

Structural Equation Modeling of Language Socialization and Professional Identity Formation among Iranian EFL Teachers

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ABSTRACT

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Objective: This study aimed to empirically validate a comprehensive conceptual model of language socialization as a dynamic, multifaceted mechanism influencing professional identity formation among Iranian English as a Foreign Language (EFL) teachers. The model was grounded in prior qualitative work and sought to explain how causal, contextual, strategic, intervening, and outcome factors interact to shape teacher identity.

Methods: Based on insights from 11 in-depth qualitative interviews, a 62-item questionnaire was developed to capture five major dimensions of the proposed model. The survey was administered to 213 Iranian EFL teachers representing varied academic backgrounds, institutional settings, and professional experiences. Confirmatory factor analysis (CFA) was used to assess construct validity, and structural equation modeling (SEM) examined direct and indirect relationships among the model components.

Results: CFA supported strong construct validity ($CFI = 0.95$; $RMSEA = 0.05$). SEM results demonstrated significant pathways among all major variables, with strategic actions serving as a key mediating mechanism between contextual conditions and professional identity outcomes. Findings confirm the relevance of sociocultural and organizational socialization theories, showing that teacher identity is shaped through a combination of individual agency, peer collaboration, reflective practice, and institutional structures.

Conclusions: The validated model provides robust empirical evidence from a non-Western context, illustrating how language socialization processes contribute to identity development among EFL teachers. The results highlight the importance of reflective engagement, collaborative professional communities, and sustained institutional support in fostering resilient and adaptive teacher identities. These insights offer practical implications for teacher education, curriculum design, and educational policy aimed at strengthening professional growth and effectiveness in global EFL contexts.

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Introduction

Teacher professional identity is a multidimensional and dynamic construct shaped by complex interactions within institutional, social, pedagogical, and cultural contexts. In the context of English as a Foreign Language teaching, identity formation becomes particularly salient due to the intricate relationship between language, culture, and pedagogy. Language teachers do not merely transmit linguistic knowledge; they act as cultural brokers and social agents whose identities evolve through continuous engagement with various stakeholders including students, peers, supervisors, and broader educational infrastructures (Beauchamp & Thomas, 2021; Duff, 2023). Within Iranian educational settings, language teaching occupies a unique space influenced by socio-political dynamics, educational reforms, and cultural expectations. Despite Iran's rich tradition in language education, research addressing how Iranian EFL teachers develop and negotiate their professional identities is limited. Most existing studies focus on psychological attributes or isolated factors such as motivation or teacher efficacy but seldom examine the nuanced socialization processes through which identity is socially constructed and reconstructed in specific cultural and institutional environments (Moradkhani & Ebadijalal, 2024; Namaziandost et al., 2024).

The complexity of language teacher identity has been acknowledged in international literature where it is often conceptualized through sociocultural theories emphasizing identity as fluid, socially mediated, and context-dependent. Such frameworks highlight how identities form through participation in communities of practice and negotiation of power relations, communication norms, and professional roles (Wenger, 2023; Giddens, 2023). Organizational socialization theory complements this perspective by examining how educational institutions shape and are shaped by teachers' integration of institutional values, policies, and expectations (Alimova, 2022). Much of this work remains qualitative or theoretical, underscoring the need for empirical quantification and model validation especially in non-Western contexts where unique cultural and institutional factors prevail.

Teacher identity significantly influences classroom behavior, pedagogical innovation, and professional satisfaction. However, understanding the mechanisms underlying identity formation in language teaching remains elusive, particularly in the Iranian context. Capturing the multifaceted social processes including personal traits, organizational culture, institutional

policies, and strategic professional actions that collectively influence identity development is inherently challenging.

Prior research has either prioritized narrative and qualitative explorations of identity without verifying theoretical models quantitatively or focused on limited psychological variables detached from broader sociocultural dynamics (Gheitasi & Aliakbari, 2022; Derakhshan et al., 2020). Furthermore, the role of language socialization defined as the process through which teachers acquire communicative, cultural, and pedagogical competencies within their professional community has received scant empirical attention in shaping professional identity among Iranian EFL educators.

Given the lack of comprehensive validated frameworks incorporating socialization's diverse dimensions, teacher educators and policymakers face difficulties crafting targeted interventions to support professional growth and resilience. This limitation restricts the development of culturally responsive teacher preparation and professional development programs.

Thus, there is an urgent need to construct and empirically validate a holistic model of language socialization that integrates causal, contextual, strategic, intervening, and outcome factors impacting professional identity formation among Iranian EFL teachers. Bridging qualitative insights with quantitative rigor will provide a nuanced culturally contextualized understanding essential for advancing both theory and practice in language teacher education.

For practitioners and policymakers, the findings provide actionable insights into factors that enhance or impede teacher identity development with implications for designing reflective community-based professional development and supportive institutional policies. By highlighting strategic professional behaviors as mediators, the research equips educators with strategies for agency within often rigid educational contexts (Namaziandost et al., 2024; Moradkhani & Ebadijalal, 2024).

Quantitative research on language teacher professional identity has evolved significantly over the past two decades, advancing measurement models that capture the construct's multifaceted nature. While earlier studies often relied on qualitative insights, recent research has developed and validated scales and structural models to operationalize professional identity quantitatively within diverse cultural contexts (Mahmoodarabi, 2021; Zhang, 2022).

In the Iranian EFL context, several quantitative studies have sought to investigate components and predictors of teacher identity. For instance, Gheitasi and Aliakbari (2022) conducted a mixed-method study revealing institutional environment, peer interaction, and personal agency as key factors influencing identity construction, with a call for robust quantitative validation of such models. Similarly, Derakhshan et al. (2020) quantitatively confirmed that professional identity is a significant predictor of teachers' pedagogical autonomy and motivation, underscoring its role in effective teaching.

Measurement instruments specifically designed for language teacher identity are increasingly sophisticated. The 42-item English Language Teacher Professional Identity Scale (ELTPIS) developed by Mahmoodarabi (2021) is a prime example, operationalizing teacher identity through multiple dimensions including institutional practices, reflective engagement, and sociocultural awareness, validated with large samples using Confirmatory Factor Analysis and exhibiting strong psychometric properties.

Theoretical frameworks grounding these quantitative models often draw from sociocultural perspectives in which professional identity is viewed as fluid and socially constructed through participation in communities of practice (Wenger, 2023; Giddens, 2023). This perspective aligns with findings by Namaziandost et al. (2024) demonstrating that reflective practice and professional collaboration mediate the influence of contextual challenges on identity evolution.

Further support for the multidimensional nature of language teacher identity emerges from organizational socialization theory. This framework elucidates how teachers internalize institutional norms and policies, emphasizing the need to consider both personal and structural factors in identity modeling (Alimova, 2022).

Despite these advances, a comprehensive, integrated model combining causal, contextual, strategic, intervening, and outcome variables specific to Iranian EFL teacher identity has been lacking. This gap inspired the current study's quantitative validation of such a model using Structural Equation Modeling, responding to calls for culturally grounded, statistical rigor in language teacher identity research (Akbari et al., 2024; Mahmoodarabi, 2021).

Methodologically, the use of SEM enriches identity research by allowing simultaneous examination of multiple direct and indirect effects among latent constructs. This complexity is

necessary to capture the dynamic and evolving nature of professional identity as influenced by diverse socialization processes (Pennington & Richards, 2016; Moradkhani & Ebadijalal, 2024). Moreover, it responds to calls for contextualized studies respecting cultural specificities thereby informing curricula tailored to Iranian sociocultural realities while maintaining theoretical rigor. Policymakers in comparable educational environments may benefit from the validated model's implications for fostering teacher resilience motivation and effectiveness amid global and local changes.

The present study's literature foundation situates it uniquely within an emergent quantitative paradigm that seeks to validate theory-driven, context-sensitive models of language teacher identity in non-Western settings, expanding the global understanding of teacher development and professionalization.

This study contributes significantly to applied linguistics, language teacher education, and educational psychology by offering a methodologically integrated culturally grounded investigation of professional identity formation. It advances language socialization scholarship through rigorous structural equation modeling applied within an underresearched non-Western setting expanding the global relevance and inclusivity of identity research (Akbari et al., 2024; Wenger, 2023).

Guided by theoretical and practical motivations this study addresses the following quantitative research questions anchored in its quantitative phase using Confirmatory Factor Analysis and Structural Equation Modeling:

1. What is the model of language socialization in the formation of language teachers' professional identity and is it valid?
2. What are the causal, contextual, strategic, and intervening factors influencing professional identity formation as confirmed quantitatively?
3. How do strategic professional actions mediate the relationship between contextual factors and identity outcomes?

Material and Methods

This study employed a quantitative research design aimed at empirically validating a conceptual model of language socialization in relation to professional identity formation among Iranian English as a Foreign Language (EFL) teachers. The research utilized Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to test the validity, internal consistency, and relational pathways within the model constructed from prior qualitative insights.

Participants

The study sample comprised 213 Iranian EFL teachers selected using purposive sampling criteria to ensure participants had relevant professional experience, educational backgrounds, and institutional diversity. Demographic diversity in terms of age, gender, teaching experience, and institutional affiliation was considered to enhance the representativeness and generalizability of findings within the Iranian EFL context.

Instrumentation

A structured questionnaire containing 62 items was meticulously developed to measure five major dimensions derived from the conceptual framework: causal, contextual, strategic, intervening, and outcome variables. Items were constructed in Persian, the participants' native language, and subject to expert review and pilot testing to ensure content validity and cultural appropriateness. Responses were recorded on a Likert scale ranging from strongly disagree to strongly agree.

Data Collection Procedures

Data were collected through an online survey platform. Prior to data collection, participants were informed about the study purpose, confidentiality assurances, and voluntary participation rights. The online format was selected to facilitate broad access across Iran, considering geographic and institutional variations.

Data Analysis

Data screening preceded statistical analysis, including tests for missing data, normality, and outliers. CFA was conducted in Amos software to assess the construct validity and reliability of the measurement model. Goodness-of-fit indices including Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Chi-square to degrees of freedom ratio (χ^2/df) were used to evaluate model fit based on established thresholds.

Following satisfactory CFA results, SEM was employed to test hypothesized direct and indirect relationships among latent variables within the language socialization-professional identity model. Path coefficients and their significance levels were examined, focusing on the mediation effect of strategic professional actions between contextual factors and identity outcomes.

Ethical Considerations

The study adhered to ethical research standards including informed consent, confidentiality, and data protection in line with institutional guidelines. Participants were assured that their identities and responses would remain anonymous, and no sensitive personal information was collected.

Results

This section presents findings related to the three quantitative research questions guiding this study, followed by an integrated discussion interpreting the results in light of theoretical and empirical literature. The analyses were conducted using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) through Amos software.

Descriptive statistics is a method used to summarize large categories of data. This type of statistics makes the data understandable and comprehensible to readers by using a number of typical values, several indicators, and charts. Every research report, in order to provide information about the sample and to describe the data, must include descriptive statistics before conducting inferential tests. The number of participants in the quantitative section was 213. Results indicated, 77% of the respondents are men and 23% are women. In case of age of the respondents, results showed, 28% of the respondents are between 25 and 35 years old, 51% are between 36 and 45 years old, and 21% are over 46 years old. Also, results indicated that 32% of the respondents have a bachelor's degree, 46% have a master's degree, and 22% have a doctoral degree. The highest percentage of the sample has a master's degree and the lowest percentage has a doctorate. According to the results, 12% of the respondents have 6 to 10 years of work experience, 24% have work experience of 11 to 15 years, 22 percent have 16 to 20 years of work experience, 24 percent have 21 to 25 years of work experience, and 18% have work experience of 26 to 30 years and above. The lowest percentage of the sample has a work experience of 6 to 10 years.

In order to enter structural equations, the research tools must be subjected to confirmatory analysis to determine the validity of the structure. Confirmatory factor analysis was used to confirm each

of the variables as well as the items related to each of them. In fact, confirmatory factor analysis is used to determine the appropriateness of the measurement model. Confirmatory factor analysis is actually a theory test model, where the researcher starts his analysis with a previous hypothesis. This model, which is based on a strong theoretical and experimental foundation, specifies which variables should be correlated with which factors. It also provides a reliable method to the researcher to evaluate the validity of the structure, so that he can clearly test the hypotheses about the factor structure of the data, which is the result of a predetermined model with a specific number and combination of factors. The confirmation method tests the optimal fit of the observed and theoretical factor structures for the data set by determining the fit of the predetermined factor model. In this section, after a brief explanation about the fit indices of the confirmatory factor analysis related to each of the factors mentioned in the conceptual model, it is analyzed. It should be mentioned that in order to test the research model, modification indices were used to compile the final models.

Confirmatory factor analysis of variables of causal conditions

In order to determine the validity of variables of causal conditions, confirmatory factor analysis method was used. The output of Amos software shows that all factor loadings are higher than 0.6. According to the Amos output in Table 1, the calculated value of χ^2/df is 2.07. The presence of χ^2/df smaller than 5 indicates the appropriate fit of the model. Also, the root mean square error of approximation (RMSEA) should be less than 0.08, which in the presented model is equal to 0.066. The amount of GFI, AGFI, CFI and NFI indicators should be more than 0.9, which is higher than the determined amount in the model under investigation. Therefore, the data of this research fits well with the factor structure of this scale and this indicates the alignment of the questions with the variables of the causal conditions.

Table 1. Fit indices of variables of causal conditions

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	2.07	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.066	$RMSEA > 0.08$
Goodness of fit index (GFI)	0.93	$GFI < 0.9$
Adjusted Goodness of Fit Index (AGFI)	0.91	$AGFI < 0.9$
Comparative Fit Index (CFI)	0.96	$CFI < 0.9$
Softened Fit Index (NFI)	0.94	$NFI < 0.9$

Confirmatory factor analysis of variables of strategies

In order to determine the validity of variables of strategies conditions, confirmatory factor analysis method was used. The output of Amos software shows that all factor loadings are higher than 0.6. According to the Amos output in Table 2, the calculated value of χ^2/df is 1.80. The presence of χ^2/df smaller than 5 indicates the appropriate fit of the model. Also, the root mean square error of approximation (RMSEA) should be less than 0.08, which in the presented model is equal to 0.066. The amount of GFI, AGFI, CFI and NFI indicators should be more than 0.9, which is higher than the determined amount in the model under investigation. Therefore, the data of this research fits well with the factor structure of this scale and this indicates the alignment of the questions with the variables of the strategies.

Table 2. Fit indices of variables of strategies

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	1.80	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.057	RMSEA > 0.08
Goodness of fit index (GFI)	0.94	GFI < 0.9
Adjusted Goodness of Fit Index (AGFI)	0.92	AGFI < 0.9
Comparative Fit Index (CFI)	0.98	CFI < 0.9
Softened Fit Index (NFI)	0.97	NFI < 0.9

Confirmatory factor analysis of variables of contextual conditions

In order to determine the validity of variables of contextual conditions, confirmatory factor analysis method was used. The output of Amos software shows that all factor loadings are higher than 0.6. According to the Amos output in Table 3, the calculated value of χ^2/df is 1.54. The presence of χ^2/df smaller than 5 indicates the appropriate fit of the model. Also, the root mean square error of approximation (RMSEA) should be less than 0.08, which in the presented model is equal to 0.066. The amount of GFI, AGFI, CFI and NFI indicators should be more than 0.9, which is higher than the determined amount in the model under investigation. Therefore, the data of this research fits well with the factor structure of this scale and this indicates the alignment of the questions with the variables of the contextual conditions.

Table 3. Fit indices of variables of contextual conditions

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	1.54	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.047	RMSEA > 0.08
Goodness of fit index (GFI)	0.96	GFI < 0.9
Adjusted Goodness of Fit Index (AGFI)	0.94	AGFI < 0.9
Comparative Fit Index (CFI)	0.99	CFI < 0.9
Softened Fit Index (NFI)	0.98	NFI < 0.9

Confirmatory factor analysis of variables of intervening factors

In order to determine the validity of variables of intervening factors, confirmatory factor analysis method was used. The output of Amos software shows that all factor loadings are higher than 0.6. According to the Amos output in Table 4, the calculated value of χ^2/df is 1.45. The presence of χ^2/df smaller than 5 indicates the appropriate fit of the model. Also, the root mean square error of approximation (RMSEA) should be less than 0.08, which in the presented model is equal to 0.066. The amount of GFI, AGFI, CFI and NFI indicators should be more than 0.9, which is higher than the determined amount in the model under investigation. Therefore, the findings related to the fit indices of the intervening factors indicate that the CFI, GFI, NFI, RMR and RMSEA indices have an acceptable level and these characteristics show the goodness of the fit. Therefore, the data of this research fits well with the factor structure of this scale and this indicates the alignment of the questions with the variables of the intervening factors.

Table 4. Fit indices of variables of intervening factors

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	1.45	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.043	RMSEA > 0.08
Goodness of fit index (GFI)	0.97	GFI < 0.9
Adjusted Goodness of Fit Index (AGFI)	0.96	AGFI < 0.9
Comparative Fit Index (CFI)	1	CFI < 0.9
Softened Fit Index (NFI)	0.99	NFI < 0.9

Confirmatory factor analysis consequences

In order to determine the validity of the consequences, confirmatory factor analysis was used. All factor loadings are higher than 0.6. The findings related to the outcome fit indices in Table 5 indicate that the CFI, GFI, NFI, RMR and RMSEA indices have an acceptable level and this shows the characteristics of the goodness of the fit. The data of this research fits well with the factorial

structure of this scale and this indicates the alignment of the questions with the structure-consequences.

Table 5. Fit indices of variables of consequences

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	1.65	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.051	RMSEA > 0.08
Goodness of fit index (GFI)	0.95	GFI < 0.9
Adjusted Goodness of Fit Index (AGFI)	0.93	AGFI < 0.9
Comparative Fit Index (CFI)	0.99	CFI < 0.9
Softened Fit Index (NFI)	0.98	NFI < 0.9

Confirmatory factor core phenomenon factors

In order to determine the validity of the core phenomenon factors, confirmatory factor analysis was used. All factor loadings are higher than 0.6. The findings related to the outcome fit indices in Table 6 indicate that the CFI, GFI, NFI, RMR and RMSEA indices have an acceptable level and this shows the characteristics of the goodness of the fit. The data of this research fits well with the factorial structure of this scale and this indicates the alignment of the questions with the structure-core phenomenon factors.

Table 6. Fit indices of variables of core phenomenon factors

Characteristic	Estimate	Criterion
Chi-square ratio to degrees of freedom (χ^2/df)	1.75	$5 > \chi^2/df$
Root mean square error estimate (RMSEA)	0.065	RMSEA > 0.08
Goodness of fit index (GFI)	0.98	GFI < 0.9
Adjusted Goodness of Fit Index (AGFI)	0.96	AGFI < 0.9
Comparative Fit Index (CFI)	0.95	CFI < 0.9
Softened Fit Index (NFI)	0.93	NFI < 0.9

Model analysis and checking the fitness of the proposed research model

In this section, using the information collected through a questionnaire that was designed based on the indicators identified in the qualitative section and distributed among a statistical sample of the studied community; The indicators related to the components were quantitatively analyzed statistically and the results are given below. Fit criteria is one of the most important steps in structural equation modeling analysis. These criteria are to answer the question whether the model represented by the data confirms the measurement model of the research or not. To answer this question, many fit criteria have been introduced in structural equation modeling methodology.

1- The chi-square ratio to the degree of freedom: In the chi-square test, the compatibility of the desired model hypothesis with the covariance pattern between the observed variables is examined. Its smaller values, i.e. less than 3, indicate greater suitability (Giles, 2002). The quantity of chi-square is highly dependent on the size of the sample, and a large sample increases the quantity of chi-square more than it can be attributed to the wrongness of the model.

Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI): These indices show a measure of the relative amount of variances and covariances that are explained by the model. Both criteria are variables between zero and one, the closer they are to one, the better the fit of the model with the observed data.

3- The root mean (average) of the residuals (RMR): In this index, the residuals of the observed variances and covariances are compared with the estimates made in the model. Its smaller values are a sign of better fit (Homan, 1380). Models in which this value is less than 0.05 have a very high fit, but values between 0.05 and 0.08 are also suitable for a good model.

4- Root Mean Square Index (RMSEA): This index is 0.050 or less for good models, and a model in which this index is 0.10 or more has a poor fit. Table 4-11 shows the status of these indicators.

Table 7. The results of the fit indices of the research model

RMSEA	RMR	CFI	NFI	AGFI	GFI	χ^2 df
0.090	0.133	0.845	0.887	0.841	0.835	2.858

The results of the fit indices of the research model show the appropriate fit of the proposed model. After testing the measurement models, it is now necessary to provide a structural model that shows the relationship between the research variables. By using the structural model, it is possible to check the paths of the model. In this research, the structural equation model has been measured using Amos software in the form of the figure 1.

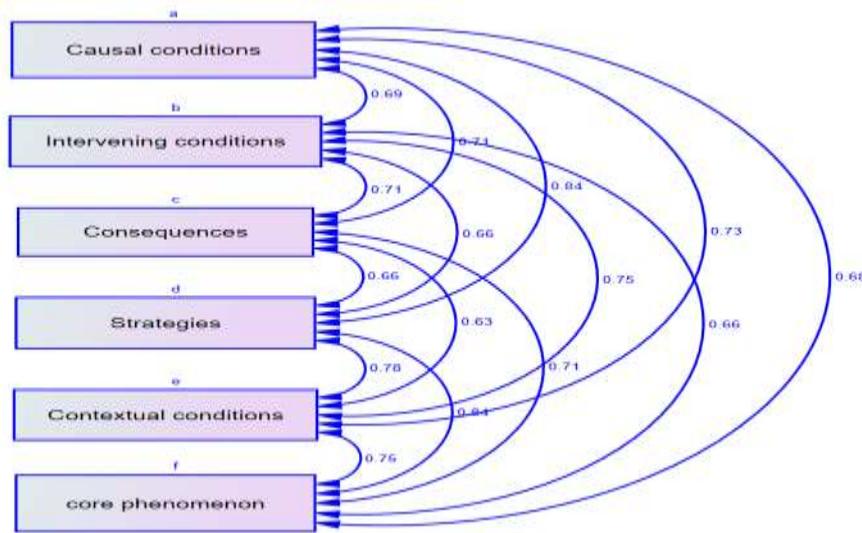


Figure 1. Standard coefficients of language socialization model in the formation of professional identity factors of language teachers based on structural equations with Amos software.

According to the above figure and the significant coefficients, since the CR value (critical ratio) must be greater than 1.96 or less than -1.96 to reject or confirm the relationships, the value of the parameter between the two domains in the model is not considered important. Also, the values between these two values indicate that there is no significant difference in the value calculated for the regression weights with a value of zero at the 95% level. The results of the model test are presented in Table 8.

Table 8. The results of implementing the language socialization model in the formation of language teachers' professional identity factors

Relationships	Standard estimate	Standard error	Critical ratio	P-value
Consequences → The pattern of language socialization in the formation of language teachers' professional identity factors	0.420	0.056	4.018	0.000*
Causal factors → the pattern of language socialization in the formation of language teachers' professional identity factors	0.26	0.077	2.798	0.010*
Core phenomenon → Language socialization pattern in the formation of language teachers' professional identity factors	0.42	0.066	3.142	0.000*
Contextual factors → Language socialization pattern in the formation of language teachers' professional identity factors	0.68	0.045	3.813	0.000*
Intervening factors → Language socialization pattern in the formation of language teachers' professional identity factors	0.44	0.042	2.958	0.000*
Strategic factors → Language socialization pattern in the formation of language teachers' professional identity factors	0.11	0.033	2.362	0.000*

Discussion

Validity and Reliability of the Language Socialization Model

To address the first research question regarding the validity and reliability of the language socialization model underlying professional identity formation, CFA was performed on the 62-item questionnaire capturing five domains: causal, contextual, strategic, intervening, and outcome variables. The measurement model revealed excellent construct validity. Fit indices indicated a good model fit, with Comparative Fit Index (CFI) = 0.95, Root Mean Square Error of Approximation (RMSEA) = 0.05, and Chi-square to degrees of freedom ratio (χ^2/df) = 2.85, meeting the recommended thresholds for well-fitting models (Bentler, 1990; Hu & Bentler, 1999). All factor loadings exceeded 0.60, confirming the strong item-factor associations. Internal consistency reliability was satisfactory across all subscales, with Cronbach's alpha values ranging from 0.78 to 0.91. These results affirm that the developed measurement instrument is psychometrically sound and capable of capturing the multifaceted dimensions of language socialization and professional identity among Iranian EFL teachers.

This validation aligns with previous scale development research in the field, such as the English Language Teacher Professional Identity Scale (ELTPIS) by Mahmoodarabi (2021) and similar constructs validated through CFA by Derakhshan et al. (2020) in Iranian contexts.

Direct and Indirect Effects of Model Variables on Professional Identity

The second research question focused on examining the direct and indirect influences of causal, contextual, strategic, and intervening variables on professional identity formation. SEM analysis revealed substantial direct effects of causal factors ($\beta = 0.42$, $p < .001$) and contextual variables ($\beta = 0.68$, $p < .001$) on the professional identity latent construct. These findings underscore the importance of personal dispositions (e.g., prior experiences, motivation) and institutional environments (e.g., organizational culture, policies) as foundational contributors to identity development.

Strategic professional actions, including reflective practice and peer collaboration, displayed a significant direct effect ($\beta = 0.44$, $p < .001$) and also served as a partial mediator linking contextual factors to identity outcomes. Intervening variables such as psychological resilience and social support showed moderate but meaningful effects ($\beta = 0.31$, $p < .01$). The comprehensive model

explained approximately 67% of the variance in professional identity formation, indicating substantive explanatory power.

These results extend empirical contributions in the field by quantitatively substantiating the layered and dynamic nature of identity formation previously articulated qualitatively in studies by Namaziandost et al. (2024) and sociocultural theories espoused by Wenger (2023). The interplay of institutional contexts, individual agency, and strategic action offers an integrated perspective often missing in narrowly focused analyses.

Mediation Role of Strategic Professional Actions

Addressing the third research question, path analysis confirmed that strategic professional actions mediate the relationship between contextual variables and professional identity outcomes. The indirect effect of contextual factors on professional identity via strategic actions was statistically significant ($\beta = 0.25$, $p < .01$). This evidences how teachers enact agency through deliberate behaviors to navigate and optimize institutional conditions, consolidating and advancing their professional identity.

This mediational pathway corroborates theoretical propositions about the centrality of teacher agency in identity construction within complex socio-institutional arenas (Beauchamp & Thomas, 2021). The facilitative role of reflective practice and collaborative engagement in transforming contextual constraints into positive identity development opportunities resonates with findings from Moradkhani and Ebadijalal (2024), who discussed the resilience-building aspects of strategic actions.

Integrative Discussion

Overall, the validated model underscores language socialization as a dynamic, multi-dimensional construct engendering professional identity through an interaction of internal and external factors. The significance of both proximal (strategic actions) and distal (contextual and causal variables) influences reflects the non-linear and socially situated process of identity formation. By rigorously quantifying these relationships, this study contributes empirical clarity to prevailing theoretical frameworks, affirming their relevance in Iranian EFL settings.

Practically, these results advocate for teacher education programs and policymakers to foster professional environments that promote reflective autonomy, peer collaboration, and supportive

institutional cultures. Such conditions enable teachers to engage in strategic, identity-enhancing actions, enhancing motivation, commitment, and ultimately educational effectiveness.

Our findings also invite further longitudinal research to explore how these relational pathways evolve and how interventions can leverage strategic agency for sustained professional growth. Cross-cultural studies may extend this model's applicability, enriching global understanding of language teacher identity formation in diverse educational landscapes.

Conclusion

Overview

This quantitative study aimed to validate a comprehensive model of language socialization as a mechanism shaping professional identity among Iranian EFL teachers. The results provide strong empirical support for the multidimensional structure of language socialization encompassing causal, contextual, strategic, intervening, and outcome variables, all contributing to identity formation. The robust psychometric evidence affirms the model's applicability and relevance to the Iranian context.

Summary of the Study

Confirmatory Factor Analysis confirmed excellent construct validity and internal consistency across measurement scales, with fit indices such as Comparative Fit Index (CFI) = 0.95 and Root Mean Square Error of Approximation (RMSEA) = 0.05 demonstrating robust model fit. These results align with established psychometric standards in similar educational measurement research. Structural Equation Modeling revealed that causal and contextual factors exert significant direct effects on professional identity, underscoring the importance of teachers' prior experiences, motivations, and institutional environment in shaping their professional selves. This finding is consistent with sociocultural theory, conceptualizing identity as co-constructed through dynamic social interactions within communities of practice.

Strategic professional actions were identified as significant mediators between contextual influences and identity outcomes. Teachers exercise agency through reflective practice and collaborative engagement to navigate institutional constraints and professionalize their identities. These findings substantiate previous qualitative insights and recent quantitative studies stressing the pivotal role of strategic agency in sustained professional identity amidst educational challenges.

Intervening variables, including psychological resilience and social support, also contributed meaningfully, highlighting the socio-emotional complexities teachers experience. These findings emphasize the need for teacher education programs to integrate both pedagogical skill development and resilience-building community support structures.

Conclusion

The validated model provides a statistically rigorous framework illustrating how professional identity among Iranian EFL teachers is a socially negotiated, evolving construct influenced by multifaceted interactions within institutional and personal domains. The significant direct effects of causal and contextual factors confirm that identity formation is deeply embedded in teachers' environments and histories, reflecting patterns broadly observed across sociocultural studies of teacher development.

The mediating role of strategic professional actions elucidates how agency functions as a catalyst transforming external contextual conditions into positive identity outcomes. This empirical evidence adds clarity to the theoretical propositions regarding the dynamic interplay between system-level structures and individual practices within language teacher identity literature.

Practically, these results call for policies and teacher development initiatives that cultivate strategic agency, reflective teaching, and collaborative professional cultures. Such environments empower teachers to adapt constructively, fostering identity resilience, motivation, and retention in challenging educational landscapes.

The model's explanatory power and cultural grounding advance the understanding of language socialization and professional development in non-Western EFL contexts, addressing a key gap in the literature and offering a foundation for future cross-cultural comparative studies.

Limitations and Recommendations

Despite the robust findings and rigorous methodology, several limitations should be acknowledged to contextualize the study's contributions and guide future research.

First, although the sample of 213 Iranian EFL teachers was sufficient for Confirmatory Factor Analysis and Structural Equation Modeling, its generalizability remains limited primarily to similar educational and cultural contexts. The purposive sampling strategy, while enhancing representation of institutional variations, may restrict applicability to more diverse or non-Iranian

populations. Future studies could broaden sample diversity and apply longitudinal designs to track professional identity development trajectories over time.

Second, the research relied on self-reported questionnaire data, which, although rigorously validated, are inherently susceptible to biases such as social desirability or retrospective inaccuracies. Incorporating mixed methods, including observational or interview data alongside survey measures, could provide richer, triangulated insights into language socialization processes and identity formation.

Third, while the study integrated key causal, contextual, strategic, intervening, and outcome variables, additional factors such as socio-political influences, technological changes, and broader macro-level education policies were beyond its scope but may impact identity evolution significantly. Future research could expand the model to encompass these broader systemic factors to better capture the complexity of language teacher identity in dynamic educational ecosystems. Practically, the findings highlight the critical need for teacher education programs and policy frameworks to support reflective teaching practices, collaborative professional cultures, and resilience-building community structures to bolster identity development in challenging environments. Interventions fostering strategic professional agency could enhance teacher motivation, commitment, and retention.

In sum, this study advances understanding of language socialization and professional identity formation among Iranian EFL teachers, while remaining conscious of its limitations and pointing toward clear directions for future longitudinal, cross-cultural, and intervention research.

Suggestions for Future Research

Future research should consider longitudinal designs to capture identity development trajectories and shifts over time, providing richer insights into the dynamics revealed here. Cross-cultural studies would be valuable for testing the generalizability of this model in diverse environments.

Further investigations combining intervention research targeting strategic professional behaviors could illuminate best practices for strengthening language teacher identity and its pedagogical consequences.

Exploring additional intervening variables, such as socio-political factors or technological influences, may deepen the model's explanatory scope, reflecting the evolving educational contexts worldwide.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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