Cultural Intelligence among Thai Teachers in Schools with Cultural Diversity

Saisuda Khamsook*, Suwaree Rerkjaree & Prakittiya Tuksino

Faculty of Education, Khon Kaen University, Khon Kaen, 40002 Thailand

Article info

Abstract

This study examined the construct validity of cultural intelligence (CQ) among Thai teachers working in culturally diverse schools and assessed their overall CQ levels. The sample consisted of 587 teachers from 49 schools across six regions of Thailand, representing the Primary Educational Service Area Office, Secondary Educational Service Area Office, Local Administrative Organization, and Bangkok Metropolitan Administration. Data were collected using a teacher cultural intelligence questionnaire (Cronbach's $\alpha = 0.92$) based on Van Dyne et al.'s (2012) four-component model: Metacognitive, Cognitive, Motivational, and Behavioral CQ. A second-order confirmatory factor analysis confirmed a four-factor structure, with standardized loadings of 0.982 for Motivational CQ, 0.944 for Behavioral CQ, 0.885 for Cognitive CQ, and 0.777 for Metacognitive CQ. Model fit indices indicated a strong fit to the empirical data ($p = 0.124$, $\chi^2 = 32.132$, $df = 24$, $\chi^2/df = 1.339$, CFI = 0.997, TLI = 0.993, RMSEA = 0.024, SRMR = 0.023). Motivational CQ emerged as the strongest latent contributor, whereas descriptive results showed Metacognitive CQ with the highest mean score and Cognitive CQ the lowest. These findings highlight the central role of motivational factors in teachers' cultural adaptability and underscore the need for educational administrators to prioritize policies and professional development programs that strengthen CQ, particularly in diverse school contexts. Targeted training initiatives can enhance teachers' capacity to adapt effectively, foster inclusivity, and respond to the challenges of globalization.

Introduction

Cultural intelligence (CQ), also referred to as cultural quotient, is a relatively recent construct that has emerged in response to social changes in the era of globalization. It is increasingly recognized as being as important as intelligence quotient (IQ) and emotional intelligence (EQ) (Hong, 2013). In the context of globalization, cultural diversity has expanded opportunities for cross-cultural communication, while also giving rise to potential challenges, including cultural misunderstandings, stress, and conflict (Ang et al., 2011). Developing CQ through cross-cultural interactions enables individuals to adapt their thinking, enhance social skills, demonstrate culturally appropriate behaviors, and acquire the knowledge and understanding of cultural differences necessary for effective cross-cultural communication. CQ is regarded as an essential trait for each individual to adapt in situations of cultural

* Corresponding Author
  email: saisuda_khamsook@yahoo.co.th

diversity – referred to as cultural competence (Thomas & Inkson, 2004). Additionally, cultural competence will continue to play an increasingly important role in the workplace since individuals with cultural diversity are typically interdependent, and given classroom experiences, this form of competence is equivalent to teachers' ability to teach and engage with students of diverse cultural backgrounds. It is widely viewed that "such inability to adapt and understand local culture is significant and costly to organizations" (Earley & Ang, 2003, p.1). Hence, cultural intelligence is associated with organizational psychology, aimed at elucidating the impacts of each individual in the organization's culture on their behavior. It acts as not only a vital element for organizational effectiveness but also an indicator of individual performance in the workplace. Cultural intelligence, thus, is acknowledged as an important skill for working amidst the trend of globalization (Earley & Ang, 2003).

Thailand is characterized by extensive diversity in ethnicity, language, religion, customs, and lifestyles. This diversity is particularly pronounced in border areas adjacent to neighboring countries and in regions engaged in international collaboration through the ASEAN Economic Community (AEC). These developments have increased the proportion of students from diverse ethnic backgrounds studying alongside Thai students, thereby enhancing cultural diversity within educational institutions. While such diversity enriches learning environments, it also presents challenges for teachers, many of whom may be unprepared to effectively engage with students from different cultural backgrounds. Compared with the past—when classrooms were largely culturally homogenous—teachers now face greater demands in adapting teaching approaches to meet varied linguistic, cultural, and educational needs (Naowabut & Sungrugsa, 2015). According to 2019 statistics, 8,547 non-Thai students were enrolled in schools under the Local Administrative Organization, 4,603 in schools under the Bangkok Metropolitan Administration (BMA), and 180,795 in schools under the Office of Basic Education Commission (OBEC) (Bureau of Information and Communications Technology, 2020a; Local Information Technology Center, 2020; Office of Bangkok Education, 2020). The growing cultural diversity among students underscores the need for teachers to be adequately prepared to teach in multicultural settings, where differences in culture, language, and ethnicity are the norm (Keengwe, 2010).

Cultural intelligence (CQ) is essential for educators in such contexts. Individuals with high CQ can learn about and adapt to new cultural environments, demonstrate appropriate cultural behaviors, and interact with others respectfully and compassionately (Livermore, 2010, 2011). For teachers, CQ fosters the ability to adjust teaching and assessment methods to align with students' cultural backgrounds, preparing them to thrive in the era of globalization. CQ also supports effective communication, problem-solving, and adaptation in culturally diverse environments. In educational contexts, differences in ethnicity and culture significantly influence students' academic achievement (Harry & Klingner, 2006; Orosco & Klingner, 2010; Skiba et al., 2011). However, many teachers lack the knowledge, content expertise, experience, and training necessary to meet the needs of culturally diverse students (Au, 2009). Inadequate preparation can widen cultural gaps between teachers and students, potentially contributing to higher dropout rates, particularly among cross-national children who often enter school late and require extended time to learn Thai (Gay, 2010; Ladson-Billings, 2009; Nawarat, 2018).

The situation is especially pronounced in Bangkok, Chiang Mai, and economically active border areas such as Mae Sot, Mae Sai, Samut Sakhon, Rayong, and Ranong—regions that attract migrant labor and, consequently, cross-national students. With Thailand's Education for All policy extending to stateless and migrant children (Nawarat, 2012, 2014; Nawarat & Yimsawat, 2017), schools must address increasingly diverse classrooms. Yet, government mechanisms to support curriculum adaptation and culturally responsive teaching remain limited, resulting in the treatment of cross-national students in the same manner as Thai students. Research has shown that teachers with higher CQ are more adept at integrating culturally relevant content into their instruction and fostering inclusive classroom environments (Wei et al., 2022; Kennedy, 2016). Instruction grounded in an understanding of students' cultural backgrounds enhances the integration of ethnicity, culture, and language, thereby improving academic outcomes (Smith, 2004). Conversely, neglecting cultural differences can lead to conflict and hinder student learning (Nieto & Bode, 2008). Despite the importance of CQ, studies on Thai teachers in this area remain limited, often focusing instead on other populations such as students, nurses, hospitality workers, and administrators. Expanding the scope of CQ research to teachers, who

serve as both educators and cultural representatives, is critical for fostering understanding and adaptation in multicultural societies.

This study examines Thai teachers working in culturally diverse schools across six regions—Northern, Central, Eastern, Western, Southern, and Bangkok, under four administrative categories: the Primary Educational Service Area Office (PEASO), the Secondary Educational Service Area Office (SESAO), the Local Administrative Organization, and the BMA. By analyzing CQ in this context, the study aims to contribute to teacher development strategies that promote inclusive, culturally responsive classrooms, ultimately supporting harmonious coexistence and effective learning in Thailand's increasingly diverse educational landscape.

Objectives

The objectives of the study consist of the following:

1. To analyze and examine validity through confirmatory factor analysis of cultural intelligence among Thai teachers in schools with cultural diversity;

2. To investigate levels of cultural intelligence among Thai teachers in schools with cultural diversity.

Hypotheses

1. The construct-based model of teachers' cultural intelligence fits the empirical data.

2. Levels of cultural intelligence among teachers in schools with cultural diversity vary in their mean scores.
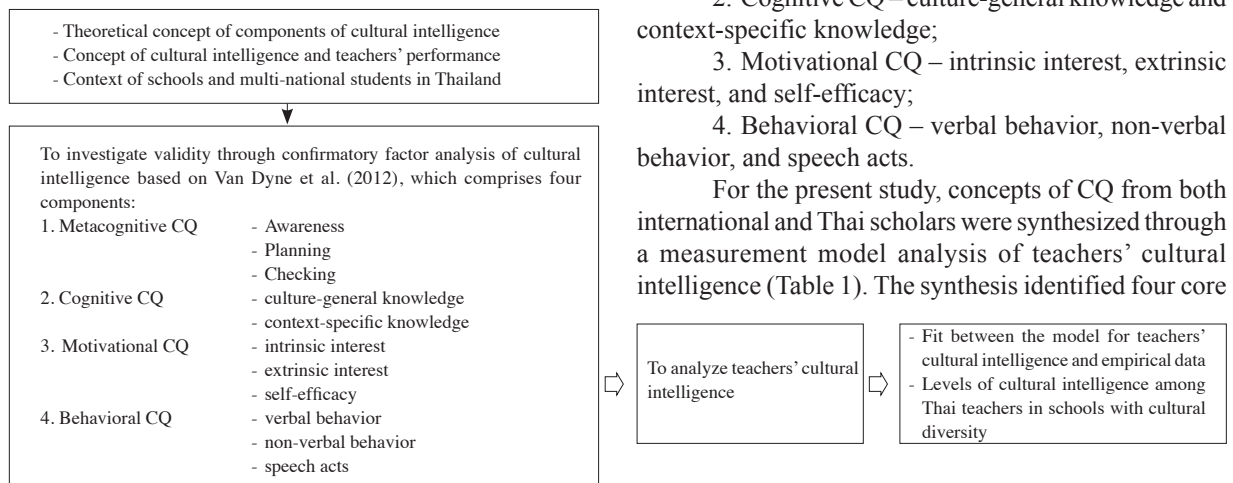
Conceptual Framework

Figure 1 Conceptual Framework

Literature Review

Concepts of Cultural Intelligence

Cultural intelligence (CQ) refers to an individual's capability to function effectively in situations involving people from different cultural backgrounds. It is commonly conceptualized as comprising four interrelated dimensions: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Earley & Ang, 2003). Metacognitive CQ encompasses the mental processes used to recognize, understand, and adapt to cultural differences, including planning and strategizing for intercultural interactions. Cognitive CQ refers to an individual's knowledge of cultural norms, practices, and conventions, whether general or specific to a given context. Motivational CQ reflects the interest, drive, and confidence to engage in cross-cultural situations, which directly influences the willingness to learn and adapt. Behavioral CQ involves the capacity to exhibit appropriate verbal and non-verbal actions when interacting with individuals from different cultures.

Livermore (2010) extends this conceptualization by emphasizing that CQ enables professionals to operate effectively in culturally diverse environments across differences in ethnicity, age, and cultural norms. This includes the ability to solve problems and adapt strategies to suit the demands of multicultural contexts. Advances in CQ research have led to more refined models. Van Dyne et al. (2012), using second-order confirmatory factor analysis, confirmed the convergent and discriminant validity of CQ's four dimensions and identified 11 sub-dimensions:

1. Metacognitive CQ – planning, awareness, and checking;

2. Cognitive CQ – culture-general knowledge and context-specific knowledge;

3. Motivational CQ – intrinsic interest, extrinsic interest, and self-efficacy;

4. Behavioral CQ – verbal behavior, non-verbal behavior, and speech acts.

For the present study, concepts of CQ from both international and Thai scholars were synthesized through a measurement model analysis of teachers' cultural intelligence (Table 1). The synthesis identified four core

components; metacognitive, cognitive, motivational, and behavioral, that were consistently recognized across 19 prior studies. Confirmatory factor analysis further validated that these components and their indicators align with the theoretical framework proposed by Van Dyne et al. (2012).

long-term objectives and aligning action plans with cultural contexts;

○ Checking – reviewing and reassessing beliefs or expectations about other cultures by analyzing challenges and comparing anticipated and actual outcomes.

Table 1 The synthesis of factors of teachers' cultural intelligence

Concepts	Cultural intelligence												
References	Meta-cognitive	Cognitive	Motivational	Behavioral	Knowledge	Mindfulness	Cultural strategic thinking	Cultural skills	Empathy	Physical	Adaptation	Awareness	Interaction
Earley & Ang (2003)	/	/	/	/									
Earley & Mosakowski (2004)		/	/							/			
Schmidt & Hunter (2000)	/	/		/									
Dubrin (2010)	/	/	/	/									
Earley & Peterson (2004)	/	/	/	/									
Earley et al. (2006)		/	/				/						
Thomas & Inkson (2005)			/		/	/							
Thomas (2006)			/		/				/				
Ang et.al. (2007)	/	/	/	/									
Thomas et.al.(2008)	/				/			/					
Livermore (2010)	/	/	/	/									
Daft & Lane (2008)		/	/							/			
Van Dyne et al. (2010)	/	/	/										
Creque & Gooden (2011)		/		/									
Malek & Budwar (2013)												/	/
Peterson (2004)			/		/				/				
Chamnan (2011)		/	/							/			
Akaraborworn (2012)		/	/								/		
Obluang & Sujiva (2013)	/	/	/	/									
Total	**9**	**13**	**12**	**13**	**4**	**1**	**1**	**1**	**2**	**3**	**1**	**1**	**1**
Component selected to be examined	/	/	/	/									

Cultural Intelligence Framework

Van Dyne et al. (2012) conceptualize cultural intelligence (CQ) as comprising four main components and 11 sub-components, as outlined below:

1. Metacognitive CQ refers to cultural awareness, self-regulation, and self-assessment in navigating cross-cultural interactions. It involves higher-order cognitive strategies and deep information processing, enabling individuals to recognize the influence of culture on themselves, plan for intercultural encounters, and reflect on underlying beliefs or perspectives toward different cultures. The three sub-components are:

○ Awareness – recognizing how culture influences one's own and others' thoughts, behaviors, and habits, particularly in intercultural situations;

○ Planning – developing strategies before cross-cultural engagement, including setting short- and

2. Cognitive CQ denotes an individual's knowledge of norms, practices, and conventions across cultures. Understanding the cultural environment enables recognition of the values embedded in behavioral patterns and the factors shaping cross-cultural interactions. It includes:

○ Culture-general knowledge – essential knowledge that underpins cultural environments;

○ Context-specific knowledge – factual knowledge regarding appropriate behaviors in a particular culture and strategies for effective intercultural engagement.

3. Motivational CQ reflects the drive and self-motivation to engage in culturally diverse settings. It encompasses valuing diversity, deriving satisfaction from intercultural experiences, recognizing tangible benefits from such interactions, and maintaining confidence in

cross-cultural activities. The three sub-components are:

○ Intrinsic interest – genuine enjoyment and appreciation of diversity through cross-cultural interaction;

○ Extrinsic interest – recognition of the tangible or personal benefits arising from culturally diverse experiences;

○ Self-efficacy – confidence in adapting to and functioning effectively in multicultural environments, including managing the stress associated with cultural adjustment.

4. Behavioral CQ is the ability to display appropriate verbal and non-verbal behaviors, including speech acts, in intercultural interactions. This skill facilitates effective social behavior and reduces misunderstandings. The three sub-components are:

○ Verbal behavior – culturally appropriate language use, including tone, pauses, and silence;

○ Non-verbal behavior – effective use and adaptation of gestures, facial expressions, and body language;

○ Speech acts – contextually appropriate communication functions, such as making requests, offering invitations, expressing gratitude, or refusing politely.

Teachers and cultural intelligence

Earley & Ang (2003) argue that through the self-development in each aspect of cultural intelligence, individuals with high Metacognitive CQ will acknowledge others' cultural satisfaction consciously and adapt their mental modes during interactions, while those with high Cognitive CQ can understand similarities and differences between each culture. Persons equipped with high Motivational CQ will be able to direct their interest towards intercultural situations, drawing on their interest and confidence in the efficacy of their own culture. Additionally, those with a high level of Behavioral CQ will exhibit behavior which is appropriate for situations through a variety of verbal and non-verbal communication skills, such as the use of culturally appropriate language, tone of voice, gestures, and facial expressions. As such, given the growing cultural diversity within classrooms and schools, teachers and education staff should possess cultural intelligence skills. In fact, based on Key et al. (2022) study on cultural intelligence skills among accounting students through action research for cross-cultural teamwork, cultural intelligence (CQ) is regarded as a necessary trait for accounting graduates entering the contemporary business world and engaging in

professional practice, as such, accounting teachers were prompted to develop instructional innovations to instill this skill for students. The results of the first phase only demonstrated students' success in terms of Behavioral and Cognitive CQ. Still, the substantial changes in the second phase contributed to their overall success in all four aspects of cultural intelligence. This finding is consistent with Grosch et al. (2023) study on cultural intelligence and roles of components of international classrooms. In particular, it aimed to investigate the relationship among components of international classrooms, comprising of students from diverse ethnicities. It was found that cross-cultural learning was positively related to all factors of cultural intelligence. Therefore, Ladson-Billings (1995) opposes the idea of "adapting" students to align with the educational structure, which can perpetuate inequality. Instead, she proposes the culturally relevant pedagogy (CRP). Through this pedagogy, teachers can employ various teaching approaches, guided by three fundamental principles: 1) recognizing the value and capabilities of oneself and others; 2) the dynamic of social relationships, which can promote connections, establish a community of learners, and foster pride and shared responsibility; 3) the concept of fluid and valuable knowledge which aligns with critical analysis, coupled with a passion for learning, support, and multi-dimensional assessment. In addition, Sims (2011) study on the direct relationship between cultural intelligence and job satisfaction observed a significant positive relationship between these two factors among teachers in international schools in Latin America. Livermore (2010) identified four main components for applying cultural intelligence in practice: CQ Drive, CQ Strategy, CQ Knowledge, and CQ Action. Specifically, CQ Drive (Motivational CQ) involves having the drive, interest, motivation, and openness to learn about other cultures without prejudice, while CQ Strategy (Metacognitive CQ) involves formulating and applying action plans. It concerns metacognitive awareness and seeking methods to manage various situations, such as "How should I behave?". Additionally, CQ Knowledge (Cognitive CQ) encompasses learning and understanding, such as "What should I learn when working with this group?". This includes cultural systems, cultural norms, and values. The other component – CQ Action (Behavior CQ) – entails adapting communication methods and expressions, for example "How should I manage my expressions appropriately?" and "How should I express myself and manage my tone?". This

encompasses verbal communication, non-verbal communication, and speech acts. These components align with the characteristics of effective teachers, defined as those who achieve socially valued objectives, particularly enabling student learning (Campbell et al., 2004). Teaching that is informed by students' cultural backgrounds supports the integration of ethnicity, culture, and language, thereby enhancing academic achievement (Smith, 2004). Conversely, neglecting cultural differences can lead to classroom conflict and hinder academic success (Nieto & Bode, 2008). In today's globalized educational context, teachers' ability to navigate cultural diversity is not optional but essential. As Ross and Thomson (2008) argue, the skills to interact effectively with individuals from varied backgrounds are central to achieving equitable and impactful educational outcomes.

Research Methodology

This study was conducted through quantitative research; in particular, second-order confirmatory factor analysis was employed to investigate construct validity in the structural equation model for teachers' cultural intelligence as well as assess their levels of cultural intelligence.

1. Population and Sample

The population of this study comprised teachers from schools under the supervision of four educational authorities—the Primary Educational Service Area Office (PEASO), Secondary Educational Service Area Office (SESAO), Local Administrative Organization (LAO), and Bangkok Metropolitan Administration (BMA)—across all six regions of Thailand (Northern, Eastern, Western, Central, Southern, and Bangkok Metropolis) that admitted cross-national students in the 2020 academic year. The exact population size was unknown.

The sample consisted of 600 teachers from schools admitting cross-national students during the first semester of the 2020 academic year. Multi-stage sampling was employed to ensure representation from all regions and affiliated offices. The required sample size was determined based on Hair et al. (2006), who recommend 5–20 times the number of parameters for confirmatory factor analysis (CFA). With 11 variables, the minimum sample size was calculated at 220 participants (20×11 variables), assuming a 95% confidence level. This was increased to 600 to enhance the likelihood of a normal distribution and improve the robustness of CFA results.

Sampling was conducted in the following stages:

1. Regional selection – Schools were selected from six regions: Northern, Eastern, Western, Central, Southern, and Bangkok Metropolis (the latter considered a special area due to its cultural diversity).

2. Affiliated office stratification – Within each region, schools were classified by their affiliated office: PEASO, SESAO, LAO, and BMA.

3. School selection – Using stratified random sampling followed by simple random sampling via computer, schools were selected according to predefined quotas: five schools from PEASO, two from SESAO, two from LAO, and four from BMA, yielding a total of 49 schools nationwide.

4. Teacher selection – Within each selected school, simple random sampling was applied to select respondents. Fifteen teachers were chosen from each BMA school, and 12 teachers from each school under the other three offices, resulting in 600 teachers in total.

Non-proportional stratified sampling was used because of contextual differences between schools in different affiliated offices. The final sampling proportions were set at five PEASO schools, two SESAO schools, and two LAO schools per region, with four BMA schools representing Bangkok (Figure 2).
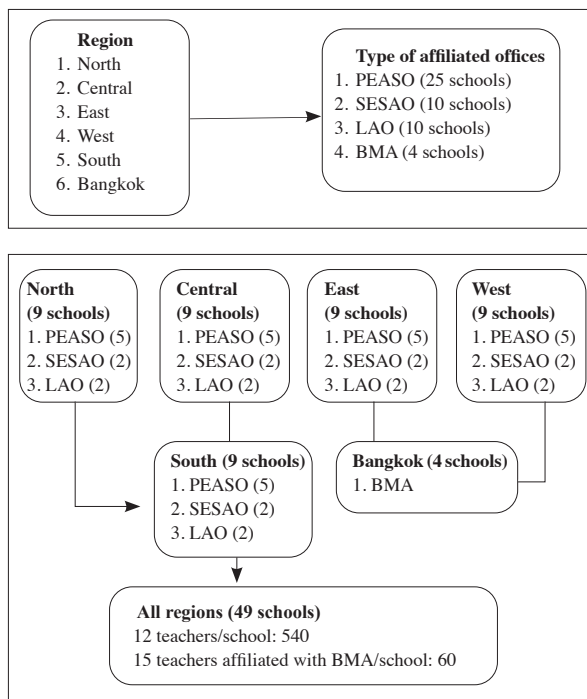

Figure 2 Classification of Regions and Types of School Affiliations

2. Data collection

Data were collected from July to August 2020 from an initial sample of 600 teachers. After excluding incomplete responses, 587 valid questionnaires remained, which still exceeded the minimum required sample size for the study. The research instrument was a 63-item Cultural Intelligence Questionnaire based on the four factors and 11 indicators proposed by Van Dyne et al. (2012): Metacognitive CQ – 12 items, Cognitive CQ – 22 items, Motivational CQ – 14 items, and Behavioral CQ – 15 items. A table of specifications was developed to ensure comprehensive coverage of relevant constructs. Content validity was evaluated by five experts using the Index of Item-Objective Congruence (IOC), and the questionnaire was revised accordingly. A pilot test was conducted with 30 non-participant teachers from schools admitting cross-national students, selected using stratified and simple random sampling. Internal consistency reliability was assessed using Cronbach's alpha, yielding the following coefficients: Metacognitive CQ = 0.85, Cognitive CQ = 0.83, Motivational CQ = 0.78, Behavioral CQ = 0.82, and overall instrument reliability = 0.92, indicating high reliability.

3. Data analysis

Descriptive statistics that included mean, standard deviation, skewness, kurtosis, and coefficient of variation were used to summarize teachers' levels of cultural intelligence. Construct validity of the measurement model was assessed through Confirmatory Factor Analysis (CFA) using MPLUS, examining both convergent and discriminant validity. Model fit was evaluated using the following criteria:

• Chi-square (χ^2): non-significant p-value (> 0.05) indicates good fit.

• Relative chi-square (χ^2/df): < 2.0 (Tabachnick & Fidell, 2007).

• Comparative Fit Index (CFI): > 0.95 (Sharma et al., 2005).

• Tucker–Lewis Index (TLI): > 0.95 (Sharma et al., 2005).

• Standardized Root Mean Square Residual (SRMR): < 0.08.

• Root Mean Square Error of Approximation (RMSEA): < 0.06 (Hu & Bentler, 1999, cited in Chadcham, 2003).

Finally, the overall levels of teachers' cultural intelligence were classified according to Kannasuth's (1984) criteria:

• Low: 1.00–1.49
• Moderate: 2.50–3.49
• High: 3.50–4.49
• Highest: 4.50–5.00

Results

1. Results of Assessment of Validity through CFA of Teachers' Cultural Intelligence

1.1 Determining the Distribution Characteristics of Variables

Based on a review of relevant documents and research, factors of teachers' cultural intelligence were synthesized according to Van Dyne et al. (2012) concept and, in turn, categorized into four factors and 11 indicators, including A. metacognitive (MET), B. cognitive (COG), C. motivational (MOT), and D. behavioral (BEH). The variables in this study were 11 observed variables, each of which was numerical/quantitative data, characterized as continuous data. Considering this, the data distribution characteristics were identified using the Kolmogorov–Smirnov statistic. It was found that for all variables, P-value $\leq \alpha$ (Kolmo.), showing statistical significance at a significance level of .01. Moreover, the Kolmogorov–Smirnov statistic ranged between .080 – .167, with df equal to 587. Thus, it was concluded that all variables exhibited a normal distribution.

1.2 Relationship among Variables

The linearity of the relationships between each pair of variables was assessed through the use of the Pearson Product-Moment Correlation Coefficient (PPMCC). The results demonstrated that each pair of factors of teachers' cultural intelligence exhibited linear relationships, with the correlation coefficients ranging between 0.500 - 0.694. Moreover, all pairs of indicators showed the relationships at a statistical significance level of .01, with correlation coefficients between 0.126 - 0.752. In the same manner, based on Bartlett's test of Sphericity statistic, which typically tests the identity matrix for the correlation matrix, it was observed that the Chi-Square (X^2) was 2,785.091, with df of 55 and a significance level of .000. Hence, given the statistical probability of the Chi-Square (X^2) at .000, which is below .050, it demonstrates the appropriateness of the correlation matrix for all indicators focused in this study; it can be further used for analysis of factors (Hair et. al., 2010).

The Measure of Sampling Adequacy (MSA) index for Factor Analysis, also referred to as a Kaiser-Meyer-Olkin (KMO) index, involves comparing

the size of the partial correlation coefficients and the size of the partial correlations between each pair of variables. This is typically carried out after the variance of other variables had been removed. If there exists sufficient correlation for CFA, a KMO index should range between 0-1 ($0 \geq KMO \geq 1$). In this study, the KMO index of all variables was 0.878. Thus, based on Hair et al. (2010)'s criteria, a KMO index greater than .80 indicates strong appropriateness, and when it is close to 1, it suggests an acceptable level for proceeding with CFA (Kaiser, 1970; Kaiser, 1974; Kaiser & Rice, 1974; Hair et al., 2010).

1.3 Results of Confirmatory Factor Analysis of Teachers' Cultural Intelligence

The results of the second-order factor analysis of the teachers' cultural intelligence model showed that the model was congruent with empirical data, with the Chi-Square (X^2) at a significance level of 0.1238, which is above 0.05 (P-value > 0.05).

criteria. All indices met or exceeded the recommended thresholds, confirming that the model was consistent with the empirical data. Factor loadings and standardized coefficients are presented in Table 2

As shown in Table 2, it can be concluded that teachers' cultural intelligence included four components, namely metacognitive (MET), cognitive (COG), motivational (MOT), and behavioral (BEH), with factor loadings between $0.511 – 2.614$, standard factor loadings ranging from 0.320-0.898, factor score coefficients between $0.006 – 0.245$, and reliability ranging from 0.102 – 0.806. This indicated that all factors could be used for factor analysis. Metacognitive CQ was assessed through three observable variables including ME 1, ME 2, and ME 3, while Cognitive CQ was evaluated using two observable variables: CO 1 and CO 2. Moreover, Motivational CQ was measured using three observable variables, namely MO 1, MO 2, and MO 3, while

Table 2 Factor loadings, standard error, factor score coefficients, reliability of indicators by main factors

Factors	Factor Loading Matrix				Factor Score	R²
	b	β	S.E.	t		
1. A. Meta-cognitive: MET	1.000	0.777	0.025	30.976*	0.946	0.604
ME 1	1.000	0.320	0.039	8.184*	0.006	0.102
ME 2	2.614	0.898	0.018	48.574*	0.192	0.806
ME 3	2.398	0.836	0.020	42.167*	0.127	0.699
2. B. Cognitive: COG	1.150	0.885	0.055	16.102*	0.847	0.783
CO 1	1.000	0.606	0.048	12.681*	0.122	0.368
CO 2	0.560	0.408	0.045	9.071*	0.133	0.167
3. C. Motivational: MOT	2.636	0.982	0.002	531.036*	0.924	0.965
MO 1	1.000	0.758	0.026	29.476*	0.171	0.575
MO 2	1.019	0.795	0.025	31.837*	0.245	0.632
MO 3	0.511	0.390	0.042	9.243*	0.108	0.152
4. D. Behavior: BEH	1.955	0.944	0.027	35.248*	0.914	0.890
BE 1	1.000	0.690	0.027	25.201*	0.149	0.476
BE 2	1.247	0.776	0.025	30.597*	0.214	0.602
BE 3	0.603	0.482	0.038	12.703*	0.025	0.232

Considering other indices of congruence, the statistical value was considered acceptable, with χ^2 of 32.132, Degrees of Freedom (df) of 24, and χ^2/df of 1.339, which is below 2, meeting the acceptable criteria of 2:1 (Tabachnik & Fidell, 2007).

Additionally, the Comparative Fit Index (CFI) and Tucker-Lewins Index (TLI) were 0.997 and 0.993, respectively; since both indices exceeded 0.95, they fulfilled the acceptable criteria (Shama et al., 2005). The Root Mean Square Error of Approximation index was 0.024, which was below 0.070, essentially meeting the acceptable criteria (Steiger, 2007). Moreover, the Standardized Root Mean Square Residual index was 0.023, which is less than 0.080, fulfilling the acceptable

Behavioral CQ was assessed using three observable variables, including BE 1, BE 2, and BE 3.

In Figure 3, confirmatory factor analysis of teachers' cultural intelligence found that the model fitted with empirical data (χ^2 - 32.132, χ^2/df = 1.339, P-value = 0.1238, CFI = 0.99, TLI = 0.993, RMSEA = 0.024, SRMR = 0.023). In addition, the second-order confirmatory factor analysis showed four main components of teachers' cultural intelligence, covering Metacognitive CQ, Cognitive CQ, Motivational CQ, and Behavioral CQ. Considering the factor loadings of the four latent variables based on standardized factor coefficients, it was observed that Motivational CQ emerged as the most important, followed by Behavioral
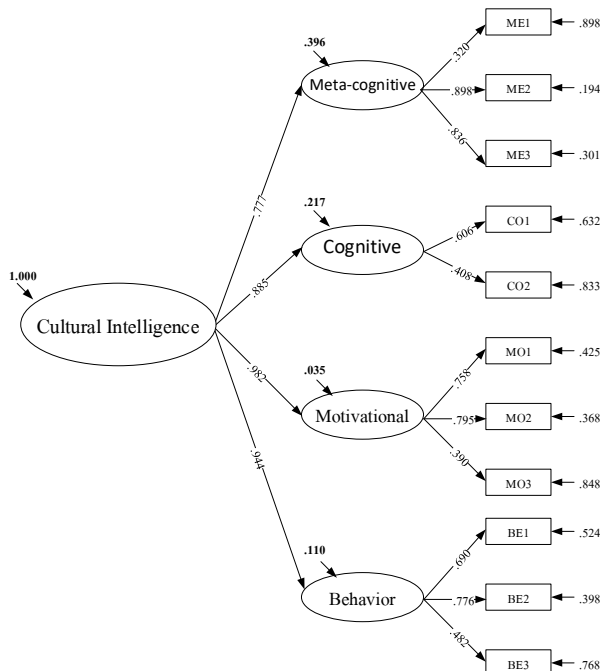
Figure 3 The Model of Confirmatory Factor Analysis of Teachers' Cultural Intelligence

CQ, Cognitive CQ, and Metacognitive CQ, with standardized coefficients of .982, .944, .885, and .777, respectively.

2. Results of Teachers' Cultural Intelligence

The results demonstrated the range of the highest and lowest scores and mean scores for all components of teachers' cultural intelligence, as shown in Table 3.

The analysis of the average score of teachers' Metacognitive CQ revealed that the mean score was 3.89 (SD = 0.60), which was determined to be the highest level, with a coefficient of variation of the mean score of 15.42. Teachers' Cognitive CQ achieved a mean score of 3.35 (SD = 0.30), considered as moderate, with a coefficient of variation of the mean score of 8.95. Furthermore, teachers' Motivational CQ was equal to 3.66 (SD = 0.52), interpreted as a high level, with a coefficient of variation of the mean score of 14.21. Finally, the mean score for teachers' Behavioral CQ was 3.62 (SD = 0.47), which was deemed as a high level, with a coefficient of variation of the mean score of 12.98. Considering each factor of teachers' cultural intelligence, context-specific knowledge had the lowest mean score (M = 3.29), while checking attained the highest mean score (M = 4.10).

Discussion

The developed measurement model for teachers' cultural intelligence (CQ) demonstrated strong congruence with the empirical data. Among the four CQ components, Motivational CQ exhibited the highest factor loadings, followed by Behavioral CQ, Cognitive CQ, and Metacognitive CQ, respectively. This indicates that Motivational CQ plays a pivotal role in teachers' effectiveness in cross-cultural work and in enhancing their overall CQ. Within this component, extrinsic interest recorded the highest loading, suggesting that external incentives such as improved teaching performance, positive student outcomes, or recognition,

Table 3 Minimum, maximum scores, mean, S.D., coefficients of variation on teachers' cultural intelligence

Items	Min	Max	X	S.D.	CV	Level of scores
1. Metacognitive CQ	**1.92**	**5.00**	**3.89**	**0.60**	**15.42**	High
1.1 Awareness	1.60	5.00	3.67	0.81	22.07	High
1.2 Planning	1.00	5.00	4.01	0.74	18.45	High
1.3 Checking	1.33	5.00	4.10	0.73	17.80	High
2. Cognitive CQ	**2.36**	**4.41**	**3.35**	**0.30**	**8.95**	Moderate
2.1 Culture-general knowledge	2.00	4.60	3.43	0.43	12.54	Moderate
2.2 Context-specific knowledge	2.33	4.50	3.29	0.35	10.64	Moderate
3. Motivational CQ	**2.00**	**5.00**	**3.66**	**0.52**	**14.21**	High
3.1 Intrinsic interest	1.25	5.00	3.77	0.70	18.57	High
3.2 Extrinsic interest	1.20	5.00	3.80	0.68	17.89	High
3.3 Self-efficacy	1.80	5.00	3.41	0.71	20.82	Moderate
4. Behavioral CQ	**2.07**	**4.87**	**3.62**	**0.47**	**12.98**	High
4.1 Verbal	1.75	5.00	3.52	0.60	17.04	High
4.2 Non-verbal	1.60	5.00	3.80	0.66	17.37	High
4.3 Speech acts	1.83	5.00	3.54	0.52	14.69	High
4 dimensions in total	**2.43**	**4.57**	**3.59**	**0.37**	**10.30**	High

are influential in motivating teachers to adapt to culturally diverse classrooms.

Challenges in cross-cultural teaching, such as anxiety, language barriers, and uncertainty in intercultural communication with cross-national students, foreign teachers, or parents, may initially hinder classroom effectiveness. Nevertheless, teachers often respond with proactive strategies, including observing student behavior, learning basic phrases in students' native languages, encouraging Thai language use, building peer support systems, fostering mutual acceptance, and incorporating diversity-promoting homeroom activities. Such practices not only reduce stress but also enable teachers to recognize the professional and personal benefits of working in culturally diverse environments. These findings are consistent with Skaria and Montayre (2023), who reported that nursing students with higher Motivational CQ were more confident and effective in intercultural interactions, and with Haff et al. (2014), who found that Motivational CQ significantly facilitated adaptation and professional success in foreign contexts.

While Motivational CQ emerged as the strongest factor, mean scores for all four CQ components were relatively close, with Metacognitive CQ having the highest average score and Cognitive CQ the lowest. The prominence of Metacognitive CQ suggests that teachers actively engage in planning, reflection, and strategic thinking to accommodate diverse learners—skills essential for creating inclusive classrooms, promoting equity, and building community trust. Teachers in this study demonstrated deliberate planning for multicultural teaching, efforts to understand students' perspectives, and strategies for engaging parents and communities, thereby supporting harmonious, cooperative, and conflict-free learning environments. This aligns with Van Dyne et al. (2010), who emphasized the interdependence between Motivational and Metacognitive CQ in developing strategies for observing, interpreting, and responding to cultural differences.

However, the comparatively lower Cognitive CQ score (though still at a moderate level) suggests a gap in teachers' factual and procedural knowledge of other cultures. This may be due to limited training in cross-cultural communication, insufficient exposure to intercultural work, and school cultures that expect cross-national students to adapt to existing curricula without significant modifications. Such findings mirror Yüksel and Eres (2018), who reported similar patterns

among teachers, and Arphattananon (2018), who noted that although linguistic diversity is increasingly acknowledged as cultural capital, school practices often focus on visible culture (e.g., food, festivals) rather than deeper integration of students' cultural identities into pedagogy. The lack of emphasis on Cognitive CQ may impede teachers' ability to understand and interpret the values, beliefs, and behaviors of students from minority cultures, potentially contributing to adaptation difficulties, cultural misunderstandings, and the perpetuation of inequities. Bernardo and Presbitero (2018) link such gaps to limited cognitive flexibility, which in turn reduces the capacity to perform effectively in multicultural environments. Ho et al. (2023) further argue that dynamic, curriculum-integrated approaches are necessary to build CQ, supporting Ang and Van Dyne's (2006) and Triandis' (1994) assertion that knowledge of both cultural universals and specific cultural differences is essential for decision-making and performance in cross-cultural contexts.

The findings also point to moderate levels of self-efficacy among teachers, potentially stemming from uncertainties surrounding school policies on cross-national student admissions, limited public communication of such policies, and perceived resistance from local stakeholders. These factors may discourage teachers from investing effort in teaching cross-national students, particularly when drop-out rates are high and parental priorities often lean toward immediate employment over continued education. Such systemic challenges echo Arphattananon's (2018) observation that policy directives, while granting access to education, often lack clarity of purpose and alignment with pedagogical practices that genuinely promote inclusion and long-term academic engagement. Given these findings, policy reviews are warranted to ensure that the goals of providing education to cross-national students are explicit, aligned with inclusive teaching practices, and supported by targeted professional development for teachers. Without such alignment, there is a risk of perpetuating social inequality through policies that offer access but fail to provide the conditions necessary for equitable educational outcomes.

Suggestions
Suggestions for Implementation

1. Based on the results, Motivational CQ had the highest influence on teachers' cultural intelligence. Therefore, it is deemed necessary to promote teachers'

cultural intelligence in different forms and accessible manners, enabling self-learning. Ongoing monitoring and evaluation should be implemented while positive reinforcements should be provided by educational institutions to teachers actively engaged in self-improvement.

2. In addition, Cognitive CQ was found to exhibit the lowest mean score. Consequently, teacher educational institutes should equip teachers with knowledge to work in the culturally diverse context and foster practical policies for continuous development of teachers' cultural intelligence. Moreover, educational institutions should implement various methods to foster a cultural understanding and language abilities among teachers.

3. The results showed that in terms of Motivational CQ, self-efficacy had the lowest mean score. Considering this, educational institutions should provide teachers with clear guidelines to ease their anxiety and confusion as well as to instill confidence in their instructional practices for cross-national students.

4. Educational institutions should develop teachers' cultural intelligence through various methods, such as training sessions, cultural research within classrooms, and exposure to cultural experiences.

Suggestions for Future Research

1. Further studies should investigate and develop programs for the development of teachers' cultural intelligence, covering all four components of this intelligence. This aims to enhance effectiveness in their performance and instruction which accommodate students with cultural diversity.

2. Additionally, future research should examine psycho-social or social-science factors influencing teachers' cultural intelligence. As a result, the data can be drawn on to improve their cultural intelligence in the context of schools with cultural diversity.

3. Finally, further studies should delve into teachers' cultural intelligence in teacher educational institutions or schools to assess this competency and enhance their teaching performance. This would contribute to professional teacher development in the future.

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