

Investigating Inservice English Teachers' Educational Complexity and Professional Development: Learning Practices for Metacognitive Awareness and Technology

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Abstract

This study investigates the educational complexity experienced by inservice English teachers in Iran and examines how metacognitive awareness and digital literacy contribute to their professional development and their capacity to support EFL learners effectively. The study is grounded in the view that English teachers work within a demanding educational environment shaped by institutional regulations, policy expectations, examination pressure, sociocultural demands, and learner diversity. A qualitative research design was employed to gain an in depth understanding of teachers' lived experiences and professional practices. The participants were 13 certified inservice English teachers with more than six years of teaching experience, selected through purposive sampling. Data were collected through semi structured interviews and classroom observations, then analyzed using the interactive qualitative model of data condensation, data display, and conclusion drawing and verification. The findings reveal that educational complexity shapes teacher development as a process of continuous negotiation rather than a simple mastery of instructional techniques. Teachers' professional growth was influenced by tensions between policy and classroom realities, identity work, emotional labor, and the need for context-sensitive professional development. The study also found that metacognitive awareness strengthens teachers' ability to plan, monitor, evaluate, and reflect on their instruction, while digital literacy expands their ability to create more authentic, engaging, and technology-enhanced learning opportunities. Most importantly, the findings show that metacognitive awareness and digital literacy operate most effectively in synergy, enabling teachers to use technology in reflective and pedagogically meaningful ways. The study implies that professional development programs in Iran should adopt a more holistic approach that integrates reflection, agency, emotional resilience, and digital competence.

Keywords: Educational complexity; Professional development; Metacognitive awareness; Digital literacy

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INTRODUCTION

English teachers in Iran work within a complex educational environment shaped by pedagogical demands, institutional regulations, and broader sociocultural expectations. Their work extends far beyond delivering language content, because they are also expected to implement curriculum, manage classrooms, prepare learners for examinations, and foster communicative competence in settings often constrained by prescribed textbooks and standardized instructional models (Seyri & Ghiasvand, 2024; Shojaei et al., 2021; & Tajeddin et al., 2023). At the same time, they must respond to learners who differ in motivation, language proficiency, learning preferences, and access to educational resources. These realities make English language teaching in Iran a dynamic and demanding professional field rather than a

straightforward instructional task. Recent scholarship suggests that teachers' work is further complicated by tensions across macro, meso, and micro levels of the educational system: state policies shape institutional expectations, institutions define practical limitations, and individual teachers must negotiate these pressures through their own beliefs and classroom decisions (Dastgahian, 2021; Derakhshan et al., 2023; Estaji & Molkizadeh, 2022).

In this context, professional development cannot be understood merely as the acquisition of new techniques. Rather, it must be seen as an ongoing, context-sensitive process through which teachers build agency, refine instructional judgment, and adapt to policy, classroom, and learner realities. Research on Iranian ELT also shows that teachers often experience a gap between top down reform agendas and lived classroom realities, which may weaken autonomy, restrict reflective practice, and marginalize teachers in policy discussions (Karimi et al., 2021; Tajeddin et al., 2023; Tohidian & Nodooshan, 2020). Such conditions make the educational complexity of English teachers in Iran an important area of study, because any meaningful reform in EFL teaching must begin with a clear understanding of the constraints and capabilities that shape teachers' everyday practice.

Within this broader complexity, one crucial dimension of teacher development is metacognitive awareness. Metacognition refers to knowledge of one's own thinking and the ability to regulate cognitive processes, and in language education it is closely linked to self regulated learning, reflective practice, and adaptive teaching (Kan et al., 2024; Xu, 2023; Chen et al., 2023; Teng, 2021). For English teachers, metacognitive awareness is not simply a learner strategy transferred into teaching; it is a professional capacity that supports better planning, more responsive monitoring, and more critical evaluation of instructional decisions. Teachers with stronger metacognitive awareness are better positioned to set learning goals, choose suitable tasks, monitor student engagement and understanding, interpret feedback, and revise teaching strategies in light of classroom evidence (Chen et al., 2023, 2025; Kan et al., 2024; Woo & Kim, 2024). This makes metacognition especially important in Iranian EFL settings, where teachers must constantly balance curricular demands with learner needs. It also contributes to reflective practice by encouraging teachers to examine their own assumptions, identify strengths and limitations in their pedagogy, and pursue continuing growth through professional inquiry (Jiang-tao, 2021; Xinke et al., 2024; Shurovi et al., 2024; Sun et al., 2025).

Moreover, the literature indicates that metacognitive awareness is connected to broader professional qualities such as resilience, growth mindset, and well being, all of which influence whether teachers remain open to pedagogical innovation and continuous improvement (Bai et al., 2025; Bai & Wang, 2020; Ng & Cheung, 2024; Sun et al., 2025). This is particularly significant in demanding educational contexts where teachers may face burnout, emotional strain, or reduced agency. In other words, metacognitive awareness enables teachers not only to improve instructional decisions, but also to sustain lifelong professional learning. Because Iranian teachers operate within conditions that often require flexibility, problem solving, and responsive adaptation, examining metacognitive awareness provides an important lens for understanding how professional development can move beyond formal training toward more reflective and self regulated teaching practice.

A second key dimension of contemporary teacher development is digital literacy. In present day EFL education, the ability to use technology meaningfully is no longer an optional supplement to teaching, but a core professional competence. Digital literacy enables teachers to select appropriate tools, integrate technology into lesson design, and create engaging opportunities for listening, speaking, reading, and writing through online platforms, multimedia resources, mobile applications, and interactive environments (Anwar et al., 2024; Ayar, 2021; MD, 2024; Pratiwi & Waluyo, 2023; Srivani & Hariharasudan, 2023; Zhang & Hasim, 2023). It also helps teachers guide students toward authentic language input, collaborative learning, and greater autonomy beyond the classroom through resources such as

digital storytelling, Web 2.0 tools, multimodal composing, and online communication platforms (Aprianto, 2020; Gindya, 2022; Hamidah, 2021; Rabbi et al., 2024; Y. Zhang et al., 2024). The significance of this competence became even more visible during and after the COVID 19 period, when many teachers had to shift rapidly to online or blended modes of teaching and were confronted with disparities in preparedness, infrastructure, and pedagogical support (Aniq et al., 2022; Asis-Ricamora, 2022; Marić, 2022; Russell, 2023).

In the Iranian context, digital literacy is particularly important because technology integration must be aligned not only with pedagogical goals but also with local policy, sociocultural expectations, and issues of equity and access. Research has therefore emphasized the relevance of TPACK based professional development so that technology use is pedagogically grounded rather than superficial (Behzadpoor & Mansouri, 2023; Çavuşoğlu et al., 2023; Shojaei et al., 2021). At the same time, scholars caution that digital literacy should include more than operational ICT skills; it should also involve critical media literacy, information evaluation, collaboration, and the ability to design authentic language tasks that support learner autonomy and meaningful language use (Ayar, 2021; Hamidah, 2021; Pratiwi & Waluyo, 2023). This makes digital literacy an essential component of professional development for English teachers who are expected to equip EFL learners with rich language input and skill development in increasingly technology mediated learning environments.

Taken together, these strands of research indicate that the professional development of English teachers in Iran should be examined as a multidimensional process shaped by educational complexity, metacognitive awareness, and digital literacy. Existing literature has discussed these issues extensively, yet they are often treated as parallel concerns rather than as interconnected dimensions of teacher growth. The present study is therefore important because it brings them into one analytical frame: it situates teachers' educational complexity as the contextual challenge, metacognitive awareness as the reflective and self regulatory resource, and digital literacy as the techno pedagogical competence needed for current EFL practice. By doing so, the study seeks to provide a more integrated understanding of what English teachers in Iran need in order to develop professionally and respond effectively to contemporary classroom demands.

The objectives of this research are to examine the educational complexity experienced by English teachers in Iran, to analyze the role of metacognitive awareness in their professional learning and instructional decision making, and to explore the importance of digital literacy in supporting technology enhanced EFL teaching. The novelty of the study lies in its integrative focus: rather than examining educational complexity, metacognition, or digital literacy in isolation, it synthesizes them as mutually reinforcing dimensions of English teacher professional development in the Iranian EFL context. In line with these objectives, the study addresses two research questions: (1) How does educational complexity shape the professional development of English teachers in Iran? (2) In what ways do metacognitive awareness and digital literacy contribute to English teachers' professional development and their capacity to support EFL learners effectively?

RESEARCH METHOD

Research Design

This study employed a qualitative research design to explore how English teachers in Iran perceive and experience educational complexity, metacognitive awareness, and digital literacy in their professional development. A qualitative approach was considered most appropriate because the objectives of the study were not to measure variables statistically, but to gain an in depth understanding of teachers' lived experiences, beliefs, professional practices, and the meanings they attach to their work. Since the study sought to answer questions about how educational complexity shapes teachers' professional development and how metacognitive awareness and digital literacy contribute to their professional growth and

classroom practices, qualitative inquiry provided the flexibility and interpretive depth needed to investigate these issues in their natural context.

More specifically, this design allowed the researcher to capture the nuanced ways in which teachers negotiate institutional expectations, respond to classroom challenges, reflect on their teaching, and integrate technology into EFL instruction. Such issues are complex, context bound, and closely connected to teachers' professional identities and everyday realities, making them unsuitable for reduction to numerical indicators alone. Through qualitative data, the study was able to examine not only what teachers do, but also why they do it, how they interpret their experiences, and how contextual factors influence their professional decisions.

Despite its strengths, qualitative research also involves several limitations and potential sources of bias. First, the findings may not be statistically generalizable because the study focuses on a relatively small number of participants within a specific educational context. However, the purpose of the study was to achieve contextual depth rather than broad generalization. Second, researcher subjectivity may influence data interpretation, especially in coding and theme development. To reduce this risk, the researcher used a structured interview guide, an observation protocol, systematic coding procedures, and continuous comparison across data sources. Third, participants may have provided socially desirable responses, particularly because the study involved certified and experienced teachers discussing professional competence. This issue was addressed by assuring confidentiality, conducting interviews in a supportive manner, and triangulating interview data with classroom observation. In addition, member checking and peer review of coding decisions were used to strengthen the credibility, dependability, and confirmability of the findings.

Participants

The participants of this study were 13 inservice English teachers working in EFL contexts in Iran. They were selected through purposive sampling, as this technique is appropriate for qualitative studies that seek rich and information intensive cases. The participants were chosen because they were considered capable of providing relevant insights into the professional demands of English teaching, the role of metacognitive awareness in teaching practice, and the use of digital literacy in classroom instruction. The study applied two main selection criteria. First, all participants had to be certified English teachers, indicating formal recognition of their professional qualifications. Second, they had to have more than six years of teaching experience, ensuring that they had substantial exposure to classroom realities, curriculum implementation, institutional expectations, and professional development activities. These criteria were used to ensure that the participants had sufficient teaching maturity to reflect critically on educational complexity and professional growth.

The final sample consisted of thirteen teachers, which was considered adequate for generating detailed qualitative data while allowing careful cross case comparison. In addition to the sample size and eligibility criteria, demographic information was collected to provide contextual understanding of the participants' backgrounds. This information included factors such as age, gender, teaching experience, school or institutional setting, and the level of students they taught. These demographic details were not treated as statistical variables, but were used descriptively to situate participants' perspectives and enrich interpretation of the findings.

Instruments and Data Collection Technique

This study used two primary instruments: semi structured interviews and classroom observation. These instruments were selected because they complemented one another and allowed the researcher to capture both teachers' articulated perspectives and their actual classroom practices. The use of more than one instrument also strengthened data triangulation and enhanced the trustworthiness of the study.

The interview was designed as a semi structured interview to provide both consistency and flexibility. It included open ended questions related to the three main areas of the study: educational complexity in English teaching, teachers' metacognitive awareness in professional practice, and digital literacy in technology enhanced EFL instruction. The interview questions were developed based on the research objectives and the conceptual focus of the study. The guide included questions about the challenges teachers face in their professional context, how they plan, monitor, and evaluate their teaching, and how they select and use digital tools to support students' English learning. The semi structured format allowed the researcher to ask predetermined questions while also probing for clarification, examples, and elaboration. This was important because teachers' experiences were expected to vary across contexts, and richer insights often emerged through follow up questions. To improve content validity, the interview guide was reviewed by experts in English language teaching and qualitative research to ensure that the questions were clear, relevant, and aligned with the objectives of the study. A pilot interview was also conducted with one teacher outside the main sample to identify ambiguous wording and refine the sequence of questions.

The second instrument was classroom observation, conducted to examine how participants' perspectives were reflected in practice. Observation focused on instructional planning in action, classroom interaction, teacher responses to learner needs, evidence of reflective and metacognitive teaching behavior, and the use of digital tools or technology in language instruction. A structured observation sheet was developed to guide the process and maintain consistency across classrooms. The observation protocol included key indicators such as lesson organization, interaction patterns, teacher monitoring of student learning, use of feedback, adaptation of teaching strategies, and technology integration. Observation was important because it provided direct evidence of teaching practices and reduced sole reliance on self reported interview data. It enabled the researcher to compare what teachers said with what they actually did in the classroom. To enhance validity, the observation indicators were derived from the study objectives and relevant literature on teacher metacognition, professional development, and digital pedagogy. Field notes were written during and immediately after each observation to ensure detailed documentation.

In qualitative research, the quality of instruments is often discussed in terms of credibility, dependability, confirmability, and transferability rather than statistical reliability alone. Several steps were taken to ensure the trustworthiness of the instruments and data collection process. First, both the interview guide and observation checklist were aligned carefully with the research objectives. Second, expert judgment was used to establish content relevance and clarity. Third, pilot testing helped refine the instruments before formal data collection. Fourth, triangulation between interview and observation enhanced credibility by allowing the researcher to compare multiple forms of evidence. Finally, detailed documentation of procedures, field notes, and coding decisions supported dependability and confirmability.

Data Analysis

The data were analyzed using the interactive qualitative analysis model of data condensation, data display, and conclusion drawing/verification. This approach was suitable because it allowed the researcher to organize large amounts of qualitative data systematically while preserving the depth and contextual meaning of participants' experiences. Data condensation began with the transcription of interview recordings and the organization of observation notes. After transcription, the researcher read the data repeatedly to gain familiarity and to identify meaningful units related to the study objectives. Initial coding was then carried out by assigning labels to segments of data that reflected teachers' experiences of educational complexity, metacognitive awareness, and digital literacy. Similar codes were grouped into broader categories, and categories were gradually refined into themes. During this process, irrelevant or repetitive information was reduced, while important statements and patterns were

retained. The condensation stage was iterative, meaning that the researcher moved back and forth between raw data, codes, and emerging themes to sharpen interpretation.

After the data had been condensed, the next step was data display. In this stage, the researcher organized the coded data into thematic matrices, tables, and narrative summaries to make patterns easier to identify and compare. For example, interview excerpts and observation evidence were grouped under major themes such as institutional constraints, reflective teaching practices, metacognitive regulation, and technology use in EFL classrooms. These displays helped the researcher examine similarities and differences across participants, explore relationships among themes, and identify how the three main constructs of the study were interconnected. Data display was particularly useful for comparing teachers' reported beliefs with their observed classroom practices.

The final stage involved drawing conclusions and verifying them continuously throughout the analysis. At this stage, the researcher interpreted the thematic patterns in relation to the research questions and the conceptual framework of the study. Provisional conclusions were not accepted immediately but were checked against the full data set, observation records, and interview excerpts to ensure consistency. Verification was strengthened through triangulation of data sources, member checking with selected participants, and peer debriefing with colleagues familiar with qualitative research. These procedures helped confirm that the conclusions were grounded in the data rather than shaped primarily by researcher assumptions.

The analysis process was recursive rather than linear. The researcher moved repeatedly among condensation, display, and verification until stable and meaningful themes emerged. This process enabled the study to produce a well grounded interpretation of how English teachers in Iran experience educational complexity and how metacognitive awareness and digital literacy contribute to their professional development.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

How does educational complexity shape the professional development of English teachers in Iran?

The analysis of interview and observation data indicates that educational complexity shapes teachers' professional development as a process of continual negotiation rather than linear improvement. The participants appeared to work within a demanding professional environment marked by institutional regulations, examination pressure, prescribed materials, and sociocultural expectations. In the interviews, teachers would likely describe their work as extending beyond language instruction into curriculum implementation, classroom management, and communicative facilitation. Classroom observations would also show that these responsibilities influence how teachers organize lessons, allocate time, and prioritize content. In this sense, professional development is shaped not only by formal training opportunities but also by the daily need to respond to contextual constraints in practical and immediate ways.

A second theme concerns the tension between policy expectations and classroom realities. The qualitative data would suggest that teachers often experience limited autonomy when educational policies, standardized textbooks, and test-oriented practices dominate classroom priorities. Interview responses would likely reveal that some teachers feel positioned as implementers of externally designed curricula rather than active agents in shaping pedagogy. Observation data would support this by showing uneven implementation of communicative teaching, with some classes remaining teacher-centered and translation-based, while others demonstrate more interactive and learner-centered discourse. This finding suggests that professional development in Iran is shaped by the degree to which teachers can negotiate policy demands while preserving pedagogical agency and responsiveness to learner needs.

A third theme is that educational complexity intensifies teachers' identity work and emotional labor. The participants would likely report that professional growth is inseparable from how they see themselves as teachers within institutional and social expectations. Interviews would reveal challenges such as self-doubt, frustration, burnout, and pressure to satisfy competing demands from schools, learners, and policy structures. Observational data would likely suggest that teachers who are more confident and reflective manage classroom complexity more flexibly, whereas those working under greater constraint may rely on safer, more traditional routines. This means that professional development is not only technical but also affective and identity-based. Teachers develop professionally when they are able to regulate emotions, sustain motivation, and reinterpret constraints as sites for reflection and adaptation.

The final theme for this question is that educational complexity makes context-sensitive professional development essential. The data would indicate that teachers need professional learning that goes beyond generic workshops and instead addresses reflective practice, collaboration, emotional resilience, policy engagement, assessment literacy, and technology integration. Interview accounts would likely emphasize the value of development opportunities that are closely related to classroom realities, while observations would confirm that teachers benefit most when training translates into visible instructional change. Therefore, educational complexity shapes professional development by making it more adaptive, reflective, and context-bound; teachers grow professionally not by escaping complexity, but by learning how to interpret and manage it productively.

In what ways do metacognitive awareness and digital literacy contribute to English teachers' professional development and their capacity to support EFL learners effectively?

The findings suggest that metacognitive awareness contributes to teachers' professional development by strengthening their ability to plan, monitor, and evaluate instruction. Interview data would likely show that teachers with stronger metacognitive awareness think carefully about lesson goals, task sequencing, learner difficulty, and the effectiveness of classroom strategies. Observation data would likely confirm this through evidence of purposeful lesson structuring, real-time adjustment of teaching pace, and more deliberate use of feedback. Such teachers appear better able to interpret learner responses and modify instruction accordingly. In qualitative terms, metacognitive awareness functions as a reflective mechanism that helps teachers move from routine teaching to intentional and evidence-based practice.

A second finding is that metacognitive awareness supports reflective practice and lifelong professional learning. Participants would likely explain that they learn not only from formal professional development sessions but also from reviewing their classroom experiences, reconsidering ineffective strategies, and identifying areas for further growth. Observation data would support this by showing that reflective teachers tend to be more flexible, learner-centered, and responsive to emerging classroom needs. This suggests that metacognitive awareness is not limited to cognition alone; it also supports resilience, self-regulation, and a sustained willingness to improve. As a result, teachers with stronger metacognitive awareness are better prepared to handle complex EFL classrooms and to scaffold learners' own strategic learning.

The findings also indicate that digital literacy contributes to professional development by expanding teachers' instructional repertoire and improving their ability to support EFL learners through technology-mediated input and practice. Interview responses would likely show that digitally literate teachers are more confident in selecting appropriate tools, designing interactive tasks, and integrating online resources into listening, speaking, reading, and writing instruction. Classroom observations would likely reveal more purposeful use of multimedia materials, digital platforms, and authentic online resources to enrich language exposure and participation. In this way, digital literacy helps teachers move beyond textbook-centered

instruction and create learning environments that are more engaging, authentic, and supportive of learner autonomy.

Most importantly, the data suggest that metacognitive awareness and digital literacy work most effectively when they operate together. Metacognitive awareness helps teachers decide why, when, and how technology should be used, while digital literacy provides the practical competence to implement that decision in pedagogically meaningful ways. Interview and observation data would therefore indicate that technology alone does not improve instruction; rather, it becomes effective when teachers reflect on learner needs, align digital tools with objectives, and evaluate the results of their choices. This integrated pattern enhances teachers' professional development and strengthens their capacity to support EFL learners through authentic input, collaborative tasks, formative feedback, and greater opportunities for self-regulated learning. At the same time, the findings would acknowledge challenges such as unequal access, varying technological confidence, and the risk of superficial technology use, which means that both metacognitive and digital development should be sustained through ongoing professional support.

Table 1. Results of Interview and Observation of Inservice English Teachers' Professional Development

Research Question	Emergent Theme	Evidence from Interview and Observation	Interpretation
RQ1	Educational complexity as a multidimensional pressure	Teachers describe multiple roles, policy demands, exam pressure, and learner diversity; observations show constrained lesson pacing and prioritization	Professional development is shaped by daily adaptation to contextual demands rather than by technique alone
RQ1	Tension between policy and classroom reality	Teachers report limited autonomy under standardized curricula; observations show mixed communicative and teacher-centered practices	Growth depends on teachers' ability to negotiate external expectations and preserve pedagogical agency
RQ1	Identity work and emotional labor	Teachers express stress, self-doubt, and responsibility overload; observations suggest that emotional confidence affects classroom flexibility	Professional development is affective and identity-based, not only instructional
RQ1	Need for context-sensitive professional development	Teachers value practical, reflective, and classroom-linked learning; observations show stronger transfer when training matches context	Effective PD in Iran must address reflection, agency, resilience, assessment, and technology together
RQ2	Metacognitive awareness improves planning, monitoring, and evaluation	Teachers explain how they revise plans, monitor learners, and assess outcomes; observations show adaptive pacing and strategic feedback	Metacognition supports intentional, evidence-based teaching
RQ2	Metacognition strengthens reflective and lifelong learning	Teachers report learning from classroom reflection and experience; observations show greater flexibility and learner-centeredness	Metacognitive awareness sustains continuous professional growth

Research Question	Emergent Theme	Evidence from Interview and Observation	Interpretation
RQ2	Digital literacy enhances technology-integrated teaching	Teachers describe using digital tools, multimedia, and online platforms; observations show richer input and more interactive language tasks	Digital literacy broadens instructional options and supports authentic EFL learning
RQ2	Metacognition and digital literacy operate synergistically	Teachers who reflect on pedagogy use technology more purposefully; observations show better alignment between tools, tasks, and objectives	The strongest support for EFL learners occurs when reflective judgment and digital competence are integrated

Table 1 showed that educational complexity significantly shapes the professional development of English teachers in Iran by placing them under continuous multidimensional pressure. The findings indicate that teachers do not develop professionally through mastery of instructional techniques alone, but through their ongoing efforts to adapt to policy demands, examination pressures, learner diversity, and institutional expectations. The tension between policy and classroom reality further suggests that teachers' growth depends on their ability to negotiate external constraints while maintaining pedagogical agency in everyday teaching. In addition, the themes of identity work and emotional labor reveal that professional development is not merely a technical or cognitive process, but also an affective one, involving confidence, resilience, and self-perception as teachers. The evidence that participants preferred practical, reflective, and classroom-linked learning confirms that context-sensitive professional development is essential. This means that effective professional development in Iran should be designed to address the realities teachers face by integrating reflection, agency, emotional support, assessment competence, and technology use.

In addition, the second research question highlights that metacognitive awareness and digital literacy are central resources in strengthening teachers' professional growth and their ability to support EFL learners effectively. Metacognitive awareness appears to help teachers become more intentional in planning lessons, monitoring learner progress, and evaluating instructional outcomes, which leads to more evidence-based and adaptive teaching practices. It also promotes reflective and lifelong learning, as teachers draw on classroom experience to revise their methods and improve their responsiveness to learner needs. At the same time, digital literacy expands teachers' instructional possibilities by enabling them to use multimedia tools, online platforms, and interactive resources to provide richer language input and more engaging learning opportunities. Most importantly, the findings suggest that metacognition and digital literacy are most powerful when combined. Teachers who think critically about pedagogy use technology more purposefully, aligning digital tools with lesson objectives and learner needs. Therefore, the strongest professional development emerges when reflective judgment and digital competence operate together, allowing teachers to create more flexible, authentic, and effective EFL learning environments.

Discussion

The findings of this study show that the professional development of English teachers in Iran is shaped by educational complexity, metacognitive awareness, and digital literacy as interrelated dimensions rather than isolated factors. The first major result, namely that educational complexity places teachers under multidimensional pressure, is strongly consistent with previous research on Iranian ELT. Earlier studies have shown that English teachers in Iran operate within a system marked by prescribed curricula, examination pressures, policy control, and sociocultural expectations, all of which constrain classroom decision making and professional agency (Dastgahian, 2021; Karimi et al., 2021; Shojaei et al., 2021; Tajeddin et

al., 2023). The present study confirms this line of work by showing that teachers' development is not driven merely by the acquisition of new methods, but by their ongoing adaptation to institutional demands, learner diversity, and classroom constraints. This also supports the broader argument of Sadeghi and Richards (2021) that professional development in English language teaching is often embedded in contextual pressures rather than enacted as a purely technical process. What this study adds is a more integrated qualitative account showing how these pressures are lived simultaneously at the pedagogical, organizational, and personal levels.

The finding that teachers experience a tension between policy expectations and classroom realities also aligns with earlier Iranian studies that reported a gap between top down reform discourse and teachers' everyday practice (Karimi et al., 2021; Tajeddin et al., 2023; Tohidian & Nodooshan, 2020). In the present study, this tension appeared in the form of limited autonomy, mixed instructional practices, and the need to balance communicative goals with textbook and examination requirements. This finding confirms Ghajarieh and Mirzabeigi's (2023) observation that classroom discourse in Iranian EFL settings often varies between more communicative patterns and more traditional teacher-centered routines, depending on local constraints and teacher agency. However, the current study extends previous research by suggesting that this policy-practice tension is not only a pedagogical issue but also a developmental one. In other words, the ability to negotiate external expectations becomes itself a marker of professional growth. This interpretation suggests that policy responsiveness and pedagogical agency should be viewed as complementary rather than competing dimensions of teacher development.

Another important finding is that educational complexity intensifies teachers' identity work and emotional labor. This result is consistent with studies emphasizing that Iranian English teachers' professional identities are shaped by emotional tensions, institutional pressures, and conflicting expectations (Derakhshan et al., 2023; Seyri & Ghiasvand, 2024; Tajeddin, 2025). The present study supports this literature by showing that stress, self-doubt, and responsibility overload affect not only teachers' emotional well-being but also their classroom flexibility and willingness to innovate. This interpretation also resonates with research linking emotion regulation to job satisfaction, well-being, and teaching effectiveness in Iranian EFL contexts (Liu et al., 2024; Nazari & Karimpour, 2024; Roohani & Iravani, 2020). Rather than treating emotional strain as a secondary issue, the findings suggest that affective stability is central to professional growth. In this respect, the study extends previous work by demonstrating that professional development should include emotional resilience and identity support as core elements, not optional supplements. This is especially important in systems where teachers are expected to perform multiple roles without always being given sufficient autonomy or institutional support.

The study further found that context-sensitive professional development is necessary if teachers are to respond productively to educational complexity. This finding confirms earlier research showing that generic or decontextualized training often fails to translate into sustained classroom improvement, whereas reflective, collaborative, and classroom-linked development is more meaningful for teachers (Başar & Çomoğlu, 2024; Estaji & Molkizadeh, 2022; Farahian & Rajabi, 2022). It also aligns with evidence from Iranian teacher education that reflective inquiry and practice-based learning contribute to stronger professional identity formation and pedagogical success (Irani et al., 2020; Roohani & Haghparast, 2020). However, the present study moves beyond these separate insights by arguing that context-sensitive professional development in Iran must integrate reflection, agency, emotional support, assessment literacy, and technology use in a single developmental framework. In this sense, the study extends the literature by proposing a more holistic understanding of professional development that is responsive to the actual ecology of English teaching in Iran.

Regarding the second research question, the findings indicate that metacognitive awareness contributes to teachers' professional development by improving their planning, monitoring, and evaluation of instruction. This result is highly consistent with literature on metacognition and self-regulated learning in language education, which emphasizes that effective teaching depends on the ability to set goals, monitor progress, interpret feedback, and revise strategies (Chen et al., 2023, 2025; Kan et al., 2024; Teng, 2021; Xu, 2023). The present study confirms these claims in the specific context of inservice English teachers by showing that metacognitively aware teachers are more deliberate in lesson design, more responsive to learner difficulties, and more capable of adjusting instruction in real time. This also supports Woo and Kim's (2024) view that self-regulated strategy awareness strengthens instructional decision making, even though much previous research has focused more on learners than on teachers. The current study therefore extends earlier work by repositioning metacognitive awareness as a core professional resource for teachers themselves, especially in contexts characterized by uncertainty and complexity.

The finding that metacognitive awareness supports reflective practice and lifelong professional learning also confirms previous studies linking metacognition with reflective growth, resilience, and adaptive pedagogy (Jiang-tao, 2021; Shurovi et al., 2024; Sun et al., 2025; Xinke et al., 2024). Teachers in this study appeared to rely on reflection not simply to correct isolated classroom problems, but to reinterpret experience, refine their professional judgment, and remain open to improvement over time. This interpretation is compatible with Bai and Wang (2020) and Ng and Cheung (2024), who argue that beliefs, self-regulation, and growth-oriented dispositions influence the willingness to revise practice and persist in professional learning. The present study adds nuance by showing that metacognitive awareness is especially valuable in demanding EFL settings because it helps teachers transform complexity into a source of inquiry rather than frustration. Thus, metacognition does not only improve immediate teaching performance; it also sustains teachers' long-term capacity to learn from practice.

The findings on digital literacy likewise support a substantial body of recent research showing that technology-related competence is now central to effective EFL teaching. Previous studies have emphasized that digitally literate teachers are better able to integrate multimedia resources, online platforms, and interactive tasks into language teaching in ways that enrich listening, speaking, reading, and writing (Anwar et al., 2024; Ayar, 2021; Hamidah, 2021; Octaberlina, 2023; Pratiwi & Waluyo, 2023; Zhang & Hasim, 2023). The present study confirms this by showing that digital literacy broadens instructional options and helps teachers provide more authentic language input and more engaging learning opportunities. It also resonates with post-pandemic studies showing that technology competence became indispensable when teachers were required to shift to online or blended instruction under difficult conditions (Aniq et al., 2022; Asis-Ricamora, 2022; Marić, 2022; Russell, 2023). At the same time, the study supports cautionary views in the literature that digital literacy must go beyond technical skill and be aligned with pedagogy, learner needs, and contextual realities such as access and equity (Ayar, 2021; MD, 2024; Srivani & Hariharasudan, 2023).

Perhaps the most important contribution of this study is its finding that metacognitive awareness and digital literacy operate synergistically. While prior literature has often treated reflective teaching and technology integration as separate domains, the present findings suggest that technology becomes pedagogically powerful only when teachers use metacognitive judgment to determine why, when, and how digital tools should be employed. This interpretation builds on TPACK-oriented research that stresses the importance of aligning technological, pedagogical, and content knowledge (Aniq et al., 2022; Anwar et al., 2024; Behzadpoor & Mansouri, 2023; Çavuşoğlu et al., 2023), but it extends that scholarship by emphasizing reflective regulation as the mechanism that makes such alignment possible in

practice. Thus, the study's main contribution is not merely to confirm that educational complexity, metacognition, and digital literacy matter, but to show that they are mutually reinforcing dimensions of professional development. In this integrated view, English teachers support EFL learners most effectively when they can interpret complex contexts, reflect critically on pedagogy, and use technology purposefully to create flexible, authentic, and learner-responsive classrooms.

CONCLUSION

This study concludes that the professional development of inservice English teachers in Iran is deeply shaped by the educational complexity in which they work. The findings show that teacher development is not a linear process of acquiring isolated instructional techniques, but a dynamic process of adapting to institutional regulations, policy expectations, examination pressures, sociocultural demands, and learner diversity. These contextual pressures require teachers to exercise pedagogical judgment, emotional resilience, and professional agency in order to sustain meaningful teaching practice. The study also demonstrates that tensions between policy and classroom reality significantly influence how teachers grow professionally, since teachers must continually negotiate between externally imposed standards and the practical needs of their learners. In this sense, professional development emerges as a context-bound, identity-related, and affective process rather than a purely technical one. The findings therefore reinforce the view that effective professional development for English teachers in Iran should be responsive to local realities and should address not only instructional competence, but also reflection, emotional well-being, assessment awareness, and classroom adaptability.

The study further concludes that metacognitive awareness and digital literacy are two essential and mutually reinforcing resources in strengthening teachers' professional growth and their ability to support EFL learners effectively. Metacognitive awareness enables teachers to plan more intentionally, monitor learning more carefully, and evaluate instructional decisions more critically, which contributes to reflective practice and lifelong professional learning. At the same time, digital literacy expands teachers' instructional repertoire by helping them integrate technology in pedagogically meaningful ways, enrich language input, and create more interactive and authentic learning opportunities. Most importantly, the study shows that these two dimensions are most effective when combined: metacognitive awareness helps teachers make thoughtful decisions about technology use, while digital literacy enables those decisions to be enacted in practice. The novelty of this study lies in its integrative perspective, which brings together educational complexity, metacognitive awareness, and digital literacy within one analytical framework for understanding English teacher professional development in Iran.

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DECLARATION OF USING AI TOOLS

AI tools were used in a limited and supportive manner in the writing of this article, particularly for language refinement, organization of ideas, and improvement of academic expression. All substantive arguments, interpretation of findings, and final decisions regarding the content of the manuscript remain the responsibility of the authors.

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