ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

Metacognitive Skills, Professional Competence, and Teaching Competence as Predictors of Critical Thinking Disposition: A Structural Equation Modeling Study

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Abstract. This study examined the best-fitting structural model of critical thinking disposition among secondary school teachers in the Philippines. It addressed the need to better understand how metacognitive skills, professional competence, and teaching competence relate to and predict teachers' critical thinking disposition. Using a quantitative survey design, the researchers collected data from 400 secondary school teachers selected through stratified random sampling. The researchers analyzed the data using means, Pearson correlations, regression analysis, and structural equation modeling. The findings showed that metacognitive skills, professional competence, and teaching competence were related to critical thinking disposition at varying levels. Metacognitive skills and teaching competence were significantly related to critical thinking disposition, while professional competence did not show a direct effect. Among the candidate models, Model 5 best fit the data and met all specified goodness-of-fit criteria. It yielded $p = .997$, $\chi^2/df = .547$, $NFI = .951$, $TLI = 1.094$, $CFI = 1.000$, $GFI = .993$, $RMSEA = .000$, and $pclose = 1.000$, showing that the three exogenous variables together explain teachers' critical thinking disposition. These results suggest that strengthening teachers' metacognitive skills and teaching competence may support the development of a stronger critical thinking disposition.

Keywords: *Critical Thinking Disposition; Metacognitive Skills; Professional Competence; Structural Model; Teaching Competence.*

I. INTRODUCTION

Critical thinking disposition is conceptualized as a multidimensional construct driven by the dynamic interplay of internal cognitive and external instructional capabilities. Rather than viewing critical thinking as an isolated skill, this framework posits that an educator's willingness and capacity for careful judgment, essential for evaluating information, solving classroom problems, and making reasoned decisions, is sustained by an integrated system of teacher competencies (Dinçer & Çilek, 2022; Pentang et al., 2021; Thomas & Hayes, 2021).

At the foundational level, the framework is anchored in metacognitive theory, which emphasizes the necessity of self-awareness and cognitive regulation. Theoretical models and empirical evidence suggest that individuals who actively monitor and regulate their own thought processes are significantly better equipped to analyze complex information and engage in critical thought (Fatmawati et al., 2025a; Tian et al. 2024). Variations in these self-monitoring abilities directly correlate with differences in critical thinking disposition (Abanto-Ramirez et al., 2024; Chin & Fung, 2025). However, the framework also acknowledges practical friction, recognizing that educators often experience challenges in translating these internal, cognitive self-regulation strategies into active, real-time classroom instruction (Ossa et al. (2023).

Because teachers' decision-making does not occur in a vacuum, the framework integrates the theory of reflective professional practice. Professional competence supplies the domain-specific knowledge and skills required to analyze classroom environments, respond effectively to emerging problems, and make contextually appropriate decisions (Kamarulzaman & Ibrahim, 2026; Santos, 2023b). This professional capability operates symbiotically with a critical thinking disposition, fostering a continuous loop of reflective judgment and informed action that forms the basis of standard professional practice (Abrami et al., 2015).

In addition to this, the framework incorporates pedagogical and teaching competence to explain the practical execution of these cognitive and professional traits within the teaching-learning process. Effective instruction requires not just knowledge delivery, but an openness to alternative ideas and the ability to guide students through rigorous information analysis (González-Arévalo, Carles, et al, 2020; Santos (2023a). Educators who combine strong pedagogical execution with high critical thinking dispositions are uniquely positioned to cultivate parallel analytical and decision-making skills in their students (Ortega-Dela Cruz, 2022; Pentang et al., 2021). By synthesizing metacognition, professional competence, and teaching competence into a unified Structural Equation

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

Model, this framework shifts the theoretical focus from isolated skills to an interdependent system that the collectively sustains a teacher's capacity for critical thought.

Previous studies reveal a distinct contradiction between the theoretical promise of metacognitive skills and their practical execution. While several cited scholars argue that metacognitive awareness directly enhances critical thinking, Ossa et al. (2023b) highlight that educators frequently struggle to apply these cognitive strategies effectively during active instruction. Methodologically, the review identifies a limitation in how these constructs have been studied; previous empirical research has primarily relied on isolated quantitative measures to evaluate metacognition and critical thinking disposition. Examining these skills independently fails to capture the complex professional and instructional environments where real-time teacher decision-making actually occurs. This leads to a broader gap in the literature's scope: the absence of integrated, multivariate models. Rather than analyzing how metacognition, professional competence, and teaching competence concurrently interact to influence a teacher's cognitive disposition, past research has largely treated these variables in silos. Finally, the literature exhibits a contextual gap, as there is currently no empirically validated framework to confirm whether these theoretical relationships adequately represented the specific realities and localized educational settings of secondary school Filipino teachers.

Therefore, this study aimed to determine the best-fit model of teachers' critical thinking disposition by examining the relationships among metacognitive skills, professional competence, teaching competence, and critical thinking disposition. Using Structural Equation Modeling, the study sought to identify how these variables relate and which relationships support a data-supported model. The findings may provide useful evidence for teachers, school administrators, and the Department of Education in developing professional learning programs that strengthen teachers' thinking, instructional, and professional competencies. The study may also contribute to Sustainable Development Goal 4 by supporting efforts to improve teacher quality and promote effective education.

II. METHODOLOGY

2.1 Research Design

This study employed a non-experimental quantitative research design using descriptive-correlational methods. The design examined relationships among metacognitive skills, professional competence, teaching competence, and critical thinking disposition without manipulating the variables (Creswell & Creswell, 2023; Fraenkel et al., 2019). The study used Structural Equation Modeling (SEM) to examine the proposed relationships among the study variables while accounting for measurement error (Cheung et al., 2024). The analysis evaluated the measurement and structural models to determine how well the proposed model represented the observed data. If the study also used causal-comparative analysis, state the specific groups compared and the purpose of the comparison.

2.2 Research Participants

The participants were public secondary school Filipino subject teachers in Region XI, Philippines. The study reported a target population of 44,148 teachers and selected 400 participants. The researchers used stratified random sampling to ensure representation from the identified school divisions (Scales et al., 2020). The study included only teachers assigned to teach Filipino and excluded teachers from other subject areas.

2.3 Research Instruments

The authors collected data using a four-part survey questionnaire adapted from previously developed measures. The first part assessed metacognitive skills using the 30-item Metacognition Questionnaire developed by Fergus and Bardeen (2017). It measured positive beliefs about worry, negative beliefs about uncontrollability and danger, cognitive confidence, need to control thoughts, and cognitive self-consciousness. The second part assessed professional competence using indicators identified by Caena (2020a), covering instructional design, collaboration with colleagues, ethical commitment, responsiveness to learner diversity, and continuous professional development. The third part assessed teaching competence using the 40-item Teaching Competence Scale developed by Hasegawa (2012), which covered subject matter knowledge, teaching skills, classroom management, and assessment skills. The fourth part measured critical thinking disposition through the dimensions of engagement, innovativeness, and cognitive maturity, based on Fikriyati, Amiq, et al., (2022). All instruments used a four-point Likert scale. The instruments underwent expert validation and pilot testing before the main data collection. The overall Cronbach's alpha was 0.921.

2.4 Data Gathering Procedure

Before collecting data, the researcher secured the required institutional and ethics approvals and obtained permission from the appropriate education authorities and participating schools. The researcher identified eligible Filipino subject teachers based on the established inclusion criteria and selected them according to the sampling procedure. Before providing informed consent, participants were informed about the study's purpose, the voluntary nature of participation, their right to withdraw, and the confidentiality of their responses. The researchers then administered the questionnaires to the selected participants and retrieved them after completion. The researchers checked completed questionnaires for completeness, coded them, tabulated the data, and prepared them for statistical analysis.

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

2.5 Data Analysis

The researchers analyzed the collected data using descriptive and inferential statistical methods appropriate to the study objectives. Descriptive statistics summarized participants' responses and determined levels of metacognitive skills, professional competence, teaching competence, and critical thinking disposition. Correlation analysis examined relationships among the study variables, while regression analysis assessed their predictive relationships. Structural Equation Modeling was performed to examine the proposed relationships among the latent variables and identify the model that best represented the observed data. Before SEM, the data were screened for completeness and the required statistical assumptions.

2.6 Ethical Considerations

The University of Mindanao Ethics Review Committee (UMERC) reviewed and approved the study under Protocol No. UMERC-2020-063. The study observed ethical principles of voluntary participation, informed consent, privacy, confidentiality, anonymity, and respect for participants' rights throughout the study. Participants received sufficient information about the research purpose and procedures before agreeing to participate. They were informed that participation was voluntary and that they could decline or withdraw at any time without penalty. No participant was forced or pressured to participate. The researchers kept the information collected from respondents confidential, used it only for the stated research purposes, and handled it in accordance with the approved research protocol.

III. RESULTS AND DISCUSSION

3.1 Metacognitive Skills of Teachers

Table 1. Level of Metacognitive Skills of Teachers

Indicators	SD	Mean	Descriptive Level
Positive Beliefs about Worry	0.55	3.27	Moderate
Negative Beliefs about Uncontrollability	0.50	3.25	Moderate
Cognitive Confidence	0.58	3.21	Moderate
Need to Control Thoughts	0.50	3.29	Moderate
Cognitive Self-consciousness	0.55	3.38	Moderate
Overall	**0.32**	**3.28**	**Moderate**

As shown in Table 1, teachers' overall metacognitive skills were moderate ($M = 3.28$, $SD = 0.32$). This finding indicates that teachers possess adequate awareness of their cognitive processes but may not consistently regulate them during classroom instruction. Although they recognize the importance of monitoring their thinking, they may not always plan, monitor, evaluate, and adjust their instructional practices systematically. Metacognition extends beyond awareness of one's thinking and includes the deliberate regulation of cognition through planning, monitoring, evaluation, and strategy adjustment to improve learning and instructional effectiveness (Fatmawati et al., 2025b). Among the indicators, cognitive self-consciousness had the highest mean score ($M = 3.38$), whereas cognitive confidence had the lowest ($M = 3.21$). These results suggest that teachers actively monitor their thoughts but may lack confidence in their cognitive strategies during instruction (Dignath & Veenman, 2021; Schraw & Sperling, 2021).

3.2 Professional Competence of Teachers

Table 2. Level of Professional Competence of Teachers

Indicators	SD	Mean	Descriptive Level
Designing Own Instruction	0.42	3.45	High
Collaboration with Peer	0.33	3.46	High
Ethical Commitment to the Teaching Profession	0.36	3.49	High
Learner Diversity and Preparing Them to the Future	0.31	3.50	High
Developing one's Own Competencies	0.33	3.48	High
Overall	**0.21**	**3.48**	**High**

Table 2 shows that teachers' overall professional competence was high ($M = 3.48$, $SD = 0.21$), indicating that they generally possessed the professional knowledge, skills, and values needed for effective teaching. Among the five dimensions, Diversity of Learners and Preparation for Their Future had the highest mean score ($M = 3.50$), followed by Ethical Commitment to the Teaching Profession ($M = 3.49$), Developing Own Competencies ($M = 3.48$), Collaboration with Peers ($M = 3.46$), and Designing Own Instruction ($M = 3.45$). All dimensions were rated high, reflecting the teachers' commitment to inclusive education, ethical practice, collaboration, continuous professional growth, and instructional planning. The findings suggest that teachers effectively perform their professional responsibilities and are committed to improving teaching and learning. The high ratings for ethical commitment and responsiveness to learner diversity further indicate that they value inclusive, learner-centered instruction while adhering to professional standards. Recent research has shown that professionally competent teachers are better able to address students' diverse

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

needs, collaborate with peers, and pursue continuous professional development, which can contribute to improved educational outcomes (Caena, 2022b).

3.3 Teaching Competence of Teachers

Table 3. Level of Teaching Competence of Teachers

Indicators	SD	Mean	Descriptive Level
Mastery of the Subject Matter	0.35	3.46	High
Teaching Skills	0.32	3.46	High
Classroom Management	0.33	3.42	High
Evaluation Skills	0.37	3.39	Moderate
Overall	**0.20**	**3.43**	**High**

Table 3 indicates that teachers' overall teaching competence was high (M = 3.43, SD = 0.20), suggesting that they generally possessed the knowledge and pedagogical skills needed to deliver effective instruction. Among the four dimensions, mastery of the subject matter (M = 3.46) and teaching skills (M = 3.46) obtained the highest mean scores, followed by classroom management (M = 3.42). All three dimensions were rated high. Evaluation skills obtained the lowest mean score (M = 3.39) and were rated moderate. These findings indicate that although teachers were competent in content delivery, instructional strategies, and classroom management, they could still improve their assessment practices. The high level of teaching competence suggests that teachers were well prepared to facilitate learning through strong subject knowledge, effective teaching strategies, and efficient classroom management. These competencies are essential for creating engaging learning environments and supporting students' academic achievement. Previous research has shown that teachers' pedagogical competence can improve instructional quality, learner engagement, and the development of higher-order thinking skills (Tian, 2024). Nevertheless, continuous training and reflective professional learning focused on assessment may further strengthen teachers' instructional effectiveness and support student learning.

3.4 Critical Thinking Disposition of Teachers

Table 4. Level of Critical Thinking Disposition of Teachers

Indicators	SD	Mean	Descriptive Level
Engagement	0.31	3.37	Moderate
Cognitive Maturity (Innovativeness)	0.36	3.36	Moderate
Cognitive Openness	0.38	3.32	Moderate
Overall	**0.25**	**3.35**	**Moderate**

Table 4 shows that teachers' overall critical thinking disposition was moderate (M = 3.35, SD = 0.25). This finding indicates that teachers generally demonstrated positive tendencies toward critical thinking but did not consistently apply these dispositions across professional situations. Among the three dimensions, engagement had the highest mean score (M = 3.37), followed by innovativeness (M = 3.36), while cognitive maturity had the lowest (M = 3.32). All three dimensions were rated moderate, indicating that the teachers had a satisfactory but still developing disposition toward critical thinking. These results suggest a need for targeted programs that promote deeper reflection and higher-order thinking rather than routine processing (Santiago et al., 2026). Sustained professional development, reflective teaching practices, and collaborative learning opportunities may further strengthen teachers' critical thinking disposition.

3.5 Relationship between Metacognitive Skills and Critical Thinking Disposition

Table 5. Relationship between Metacognitive Skills and Critical Thinking Disposition

Metacognitive Skills	Critical Thinking Disposition			
	Engagement	Innovativeness	Cognitive Openness	Total
Positive Beliefs about worry	-.028 (.577)	.030 (.546)	-.094 (.059)	**-.044 (.375)**
Negative Beliefs about Uncontrollability	-.063 (.211)	-.025 (.617)	-.071 (.156)	**-.074 (.141)**
Cognitive Confidence	-.085 (.088)	-.044 (.379)	-.077 (.125)	**-.095 (.059)**
Need to Control Thoughts	-.197** (.000)	-.079 (.115)	-.114* (.022)	**-.175** (.000)**
Cognitive Self-Consciousness	-.027 (.585)	.008 (.873)	-.053 (.288)	**-.034 (.498)**

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 5 shows a weak but statistically significant negative relationship between teachers' overall metacognitive skills and critical thinking disposition, $r = -.14$, $p = .005$. Thus, we rejected the null hypothesis of no significant relationship. Specifically, metacognitive skills were negatively associated with engagement, $r = -.139$, $p = .005$, and cognitive maturity, $r = -.136$, $p = .006$, but were not significantly associated with innovativeness. Among the metacognitive dimensions, need to control thoughts had the strongest negative relationship with overall critical thinking disposition, $r = -.175$, $p < .001$. These findings suggest that certain maladaptive metacognitive beliefs, particularly an excessive need to control one's thoughts, may be associated with lower engagement in reflective thinking and less cognitive flexibility. Excessive cognitive control may limit openness to alternative perspectives and reflective judgment. Previous research has indicated that adaptive metacognitive regulation supports critical thinking, whereas maladaptive beliefs, such as excessive thought control, may negatively affect reasoning and decision-making (Abanto-Ramirez et al., 2024b). Professional development may therefore focus on adaptive metacognitive strategies, including reflective practice, self-monitoring, and cognitive flexibility, to strengthen teachers' critical thinking disposition.

3.6 Relationship between Professional Competence and Critical Thinking Disposition

Table 6. Relationship between Professional Competence and Critical Thinking Disposition

Professional Competence	Critical Thinking Disposition			
	Engagement	**Innovativeness**	**Cognitive Openness**	**Total**
Designing Own instruction	.074 (.140)	.053 (.289)	.039 (.436)	**.073 (.143)**
Collaboration with peers	.015 (.758)	-.007 (.887)	-.050 (.316)	**-.024 (.636)**
Ethical Commitment to the Teaching Profession	.070 (.163)	.078 (.118)	-.005 (.913)	**.061 (.221)**
Learning Diversity and Future Preparedness	.030 (.546)	.058 (.250)	.005 (.919)	**.041 (.413)**
Developing one's own Competencies	-.039 (.432)	.009 (.864)	-.105* (.035)	**-.066 (.190)**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 6 shows that teachers' professional competence was not significantly related to their overall critical thinking disposition ($r = .034$, $p = .497$). Similarly, designing one's own instruction, collaboration with peers, ethical commitment to the teaching profession, and responsiveness to learner diversity and future preparation were not significantly related to engagement, innovativeness, cognitive maturity, or overall critical thinking disposition. The only significant result was a weak negative relationship between developing one's own competencies and cognitive openness ($r = -.105$, $p = .035$). The general lack of significant relationships suggests that professional competence alone may not be associated with a stronger critical thinking disposition. Although teachers may demonstrate high levels of professional knowledge, ethical practice, collaboration, and instructional competence, these attributes may not automatically foster reflective judgment, intellectual curiosity, or openness to diverse perspectives. Critical thinking disposition develops through intentional opportunities for reflective practice, inquiry-based learning, and sustained engagement in higher-order thinking (Caena, 2020b). Therefore, schools may complement competency development with professional learning experiences that promote reflection, analytical thinking, and intellectual openness.

3.7 Relationship between Teaching Competence and Critical Thinking Disposition

Table 7. Relationship between Teaching Competence and Critical Thinking Disposition

Teaching Competence	Critical Thinking Disposition			
	Engagement	**Innovativeness**	**Cognitive Maturity**	**Total**
Mastery of the subject Matter	.061 (.222)	.036 (.470)	.081 (.106)	**.082 (.101)**
Teaching Skills	.070 (.162)	.143** (.004)	.069 (.170)	**.131** (.009)**
Classroom Management	.096 (.054)	.103* (.039)	.049 (.332)	**.114* (.023)**
Assessment Skills	.042	.037	.057	**.064**

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

	(.407)	(.457)	(.257)	**(.204)**
Total	**.113*** **(.023)**	**.133**** **(.008)**	**.109*** **(.030)**	**.164**** **(.001)**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 7 shows a statistically significant positive relationship between teaching competence and critical thinking disposition (r = .164, p < .001). Specifically, teaching competence was positively associated with engagement, r = .113, p = .023; innovativeness, r = .133, p = .008; and cognitive maturity, r = .109, p = .030. Among the dimensions of teaching competence, teaching skills were positively related to innovativeness (r = .143, p = .004) and overall critical thinking disposition (r = .131, p = .009). Classroom management was also positively related to innovativeness (r = .103, p = .039) and overall critical thinking disposition (r = .114, p = .023). In contrast, mastery of the subject matter and evaluation skills were not significantly related to critical thinking disposition. These findings suggest that teachers with stronger teaching skills and classroom management competence tend to demonstrate a more positive critical thinking disposition. Effective instruction and classroom management involve analyzing classroom situations, addressing instructional problems, adapting teaching strategies, and making sound decisions. These practices may support engagement, innovativeness, and reflective thinking. Previous research has indicated that competent teachers can foster critical thinking by creating learner-centered environments that encourage inquiry, collaboration, and evidence-based reasoning (Yilar & Yurt, 2025).

3.8 Influence of Exogenous Variables on Critical Thinking Disposition

Table 8. Multiple Regression Predicting Teachers' Critical Thinking Disposition

Predictor	*B*	β	*t*	*p*
Constant	2.983	—	9.799	< .001
Metacognitive skills	−0.115	−.147	−2.989	.003
Professional competence	0.005	.005	0.093	.926
Teaching competence	0.212	.171	3.459	.001

Note. B = *unstandardized regression coefficient; β = standardized regression coefficient. Model summary:* R = *.221,* R^2 = *.049, adjusted* R^2 = *.041,* F*(3, 396) = 6.749,* p < *.001.*

Table 8 presents the multiple regression analysis examining whether metacognitive skills, professional competence, and teaching competence predicted teachers' critical thinking disposition. The overall regression model was statistically significant, $F(3, 396) = 6.75$, $p < .001$. Together, the three predictors explained 4.9% of the variance in critical thinking disposition ($R^2 = .049$), suggesting that most of the variance may be associated with factors not included in the model. Among the predictors, only teaching competence significantly predicted critical thinking disposition, $\beta = .171$, $t = 3.46$, $p = .001$. This result indicates that higher teaching competence was associated with a stronger critical thinking disposition after controlling for metacognitive skills and professional competence. Effective teaching involves instructional decision-making, problem-solving, and reflective classroom practices, which may support engagement, innovativeness, and cognitive maturity. This finding supports the importance of learner-centered and reflective instructional practices in developing higher-order thinking.

3.9 Overall Results of Goodness of Fit Measures among the Five Models

Table 9. Fit Indices for the Five Structural Equation Models

Model	p	χ^2/df	NFI	TLI	CFI	GFI	RMSEA	pclose
1	< .001	1.651	.707	.829	.854	.947	.040	.943
2	< .001	1.628	.716	.835	.861	.949	.040	.953
3	< .001	1.614	.716	.838	.863	.949	.039	.960
4	< .001	1.692	.702	.818	.846	.946	.042	.915
5	.997	.547	.951	1.094	1.000	.993	.000	1.000

Note. χ^2/df = *chi-square divided by degrees of freedom;* CFI = *comparative fit index;* GFI = *goodness-of-fit index;* NFI = *normed fit index;* RMSEA = *root mean square error of approximation;* TLI = *Tucker–Lewis index. The criteria applied were* p > *.05,* χ^2/df < *2.00,* NFI > *.95,* TLI > *.95,* CFI > *.95,* GFI > *.95,* RMSEA < *.05, and* p*close* > *.05.*

Table 9 summarizes the goodness-of-fit indices for the five structural equation models. Among the candidate models, Model 5 best fit the data and met all specified goodness-of-fit criteria. It yielded p = .997, χ^2/df = .547, *NFI* = .951, *TLI* = 1.094, *CFI* = 1.000, *GFI* = .993, *RMSEA* = .000, and *p*close = 1.000. Collectively, these indices indicate that Model 5 fits the observed data closely. In comparison, Models 1–4 did not meet the recommended cutoff values for several incremental fit indices, particularly the *NFI*, *TLI*, and *CFI*, despite having acceptable χ^2/df and *RMSEA* values. The improved fit of Model 5 indicates that the changes introduced during model respecification produced a model that was more consistent with the observed covariance structure. SEM literature

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

recommends evaluating multiple fit indices together and considering the model's theoretical basis rather than relying on a single statistic (Hair et al., 2022; Kline, 2023). Thus, the results support selecting Model 5 as the final model, although good fit alone does not prove the model is theoretically correct.

3.10 Structural Best-Fit Model

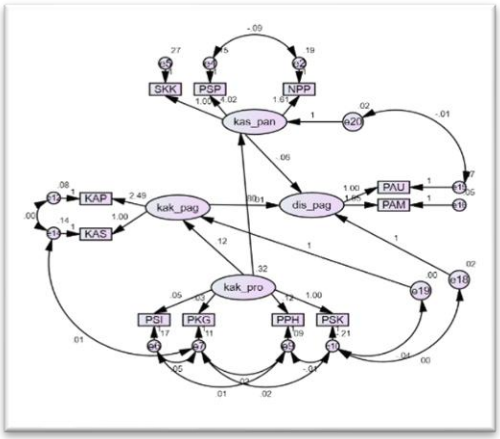


Figure 1. Hypothesized Model 5

Figure 1 presents the best-fitting structural model of the relationships among metacognitive skills, professional competence, teaching competence, and critical thinking disposition. In the final model, teaching competence had a significant positive direct association with critical thinking disposition, whereas metacognitive skills had a significant negative direct association. Professional competence had no significant direct association with critical thinking disposition but was indirectly associated through teaching competence. The retained indicators were need to control thoughts for metacognitive skills; designing one's own instruction and professional learning for professional competence; teaching skills and classroom management for teaching competence; and engagement and cognitive maturity for critical thinking disposition. These indicators made statistically meaningful contributions to their respective constructs and produced a more parsimonious model.

Teaching competence had the strongest direct association with critical thinking disposition. This finding suggests that teachers with stronger teaching skills and classroom management competence tended to demonstrate greater engagement and cognitive maturity. Effective teaching involves managing classrooms, applying appropriate instructional strategies, solving instructional problems, and facilitating meaningful learning experiences. These practices may promote reflective thinking and evidence-based instructional decision-making (Wang & Qing, 2024b).

IV. CONCLUSION

The study contributes to the understanding of teachers' critical thinking disposition by showing how metacognitive skills, professional competence, and teaching competence operate together within a structural model. Public secondary school teachers demonstrated moderate metacognitive skills and high professional and teaching competence. Among the models tested, Model 5 provided the best fit, with teaching competence emerging as the strongest predictor of critical thinking disposition. Professional competence contributed mainly through its relationship with teaching competence, while metacognitive skills showed a negative direct effect on critical thinking disposition. These findings indicate that teachers' critical thinking disposition is shaped by the combined and distinct roles of cognitive and professional factors rather than by a single competence alone.

The findings support the need for teacher development programs that strengthen instructional practice while providing opportunities for reflection and metacognitive development. Schools and teacher education institutions may promote these areas through sustained professional learning and collaborative practices. Future studies may test the model among teachers from other educational settings and use longitudinal or intervention-based designs to examine how these relationships change over time. Other factors, such as teaching self-efficacy, institutional support, and organizational climate, may also be examined to further explain teachers' critical thinking disposition.

ISSN :2584-2706 DOI: https://doi.org/10.67317/IJMSRT26OCT128

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