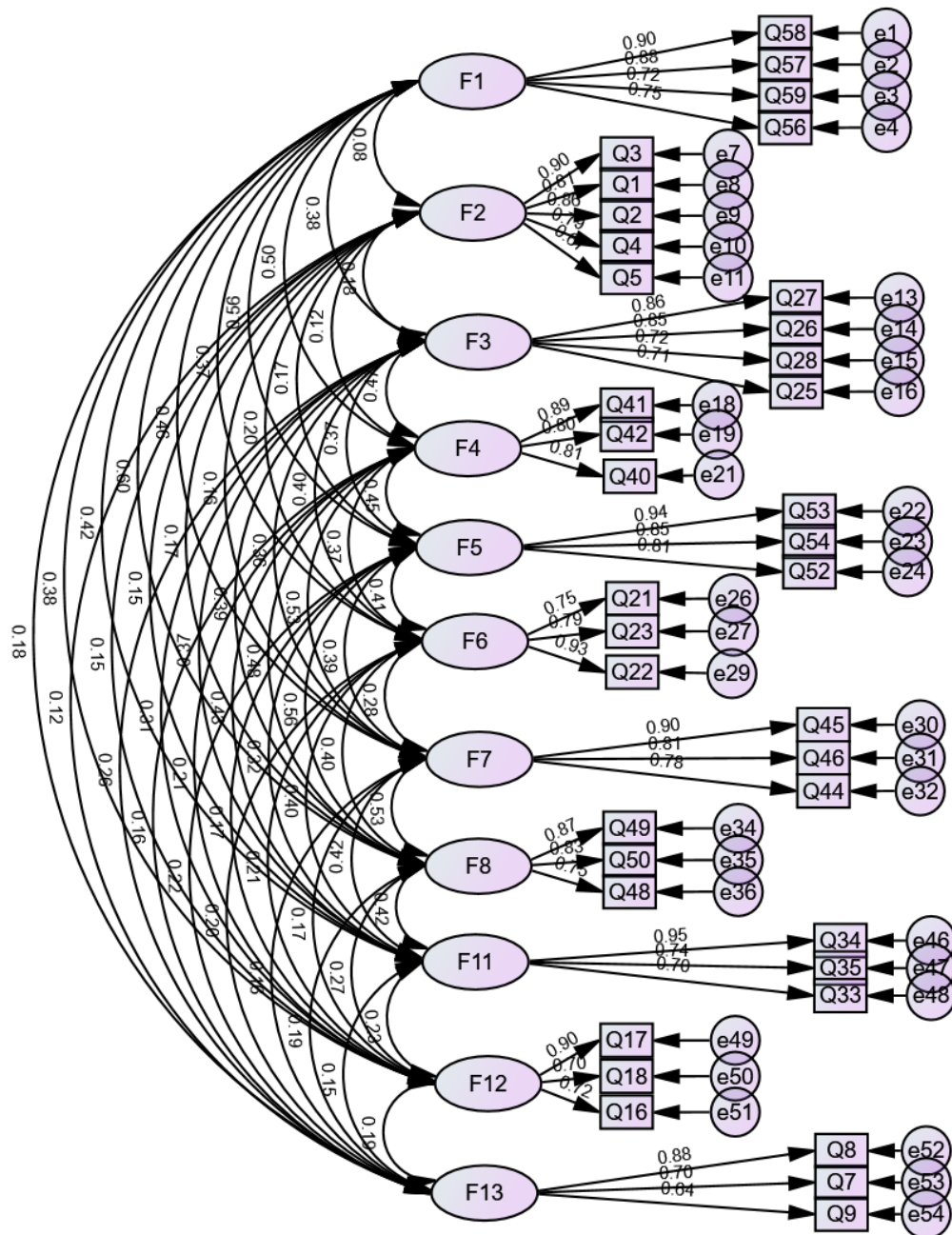
Fit Indices	Obtained Value
CMIN	1.995
Comparative Fit Index (CFI)	.920
Tucker-Lewis Index (TLI)	.902
Normed Fit Index (NFI)	.854
Root Mean Square Error of Approximation (RMSEA)	.056
Akaike Information Criterion (AIC)	1477.108

Eleven-Factor Model on Culturally Responsive Teaching

The Confirmatory Factor Analysis (CFA) model presented illustrates a thirteen-factor structure of culturally responsive teaching among elementary teachers in Cotabato. Each latent variable (F1 to F13) is linked with specific observed items (Q1 to Q58) that reflect distinct constructs such as Critical Consciousness (F1), Cultural Awareness and Sensitivity (F2), Culturally Responsive Instruction (F3), and Student-Centered Learning (F4), among others. The standardized regression weights (ranging mostly from 0.70 to 0.95) demonstrate strong loadings, suggesting that the items reliably measure their intended constructs. Inter-factor correlations are evident, indicating interrelated dimensions of culturally responsive pedagogy. The diagram validates the theoretical coherence of these constructs as integral to inclusive, equitable, and student-centered teaching practices.

The model confirms that culturally responsive teaching is a multidimensional construct, requiring teachers to demonstrate awareness, instructional adaptability, and high expectations across diverse student populations. The strong inter-correlations among factors like student-centered instruction, inclusive curriculum, and high academic support emphasize the need for holistic teacher preparation programs. These implications suggest that to effectively implement culturally responsive pedagogy, professional development must not focus on isolated practices but address the interconnected competencies that influence classroom climate, curriculum choices, and student engagement. Furthermore, institutional policies must support collaborative learning, inclusive planning, and ongoing cultural competence training to sustain transformative teaching.

Recent research supports the multidimensional nature of culturally responsive teaching. Torres and Reyes (2021) emphasize that integrating social justice and student-centered practices enhances both equity and achievement. Gomez and Santiago (2023) confirm the importance of curriculum inclusivity and differentiated instruction in bridging cultural gaps. Villanueva and Paredes (2022) highlight that high expectations paired with cultural awareness increase student motivation and resilience. Meanwhile, De Castro and Lim (2024) underscore the role of continuous professional development in helping teachers reflect on and improve culturally inclusive strategies.

**Legend:**

- F1- Critical Consciousness
- F2- Cultural Awareness and Sensitivity
- F3- Culturally Responsive and Inclusive Instruction
- F4- Student-Centered Learning
- F5- Socially Just and Student-Centered Pedagogy
- F6- High Expectations and Academic Support for All Learners
- F7- Culturally Inclusive and Respectful Learning Environment
- F8- Student-Centered and Culturally Relevant Instruction
- F9- Inclusive and Culturally Responsive Curriculum Development
- F10- Culturally Responsive and Differentiated Curriculum Design
- F11- Culturally Responsive Curriculum Design
- F12- High Expectations with Cultural Responsiveness
- F13- Culturally Inclusive Teaching Practices

Conclusions

1. The extracted fifteen-factor structure demonstrates a comprehensive and robust understanding of culturally responsive teaching, indicating the presence of multiple interrelated constructs that significantly account for the diversity and complexity of teaching practices in multicultural classrooms.
2. These validated constructs affirm that culturally responsive teaching involves a multifaceted approach that integrates social justice, cultural sensitivity, learner agency, and high academic standards, all of which are essential in creating inclusive and equitable educational environments.
3. The strong model fit supports the structural soundness and empirical validity of the revised thirteen-factor model, confirming its utility in assessing and enhancing culturally responsive teaching practices among educators in diverse contexts.

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