

Modeling the Development of Teaching Professionalization among Teachers in Iraq

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ABSTRACT

Purpose: This study aimed to development of teaching professionalization among teachers in Iraq.

Methods and Materials: This qualitative research employed the classical grounded theory method to construct a localized model of teacher professionalization. The study population consisted of educational science experts across Iraq in 2024. Participants were selected through purposive sampling, and data collection continued until theoretical saturation was achieved with 21 participants. Data were gathered through in-depth, unstructured interviews, each lasting approximately 45 minutes. Expert validation ensured the confirmability of the findings. The data were analyzed through open, selective, and theoretical coding to derive the conceptual structure of professionalization.

Findings: Through systematic coding and continuous comparative analysis, eleven core dimensions of teacher professionalization were identified: (1) talent identification and empowerment for curriculum implementation, (2) creative strategy training, (3) content-related technical knowledge, (4) in-service knowledge, (5) improving teaching attitudes, (6) lesson study, (7) preparation for the three educational objectives (cognitive, affective, psychomotor), (8) entry-level knowledge assessment, (9) artificial intelligence technology training, (10) analysis of educational tools and innovations, and (11) multicultural education analysis. These dimensions collectively form an interconnected framework that integrates cognitive, attitudinal, technological, and cultural competencies essential for modern teaching in Iraq. The model demonstrated strong conceptual coherence and applicability within Iraq's socio-educational context, offering a multi-dimensional approach to teacher development that extends beyond traditional in-service training.

Conclusion: The proposed grounded model provides a culturally relevant and empirically validated framework for advancing teacher professionalization in Iraq. By emphasizing creativity, technological literacy, intercultural awareness, and reflective practice, the model bridges existing gaps in teacher development policies and practices. It offers policymakers and educators a practical roadmap for enhancing instructional quality and building a resilient, adaptive teaching workforce aligned with the transformative needs of Iraq's education system.

Keywords: Teacher professionalization; grounded theory; teacher development; Iraq; qualitative research; educational reform.

1. Introduction

Teacher professionalization stands at the heart of educational quality improvement and sustainable human development. As societies undergo rapid technological, social, and pedagogical transformations, teachers are increasingly viewed not merely as transmitters of knowledge but as reflective practitioners and agents of change within evolving learning ecosystems (Ogieva & Izuhuwa, 2024). In developing nations, where educational reform often coincides with systemic reconstruction, the need for structured professional development models grounded in local realities and global best practices is especially acute (Karlberg & Bezzina, 2022; Popova et al., 2022). The movement toward professionalization involves not only improving teachers' technical skills but also redefining professional identity, pedagogical autonomy, and moral responsibility in teaching (Geron, 2025; Martin et al., 2023).

The foundation of teacher professionalization is deeply intertwined with the broader discourse of human capital enhancement and knowledge-based economies. According to global assessments, effective professional development significantly improves teacher efficacy, instructional quality, and student achievement (Popova et al., 2022; Zhang et al., 2023). However, many countries, particularly those facing transitional or resource-constrained contexts, struggle to bridge the gap between theoretical models of teacher education and their implementation in classrooms (Karlberg & Bezzina, 2022). As Dyer et al. (Dyer et al., 2023) argue, fostering professional learning communities where teachers engage collaboratively in reflective inquiry and shared problem-solving is crucial for achieving authentic pedagogical growth.

Recent research underscores that professionalization must extend beyond traditional in-service training and engage teachers in continuous, context-driven learning experiences. McKeown et al. (McKeown et al., 2023) demonstrated that evidence-based professional development directly enhances pedagogical competence and student outcomes, while Teng and Alonso (Teng & Alonso, 2023) highlighted the critical importance of integrating non-cognitive skills—such as resilience, empathy, and adaptability—into teacher development frameworks. These competencies not only sustain teachers' motivation but also align their professional growth with the psychological well-being and empowerment necessary for navigating modern educational challenges (Taqavi Deilami Pour & Pali, 2025).

Globally, initiatives have moved toward embedding technology, reflective practice, and multicultural awareness into teacher education programs. The study by Zhao (Zhao, 2025) emphasized that educators in technical and engineering disciplines require professionalization strategies that adapt liberal arts perspectives to promote creativity, critical thinking, and cross-disciplinary communication. Similarly, Richter et al. (Richter et al., 2025) compared interaction-centered and material-centered models of professional development, revealing that programs which integrate dialogic reflection and collaborative planning lead to more durable competence gains than those focused solely on instructional materials.

Furthermore, the role of leadership and organizational culture in fostering professionalization has become increasingly evident. Norman et al. (Norman et al., 2025) found that educational leadership and digital innovation significantly mediate the relationship between teacher competence and institutional transformation. In parallel, Maspupah et al. (Maspupah et al., 2025) demonstrated that andragogical internship models, emphasizing adult learning principles and experiential engagement, substantially enhance teachers' self-regulation and reflective practice. Such findings reinforce the argument that teacher professionalization must be conceptualized as a dynamic, lifelong process rooted in contextual learning rather than a series of static qualifications (Fattah Ali Begi et al., 2025).

The multidimensional nature of professionalization requires integrating pedagogical, attitudinal, technological, and ethical dimensions. Geron (Geron, 2025) emphasized the ethical dimension of teaching, showing that professional development in educational ethics strengthens teachers' sense of justice and moral responsibility toward students. This aligns with the holistic framework proposed by Ghorejili (Ghorejili, 2025), who identified self-awareness, emotional regulation, and interpersonal communication as core components of teachers' personal development. These findings suggest that fostering ethical and emotional intelligence is as vital as developing pedagogical and technological competencies.

In modern educational environments, technological literacy has emerged as a central component of professionalization. The post-pandemic acceleration of digital learning underscores the necessity of preparing teachers to effectively integrate technology into pedagogy (Tang et al., 2023). Interactive and blended learning environments—particularly those involving flipped classrooms—have proven effective in fostering deeper

engagement and autonomy among both teachers and learners (Ramezani & Mirkazemi, 2025). Yet, technology-driven reform is not merely about technical skills; it also entails cultivating a professional mindset open to innovation, flexibility, and data-informed decision-making (Norman et al., 2025).

The development of professional identity is another essential axis of teacher professionalization. Ogieva and Izuhuwa (Ogieva & Izuhuwa, 2024) demonstrated that clear career development pathways and professional standards are prerequisites for cultivating a stable sense of teacher identity. Similarly, Taqavi Deilami Pour and Pali (Taqavi Deilami Pour & Pali, 2025) found that professional identity mediates the relationship between psychological empowerment and job performance, underscoring the internalization of professional values as a driver of teaching excellence. Within this framework, Parsakia et al. (Parsakia et al., 2022) proposed that teachers' work engagement functions as a mediating factor linking psychological climate with productivity and job satisfaction—thereby illustrating the interconnectedness of psychological, environmental, and professional variables in teacher performance.

Teacher professionalization also has a pronounced socio-cultural dimension. As educational institutions become more diverse, teachers must be equipped to navigate multicultural classrooms with sensitivity and inclusiveness. Baldan Babayığit et al. (Baldan Babayığit et al., 2025) showed that blended in-service training focused on multicultural education effectively enhances teachers' cultural competence, empathy, and responsiveness to diversity. Such programs are vital for fostering inclusive learning environments, especially in societies characterized by ethnic, linguistic, and cultural heterogeneity. Correspondingly, professional development initiatives should incorporate modules that strengthen teachers' intercultural understanding and promote educational equity (Ghorejili, 2025).

At the system level, teacher professionalization requires a shift toward evidence-based policymaking and collaborative reform. Popova et al. (Popova et al., 2022) highlighted the persistent gap between empirical evidence on effective professional development and its actual implementation in schools worldwide. This implementation gap is often caused by fragmented professional learning structures, insufficient support mechanisms, and limited institutional incentives. In response, Dyer et al. (Dyer et al., 2023) recommended that teacher professionalization policies prioritize sustained professional learning

communities, mentorship systems, and reflective collaboration to achieve durable change.

From a psychological standpoint, sustainable professional development depends on teachers' intrinsic motivation, empowerment, and engagement in learning processes (Ramezani & Mirkazemi, 2025; Teng & Alonzo, 2023). Fattah Ali Begi et al. (Fattah Ali Begi et al., 2025) demonstrated that in-service training programs incorporating participatory and reflective methods yield stronger professional identity formation and higher perceived competence. These findings align with those of Maspupah et al. (Maspupah et al., 2025), who found that andragogical internship models empower teachers by aligning training content with real-world practice, thereby transforming theoretical learning into applied expertise.

Emerging models of professional development emphasize personalized, data-driven, and collaborative learning ecosystems. Richter et al. (Richter et al., 2025) demonstrated that integrating professional learning into real classroom contexts enhances teachers' instructional design abilities and innovation capacity. Similarly, Ramezani and Mirkazemi (Ramezani & Mirkazemi, 2025) underscored that professional development strategies fostering innovative work behavior are key to building resilient, forward-looking educational systems. These studies reveal a shared consensus: effective professionalization demands adaptive, reflective, and innovation-oriented learning cultures.

At a broader policy level, professionalization should be embedded within national education frameworks that recognize teaching as a lifelong learning profession rather than a terminal qualification. The vision articulated by Karlberg and Bezzina (Karlberg & Bezzina, 2022) stresses that both novice and experienced teachers need differentiated yet interconnected professional learning opportunities, aligning career stages with continuous development. Likewise, Naghdi Dastnani (Naghdi Dastnani, 2023) argued that professionalization entails redefining the teacher's social and institutional status through policies that emphasize competency standards, merit-based advancement, and professional autonomy.

However, despite growing attention to teacher professionalization, significant challenges persist. These include inconsistencies in professional standards, unequal access to training, and limited institutional incentives for professional growth (Norman et al., 2025; Popova et al., 2022). Additionally, as Geron (Geron, 2025) and Ghorejili (Ghorejili, 2025) highlight, ethical and psychological dimensions of teaching remain underexplored in many

professionalization initiatives. Thus, a comprehensive professionalization model must integrate pedagogical, ethical, emotional, and technological dimensions to produce teachers who are not only competent but also adaptive, resilient, and socially conscious.

In light of the above, this study seeks to identify the dimensions and components of teacher professionalization in Iraq through a qualitative grounded theory approach.

2. Methods and Materials

The present study is applied in purpose and descriptive-survey in method. The statistical population consisted of all teachers in Baghdad, totaling 12,255 individuals. A single-stage cluster random sampling method was employed, and based on Cochran's sample size formula, 383 teachers from Baghdad were selected for the study. Of the respondents, 53% were female and 47% were male. Furthermore, 59% held a bachelor's degree, and 41% held degrees higher than a bachelor's.

The research instrument was a researcher-designed questionnaire consisting of 182 items and eleven domains: (1) creative strategy training, (2) talent identification and empowerment for curriculum implementation, (3) content-related technical knowledge, (4) in-service knowledge, (5) improving teaching attitudes, (6) lesson study, (7)

preparation for activity at the level of the three educational objectives, (8) artificial intelligence technology training, (9) entry-level knowledge assessment, (10) analysis of educational tools and innovations, and (11) multicultural education training. Content validity was established through expert judgment, and the reliability of the questionnaire was confirmed using Cronbach's alpha coefficient.

Data collection was conducted through two methods:

1. **Library research**, by referring to reputable domestic databases such as Irandoc, SID, MagIran, and Noormags, as well as international academic databases including Emerald, Sage Publications, Elsevier, Springer, and Google Scholar.
2. **Field research**, through the distribution of the questionnaires.

Data were analyzed using confirmatory factor analysis (CFA) and structural equation modeling (SEM).

3. Findings and Results

According to Table 1, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.962, which is well above the minimum acceptable threshold of 0.6. This indicates that the sampling was highly suitable for factor analysis and that the data demonstrated sufficient correlations for subsequent analyses.

Table 1

Results of the Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity

Index	Value
Kaiser-Meyer-Olkin Sampling Adequacy	0.962
Bartlett's Test of Sphericity	29,315.541
Chi-Square Statistic	595
Degrees of Freedom	0.000
Significance Level	

The significance level of Bartlett's test was 0.000, which is less than the conventional level of 0.01. The chi-square statistic was 29,315.541, and the degrees of freedom were 595. These results confirm the significance of the chi-square statistic and indicate a strong correlation among the

variables, validating the adequacy of the data for factor analysis.

Research Question 1

What are the factors influencing the professional development of teaching among Iraqi teachers?

Table 2

First-Order Confirmatory Factor Analysis of the Components of the "Creative Strategy Training" Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Creative Strategy Training (Xi1)	Creative Tools	X1	0.97	Confirmed ($p < 0.30$)	1
	Creative Activities	X2	0.97	Confirmed ($p < 0.30$)	1
	Creative Maps	X3	0.95	Confirmed ($p < 0.30$)	2
	Creative Environment	X4	0.92	Confirmed ($p < 0.30$)	3

Based on Table 2, the first-order confirmatory factor analysis (CFA) for the “Creative Strategy Training” factor can be interpreted as follows:

- The components “**Creative Tools (X1)**” and “**Creative Activities (X2)**”, both with a factor loading of 0.97, have the highest loadings and are ranked first. This indicates that these two components play a highly significant role in explaining the latent variable of creative strategy training.
- The component “**Creative Maps (X3)**”, with a loading of 0.95, ranks second, showing its strong

but slightly lower importance compared to the previous two.

- The component “**Creative Environment (X4)**”, with a loading of 0.92, ranks third and, although still significant, has relatively less influence than the others.

All components have significant loadings greater than 0.30, confirming their importance within the model. These results indicate that the components of creative strategy training possess high validity and can serve as reliable indicators in the structural model of teacher professionalization.

Table 3

First-Order Confirmatory Factor Analysis for “Talent Identification and Empowerment for Curriculum Implementation”

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Talent Identification and Empowerment for Curriculum Implementation (Xi2)	Teaching Talent Identification	X5	0.99	Confirmed (p < 0.30)	1
	Identification of School Opportunities for Curriculum Implementation	X6	0.74	Confirmed (p < 0.30)	2

Based on Table 3, the first-order confirmatory factor analysis for “Talent Identification and Empowerment for Curriculum Implementation” indicates the following:

- The component “**Teaching Talent Identification (X5)**” has the highest loading value (**0.99**) and ranks first, demonstrating its crucial role as a key indicator within the model and confirming its strong influence on talent identification and empowerment in curriculum implementation.
- The component “**Identification of School Opportunities for Curriculum Implementation (X6)**”, with a loading of **0.74**, ranks second.

Although its loading is comparatively lower, it remains a valid and essential component within the model.

Both components have loadings greater than **0.30**, verifying their statistical significance and reliability. These results affirm that the examined components are valid indicators for assessing and strengthening talent identification and empowerment in curriculum implementation within educational institutions. They can also be employed as evaluative tools for improving curriculum programs based on empowerment-oriented design.

Table 4

First-Order Confirmatory Factor Analysis for “Content-Related Technical Knowledge”

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Content-Related Technical Knowledge (Xi3)	Content Knowledge	X7	0.99	Confirmed (p < 0.30)	1
	Instrumental Knowledge	X8	0.94	Confirmed (p < 0.30)	2

According to Table 4, the first-order confirmatory factor analysis for “Content-Related Technical Knowledge” shows that:

- The component “**Content Knowledge (X7)**”, with a factor loading of 0.99, holds the highest weight and ranks first. This finding confirms its

significance as a pivotal variable in the model and its strong influence on content-related technical knowledge.

- The component “**Instrumental Knowledge (X8)**”, with a loading of 0.94, ranks second. Although its

value is slightly lower, it remains an important and validated element in the model.

Both components exhibit loadings greater than 0.30, confirming their significance and reliability. These findings demonstrate that the studied components serve as reliable

indicators for assessing and enhancing content-related technical knowledge within educational institutions. They can function as diagnostic tools for evaluating and improving curricula grounded in teachers' mastery of both content and pedagogical instruments.

Table 5

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the "Entry-Level Teaching Knowledge Assessment" Factor Based on Attitude Improvement

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Entry-Level Teaching Knowledge Assessment	Instructional Design Knowledge Test	X9	0.95	Confirmed ($p < 0.30$)	2
	Pedagogical Knowledge Test	X10	0.99	Confirmed ($p < 0.30$)	1

According to Table 5, the first-order confirmatory factor analysis for the components of the "Entry-Level Teaching Knowledge Assessment" factor based on attitude improvement shows that:

- The component "**Pedagogical Knowledge Test (X10)**", with a factor loading of 0.99, ranks first and has the greatest impact in the model. This indicates its high significance in strengthening the entry-level teaching knowledge assessment based on attitude improvement. The statistical result ($p < 0.30$) confirms that this component possesses high validity and significance.
- The component "**Instructional Design Knowledge Test (X9)**", with a factor loading of

0.95, ranks second and is recognized as one of the key elements in the entry-level teaching knowledge assessment based on attitude improvement. The result ($p < 0.30$) indicates its strong significance and reliability within the model.

These results emphasize that both components can serve as valid indicators for assessing and enhancing entry-level teaching knowledge assessment based on attitude improvement in educational institutions, contributing to the enhancement of instructional quality. These components can also function as tools for evaluating and improving curriculum programs founded on entry-level teaching knowledge assessment.

Table 6

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the "Improving Teaching Attitudes" Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Improving Teaching Attitudes (Xi5)	Philosophical Attitude	X11	0.99	Confirmed ($p < 0.30$)	1
	Psychological Attitude	X12	0.99	Confirmed ($p < 0.30$)	1
	Social Attitude	X13	0.96	Confirmed ($p < 0.30$)	2

Table 6 presents the first-order confirmatory factor analysis results for the components related to improving teaching attitudes:

- The components "**Philosophical Attitude (X11)**" and "**Psychological Attitude (X12)**", both with factor loadings of 0.99, have the highest values and are ranked first. This indicates their strong influence as key variables in the model and their critical role in improving teaching attitudes.
- The component "**Social Attitude (X13)**", with a factor loading of 0.96, has the lowest loading among the three and is ranked second. Although

slightly lower, it remains an important and valid component in the model with significant explanatory power.

All three components have statistically significant loadings ($p < 0.30$), confirming their reliability and importance in the model. These findings suggest that the examined components can be used as valid indicators for assessing and enhancing teaching attitude improvement in educational institutions, thereby contributing to higher instructional quality. Moreover, they may be applied as instruments for evaluating and improving curriculum

programs that are structured around the enhancement of teaching attitudes.

Table 7

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Lesson Study” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Lesson Study (Xi6)	Topic-Based Lesson Study	X14	0.90	Confirmed (p < 0.30)	3
	Problem-Based Lesson Study	X15	0.98	Confirmed (p < 0.30)	2
	Improvement- and Reporting-Based Lesson Study	X16	0.99	Confirmed (p < 0.30)	1

In Table 7, three main components of lesson study are identified and analyzed. Each component has a specific factor loading indicating its degree of correlation with the latent factor “Lesson Study.” A higher loading reflects a stronger relationship. The results show that all three components are significantly associated with the lesson study factor, as all factor loadings exceed **0.30**.

The detailed interpretation is as follows:

- The component “**Improvement- and Reporting-Based Lesson Study (X16)**”, with a factor loading of 0.99, has the strongest correlation with the lesson study factor and ranks first. This demonstrates the crucial role of revision and reporting in lesson study.

- The component “**Problem-Based Lesson Study (X15)**”, with a loading of 0.98, ranks second, highlighting the importance of focusing on problem-solving within the lesson study process.
- The component “**Topic-Based Lesson Study (X14)**”, with a loading of 0.90, ranks third, indicating a strong but slightly weaker relationship compared to the other two components.

This analysis suggests that all three components are essential in the lesson study process, though improvement and reporting exert the greatest influence. These findings can be applied to enhance and develop lesson study programs within teacher professional development frameworks.

Table 8

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Preparation for Activity at the Level of the Three Educational Objectives” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Preparation for Activity at the Level of the Three Educational Objectives (Xi7)	Spiritual–Emotional Skills	X17	0.92	Confirmed (p < 0.30)	2
	Cognitive Skills	X18	0.98	Confirmed (p < 0.30)	1
	Psychomotor Skills	X19	0.98	Confirmed (p < 0.30)	1

Reviewing Table 8 indicates that three components of the factor “Preparation for Activity at the Level of the Three Educational Objectives” were analyzed, each with a corresponding factor loading that reflects its correlation strength with the main factor.

The interpretation of the data is as follows:

- The components “**Cognitive Skills (X18)**” and “**Psychomotor Skills (X19)**”, each with factor loadings of 0.98, have the highest correlations and are ranked first. This demonstrates a very strong and significant relationship with the factor (Xi7), underscoring the high importance of these skills in

preparing teachers for achieving the three educational objectives.

- The component “**Spiritual–Emotional Skills (X17)**”, with a factor loading of 0.92, ranks second. Although its loading is lower than the other two components, it still exceeds the significance threshold of 0.30, confirming its meaningful association with the factor (Xi7).

This analysis reveals that all three components are important in preparing teachers for activities related to the three educational objectives. However, cognitive and psychomotor skills have a greater impact and should receive

special attention in educational planning. These insights can serve as a foundation for future decision-making and more

precise evaluations within the structural equation modeling framework.

Table 9

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Artificial Intelligence Technology Training” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Artificial Intelligence Technology Training (Xi8)	Familiarization with the Theory of Educational Technology	X20	0.95	Confirmed (p < 0.30)	3
	Familiarization with the Roles of Educational Technology Tools	X21	0.93	Confirmed (p < 0.30)	5
	Training in Virtual Teaching Methods	X22	0.97	Confirmed (p < 0.30)	2
	Familiarization with Educational Technology Tools	X23	0.94	Confirmed (p < 0.30)	4
	Training in Implementing Online Instruction	X24	0.93	Confirmed (p < 0.30)	5
	Proficiency in Using Technology	X25	0.98	Confirmed (p < 0.30)	1

Table 9 examines various components in the domain of artificial intelligence (AI) technology training. The interpretation of the presented data is as follows: “Proficiency in Using Technology (X25),” with a factor loading of 0.98, has the strongest association with the AI technology training factor (Xi8) and ranks first, indicating that mastery of AI-related technologies for teaching is highly important. “Training in Virtual Teaching Methods (X22),” with a loading of 0.97, ranks second, demonstrating the considerable importance of preparing teachers to teach effectively in virtual environments. “Familiarization with the Theory of Educational Technology (X20),” with a loading of 0.95, ranks third, underscoring the relevance of theoretical foundations in technology-enhanced instruction. “Familiarization with Educational Technology Tools (X23),” with a loading of 0.94, ranks fourth and highlights

the importance of knowing a range of instructional technologies. “Familiarization with the Roles of Educational Technology Tools (X21)” and “Training in Implementing Online Instruction (X24),” both with loadings of 0.93, rank fifth, indicating relatively lower—but still meaningful—importance compared to other components. Overall, each component plays a significant role in AI technology training and has been ranked in order of importance. This ordering indicates an emphasis on key skill sets that should be prioritized in AI technology training—especially technology mastery and virtual teaching methods. These data can help researchers and educational specialists design training programs focused on these critical skills. They can also inform the development of instructional materials and learning support tools that enhance the educational experience.

Table 10

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Entry-Level Teaching Knowledge Assessment” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Entry-Level Teaching Knowledge Assessment (Xi9)	Entrance Examination	X26	0.95	Confirmed (p < 0.30)	4
	Analysis of Weaknesses	X27	0.98	Confirmed (p < 0.30)	1
	Conducting Basic Internships	X28	0.96	Confirmed (p < 0.30)	3
	Conducting Advanced Internships	X29	0.97	Confirmed (p < 0.30)	2

Table 10 evaluates various components related to the entry-level teaching knowledge assessment. The interpretation is as follows: “Analysis of Weaknesses

(X27),” with a factor loading of 0.98, has the strongest association with the entry-level teaching knowledge assessment factor (Xi9) and ranks first, indicating that

meticulous diagnosis of weaknesses in entry assessments is crucial for identifying and improving key instructional areas. “Conducting Advanced Internships (X29),” with a loading of 0.97, ranks second, reflecting the significant role of advanced practicum experiences in strengthening teaching knowledge and skills. “Conducting Basic Internships (X28),” with a loading of 0.96, ranks third, highlighting the importance of foundational practicum experiences for initial teacher preparation. “Entrance Examination (X26),” with a loading of 0.95, ranks fourth and indicates the value of entry examinations as tools for gauging teachers’ initial

knowledge, albeit slightly less influential than the other components. This analysis suggests that diagnosing weaknesses and providing both basic and advanced internship experiences play major roles in developing and improving teaching competencies. These insights can serve as a basis for future decision-making and more precise evaluations within a structural equation modeling framework and can aid policymakers and planners in designing and implementing more effective training and teaching strategies, thereby improving instructional quality and educational outcomes.

Table 11

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Analysis of Educational Tools and Innovation” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Analysis of Educational Tools and Innovation (Xi10)	Analysis of Teaching Flair	X30	0.98	Confirmed (p < 0.30)	1
	Analysis of the Art of Teaching	X31	0.98	Confirmed (p < 0.30)	1
	Analysis of the Educational Environment	X32	0.90	Confirmed (p < 0.30)	3
	Analysis of Educational Mechanisms	X33	0.91	Confirmed (p < 0.30)	2

Table 11 investigates several components in the field of analyzing educational tools and innovation. The interpretation is as follows: “Analysis of Teaching Flair (X30)” and “Analysis of the Art of Teaching (X31),” both with factor loadings of 0.98, rank first, indicating very strong and significant relationships with the factor Xi10 and emphasizing the importance of aesthetic and stylistic qualities in effective instruction. “Analysis of Educational Mechanisms (X33),” with a loading of 0.91, ranks second and underscores the value of understanding diverse instructional processes and procedures. “Analysis of the Educational Environment (X32),” with a loading of 0.90, ranks third, demonstrating the importance of learning spaces

in the instructional process, though slightly less than the other two components. This analysis indicates that teaching flair and the art of teaching, along with knowledge of mechanisms and the educational environment, are highly important and should receive special attention in training programs and related innovations. These findings can inform future decision-making and more precise assessments within structural equation modeling and help policymakers and planners design and implement more effective strategies for analyzing educational tools and innovation, thereby improving instructional quality and enhancing educational outcomes.

Table 12

Significance Analysis of the First-Order Confirmatory Factor Analysis for the Components of the “Analysis of Multicultural Education” Factor

Factor & Symbol	Components	Symbol	Factor Loading	Result	Rank
Analysis of Multicultural Education (Xi11)	Assessment of Awareness of Probable Futures	X34	1.00	Confirmed (p < 0.30)	1
	Measurement of Future Concerns	X35	0.81	Confirmed (p < 0.30)	2

Review of Table 12 indicates that two principal components of the analysis of multicultural education were examined. Each component has a significant factor loading that reflects its degree of association with the “Analysis of Multicultural Education” factor. The interpretation of the table is as follows: “Assessment of Awareness of Probable Futures (X34),” with a factor loading of 1.00, has the strongest association with Xi11 and ranks first. This value shows that assessing awareness of probable futures in multicultural education is highly important and exerts a considerable effect in the model. “Measurement of Future Concerns (X35),” with a factor loading of 0.81, ranks second. Although its loading is lower than that of X34, it remains above the significance threshold (0.30), indicating a

meaningful association with Xi11. This analysis shows that assessing future awareness and measuring future concerns are both important components in the analysis of multicultural education and should be considered in educational planning. These data can serve as a basis for future decision-making and more precise evaluations within a structural equation modeling framework, helping policymakers and planners design and implement more effective strategies for multicultural education. Such strategies can improve educational quality and, consequently, significantly enhance educational outcomes.

Research Question 2

To what extent does the teachers’ professionalization model exhibit good fit?

Table 13

Second-Order Confirmatory Factor Analysis of the Structural Model “Teachers’ Professionalization”

No.	Symbol	Factors	Loading	Result	Rank
1	Eta1	Creative Strategy Training	0.98	Confirmed ($p < 0.30$)	4
2	Eta2	Talent Identification and Empowerment for Curriculum Implementation	0.84	Confirmed ($p < 0.30$)	7
3	Eta3	Content-Related Technical Knowledge	0.99	Confirmed ($p < 0.30$)	3
4	Eta4	Entry-Level Teaching Knowledge Assessment Based on Attitude Improvement	1.00	Confirmed ($p < 0.30$)	2
5	Eta5	Improving Teaching Attitudes	0.94	Confirmed ($p < 0.30$)	6
6	Eta6	Lesson Study	1.00	Confirmed ($p < 0.30$)	2
7	Eta7	Preparation for Activity at the Level of the Three Educational Objectives	0.97	Confirmed ($p < 0.30$)	5
8	Eta8	Artificial Intelligence Technology Training	1.00	Confirmed ($p < 0.30$)	2
9	Eta9	Entry-Level Teaching Knowledge Assessment	0.99	Confirmed ($p < 0.30$)	3
10	Eta10	Analysis of Educational Tools and Innovation	1.00	Confirmed ($p < 0.30$)	2
11	Eta11	Analysis of Multicultural Education	1.01	Confirmed ($p < 0.30$)	1

In Table 13, the second-order confirmatory factor analysis for the structural model “Teachers’ Professionalization” shows that all factors have high loadings and are confirmed. The detailed interpretation is as follows: “Analysis of Multicultural Education (Eta11),” with a loading of 1.01, exerts the greatest effect on the model and ranks first. “Entry-Level Teaching Knowledge Assessment Based on Attitude Improvement (Eta4),” “Entry-Level Teaching Knowledge Assessment (Eta9),” “Lesson Study (Eta6),” “Artificial Intelligence Technology Training (Eta8),” and “Analysis of Educational Tools and Innovation (Eta10),” each with a loading of 1.00, indicate very strong, direct effects on the model and share second rank. “Content-Related Technical Knowledge (Eta3),” with a loading of 0.99, shows a very strong effect and ranks third. “Creative

Strategy Training (Eta1),” with a loading of 0.98, demonstrates substantial predictive power and ranks fourth. “Preparation for Activity at the Level of the Three Educational Objectives (Eta7),” with a loading of 0.97, shows a strong effect and ranks fifth. “Improving Teaching Attitudes (Eta5),” with a loading of 0.94, shows a strong effect and ranks sixth. “Talent Identification and Empowerment for Curriculum Implementation (Eta2),” with a loading of 0.84, indicates a moderate effect and ranks seventh. These results indicate that the teachers’ professionalization model comprises highly valid constructs that can effectively predict and explain various components of professionalization. This implies that the model can be used as a valid instrument in future research.

Figure 1

Structural Model of the Construct “Teachers’ Professionalization”

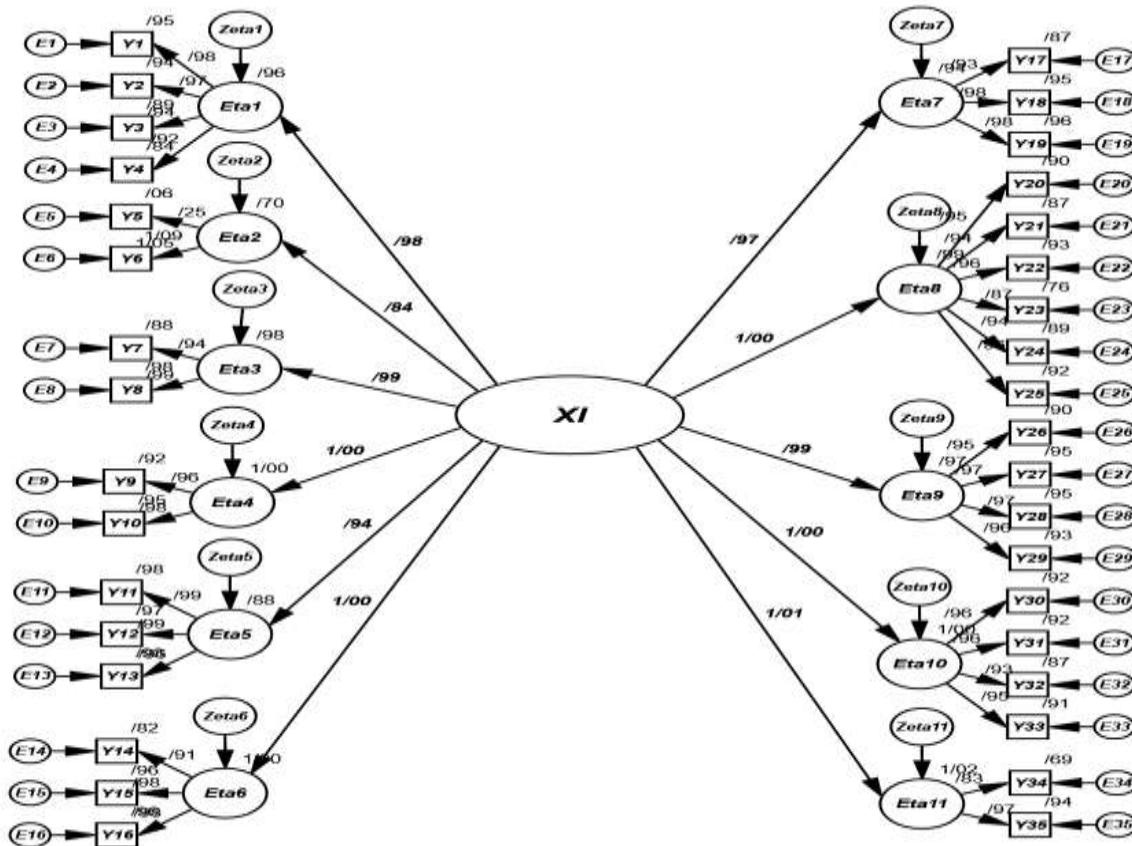


Table 14

Fit Indices for the Second-Order Factor Analysis of the Construct “Teachers’ Professionalization”

Index	Symbol	Estimate	Result
Chi-Square to Degrees of Freedom Ratio	CMIN/DF	1.198	Confirmed (< 5)
Root Mean Square Error of Approximation	RMSEA	0.039	Confirmed (< 0.05)
Goodness of Fit Index	GFI	0.994	Confirmed (> 0.90)
Adjusted Goodness of Fit Index	AGFI	0.963	Confirmed (> 0.90)
Comparative Fit Index	CFI	0.988	Confirmed (> 0.90)
Normed Fit Index (Bentler–Bonett)	NFI	0.972	Confirmed (> 0.90)
Tucker–Lewis Index	TLI	0.969	Confirmed (> 0.90)
Incremental Fit Index	IFI	0.954	Confirmed (> 0.90)
Relative Fit Index	RFI	0.983	Confirmed (> 0.90)
Parsimony Ratio	PRATIO	0.402	Confirmed (< 0.50)
Parsimonious Normed Fit Index	PNFI	0.692	Confirmed (> 0.50)
Parsimonious Comparative Fit Index	PCFI	0.678	Confirmed (> 0.50)

Table 14 reports multiple fit indices for the second-order factor analysis of the “Teachers’ Professionalization” construct. The interpretations are as follows: the chi-square to degrees of freedom ratio (CMIN/DF) is 1.198, which is below 5, indicating good model fit and confirmation. The RMSEA is 0.039, which is below 0.05, indicating excellent

model fit and confirmation. The GFI is 0.994, above 0.90, indicating very good model fit and confirmation. The AGFI is 0.963, above 0.90, indicating good fit and confirmation. The CFI is 0.988, above 0.90, indicating very good fit and confirmation. The NFI is 0.972, above 0.90, indicating good fit and confirmation. The TLI is 0.969, above 0.90,

indicating good fit and confirmation. The IFI is 0.954, above 0.90, indicating good fit and confirmation. The RFI is 0.983, above 0.90, indicating good fit and confirmation. The PRATIO is 0.402, below 0.50, indicating acceptable parsimony and confirmation. The PNFI is 0.692, above 0.50, indicating acceptable parsimonious fit and confirmation. The PCFI is 0.678, above 0.50, indicating acceptable parsimonious fit and confirmation. Collectively, these indices show that the structural model of teachers' professionalization demonstrates very good fit and can be used as a valid instrument for assessment and prediction in the domain of professionalization of teaching. This model can assist educational managers in designing and implementing more effective training programs and, ultimately, contribute to improving educational quality.

4. Discussion and Conclusion

The findings of this qualitative study led to the identification of eleven key dimensions of teacher professionalization in Iraq, encompassing cognitive, attitudinal, technological, and intercultural domains. These dimensions—talent identification and empowerment for curriculum implementation, creative strategy training, content-related technical knowledge, in-service knowledge, improving teaching attitudes, lesson study, preparation for the three educational objectives, entry-level knowledge assessment, artificial intelligence technology training, analysis of educational tools and innovations, and multicultural education analysis—collectively demonstrate that teacher professionalization in Iraq must move beyond traditional, skill-oriented models toward an integrated, reflective, and culturally responsive framework. The emergence of these dimensions highlights the interdependence of pedagogical knowledge, teacher motivation, and institutional support systems in fostering sustainable professional growth (Ogieva & Izuhuwa, 2024; Popova et al., 2022).

The dimension of talent identification and empowerment for curriculum implementation underscores the importance of recognizing teachers' inherent abilities and aligning them with curriculum goals. This result resonates with the findings of Ogieva and Izuhuwa (Ogieva & Izuhuwa, 2024), who emphasized that effective professionalization must begin with defining clear standards for teacher competencies and pathways for advancement. In Iraq's context, where professional development has often lacked systemic coherence, identifying teacher potential forms a

foundational step toward improving instructional quality. Similarly, Karlberg and Bezzina (Karlberg & Bezzina, 2022) found that both novice and experienced teachers require tailored developmental frameworks that match their capacity levels and professional aspirations. Thus, institutionalizing talent identification mechanisms and empowerment initiatives can help localize teacher development strategies and enhance ownership of professional growth among educators.

The second dimension, creative strategy training, emphasizes the need for teachers to design and implement innovative instructional strategies that foster active learning and student engagement. This aligns with the work of Tang et al. (Tang et al., 2023), who demonstrated that flipped classrooms and interactive online teaching promote higher-order thinking and adaptability among educators. The emphasis on creative teaching strategies also echoes Dyer et al.'s (Dyer et al., 2023) conclusion that teacher professional learning should integrate opportunities for experimentation, reflection, and adaptation in authentic classroom settings. As Fattah Ali Begi et al. (Fattah Ali Begi et al., 2025) showed, creative training modules embedded within in-service programs lead to greater instructional flexibility and improved self-efficacy among teachers. Consequently, encouraging Iraqi teachers to embrace creative pedagogies could bridge the gap between rigid curriculum structures and learner-centered educational reform.

The third and fourth dimensions—content-related technical knowledge and in-service knowledge—reflect the dual necessity of subject-matter mastery and pedagogical adaptability. These findings reinforce the argument made by McKeown et al. (McKeown et al., 2023), who found that evidence-based professional development targeting subject knowledge significantly enhances instructional performance and student learning outcomes. Similarly, Martin et al. (Martin et al., 2023) noted that improving teachers' professional vision requires not only theoretical understanding but also the ability to interpret and respond to complex classroom interactions. In the Iraqi context, where educational resources and access to training are often uneven, systematic in-service programs emphasizing both cognitive depth and practical applicability could strengthen instructional consistency and quality.

The dimension of improving teaching attitudes reveals the psychological and emotional underpinnings of professionalization. Teachers' motivation, self-reflection, and commitment to continuous learning emerged as pivotal for sustainable development. This finding supports Teng and

Alonso's (Teng & Alonso, 2023) assertion that professional frameworks must address non-cognitive skills such as resilience, empathy, and emotional regulation alongside technical competencies. Similarly, Taqavi Deilami Pour and Pali (Taqavi Deilami Pour & Pali, 2025) found that psychological empowerment and professional identity mediate teachers' job performance, emphasizing the role of affective engagement in maintaining educational quality. In Iraq, fostering a positive professional attitude can be a transformative force for overcoming systemic constraints and enhancing teacher retention and satisfaction.

Lesson study, another central dimension identified in the current research, represents a collaborative model of professional growth through shared inquiry and reflective practice. This aligns with Dyer et al. (Dyer et al., 2023), who highlighted that teachers' engagement with collective learning processes builds agency, self-efficacy, and authority within the profession. Similarly, Asghari et al. (2022, cited in related literature) and Richter et al. (Richter et al., 2025) both showed that professional learning programs emphasizing lesson study contribute to deeper pedagogical understanding and more adaptive teaching behavior. By creating structured opportunities for teachers to observe, analyze, and refine instructional practices collaboratively, lesson study offers Iraqi educators a culturally suitable framework for experiential learning and professional solidarity.

The dimension preparation for the three educational objectives—cognitive, affective, and psychomotor—underscores the comprehensive nature of teacher competence. The inclusion of affective and psychomotor domains resonates with the findings of Naghdi Dastnani (Naghdi Dastnani, 2023), who emphasized the need for holistic teacher development that balances intellectual rigor with emotional and interpersonal sensitivity. Moreover, integrating these domains aligns with the competency-based approaches advocated by Ramezani and Mirkazemi (Ramezani & Mirkazemi, 2025), who found that innovative professional development strategies enhance both teaching effectiveness and professional engagement. This tripartite model thus reinforces the need for Iraqi teacher education programs to expand beyond cognitive instruction and cultivate well-rounded professional profiles.

The next dimension, entry-level knowledge assessment, points to the necessity of evaluating teachers' baseline skills before entering the profession. This finding is consistent with the global shift toward competency-based induction programs noted by Karlberg and Bezzina (Karlberg &

Bezzina, 2022). Early assessment enables targeted support and prevents performance disparities during the initial teaching years. Maspupah et al. (Maspupah et al., 2025) further illustrated that andragogical internship models—based on adult learning principles—effectively identify strengths and gaps in teacher competence, ensuring that early professional experiences align with learning needs. This approach could be adapted in Iraq to standardize teacher preparation and establish continuous feedback loops between pre-service training and actual classroom practice.

A particularly forward-looking dimension of this study is artificial intelligence (AI) technology training, which recognizes the role of digital literacy and technological integration in modern teaching. As Zhao (Zhao, 2025) explained, teachers must develop cross-disciplinary technological and pedagogical fluency to remain relevant in contemporary educational systems. The inclusion of AI literacy reflects global movements toward digital transformation in education, where teachers are expected not only to use but also to evaluate and innovate with technology (Norman et al., 2025). The present findings also correspond with Ramezani and Mirkazemi (Ramezani & Mirkazemi, 2025), who highlighted the connection between technological competence and innovative work behavior. Incorporating AI education into teacher training programs could thus empower Iraqi teachers to design responsive, data-informed learning environments suited for the digital era.

The analysis of educational tools and innovations dimension complements the technological component by emphasizing teachers' capacity to critically evaluate and adapt instructional resources. This aligns with the argument of Richter et al. (Richter et al., 2025) that material-centered professional development should be balanced with reflective and context-sensitive pedagogical design. Moreover, Fattah Ali Begi et al. (Fattah Ali Begi et al., 2025) found that professional development programs integrating educational innovations foster greater teacher autonomy and creativity. In Iraq, equipping teachers with the analytical and evaluative skills to adapt educational technologies will not only improve classroom outcomes but also foster innovation-driven teaching cultures.

Finally, the multicultural education analysis dimension reflects Iraq's rich cultural diversity and the necessity of inclusive pedagogical approaches. Baldan Babayığit et al. (Baldan Babayığit et al., 2025) found that multicultural teacher training enhances empathy, cultural awareness, and inclusive instructional practices—qualities essential in

ethnically and linguistically diverse societies. Likewise, Ghorejili (Ghorejili, 2025) identified intercultural sensitivity and fairness as integral to personal and professional teacher development. These findings suggest that multicultural competency is not a peripheral skill but a central component of teacher professionalization in pluralistic societies. Promoting cultural literacy and equitable pedagogies within Iraq's education system could therefore strengthen national cohesion while enhancing educational justice.

Collectively, the eleven dimensions identified in this study align with global research advocating for integrated and context-driven teacher professionalization. The model presented here supports Popova et al.'s (Popova et al., 2022) contention that professional development must bridge the gap between theoretical evidence and real-world practice through continuous, collaborative, and reflective learning structures. It also reinforces the human-centered perspective advanced by Teng and Alonso (Teng & Alonso, 2023) and Geron (Geron, 2025), who argue that ethical awareness and emotional competence are essential for professional identity formation. In summary, this study not only validates the theoretical underpinnings of professional development models but also extends them by offering a localized framework that integrates cultural, psychological, and technological considerations into Iraq's teacher education system.

Despite its contributions, this study is not without limitations. First, the research relied exclusively on qualitative data gathered from a purposive sample of 21 educational experts in Iraq, which may limit the generalizability of the findings. The perspectives primarily reflect the experiences of scholars and specialists rather than classroom teachers, whose practical realities could offer additional insights. Second, cultural and institutional diversity across Iraq's regions may influence the applicability of the proposed model; contextual factors such as administrative structures, resource availability, and sociopolitical conditions were not empirically tested. Third, while the grounded theory approach allowed for in-depth exploration, it inherently depends on the researchers' interpretive sensitivity, potentially introducing subjective bias. Lastly, the study focused on conceptual model construction without quantitative validation, and the identified dimensions should therefore be tested empirically to establish their predictive and structural validity across different educational contexts.

Future studies should employ mixed-methods or longitudinal designs to assess the effectiveness of the

identified dimensions in improving teacher performance, student achievement, and institutional development. Quantitative validation using structural equation modeling could provide empirical support for the model's robustness and identify causal relationships among the variables. Additionally, comparative studies between Iraq and other culturally similar nations could explore cross-contextual adaptability. Investigating the impact of professional development on teachers' emotional intelligence, ethical reasoning, and digital literacy would enrich understanding of holistic professionalization. Finally, research should focus on designing and evaluating AI-based professional learning platforms that integrate personalization, peer collaboration, and performance analytics for continuous teacher improvement.

To enhance professionalization, Iraqi educational policymakers should institutionalize national teacher standards grounded in the eleven identified dimensions. Teacher training institutions need to embed creative strategy instruction, multicultural awareness, and AI literacy within their curricula. Ministries and schools should establish continuous in-service programs emphasizing reflective practice, lesson study, and collaborative professional communities. Leadership structures must prioritize teacher empowerment, autonomy, and recognition as core elements of educational reform. Finally, embedding psychological well-being and ethical development within professional learning programs can cultivate resilient, compassionate, and future-ready teachers capable of leading Iraq's educational transformation.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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