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Research Article

Cognitive Flexibility among Iranian EFL Teachers: The Predictive Roles of Intercultural Competence and Work Engagement

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ABSTRACT

Although cognitive flexibility (CF) has attracted increasing attention in language teacher education, limited research has examined its association with intercultural competence (ICC) and work engagement (WE), particularly among Iranian English as a Foreign Language (EFL) teachers. The present study investigated the relationships among CF, ICC, and WE and examined the extent to which ICC and WE statistically predicted teachers' CF. A cross-sectional correlational design was employed with 293 Iranian EFL teachers. Data were collected using the Cognitive Flexibility Scale (CFS), the Intercultural Competence Questionnaire, and the Utrecht Work Engagement Scale (UWES-9). Descriptive statistics, Pearson product-moment correlations, and standard multiple regression were used for data analysis. The findings indicated significant positive associations among all three variables. ICC and WE both made significant unique contributions to CF and jointly accounted for 23.6% of the variance in CF, with WE showing the larger standardized coefficient. These findings indicate that teachers' reported CF is statistically associated with both intercultural and motivational dimensions of professional functioning. The study contributes to research on language teacher cognition by bringing cognitive, intercultural, and motivational dimensions into a common empirical framework.

Introduction

Teaching in contemporary EFL classrooms requires teachers to respond to changing learner needs, unexpected instructional demands, and culturally diverse forms of classroom interaction. CF, defined as the capacity to shift perspectives, reconsider alternatives, and adapt cognitive responses to changing circumstances, is therefore potentially relevant to teachers' professional functioning (Hohl & Dolcos, 2024; Martin & Rubin, 1995). Two teacher characteristics may be particularly relevant to this capacity: ICC, which involves responding appropriately to cultural difference, and WE, characterized by vigor, dedication, and absorption (Deardorff, 2006; Schaufeli et al., 2002, 2006).

Existing research provides separate evidence concerning these constructs, but their interrelationships remain insufficiently examined (Del Villar et al., 2025). Studies of CF among language teachers have linked it to variables such as grit, critical-thinking disposition, adaptive practice, and professional success (Erarslan, 2023; Orakcı & Khalili, 2024; Peng & Gao, 2025; Zhang et al., 2024). Research on ICC has emphasized perspective-taking, reflexivity, openness to diversity, the contribution of ICC to EFL teachers' professional development, and culturally responsive pedagogical thinking (Álvarez-Valencia & Michelson, 2023; Gao, 2024; Hernández-López et al., 2024; Rissanen et al., 2023). Similarly, research on teacher WE has associated engagement with professional functioning, well-being, and adaptive responses to occupational demands (Drouin-Rousseau et al., 2024; Uslukaya & Demirtaş, 2024; Zhou et al., 2024). These strands of research suggest conceptual connections among the three constructs, which should not be equated with demonstrated causal relationships. Despite these separate strands of evidence, it remains theoretically unclear whether CF in language teaching is primarily associated with intercultural interpretive resources, motivational resources, or their combination. Existing studies have generally examined these dimensions separately, leaving unresolved whether CF can be understood as a multidimensional aspect of teachers' professional functioning that is simultaneously related to intercultural and motivational characteristics. The present study addresses this unresolved issue by examining ICC and WE simultaneously as statistical predictors of CF.

The possible relationship between ICC and CF is particularly plausible because ICC requires teachers to consider perspectives that may differ from their own, question taken-for-granted assumptions, and tolerate ambiguity. Such processes overlap conceptually with the perspective-shifting and alternative-generation dimensions of CF (Deardorff, 2006; Martin & Rubin, 1995). The relationship between WE and CF can likewise be interpreted through the motivational demands of teaching. From a Job Demands–Resources (JD-R) perspective, WE represents a positive motivational state involving energy, dedication, and sustained involvement in professional activity (Bakker & Demerouti, 2017; Schaufeli et al., 2002). These characteristics may be relevant to teachers' capacity to sustain attention and effort when classroom circumstances require adaptive responses. These theoretical arguments provide a rationale for examining associations and statistical prediction among these constructs.

The Iranian EFL context provides a particularly relevant setting for examining these relationships. Iranian EFL teachers work

within educational environments in which curricular expectations, learner diversity, and classroom-level instructional demands may require teachers to adjust their pedagogical responses. Existing research has examined CF among Iranian teachers, including its relationship with learners' attitudes toward English language learning (Saffarin, 2015), but the simultaneous statistical contributions of ICC and WE to teachers' CF have received limited empirical attention. More specifically, the present review did not identify a previous study that simultaneously examined ICC and WE as statistical predictors of CF among Iranian EFL teachers. This constitutes a more specific gap than the broader claim that the three constructs have rarely been studied together.

Accordingly, the present study examines the relationships among CF, ICC, and WE and investigates whether ICC and WE make significant unique statistical contributions to CF among Iranian EFL teachers. The use of multiple regression allows the unique contribution of each predictor to be examined while statistically accounting for the other predictor. Given the cross-sectional correlational design, the term prediction is used in its statistical sense and does not imply causal or temporal precedence.

Based on these considerations, the study addresses the following research questions:

1. Is there a significant correlation among ICC, CF, and WE among Iranian EFL teachers?
2. To what extent do ICC and WE significantly predict CF among Iranian EFL teachers?

Literature Review

CF in EFL Teaching

CF is generally defined as an ability or skill enabling individuals to switch between cognitive sets or strategies in response to changing contextual demands. Hohl and Dolcos (2024) summarize CF as dynamic processes that allow adaptation of our thinking and behavior in response to dynamic contextual demands. In practice, this means being open to multiple perspectives, spontaneously restructuring one's knowledge when needed, and remaining adaptable (Martin & Rubin, 1995). Martin and Rubin's trait-like definition highlights CF as awareness of alternatives, willingness to adapt, and self-efficacy in flexibility. In educational settings, CF involves both mental flexibility (shifting attention or strategies) and behavioral flexibility (changing instructional actions) to meet students' evolving needs (Erarslan, 2023). Overall, CF is viewed as a key executive function that integrates processes like attention-shifting, inhibition, and working memory to support flexible problem-solving (Hohl & Dolcos, 2024).

For EFL teachers, high CF is crucial for effective pedagogy. Flexible teachers can modify lesson plans, adjust explanations, and create alternative instructional paths when original plans fail or new student needs arise (Stronge, 2007). Stronge (2007) emphasizes that effective teachers are responsive to students' needs as they are not only planned but also spontaneously flexible. In practice, cognitively flexible teachers readily employ multiple strategies (e.g., visual aids, group work, translanguaging) and shift techniques mid-lesson if necessary. This adaptability contributes to problem-solving in the classroom: flexible teachers are better able to diagnose learning gaps and generate creative

solutions (Diamond & Lee, 2011; Dietrich & Kanso, 2010). By preventing cognitive rigidity (Davis & Nolen-Hoeksema, 2000) and stereotyped thinking, CF also helps teachers avoid prejudging students and supports inclusive, differentiated instruction. Ultimately, CF underlies a responsive teaching approach, enhancing decision-making when unexpected challenges (e.g., mixed-ability learners, technical issues, sudden schedule changes) occur.

Empirical evidence links CF to positive teacher and student outcomes. For example, Erarslan (2023) surveyed 589 Turkish EFL teachers during the COVID-19 crisis and found that those with higher CF not only coped better with emergency remote teaching but also reported using perseverance and adaptability strategies (grit) to overcome challenges. CF and grit were strongly correlated in that study, highlighting CF's role in teacher resilience. Similarly, Zhang et al. (2024) studied 533 Chinese EFL teachers and found that teacher CF (along with positive psychological capital) significantly predicted professional success: CF and psychological capital together accounted for over 50% of variance in teachers' self-reported success. In other words, more flexible teachers tend to feel more effective and achieve higher professional goals. Orakcı and Khalili (2024) examined prospective EFL teachers and found a strong positive relationship between CF and critical thinking disposition – a key component of professional competence. These findings suggest that CF supports the higher-order thinking (analysis, creative problem-solving) that underpins effective teaching. Even among students, CF of their teachers appears important: for example, an Iranian study (Saffarin, 2015) reported that teachers' CF was positively correlated with their students' attitudes toward English, implying that flexible teaching methods foster more positive learner motivation.

CF has been operationalized with both performance tasks (e.g., the Wisconsin Card Sorting Test, task-switching paradigms) and self-report scales. In language education research it is common to use self-report inventories. The CF Scale developed by Martin and Rubin (1995) is a 12-item questionnaire (6-point Likert) assessing beliefs about one's flexible thinking (e.g., "I can find workable solutions to seemingly unsolvable problems"). Martin and Rubin demonstrated the CFS's reliability and validity in two studies, finding it internally consistent and conceptually related to communication flexibility and open-mindedness. Other self-report tools include the CF Inventory (Dennis & Vander Wal, 2010) and acceptance-based measures (AAQ-II), but the CFS remains widely used (including in Iranian research).

Most research on CF in teaching comes from Western or Chinese contexts. To date, few studies, to be conservative, have examined CF specifically among Iranian EFL teachers. The lone related study found was that of Saffarin (2015), which linked Iranian teachers' CF to learners' attitudes, but it did not investigate CF alongside other teacher traits. In particular, CF has not been explored in combination with ICC or WE in Iran's EFL context. Given Iran's linguistically and culturally diverse classrooms, the ability to think flexibly (e.g., to consider students' cultural backgrounds) may be especially crucial. Moreover, Iranian EFL teachers often work with limited resources and strict curricula, contexts that demand adaptive problem-solving. The lack of local data on CF – especially its joint effects with ICC and engagement – represents a significant gap. The

present study aims to fill this void by testing how ICC and WE jointly predict Iranian EFL teachers' CF.

ICC among EFL Teachers

ICC broadly refers to the knowledge, attitudes, and skills that enable individuals to function effectively across cultural boundaries (Deardorff, 2006; Spitzberg & Changnon, 2009). In language education, ICC involves an ability to understand and mediate cultural differences in communication. For example, Corbett (2022) describes ICC as a teacher's capacity for intercultural understanding and mediation when working with diverse learners. In the same vein, Alvarez-Valencia and Michelson (2023) view ICC as the capacity to establish and nurture connections with individuals of different cultural backgrounds via shared meaning-making. These connections require teachers to develop awareness of their own cultural frames and to adopt openness, curiosity, and empathy toward other cultures (Álvarez-Valencia & Michelson, 2023; Bennett, 2017). In practice, an interculturally competent teacher not only possesses factual knowledge of multiple cultures, but also demonstrates attitudes such as respect for diversity and skills such as perspective-taking, adaptability, and tolerance for ambiguity (Álvarez-Valencia & Michelson, 2023; Hernández-López et al., 2024).

In EFL and educational contexts, ICC has become especially valued. Language instructors with high IC are better able to create inclusive classrooms and to tailor instruction to culturally diverse students. They tend to use culturally responsive pedagogy and to interpret student responses within context (Hernández-López et al., 2024; Lin Huang, 2023). Empirical studies echo this: for instance, teachers who actively engage with cultural content and emphasize students' cultural perspectives are seen as more effective in multicultural settings (Hernández-López et al., 2024; Penelope & Mathadikul, 2025). Eren (2024) notes that highly interculturally competent EFL teachers are more interested in various cultures, more sensitive to cultural diversity, and more adaptable in their attitudes and practices. In other words, they show greater flexibility – for example, they are comfortable modifying examples, analogies, or teaching strategies to bridge cultural gaps. As a result, such teachers tend to reframe misunderstandings creatively and adjust their instruction on the fly to meet students' cultural needs (Álvarez-Valencia & Michelson, 2023; Eren, 2024).

Crucially, ICC and CF are closely aligned. Developing ICC requires mental processes that are at the heart of flexible thinking. Learners of IC must often *de-center* – that is, step outside their familiar cultural assumptions – and entertain multiple interpretations of any situation (Álvarez-Valencia & Michelson, 2023; Liddicoat & Scarino, 2013). This perspective shifting is itself a form of CF. Álvarez-Valencia and Michelson (2023) highlight that engaging with different cultural norms involves recognizing when one's own viewpoints are limited or culturally biased, and reorganizing one's thinking accordingly. In pedagogical terms, an interculturally competent teacher routinely considers students' cultural frames and is willing to revise lesson plans or explanations accordingly (Eren, 2024; Hernández-López et al., 2024).

In sum, teachers with higher ICC have cultivated the very cognitive and affective resources that support flexible thinking. Their openness and curiosity mean they welcome uncertainty and multiple viewpoints, rather than rigidly adhering to a single perspective

(Álvarez-Valencia & Michelson, 2023). They are skilled at shifting frames, for example, reinterpreting a communicative scenario from a student's cultural standpoint, which directly mirrors the processes underlying CF. Consequently, interculturally competent teachers are typically more adaptive in instruction and classroom problem-solving. They adjust more readily to diverse classrooms, rephrase or elaborate explanations in culturally relevant ways, and design activities that leverage students' cultural backgrounds (Eren, 2024; Hernández-López et al., 2024). In other words, high ICC supports a flexible, responsive mindset that enriches teaching and learning in multilingual, multicultural EFL settings. These interpretations should be regarded as a theoretical rationale for the relationship rather than as evidence that ICC causes CF.

Another consideration concerns the conceptual and measurement diversity surrounding ICC. ICC has been operationalized in different ways across research traditions, ranging from knowledge and attitudes to communicative skills and intercultural sensitivity. Consequently, evidence concerning relationships between ICC and other teacher characteristics should be interpreted in light of the particular operationalization adopted. In the present study, ICC was measured using the questionnaire developed by Matveev (2002), and its relationship with CF was examined empirically rather than assumed from conceptual similarity alone.

EFL Teachers' WE

WE has emerged as one of the most influential constructs in positive organizational psychology and educational psychology, particularly in studies examining teacher effectiveness, well-being, motivation, and professional development. Schaufeli et al. (2002), who first conceptualized the construct, described it as a positive and fulfilling work-related state of mind including absorption, dedication, and vigor. Unlike temporary emotional states, WE represents a persistent and pervasive affective-cognitive condition through which individuals invest substantial physical, emotional, and cognitive resources in their professional activities (Schaufeli et al., 2002, 2006). Contemporary research continues to identify WE as a crucial motivational resource associated with enhanced occupational well-being, performance, and professional functioning (Bakker & Demerouti, 2017; Brennan et al., 2024). Furthermore, recent reviews indicate that WE constitutes a central component of teacher well-being and professional flourishing in contemporary educational contexts (Zhou et al., 2024).

Within educational settings, WE has attracted considerable scholarly attention because teaching is widely regarded as a cognitively demanding, emotionally intensive, and socially complex profession. Teachers are continuously required to manage diverse learner needs, adapt instruction to changing classroom conditions, address behavioral challenges, and respond to institutional expectations. Consequently, engagement functions as an important psychological resource that enables teachers to maintain enthusiasm, commitment, and effectiveness despite occupational demands (Uslukaya & Demirtaş, 2024; Zhou et al., 2024). Recent empirical evidence suggests that highly engaged teachers demonstrate stronger professional commitment, improved instructional quality, greater resilience, and enhanced occupational well-being than their

less engaged counterparts (Drouin-Rousseau et al., 2024; Zhou et al., 2024).

According to the Utrecht WE framework, WE comprises three interrelated dimensions: vigor, dedication, and absorption (Schaufeli et al., 2002, 2006). Vigor refers to high levels of energy, mental resilience, persistence, and willingness to invest effort in work activities. Teachers who demonstrate vigor remain energetic and persistent even when confronted with classroom difficulties or professional setbacks. Dedication reflects a strong sense of involvement in one's work and is characterized by enthusiasm, inspiration, significance, pride, and challenge. Teachers high in dedication perceive their profession as meaningful and valuable, which strengthens their commitment to teaching and learning. Absorption refers to a state of deep concentration and immersion in work activities whereby individuals become fully engrossed in their tasks and often experience difficulty detaching themselves from work. Together, these dimensions capture the energetic, emotional, and cognitive aspects of teachers' engagement and provide a comprehensive picture of their positive involvement in professional activities (Drouin-Rousseau et al., 2024; Schaufeli et al., 2002).

The theoretical foundations of WE are commonly grounded in the Job Demands–Resources (JD–R) model, which proposes that occupational resources stimulate motivational processes that enhance employee functioning, performance, and well-being (Bakker & Demerouti, 2008, 2017). According to this perspective, engaged employees are more likely to mobilize available resources effectively, remain persistent when facing challenges, and proactively address workplace demands. Research has consistently demonstrated that job resources such as autonomy, social support, professional development opportunities, and psychological safety foster engagement by strengthening employees' motivational capacities (Brennan et al., 2024; Uslukaya & Demirtaş, 2024). In educational environments, such resources facilitate teachers' ability to cope with occupational stressors and maintain effective instructional performance.

Beyond its motivational value, WE has significant implications for adaptive functioning and CF. Teaching is inherently dynamic and requires educators to continuously evaluate classroom situations, solve unexpected pedagogical problems, accommodate learner diversity, and make rapid instructional decisions. These professional demands require a considerable degree of cognitive adaptability and flexibility. The vigor dimension provides the psychological energy necessary to sustain effort in challenging instructional contexts, whereas dedication strengthens commitment to long-term educational goals despite obstacles. Likewise, absorption facilitates concentrated attention and deep cognitive processing, enabling teachers to analyze classroom information effectively and identify alternative instructional strategies when necessary (Schaufeli et al., 2002, 2006). Research further suggests that engaged teachers display greater curiosity, persistence, enthusiasm for professional learning, and openness to innovative teaching practices, all of which are associated with adaptive professional functioning (Burić & Macuka, 2018; Dong & Xu, 2022).

Recent scholarship has increasingly linked WE to broader psychological resources that support adaptability and resilience. For example, teacher self-efficacy, psychological capital, optimism, and growth mindset have all been found to contribute positively to WE and

adaptive professional behavior (Brennan et al., 2024; Zhang & He, 2024). Engaged teachers are more likely to approach instructional challenges with confidence, reinterpret difficulties as opportunities for growth, and maintain constructive responses to changing educational circumstances. Such characteristics closely resemble the core processes underlying CF, namely the ability to modify cognitive frameworks, generate alternative solutions, and adapt behavior to contextual demands. Consequently, WE may be relevant not only as a motivational construct but also as a psychological resource associated with flexible thinking and adaptive decision-making in educational settings.

Moreover, contemporary educational research suggests that teacher engagement contributes to positive classroom climates, improved student outcomes, and enhanced instructional effectiveness (Wartenberg et al., 2023). Teachers who experience high levels of engagement tend to demonstrate stronger commitment to student learning, greater responsiveness to learners' needs, and more effective classroom management practices. Such outcomes are particularly important in EFL contexts, where teachers must frequently adjust pedagogical approaches to accommodate varying linguistic abilities, cultural backgrounds, and learning preferences. Therefore, engaged teachers are likely to exhibit greater adaptive functioning and stronger CF than less engaged teachers because they possess the motivational, emotional, and cognitive resources necessary to navigate complex educational environments successfully.

The existing literature indicates that WE constitutes a critical psychological resource that supports teachers' effectiveness, resilience, and adaptability. Through its dimensions of vigor, dedication, and absorption, engagement provides the motivational energy, professional commitment, and attentional resources necessary for navigating the complexities of contemporary language classrooms. Consequently, WE represents a theoretically meaningful predictor of CF among Iranian EFL teachers and warrants empirical investigation within the framework of the present study.

Theoretical Integration and Conceptual Framework

Although CF, ICC, and WE have each received considerable attention in educational and organizational research, their integration within a single empirical framework remains comparatively limited, particularly in EFL contexts. Rather than conceptualizing these constructs as independent domains, the present study brings together their cognitive, intercultural, and motivational dimensions to examine whether ICC and WE are statistically associated with teachers' CF. The rationale for their integration rests on a potential functional complementarity: ICC may be relevant to the breadth and flexibility of teachers' interpretive perspectives, whereas WE may be relevant to the motivational investment involved in sustaining attention and responding adaptively to professional demands (Bakker & Demerouti, 2017; Deardorff, 2006). Importantly, these conceptual links do not establish that ICC or WE causes CF. Alternative explanations, including reciprocal associations, common underlying characteristics, and unmeasured individual or contextual factors, remain possible and cannot be resolved by the present cross-sectional design.

The proposed relationship between ICC and CF derives primarily from the conceptual overlap between intercultural perspective-taking and flexible cognition. Contemporary conceptualizations of ICC emphasize openness to cultural difference, awareness of multiple perspectives, tolerance of ambiguity, and the capacity to reconsider culturally situated assumptions (Deardorff, 2006; Gao, 2024). These characteristics are compatible with important dimensions of CF, particularly the capacity to shift perspectives, reconsider established interpretations, and generate alternative responses to changing circumstances (Martin & Rubin, 1995). Research on intercultural and inclusive pedagogy similarly highlights teachers' reflexivity, responsiveness to diversity, and capacity to adapt pedagogical thinking to different learners and contexts (Feng et al., 2025; Nigar & Kostogriz, 2024; Rissanen et al., 2023). This literature provides a theoretically plausible basis for expecting ICC and CF to be positively associated, although it does not demonstrate a direct developmental or causal pathway from ICC to CF.

The proposed relationship between WE and CF is grounded primarily in the motivational perspective provided by the Job Demands–Resources (JD-R) framework. Within this framework, WE represents a positive motivational state and is associated with how individuals invest energy and attention in their work (Bakker & Demerouti, 2017; Schaufeli et al., 2002, 2006). For teachers, sustained engagement may be relevant to the capacity to remain attentive to changing classroom demands and to invest effort in evaluating alternative responses. Research linking teacher engagement with resilience, professional functioning, well-being, and other adaptive characteristics provides indirect support for this possibility (Bardach et al., 2024; Uslukaya & Demirtaş, 2024; Zhang & He, 2024; Zhou et al., 2024). Nevertheless, the existing evidence does not establish that WE produces greater CF. The relationship may instead reflect reciprocal processes or common motivational and contextual influences. Accordingly, the present study treats WE as a theoretically motivated statistical predictor rather than as a demonstrated causal antecedent of CF.

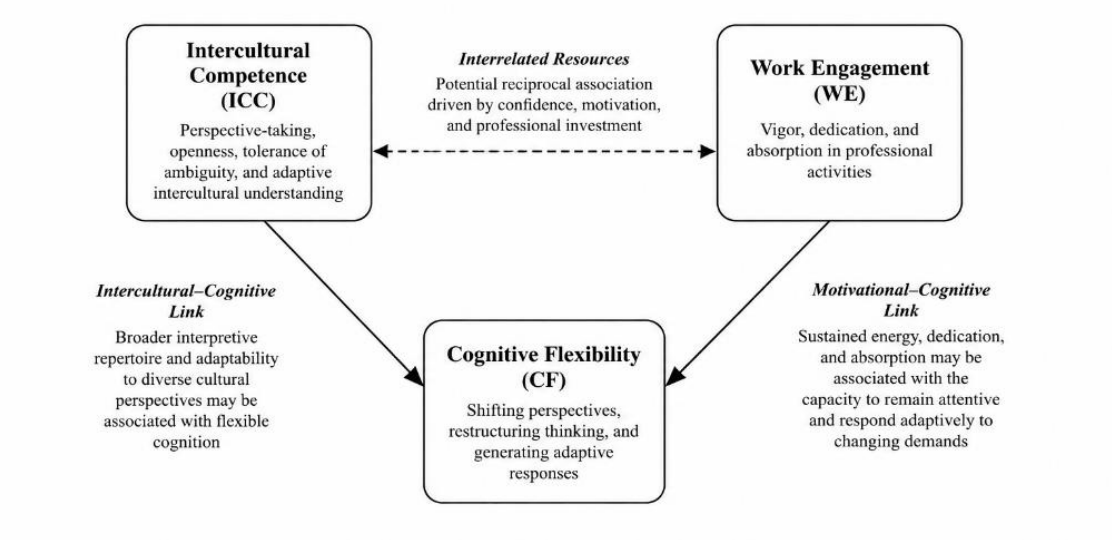
The two predictors may also be related to one another, which further supports examining them within a common analytical framework. Teachers who are more comfortable interpreting and responding to cultural diversity may experience greater confidence and professional efficacy, whereas greater engagement may encourage investment in professional learning and culturally responsive practice. Conversely, teachers who are highly engaged may have greater motivation to develop intercultural knowledge and skills, while ICC may contribute to more meaningful and rewarding professional interactions. Research on diversity-related beliefs, inclusive practices, and teachers' professional functioning is broadly consistent with these possibilities (Feng et al., 2025; Li et al., 2025; Rissanen et al., 2023). However, these potentially reciprocal relationships remain speculative within the present design and should not be interpreted as established directional pathways.

The conceptual integration proposed here therefore rests on three complementary assumptions. First, ICC and CF may be connected through processes of perspective-taking, openness, reflexivity, and the consideration of alternative interpretations. Second, WE and CF may be connected

through motivational and attentional processes associated with sustained investment in demanding professional activities. Third, ICC and WE may themselves be interrelated, potentially reflecting overlapping aspects of teachers' professional functioning. Rather than assuming that either construct determines CF, the framework proposes that both may account for unique variance in teachers' reported CF when considered simultaneously.

Figure 1

Conceptual Model of the Hypothesized Relationships among the Variables



Note. Solid arrows indicate the hypothesized statistical predictive relationships examined in the regression model. The dashed bidirectional arrow indicates the expected interrelatedness between ICC and WE.

Accordingly, the present study examines a statistical model, as displayed in Figure 1, in which ICC and WE are specified as predictors of CF, while recognizing that the observed relationships may also be compatible with alternative directional or reciprocal explanations. The model is therefore intended to test whether ICC and WE make significant unique contributions to CF and to determine the proportion of variance in CF jointly accounted for by the two predictors. This integrated framework provides a parsimonious basis for examining cognitive, intercultural, and motivational dimensions of EFL teachers' professional functioning without making causal claims that exceed the evidence afforded by a cross-sectional correlational design.

Method

Research Design

This study employed a cross-sectional, correlational design. Such designs are appropriate for examining relationships among variables and determining statistical prediction rather than causal or temporal prediction of predictor variables of an outcome variable (Creswell & Creswell, 2018; Setia, 2016; Tabachnick & Fidell, 2019). To address the research objectives, descriptive statistics were used to summarize participants' responses, Pearson correlations examined the bivariate relationships among the study variables, and multiple regression analysis assessed the unique contribution of each

predictor variable to CF. The statistical procedures have been widely used in educational psychology and teacher education research (Burić & Macuka, 2018).

Participants

The participants were 293 Iranian EFL teachers recruited through convenience sampling from various educational settings across Iran. The inclusion criteria were: (a) being an Iranian EFL teacher, (b) currently engaged in English teaching, and (c) willingness to participate and complete all research instruments.

The sample comprised 108 male teachers (36.86%) and 185 female teachers (63.14%). Participants' ages ranged from 22 to 47 years ($M = 33.21$, $SD = 6.14$). Regarding educational background, 252 teachers (86.01%) held a bachelor's degree, while 41 (13.99%) held a master's degree. Teaching experience ranged from 1 to 25 years ($M = 7.00$, $SD = 5.82$). With respect to teaching institutions, 70 teachers (23.89%) were employed in public schools, whereas 223 (76.11%) worked in private language institutes.

An a priori power analysis was conducted using GPower 3.1.9.7 for a linear multiple regression analysis testing a single regression coefficient. The analysis was specified as one-tailed, with a medium anticipated effect size ($f^2 = .15$), $\alpha = .05$, statistical power of .95, and two predictors. The analysis indicated a minimum required sample size of 74 participants. The final sample of 293 teachers therefore substantially exceeded the minimum requirement for the planned regression analysis (Hair et al., 2019). Iranian EFL teachers were selected because language teaching contexts require ongoing pedagogical adaptation, intercultural responsiveness, and professional engagement.

Instruments

Intercultural Competence Questionnaire

ICC was measured using the questionnaire developed by Matveev (2002). The instrument consists of 21 items rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). In the present study, the composite ICC score was calculated by averaging participants' responses across the relevant items, so that the resulting score retained the metric of the original response scale. Internal consistency reliability in the present sample was acceptable ($\alpha = .88$) (Hair et al., 2019).

Cognitive Flexibility Scale

CF was assessed using the CFS developed by Martin and Rubin (1995). The scale comprises 12 items rated on a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). A composite CF score was calculated by averaging responses across the scale items. Internal consistency reliability in the present sample was satisfactory ($\alpha = .84$).

Utrecht Work Engagement Scale (UWES-9)

WE was measured using the nine-item Utrecht Work Engagement Scale (UWES-9; Schaufeli & Bakker, 2003). Items are rated on a seven-point frequency scale ranging from 0 (never) to 6 (always), representing the dimensions of vigor, dedication, and absorption. A composite WE score was calculated by averaging responses across the nine items. The UWES-9 has demonstrated satisfactory psychometric properties across different samples (Schaufeli et al., 2006). Internal consistency reliability for the overall scale in the present sample was excellent ($\alpha = .91$).

Data Collection Procedure

Data were collected over a 14-week period in late 2025. A total of 320 questionnaire

packages were distributed to Iranian EFL teachers through both face-to-face administration and online channels, including email and social networking platforms such as Eitaa. Each package included the Intercultural Competence Questionnaire, the CFS, the Utrecht Work Engagement Scale (UWES-9), and an informed consent form.

Before completing the questionnaires, participants were informed about the purpose of the study and provided their consent through the consent form. Participation was entirely voluntary, and respondents were assured that their identities would remain anonymous and that all responses would be used solely for research purposes. The study adhered to established ethical principles concerning informed consent, confidentiality, and voluntary participation (Creswell & Creswell, 2018).

Of the 320 distributed questionnaire packages, 293 were retained for analysis. Several questionnaires were not returned, and a number of returned questionnaires contained substantial missing data and were therefore excluded from the final dataset. Following data collection, the responses were coded and screened for completeness, missing values, outliers, and data-entry errors before statistical analyses were conducted.

Data Analysis

Descriptive statistics were first calculated to summarize the central tendency and dispersion of the three study variables. Because the composite scores were calculated as mean item scores, the resulting values retained the response-scale metric of their respective instruments. Pearson product-moment correlations were then calculated to examine the bivariate relationships among CF, ICC, and WE. Finally, a standard multiple regression using the enter method was conducted to examine the unique statistical contribution of ICC and WE to CF when both predictors were entered simultaneously. The enter method was appropriate because the study was theoretically motivated to examine the unique contribution of both predictors rather than to select predictors on the basis of statistical criteria.

Prior to regression analysis, the data were examined for linearity, normality of residuals, homoscedasticity, independence of errors, multicollinearity, and influential observations. The diagnostic results indicated no substantial violations of the assumptions required for the regression analysis. (Hair et al., 2019).

Results

Descriptive Statistics

Descriptive statistics for the three study variables are presented in Table 1. CF had a mean score of 4.4050 (SD = 0.71731), ICC had a mean score of 3.6470 (SD = 0.41837), and WE had a mean score of 3.7186 (SD = 0.97956). To verify the normality assumption, both skewness and kurtosis values were examined. As Table 1 indicates, all skewness values were below the absolute threshold of 1.0, and all kurtosis values were below 2.0, suggesting no serious departures from normality (Tabachnick & Fidell, 2019). Consequently, parametric statistics were employed for the main analyses.

Table 1

Descriptive Statistics for the Main Variables

Variable	N	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
CF	293	4.4050	0.71731	1.67	6.00	-0.279	+0.084
ICC	293	3.6470	0.41837	2.30	4.83	-0.031	-0.127
WE	293	3.7186	0.97956	.22	5.00	-0.164	+0.058

Because the three instruments employ different response scales, these raw mean scores should be interpreted within their respective scoring frameworks rather than ranked directly across constructs. ICC showed the smallest standard deviation, indicating comparatively less variability in ICC scores within the sample.

Correlation Analysis

Pearson correlations indicated statistically significant positive associations among all three constructs. The association between CF and ICC was moderate ($r = .300$, $p < .001$), as was the association between ICC and WE ($r = .310$, $p < .001$).

Table 2.

Pearson Correlations among the Main Variables

Variable	1	2	3
1. CF	1.000		
2. ICC	.300**	1.000	
3. WE	.456**	.310**	1.000

**p < .001.

The association between CF and WE was comparatively stronger ($r = .456$, $p < .001$). Thus, teachers reporting greater ICC and WE also tended to report greater CF. The correlations indicate meaningful statistical associations.

Multiple Regression Analysis

Assumption Checking

Prior to conducting the regression analysis, the underlying assumptions were examined. Visual inspection of the histogram, and Normal P–P Plot of standardized residuals (Figures 2 and 3) indicated that the residuals were approximately normally distributed.

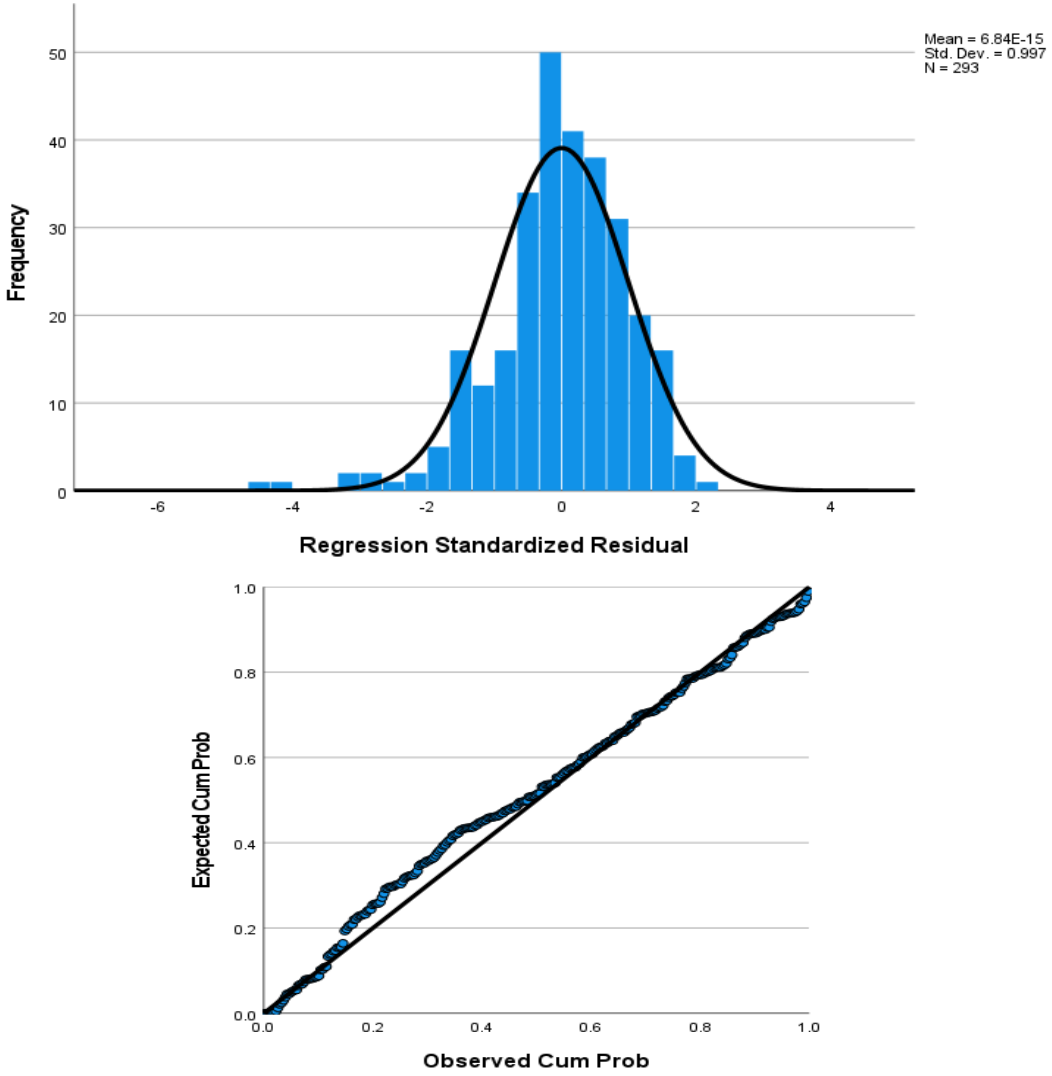
Figure 2

Histogram of Regression Standardized Residuals for CF

Furthermore, the scatterplot of standardized residuals against standardized predicted values revealed no substantial deviations from linearity or homoscedasticity (Figure 3).

Figure 3

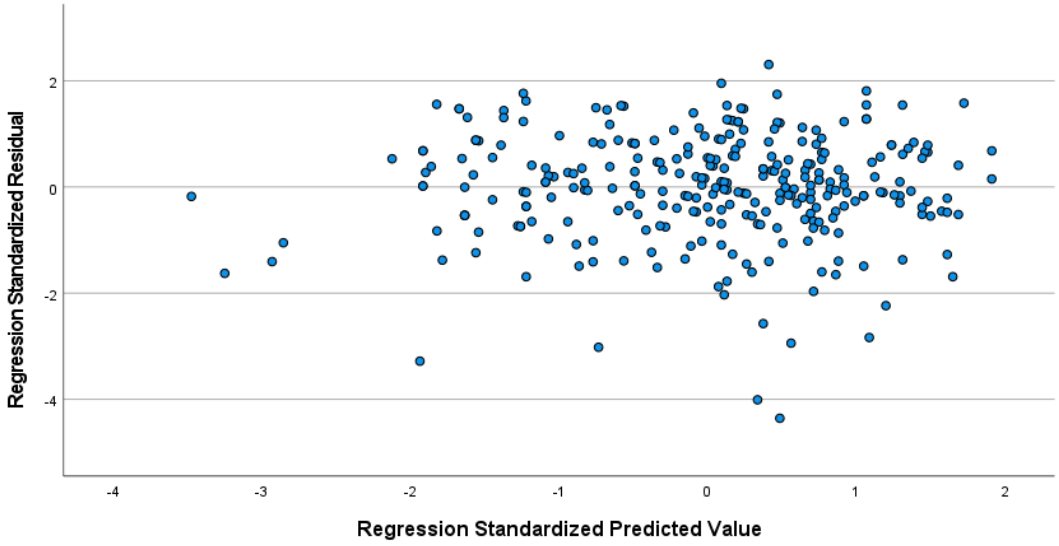
Normal P–P Plot of Regression Standardized Residuals for CF



The assumption of independence of errors was satisfied, as indicated by a Durbin–Watson statistic of 1.904 (Table 3). Multicollinearity was not a concern, with tolerance values of .904 and VIF values of 1.106 for both predictors (Table 5). In addition, influence diagnostics revealed no problematic outliers or influential observations (maximum Cook's distance = .143). Collectively, these results confirmed the suitability of the data for multiple regression analysis.

Figure 4

Scatterplot of Regression Standardized Residuals Against Standardized Predicted Values



The scatterplot of standardized residuals against standardized predicted values showed no substantial deviations from linearity or homoscedasticity (Figure 4).

Model Fit

A standard multiple regression analysis was conducted to determine whether ICC and WE predicted CF. The overall model was statistically significant, $F(2, 290) = 44.767$, $p < .001$.

Table 3

Model Summary for the Multiple Regression Predicting CF

Model	R	R^2	Adj. R^2	Std. Error of the Estimate	Durbin–Watson
1	.486	.236	.231	.62918	1.904

As shown in Table 3, the model explained 23.6% of the variance in CF ($R^2 = .236$), with an adjusted R^2 of .231, indicating a moderate level of explanatory power.

Table 4

ANOVA for the Multiple Regression Model

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.443	2	17.722	44.767	.000
Residual	114.801	290	.396		
Total	150.245	292			

Table 4 confirms that the regression model is significant. Although the model represents a proportion of explained variance in a behavioral dataset, 76.4% of the variance remained unexplained, indicating that additional individual, interpersonal, organizational, and contextual variables are likely to contribute to variation in teachers' CF.

Predictive Power

The regression coefficients are presented in Table 5. Both ICC and WE emerged as significant positive predictors of CF.

Table 5

Regression Coefficients Predicting CF

Predictor	B	Std. Error	β	t	Sig.	95% CI for B	Tolerance	VIF
Constant	2.215	.326	—	6.799	.000	[1.574, 2.857]	—	—
ICC	.300	.093	.175	3.244	.001	[.118, .483]	.904	1.106
WE	.294	.040	.402	7.444	.000	[.216, .372]	.904	1.106

ICC contributed uniquely to the prediction of CF (β = .175, p = .001), whereas WE demonstrated a substantially stronger effect (β = .402, p < .001). The confidence intervals for both predictors excluded zero, further supporting the precision of the estimated regression coefficients. Based on the standardized regression coefficients, WE was the strongest predictor of CF among the variables examined.

Discussion

Positive and Significant Associations among Variables

The first research question asked whether ICC, CF, and WE were significantly related among Iranian EFL teachers. The findings showed that all three variables were positively and significantly correlated, with the strongest association emerging between CF and WE, followed by the relationships between CF and ICC and between ICC and WE.

This pattern is consistent with the view that teaching is a cognitively and emotionally demanding profession in which adaptive functioning depends on multiple resources rather than on a single trait. WE is widely linked to persistence, effective functioning, and well-being in demanding work environments (Bakker & Demerouti, 2017; Schaufeli et al., 2002, 2006). In the present study, the relatively stronger association between WE and CF suggests that teachers who are more energized, committed, and absorbed in their work may be better positioned to shift perspectives, generate alternatives, and respond flexibly to classroom demands. One possible psychological mechanism underlying this association is that sustained engagement may involve greater attentional investment and willingness to persist when familiar instructional routines are insufficient. In pedagogical terms, teachers who remain cognitively and emotionally invested in their work may be more inclined to reconsider an ineffective instructional approach, attend to students' changing needs, and explore alternative ways of organizing classroom interaction. This interpretation is also in line with recent teacher-focused research indicating that engagement is associated with stronger professional adaptability and well-being (Uslukaya & Demirtaş, 2024; Zhou et al., 2024). The relatively stronger WE–CF correlation may therefore reflect the closer conceptual proximity between motivational investment in teaching and the active cognitive effort required to adapt to changing instructional demands. By contrast, ICC may be more specifically activated by culturally or linguistically diverse encounters and may consequently have a somewhat less direct relationship with general CF. This interpretation should, however, be regarded as a plausible explanation rather than as an empirically established mechanism. However, the present cross-sectional data cannot determine whether engagement contributes to flexibility, whether flexibility contributes to

engagement, or whether both are partly explained by other factors. Reciprocal associations are also possible; for example, cognitively flexible teachers may find it easier to manage unexpected classroom demands and thereby maintain greater engagement. Unmeasured individual characteristics or contextual conditions may likewise contribute to both constructs.

The positive relationship between ICC and CF is likewise theoretically coherent. ICC involves the capacity to understand and respond appropriately to cultural difference, and it is commonly associated with perspective-taking, openness, and tolerance of ambiguity (Deardorff, 2006; Gao, 2024). Teachers who can interpret classroom interaction through multiple cultural frames are likely to show greater flexibility in cognition and in instructional decision-making. Psychologically, perspective-taking may broaden the range of interpretations available to teachers when they encounter unfamiliar student behaviors, beliefs, or communicative practices. Pedagogically, this broader interpretive repertoire may enable teachers to reconsider initial assumptions about learners and adapt explanations, interactional strategies, or classroom practices accordingly. Thus, the observed association may reflect a shared emphasis on openness to alternative perspectives and adaptive responses rather than a unidirectional effect of ICC on CF. The present finding therefore provides empirical support for the proposed association, while not establishing a causal pathway from ICC to CF.

The positive correlation between ICC and WE also suggests that these two resources may be related dimensions of teachers' professional functioning: teachers who feel more capable of handling cultural diversity may experience greater confidence and professional satisfaction, while engaged teachers may be more willing to invest effort in intercultural learning and culturally responsive teaching. In the Iranian EFL context, this relationship may be particularly relevant because English-language teaching involves interaction with linguistic and cultural perspectives that extend beyond learners' immediate sociocultural environment. Teachers' perceived ability to navigate such differences may make classroom interaction more manageable and professionally rewarding, whereas strong engagement may encourage teachers to invest additional effort in understanding learners' diverse perspectives and adapting their pedagogical practices. These contextual interpretations are plausible rather than directly tested in the present study, and they should therefore be understood as potential explanations for the observed association. Nevertheless, this interpretation is tentative because the correlational design does not establish reciprocal influence. The direction of the relationship between ICC and WE, like that between WE and CF, cannot be determined from the present data.

Taken together, the correlational findings support the idea that CF, ICC, and WE are interconnected resources in EFL teaching. Rather than functioning as isolated attributes, they were positively associated with one another in the present sample, suggesting that these dimensions of teachers' professional functioning may coexist and potentially intersect in ways that are relevant to managing the complexity of language classrooms. However, the findings should not be interpreted as demonstrating that the three variables form a mutually supportive pattern, because such wording may imply reciprocal

influence or a developmental process that cannot be established through the present cross-sectional design. More cautiously, the observed pattern indicates that teachers reporting higher levels of one construct also tended, on average, to report higher levels of the other constructs. The particularly stronger association between WE and CF further suggests that motivational investment in teaching may have a closer statistical connection with teachers' perceived capacity to adapt their thinking than ICC does, although the reasons for this difference require further investigation through longitudinal, experimental, or qualitative research.

Predictive Role of ICC and WE

The second research question examined whether ICC and WE significantly predict CF among Iranian EFL teachers. The regression analysis showed that both variables were significant positive predictors, and WE had the stronger standardized effect. Together, the two predictors explained 23.6% of the variance in CF, representing a meaningful proportion of the variability in teachers' reported CF. Although ICC and WE were significant statistical predictors, a substantial proportion of the variance remained unexplained, suggesting that other personal, organizational, and contextual factors may also be relevant to teachers' CF.

This finding is theoretically important because it suggests that CF may be associated not only with cognitive characteristics but also with teachers' motivational and intercultural resources. From the perspective of the Job Demands–Resources model, WE is expected when resources are available to help individuals meet demanding work conditions, and such engagement supports persistence, attention, and adaptive behavior (Bakker & Demerouti, 2017; Schaufeli et al., 2006). In a language-teaching context, this means that teachers who are highly engaged may be more willing and able to revise instructional plans, respond to unexpected classroom events, and maintain flexible thinking under pressure. Recent studies on teacher well-being and engagement also show that engagement is closely related to resilience, effectiveness, and adaptive functioning in educational settings (Burić & Macuka, 2018; Uslukaya & Demirtaş, 2024; Zhou et al., 2024). However, these theoretical considerations should not be interpreted as demonstrating that engagement produces greater CF. Given the cross-sectional nature of the data, the observed association may also reflect the possibility that cognitively flexible teachers are better able to sustain engagement, or that both constructs are partly shaped by other unmeasured characteristics or working conditions.

The unique contribution of ICC is equally meaningful. Teachers with stronger ICC are better equipped to interpret learner behavior from multiple perspectives, tolerate uncertainty, and adapt their responses to culturally diverse students. These processes closely resemble the core mechanisms of CF, which involve shifting mental frames, considering alternatives, and reconfiguring responses when situations change (Deardorff, 2006; Martin & Rubin, 1995). Recent work in intercultural pedagogy suggests that reflexivity, openness, and sensitivity to diversity support more adaptive teaching practices and more flexible professional thinking (Gao, 2024; Rissanen et al., 2023). Thus, ICC may be relevant to CF by broadening teachers' interpretive repertoires and potentially reducing reliance on rigid interpretations of classroom diversity; nevertheless, the present

findings do not establish that ICC produces or develops CF.

The stronger predictive effect of WE may indicate that motivational resources were more strongly statistically associated with flexible cognition than ICC in the present sample. One possible explanation is that engagement is closely connected to the sustained attentional, emotional, and behavioral investment involved in responding to day-to-day instructional demands. ICC may provide teachers with perspectives and interpretive resources for understanding diversity, whereas engagement may be more directly related to the extent to which teachers remain actively invested in addressing changing classroom demands. In other words, ICC may help teachers interpret and understand how to respond to diverse situations, whereas WE may be associated with the sustained energy and commitment involved in implementing and adjusting responses. This interpretation fits well with earlier teacher-psychology findings showing that positive motivational states are strongly linked to professional adaptability and effective classroom functioning (Bardach et al., 2024; Zhou et al., 2024). Nevertheless, the difference between the two standardized effects should not be interpreted as evidence that WE has a causal or more immediate influence on CF. The relative strength of the predictors may reflect the particular characteristics of this sample, measurement instruments, or other unmeasured factors.

The findings can also be interpreted in relation to the limited body of research conducted in the Iranian EFL context. Saffarin (2015), for example, reported a positive relationship between Iranian EFL teachers' CF and their learners' attitudes toward English language learning. Although that study examined a different outcome and did not consider ICC or WE, its findings provide contextual support for the relevance of CF to Iranian EFL teaching. The present study extends this context-specific line of inquiry by examining whether two additional dimensions of teachers' professional functioning, namely ICC and WE, are statistically associated with CF. Therefore, the convergence between the present findings and earlier Iranian evidence is noteworthy, while the differences in variables, designs, and samples caution against treating the studies as directly comparable. More broadly, the findings suggest that CF merits continued investigation within Iranian EFL settings rather than being understood solely through evidence generated in other national or educational contexts.

In sum, the regression results provide evidence that ICC and WE jointly account for a statistically significant proportion of variation in CF, rather than demonstrating that these variables foster CF. This suggests that teacher adaptability in EFL contexts may be better understood as a multidimensional phenomenon associated with cognitive, interpersonal, motivational, and contextual resources rather than as a purely individual trait. At the same time, because the model explained 23.6% of the variance, the findings indicate that substantial variability in CF remains to be explained.

Implications

Theoretical Implications

The present study contributes to educational psychology and applied linguistics by showing that CF among EFL teachers is meaningfully associated with both ICC and WE. The findings are consistent with the Job Demands–Resources perspective, insofar as the observed association between WE and CF

suggests that motivational resources may be relevant to teachers' adaptive cognitive functioning; however, the present study does not directly test or extend the JD–R framework. Rather, the findings provide empirical evidence that is compatible with the framework's broader proposition that positive motivational states are associated with effective functioning under demanding work conditions (Bakker & Demerouti, 2017). They also provide support for considering ICC as more than merely a communication skill in EFL teaching, as its significant association with CF is consistent with the view that ICC encompasses perspective-taking, reflexivity, and openness that may be relevant to adaptive professional judgment. In addition, the results are consistent with recent teacher-well-being research showing that engagement is a key positive resource associated with functioning, resilience, and professional effectiveness (Uslukaya & Demirtaş, 2024; Zhou et al., 2024).

Practical Implications

The findings have practical implications for teacher education and professional development. First, teacher training programs could consider explicitly incorporating activities that develop ICC, such as perspective-taking tasks, reflection on cultural assumptions, and analysis of culturally diverse classroom scenarios. Although the present study did not evaluate the effectiveness of such activities, these practices may provide potentially useful avenues for supporting teachers' awareness of alternative perspectives and could be explored in future teacher-education research examining their relationship with CF. Second, institutions could consider ways of strengthening conditions associated with WE by promoting supportive leadership, manageable workload, professional autonomy, and meaningful opportunities for growth, particularly because WE showed the stronger statistical association with CF in the present study. Third, language-teaching programs may benefit from recognizing that responsiveness to diversity is not only a matter of knowledge but also may be associated with sustained professional energy and commitment. Accordingly, future professional-development initiatives could explore the potential value of combining intercultural learning with practices designed to support teachers' engagement, rather than assuming that such combined initiatives will necessarily produce greater CF.

For Iranian EFL contexts in particular, the results suggest that teacher development could potentially move beyond technical language pedagogy and consider the broader psychological and intercultural resources that may be relevant to effective classroom adaptation. In multicultural and multilingual classrooms, teachers who are both engaged and interculturally competent may be better positioned to respond constructively to learner differences, revise instruction when needed, and create a more flexible and supportive learning environment.

Conclusions

The present study investigated the relationships among ICC, WE, and CF among Iranian EFL teachers and examined the predictive roles of ICC and WE in explaining variations in CF. The findings revealed that all three constructs were positively and significantly associated. Moreover, both ICC and WE emerged as significant predictors of CF, with WE demonstrating the stronger predictive effect. Together, ICC and WE explained 23.6% of the variance in CF,

indicating that although both constructs were significantly associated with teachers' CF, substantial variation remained unexplained. Accordingly, the findings should be interpreted as evidence of statistical associations rather than causal relationships.

The central contribution of the study lies in bringing intercultural and motivational dimensions together in examining CF among Iranian EFL teachers, a population and combination of constructs that have received comparatively limited empirical attention. The findings suggest that teachers' reported CF is associated with both their ICC and their WE, with WE showing the stronger statistical contribution in the present sample. At the same time, the unexplained variance indicates that CF is likely to be associated with additional personal, organizational, and contextual factors that were not examined in this study.

Overall, the study provides empirical evidence that ICC, WE, and CF are interconnected dimensions of Iranian EFL teachers' professional functioning. Rather than establishing that ICC or WE produces greater CF, the findings identify these constructs as statistically relevant correlates and predictors that warrant further investigation.

Limitations and Future Directions

Several limitations should be acknowledged. First, the study used a cross-sectional design, so causal conclusions cannot be drawn. Although the regression results demonstrate statistical prediction, longitudinal or experimental designs would be needed to establish temporal ordering more convincingly. Second, the data were collected through self-report questionnaires, which may be affected by common method bias and social desirability. Third, the sample consisted of Iranian EFL teachers selected through convenience sampling, which may limit the generalizability of the findings to other teacher populations or educational contexts. Fourth, the model explained a meaningful but incomplete proportion of variance in CF, indicating that other variables such as teacher self-efficacy, resilience, emotional regulation, classroom climate, or institutional support may also play important roles (Bardach et al., 2024; Zhou et al., 2024). Finally, the present regression model did not include demographic or professional control variables.

Future studies could therefore adopt longitudinal or mixed-method designs, use broader sampling strategies, and incorporate additional psychological and contextual predictors. It would also be valuable to examine whether the relationships found in this study are similar across different language-teaching settings, educational levels, or national contexts. Qualitative work could further deepen understanding of how ICC and WE are experienced in teachers' everyday instructional decision-making. Moreover, future studies could examine whether the associations between ICC, WE, and CF remain robust after accounting for variables such as teaching experience, age, educational level, employment setting, and school context.

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