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Enhancing Intercultural Communicative Competence and Cultural Awareness through ESP Materials for Iranian Psychology Students

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Abstract

This study investigated the impact of newly developed English for Specific Purposes (ESP) materials on enhancing Intercultural Communicative Competence (ICC) and cultural awareness among Iranian undergraduate psychology students. Addressing the need for culturally responsive communication and limitations of conventional materials, researchers designed a 5-unit coursebook based on Byram's (1997) ICC framework and the ICC materials development framework proposed by Mishan and Kiss (2024). Employing a mixed-methods design over a 10-week semester, 60 homogeneous students were equally assigned into two groups: an experimental group received newly developed ESP materials that integrated cross-cultural case studies, dialogic activities, and culturally diverse psychological modules, while the control group used traditional textbooks. Quantitative data from ICC questionnaires revealed a significant increase in ICC within the experimental group. Qualitative analysis of student reflections and interviews indicated enhanced intercultural attitudes, knowledge, skills, and cultural awareness, reflecting meaningful shifts in perspectives for the experimental group. These findings underscore the effectiveness of ICC-focused ESP materials in preparing psychology students for culturally sensitive practice. The study contributes to the development of ESP materials by advocating for the intentional integration of intercultural competence to cultivate globally competent practitioners.

Key Words: Cultural awareness, ESP materials, Intercultural Communicative Competence development, Intercultural communicative competence

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1. Introduction

In an increasingly interconnected world, Intercultural Communicative Competence (ICC) has emerged as a cornerstone of effective global communication. Defined as the ability to interact effectively and appropriately across diverse linguistic and cultural backgrounds (Byram, 1997), ICC extends beyond mere language proficiency. It encompasses crucial intercultural knowledge, open attitudes, critical cultural awareness, and robust interactional skills. Byram's foundational model highlights five key dimensions: attitudes of openness and curiosity, knowledge of social practices, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness. Mastering these competencies is vital for learners to navigate intercultural encounters with sensitivity, adaptability, and respect (Deardorff, 2020; Lázár, 2022).

Given the constant intercultural exchange characterizing our globalized world, the integration of ICC into English as a Foreign Language (EFL) education is more urgent than ever (Ayed, 2022; Mirzaei & Forouzandeh, 2013). Within English for Specific Purposes (ESP), where language instruction is tailored to professional and academic domains, fostering ICC becomes paramount. For instance, in disciplines like psychology, students routinely engage with culturally diverse populations in clinical, academic, and research settings. This engagement makes strong intercultural competence an undeniable professional necessity (D'Orazzi & Marangell, 2025; Yamazaki, 2005)

Despite this clear and growing need, many existing ESP materials—especially those designed for psychology students—critically fall short in meaningfully addressing ICC. Research by Amerian and Tajabadi (2020), Hoffman et al. (2015), and Morady Moghaddam and Tirnaz (2024) consistently reveals that these materials often overemphasize technical vocabulary and Western-centric perspectives. This oversight neglects crucial intercultural engagement and fails to cultivate inclusive global viewpoints. In contexts like Iran, where instructional materials serve as learners' primary exposure to English, this deficiency can significantly hinder their intercultural readiness and cultural awareness (Newton et al., 2010; Rezaei et al., 2020).

This critical gap unequivocally underscores why materials development has become a central concern in applied linguistics. Well-designed materials are not merely conduits for linguistic input; they are powerful tools that actively foster discovery, reflection, and interaction, making learning cognitively engaging and culturally resonant (Tomlinson, 2023). Effective coursebooks and other instructional resources must facilitate deeper connections between learners' own experiences and the target language culture (Mishan & Kiss, 2024; Newton et al., 2020). When widely adopted global textbooks fail to address specific local and cultural contexts,

it reinforces the crucial need for context-sensitive and purpose-driven materials that directly support learners' development of ICC and cultural awareness (Munezane, 2025; Sheldon, 1988).

In response to these identified challenges, the present study focused on the development and rigorous evaluation of new instructional materials specifically tailored for Iranian undergraduate psychology students at one of the branches of Islamic Azad University in Tehran. Designed within an ESP framework, these materials were meticulously structured according to Byram's (1997) ICC model and Mishan and Kiss's (2024) framework. Mishan and Kiss's framework provided additional guidance by emphasizing educational objectives such as cognitive and affective challenge, and intercultural learning objectives focused on making connections between cultures and fostering critical reflection on cultural assumptions. They explicitly target the enhancement of knowledge, skills, attitudes, and cultural awareness through highly relevant, psychology-related content. Indeed, the researchers investigated the effectiveness of these materials in fostering students' ICC development and cultural awareness using a mixed-methods design. In light of this background, this study was guided by the following research questions:

RQ1. To what extent do the newly-developed ESP materials significantly impact Intercultural Communicative Competence (ICC) among Iranian undergraduate psychology students?

RQ2. To what extent do the newly-developed ESP materials enhance the cultural awareness of Iranian undergraduate psychology students?

2. Review of the Related Literature

The development of Intercultural Communicative Competence (ICC) has become increasingly vital in language education, particularly for students in specialized professional fields such as psychology. Given that the field of psychology inherently involves engagement with individuals from diverse cultural backgrounds, psychology students need to develop the skills necessary to communicate effectively and appropriately across cultural boundaries (Byram, 1997; Deardorff, 2006). ICC is a multifaceted construct that encompasses the attitudes, knowledge, and skills needed for effective intercultural interaction. For psychology students, this competence is particularly important because psychological theories, research methodologies, and clinical practices are deeply influenced by cultural contexts (Lee & Khawaja, 2013; Lewenstein, 2017; Patterson et al., 2018; Wickline et al., 2024).

2.1. Intercultural Communicative Competence: Core Concepts and Byram's Model

ICC is not merely about linguistic proficiency; it involves a broader set of competencies that enable individuals to interact meaningfully across cultures (Fantini, 2021; Klyukanov, 2024). Among the various theoretical frameworks, Byram's (1997) model of ICC has gained widespread prominence in foreign language teaching due to its comprehensive and practical elaboration of the dimensions essential for intercultural interaction. This model underscores that intercultural competence is achieved through the development of five interlinked components, often referred to as 'savoirs':

- **Savoir être (Attitudes):** This refers to an individual's open-mindedness, curiosity, and willingness to suspend disbelief about other cultures and belief in one's own culture. It involves openness to new experiences and a readiness to relativize one's own values, beliefs, and behaviors, and to avoid prejudging others.
- **Savoirs (Knowledge):** This encompasses knowledge of one's own culture and other cultures, including social groups, their products, and practices, as well as knowledge of the processes of interaction at individual and societal levels. It also includes understanding the explicit and implicit cultural norms that govern communication.
- **Savoir comprendre (Skills of Interpreting and Relating):** This is the ability to interpret a document or event from another culture, explain it, and relate it to documents or events from one's own culture. It involves identifying and explaining potential misunderstandings or areas of cultural difference.
- **Savoir apprendre/faire (Skills of Discovery and Interaction):** This refers to the ability to acquire new knowledge of a culture and cultural practices and the ability to operate knowledge, attitudes, and skills in real-time communication and interaction. This includes the capacity to observe, analyze, and infer cultural meaning.
- **Savoir s'engager (Critical Cultural Awareness):** This is the ability to evaluate, critically and on the basis of explicit criteria, perspectives, practices, and products in one's own and other cultures and countries. It encourages a critical stance towards cultural assumptions and values, fostering responsible global citizenship.

These dimensions are particularly relevant for students in fields like psychology, where understanding human behavior requires the consideration of diverse cultural contexts. Psychology students, therefore, need not only to grasp psychological theories but also to understand how these theories are shaped by cultural norms and practices. Without adequate

cultural understanding, psychology students risk misapplying psychological principles or failing to account for cultural differences that may affect their research or clinical work (Lewenstein, 2017).

2.2. The Interplay of Language Learning Materials and ICC Development

Language learning materials are fundamental components of any successful language acquisition process, serving as critical mediators for effective teaching and learning (Tomlinson, 2011). These materials function as a core resource, guiding learners through established curricula and facilitating deeper engagement. Crucially, their design directly influences the extent to which learners develop intercultural communicative competence and cultural awareness.

However, many existing ESP coursebooks, particularly those for psychology students, tend to prioritize purely linguistic proficiency over the cultivation of essential intercultural competence (Aguilar & Rodríguez, 2012; Çelik & Erbay, 2013). This imbalance often stems from a global "fit-to-all" approach to coursebook design (Sheldon, 1988; Tomlinson, 2012), which may overlook the specific cultural and communicative needs of learners in unique contexts. Consequently, such materials may leave students ill-prepared to engage meaningfully in real-world professional settings, where understanding cultural nuances is paramount (Mitchell, 2016). Given the centrality of cultural understanding to the psychology discipline, ESP materials designed for psychology students must be purpose-built to integrate ICC components, thereby equipping them to navigate intercultural interactions in globalized professional environments (Arno-Macia & Aguilar, 2018).

Therefore, the recognized need for ESP learners, particularly in culturally sensitive fields like psychology, to develop strong intercultural communicative competence underscores the critical role of thoughtfully designed materials in applied linguistics (Tomlinson, 2023). Moving beyond traditional approaches that prioritize linguistic skills alone, effective instructional resources must intentionally integrate cultural elements, utilizing authentic scenarios (Berardo, 2006), to create a context-rich environment directly conducive to fostering both ICC and deeper cultural awareness (Mishan & Kiss, 2024; Munezane, 2025; Sheldon, 1988).

2.3. Integrating ICC through Material Design

To effectively foster ICC, materials development must go beyond superficial cultural content. It needs to involve designing materials that systematically target Byram's (1997) "savoirs":

- **For developing Savoir être (Attitudes):** Materials should expose learners to diverse perspectives through authentic texts, videos, and case studies that challenge

preconceived notions and encourage empathy. Activities could involve perspective-taking exercises or critical incident analyses where learners reflect on different cultural reactions to a situation.

- **For building Savoirs (Knowledge):** Materials need to provide explicit information about target cultures (social practices, beliefs, values, communication styles) and encourage comparison with learners' own culture. This can be achieved through readings, factual presentations, or mini-ethnographies of cultural phenomena. For psychology students, this means exploring how psychological concepts manifest differently across cultures.
- **For enhancing Savoir comprendre (Skills of Interpreting and Relating):** Materials should offer opportunities to analyze culturally rich texts or interactions, identify potential misinterpretations, and develop strategies for relating diverse cultural meanings. Exercises might involve interpreting non-verbal cues or analyzing communication breakdowns in cross-cultural scenarios.
- **For cultivating Savoir apprendre/faire (Skills of Discovery and Interaction):** Materials should incorporate interactive tasks that simulate real-world intercultural encounters, allowing learners to practice newly acquired knowledge and skills. Role-plays, simulations, problem-solving tasks involving cultural differences, and guided observation tasks (e.g., analyzing cultural artifacts or media) are vital.
- **For fostering Savoir s'engager (Critical Cultural Awareness):** This is perhaps the most advanced and crucial aspect. Materials should include activities that prompt learners to critically evaluate values and beliefs in both their own and other cultures. This could involve discussions of ethical dilemmas with cultural dimensions, analysis of cultural stereotypes, or debates on global issues from multiple cultural viewpoints. The goal is to move beyond mere tolerance to a deeper, critical understanding of cultural relativity and societal values.

Although psychology is inherently cross-cultural, ESP coursebooks for psychology students often prioritize linguistic mechanics—such as academic writing and discipline-specific vocabulary—while offering limited intercultural content (Ali Akbari, 2004; McConachy, 2019; Sharif & Yarmohammadi, 2013; Siddiqi, 2011). Many of these materials predominantly reflect Western perspectives (Ryder et al., 2020), which restrict students' exposure to the diverse viewpoints essential for developing ICC. Without such exposure, students may struggle to navigate multicultural academic and professional environments effectively.

While Iran is sometimes perceived as culturally homogeneous, its universities enroll students from diverse ethnic and linguistic backgrounds and frequently engage in international collaborations. These factors create inherently diverse contexts for intercultural learning. Consequently, pedagogical tools such as case studies, culturally adapted interventions, and reflective exercises are essential for fostering perspective-taking, empathetic communication, and a deeper understanding of cultural influences (Lewenstein, 2017; Mitchell, 2016).

Considering the above points, this study had a dual objectives. First, it aimed to evaluate the effectiveness of newly developed ICC-focused ESP materials in enhancing students' linguistic proficiency, intercultural competence, and cultural awareness. These skills enable students to understand diverse perspectives, interpret others' experiences, and communicate effectively—competencies that support academic, research, and professional development, including in clinical contexts, without implying direct clinical training. Second, it strived to address the gaps in existing materials by designing learner-centered ESP resources based on Mishan's (2024) framework. The key elements of these materials included connecting cultures, fostering comparative perspectives, challenging assumptions, promoting dialogue, and developing empathy. Pedagogical strategies such as structured reflective tasks, critical thinking prompts, and learner presentations were integrated to support active engagement and the real-world application of these skills.

3. Method

3.1. Design

This study employed a convergent parallel mixed-methods design (Creswell & Creswell, 2005), involving the concurrent collection and independent analysis of quantitative and qualitative data to evaluate the effectiveness of the new instructional materials and to gain a deeper, triangulated understanding of the development of students' Intercultural Communicative Competence (ICC).

3.2. Context and Participants

This study was conducted at one of the branches of Azad University in Tehran, Iran. This university was chosen due to the researchers' direct access to the student participants currently enrolled in English for Specific Purposes (ESP) courses within the psychology department.

The Participants in this study were 60 undergraduate psychology students (32 females,

28 males; mean age = 23.9 years, range = 22–26). All were senior students, ensuring comparable disciplinary backgrounds. Initially, 75 students from ESP courses volunteered and were recruited through convenience sampling (Creswell, 2012). To reduce heterogeneity, all 75 completed the Cambridge English B1 Preliminary (PET) reading test, to ensure participants possessed the necessary linguistic ability to comprehend the ESP materials and engage meaningfully with the complex reflective and communicative tasks. Based on the CEFR scoring band (140–159), 15 students were excluded, leaving 60 participants with the required intermediate proficiency.

The 60 eligible students were then randomly assigned using a computer-generated random number sequence into either an experimental group (n = 30), which received ICC-focused ESP materials, or a control group (n = 30), which used The Elements of Counseling (Meier & Davis, 2010).

Table 1.

Descriptive Statistics for Initial PET Reading Scores of Experimental and Control Groups

Group	N	M	SD
Experimental	30	148.87	5.12
Control	30	148.13	5.58

As shown in Table 1, the mean scores of the two groups were almost similar. An independent samples t-test confirmed no statistically significant difference, $t(58) = 0.54$, $p = .591$, indicating that the groups were homogeneous at baseline.

The same instructor (who was also one of the researchers) taught both groups using the same lesson plans, equal instructional hours, and identical classroom conditions. All participants provided written informed consent, were informed of their right to withdraw at any stage without penalty, and were assured of anonymity and confidentiality throughout the study. Ethics approval was obtained from the Faculty of Humanities Ethics Committee at the University.

3.3. Instruments

To investigate the development of ICC and cultural awareness among Iranian EFL psychology students, three complementary instruments were employed: a validated questionnaire, structured reflective tasks, and semi-structured interviews. This mixed-methods approach enabled a robust triangulation of findings, capturing both measurable change and deeper learner perspectives.

a) Intercultural Communicative Competence Questionnaire (ICCQ)

To address the first research question, a 22-item Intercultural Communicative Competence Questionnaire (ICCQ) was administered to both the experimental and control groups at the pre-test and post-test stages (see Appendix A). The instrument was adapted from Mirzaei and Forouzandeh (2013) and grounded in Deardorff's (2006) framework. It was explicitly aligned with Byram's (1997) three main components—attitudes, knowledge, and skills—ensuring conceptual coherence with the instructional design and the objectives of the newly developed materials. The ICCQ employs a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) and evaluates three key domains: knowledge (cultural self-awareness and sociolinguistic knowledge), skills (cross-cultural communication), and attitudes (openness, respect for difference, and ambiguity tolerance). These domains were selected as they directly correspond to the learning outcomes targeted by the ESP materials, with the skills domain of cross-cultural communication encompassing Byram's *savoir-faire* (interpreting/relating and discovery/interaction skills).

To ensure cultural relevance and clarity for Iranian EFL psychology students, the ICCQ was reviewed by three experts in applied linguistics and intercultural communication. Minor modifications were made, including adaptation of specific items to reflect culturally relevant examples and simplification of language for clarity. The instrument retained acceptable psychometric properties from its original validation (KMO = .61, Bartlett's test $p < .01$, $\alpha = .71$). In the present study, reliability analysis with the sample confirmed consistent internal consistency (Cronbach's alpha = 0.71). Post-adaptation validity was confirmed through Confirmatory Factor Analysis.

b) Student Reflection Tasks

To qualitatively trace the development of ICC and address the first research question, students in the experimental group completed structured reflective tasks throughout the 10-week intervention. These tasks were explicitly designed to align with Byram's five ICC components and to promote metacognitive engagement with intercultural insights.

Weekly reflection prompts, adapted from Deardorff (2011), encouraged students to respond to questions such as: "I learned that… This is important because… As a result of this learning, I will…". Reflections were completed individually in Persian and submitted electronically, typically requiring 150–250 words each. The researcher-instructor facilitated instructions to ensure consistency but did not influence participants' reflections, maintaining neutrality by only

grading the task for completion, not content or viewpoints.

Reflections were thematically analyzed using Braun and Clarke's (2006) framework. Two researchers independently coded the data, with initial codes deductively aligned to Byram's (1997) ICC model. The coding was performed on the original Persian texts to preserve nuance and minimize translation bias. Inter-rater reliability was calculated using Cohen's kappa ($\kappa = 0.82$), indicating strong agreement. Discrepancies were resolved through discussion to enhance credibility and dependability. This systematic approach ensured a transparent examination of ICC development while maintaining participant anonymity

c) Semi-Structured Interviews

To gain deeper insights into the impact of the newly developed materials on students' cultural awareness and ICC, addressing the second research question, semi-structured interviews were conducted with 10 students purposefully selected from the experimental group before and after the 10-week intervention. Selection ensured balance in gender, academic performance, and engagement levels to capture diverse perspectives on the intervention's effects.

The interview protocol was developed based on the ICC literature (Byram, 1997; Deardorff, 2011) and aligned with the five ICC components: attitudes, knowledge, interpreting/relating skills, discovery/interaction skills, and critical cultural awareness. Questions were piloted to ensure clarity and relevance (see Appendix B for the interview protocol).

Interviews lasted approximately 20–30 minutes, were audio-recorded, and transcribed verbatim. Two researchers independently coded the transcripts. Inter-rater reliability was calculated at $\kappa=0.79$, indicating substantial agreement. Discrepancies were resolved through discussion. To further enhance credibility, initial findings were subject to member checking with two participants. Selected excerpts were translated into English for reporting, preserving meaning and nuance. This qualitative data provided rich, contextual evidence of the change in student perspectives and enhanced cultural awareness attributed directly to the newly developed ESP materials.

3.4. Materials

In this study, the development of instructional materials involved selecting, adapting, and creating resources tailored for undergraduate psychology students at the one of the branches of

IAU in Tehran. The core textbook, *The Elements of Counseling* by Meier and Davis (2010, 7th ed.), provided foundational disciplinary content but lacked explicit guidance on intercultural and communicative competencies. For example, although the traditional textbook presented theoretical explanations of empathy and counseling techniques, it did not address cultural variability in rapport-building, emotional expression, or dialogic communication across diverse cultural contexts.

To address these critical disciplinary and communicative gaps, the researcher designed five comprehensive instructional units integrating linguistic, psychological, and intercultural dimensions. These units were selected as the most salient themes for developing entry-level counseling skills and intercultural competence within a 10-week intervention period (each unit covering two weeks):

1. Building Rapport and Trust in Counseling
2. Understanding and Expressing Emotions Across Cultures
3. Managing Stress and Coping Strategies
4. Active Listening and Reflective Responses
5. Ethical and Intercultural Sensitivity in Counseling Practice

Each unit included a reading section based on authentic or adapted psychology texts, accompanied by pre-reading and while-reading questions as well as post-reading reflective and dialogic activities. The tasks comprised comprehension questions, vocabulary matching, scenario-based discussions, pair or group role-plays, cultural comparison exercises, and short writing assignments that encouraged learners to connect psychological concepts with culturally diverse contexts.

For instance, within the "Building Rapport and Trust" unit, a scenario-based discussion activity was specifically designed to target attitudes (savoir-être) and interpreting/relating skills (savoir-comprendre). Students were presented with a scenario where a client exhibits indirectness regarding a family conflict, and the task required learners to discuss how different cultural norms surrounding face and directness could influence the counselor's interpretation and response, moving beyond a universal application of clinical empathy.

Additionally, each unit featured a brief multiple-choice quiz and self-assessment prompts designed to help students monitor their progress in intercultural awareness and professional communication. Specific examples of activities and a one-sample unit are provided in Appendix

C.

The adapted materials were reviewed by two experts: one holding a Ph.D. in psychology and the other an applied linguist specializing in English for Specific Purposes (ESP). The review process focused on the accuracy of the psychological content, the relevance of intercultural tasks, the clarity of instructions, and the alignment with ICC objectives. Based on their feedback, minor revisions were made, including refining reflective prompts, simplifying complex scenarios, and clarifying task instructions to enhance learner engagement and comprehension.

The development process was rigorously guided by Byram's (1997) ICC model, Tomlinson's (2011) principles of ESP materials design, and Mishan and Kiss's (2024) intercultural materials framework. Specifically, the materials adhered to Tomlinson's principles of "impact" and "authenticity," ensuring the psychological scenarios were intellectually stimulating and presented in realistic contexts. They also incorporated Mishan and Kiss's emphasis on "critical inquiry" and "affective challenge" through open-ended tasks that required students to engage in critical cultural awareness (*savoir s'engager*). Each unit was meticulously designed to integrate linguistic, psychological, and intercultural elements, fostering reflection, purposeful interaction, and deeper cross-cultural understanding.

In summary, the materials effectively align with these theoretical frameworks, ultimately preparing learners to operate with heightened sensitivity, adaptability, and insight within the "third space" between cultures (Bhabha, 1994).

3.5. Data Collection Procedure

To mitigate potential researcher and participant bias, a standardized protocol was applied throughout all data collection phases. This included structured interview guides and independent coding of all qualitative data to ensure inter-rater reliability. Additionally, the same instructor taught both groups to minimize instructional inconsistencies. To mitigate potential performance bias or enthusiasm bias, the instructor adhered strictly to standardized, pre-developed lesson plans for both groups.

The study was conducted over a 10-week semester at one of the branches of Azad University in Tehran and involved an experimental group and a control group of undergraduate psychology students. Data were collected in two phases: a pre-intervention phase to establish baseline measurements and a post-intervention phase to evaluate the impact of the intervention. All quantitative data were analyzed using raw pre- and post-test scores; no data points were excluded or adjusted, thereby preserving the integrity of the findings.

Pre-Intervention Phase (Week 1)

In Week 1, both groups completed the ICCQ as a pre-test. The assessment was administered simultaneously under standardized instructions. Concurrently, semi-structured interviews were conducted with a purposive subset of 10 students from the experimental group to establish a qualitative baseline for subsequent change in cultural awareness.

Intervention Phase (Weeks 2–9)

The intervention involved 16 instructional sessions (two 90-minute sessions per week) over eight weeks. The experimental group received instruction based on the newly developed ESP materials, while the control group followed the standard ESP textbook. Both groups received equal instructional time and were taught by the same instructor.

During this phase, the experimental group worked sequentially through the five instructional units. The five units were systematically distributed across the 16 sessions, with each unit being covered in three to four sessions to allow for depth of engagement with the reflective tasks. They completed structured reflection tasks after each unit. The control group completed standard textbook comprehension and grammar exercises without intercultural elements.

Post-Intervention Phase (Week 10)

In Week 10, both groups completed the ICCQ again as a post-test. Semi-structured interviews were conducted with the same 10 selected students from the experimental group to explore their cultural awareness and perceptions of intercultural learning experiences attributable to the new materials.

3.6. Data Analysis

This study employed both quantitative and qualitative methods to examine the development of Intercultural Communicative Competence (ICC) and cultural awareness among Iranian EFL psychology students. Quantitative analyses were performed using IBM SPSS Statistics, Version 28, with the significance level set at $p < .05$, while qualitative data were analyzed using a deductive thematic approach grounded in Byram's (1997) ICC framework.

For the quantitative data, analysis began with preliminary screening to ensure data accuracy and completeness, and to identify any missing values. The distribution of the data was examined to confirm that assumptions for parametric testing were satisfied. The internal consistency and reliability of the Intercultural Competence Questionnaire (ICCQ) were assessed for the study sample using Cronbach's alpha, which confirmed acceptable reliability ($\alpha = 0.71$).

Descriptive statistics, including means, standard deviations, and sample sizes, were calculated for pre- and post-intervention ICCQ scores for both the experimental and control groups to summarize overall trends and characteristics of the data. To evaluate the effectiveness of the intervention in addressing the first research question, inferential analyses were conducted. A paired-samples t-test examined whether the mean ICCQ scores of the experimental group differed significantly between pre- and post-intervention assessments. In addition, an independent-samples t-test was performed on post-intervention scores to compare the experimental and control groups, with Levene's Test for Equality of Variances applied to confirm the homogeneity of variance assumption. To assess the practical significance of the intervention, Cohen's d was calculated as a measure of effect size.

Qualitative analyses were conducted to address the second research question and to provide a deeper understanding of students' development in cultural awareness and ICC. Data from reflective journals and semi-structured interviews were transcribed verbatim, and since the original materials were in Persian, a rigorous translation process was employed to produce accurate English versions for analysis. The research team then engaged in repeated readings of the transcripts to familiarize themselves with the content and to generate initial codes identifying excerpts in which students expressed attitudes, knowledge, skills, or awareness relevant to intercultural encounters. These codes were systematically organized into five pre-defined themes corresponding to Byram's model: Attitudes (savoir être), Knowledge (savoirs), Skills of Interpreting and Relating (savoir comprendre), Skills of Discovery and Interaction (savoir apprendre/faire), and Critical Cultural Awareness (savoir s'engager). To ensure rigor, coding and thematic categorization were independently reviewed by a second researcher, and any discrepancies were resolved through discussion until consensus was achieved, ensuring the final thematic structure accurately reflected the data.

To complement the qualitative analysis and facilitate triangulation, the coded data were quantitatively summarized by counting the number of students in the experimental group demonstrating evidence of development within each ICC component at pre- and post-intervention stages, thereby providing a numerical representation of qualitative shifts. A student was recorded as "demonstrating development" in an ICC component if at least one coded excerpt from their reflective journals or post-intervention interview transcripts aligned with the established thematic definition for that component. This provided the frequency counts for Table 7.

4. Results

This section presents the findings from the data analysis, organized by research question

4.1. Research Question One

4.1.1. Quantitative Data: ICC Questionnaire (ICCQ)

Prior to conducting the main analyses, the normality of the data was examined, and the reliability of the ICCQ was assessed as mentioned above. The ICCQ demonstrated acceptable reliability with a Cronbach's Alpha of .71 as reported in the Instruments section. Table 2 presents the descriptive statistics for pre- and post-intervention ICC scores across both groups.

Table 2.

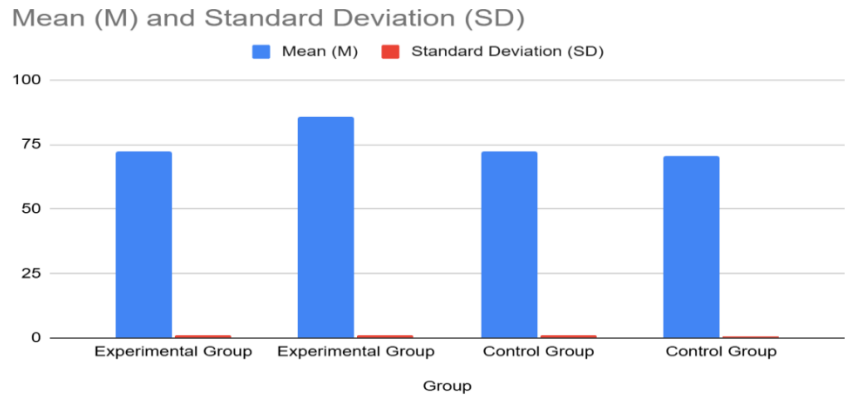
Descriptive Statistics for ICC Scores

Group	Time	Mean (M)	Standard Deviation (SD)	N
Experimental Group	Pre-Intervention	72.30	1.10	30
Experimental Group	Post-Intervention	85.70	0.95	30
Control Group	Pre-Intervention	72.50	1.15	30
Control Group	Post-Intervention	70.50	0.85	30

Also, Figure 1 illustrates the mean ICC scores for both the experimental and control groups before and after the 10-week intervention. The experimental group exhibited a substantial increase in mean ICC scores from pre-intervention (M = 72.30) to post-intervention (M = 85.70), whereas the control group showed a slight decrease from pre-intervention (M = 72.50) to post-intervention (M = 70.50). It is noteworthy that the control group exhibited a slight decline in mean ICC scores post-intervention, suggesting that mere exposure to general ESP material does not facilitate ICC development, thereby underscoring the specific impact of the new materials.

Figure 1.

Mean ICC Scores Across Experimental and Control Groups at Pre- and Post-Intervention.



A paired-samples *t*-test was conducted to examine the effect of the intervention on the experimental group's ICC scores.

Table 3.

Paired-Samples t-Test for Experimental Group ICC Scores

Comparison	Mean Difference	t	df	p
Pre-Intervention vs Post-Intervention	13.40	-12.34	29	< .001

The results, presented in Table 3, revealed a statistically significant improvement in ICC after the 10-week instructional period, $t(29) = -12.34$, $p < .001$, with a substantial mean increase of 13.40 points as observed in the pre- and post-intervention means in Table 2.

To determine the effectiveness of the new materials by comparing the experimental and control groups' ICC levels after the intervention, an independent samples *t*-test was performed. The result is presented in Table 4.

Table 4.

Independent Samples t-Test Comparing Post-Intervention ICC Scores

Test	Statistic	df	p	Mean Difference
Levene's Test for Equality of Variances	F = 0.50	58	.48	
Independent Samples t-Test	t = 5.62	58	< .001	15.20

As shown in Table 4 Levene's Test for Equality of Variances indicated that the assumption of equal variances was met ($F = 0.50$, $df = 58$, $p = .48$). The results of the independent samples *t*-test revealed that the experimental group scored significantly higher on the post-intervention ICC questionnaire compared to the control group, $t(58) = 5.62$, $p < .001$, with a large effect size (Cohen's $d = 1.19$). This large effect size suggests a substantial practical significance of the new materials in enhancing intercultural communicative competence.

4.1.2. Qualitative Data: Reflective Journals as Supportive Evidence

To complement the quantitative ICCQ findings, qualitative data from student reflection journals and interviews were analyzed to provide a richer understanding of the development of intercultural communicative competence (ICC) across Byram's (1997) five components. Student responses, translated from Persian into English, were categorized under the overarching ICC dimensions: attitudes, knowledge, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness. Table 5 presents representative excerpts illustrating

these themes.

Table 5.

Student Reflections Categorized According to Byram's ICC Model

Byram's ICC Component	Thematic Code	Sample Student Reflection Excerpt
Attitudes	Openness to cultural diversity	"At first, I hesitated to discuss cultural differences, but now I appreciate diverse psychological perspectives."
Knowledge	Understanding cultural systems	"I learned how mental health treatment varies in different cultures, which broadened my understanding."
Skills of interpreting and relating	Comparing cultural meanings	"Analyzing body language differences helped me realize how gestures may be misinterpreted across cultures."
Skills of discovery and interaction	Active cultural inquiry	"I researched counseling practices abroad and asked my instructor questions to deepen my intercultural understanding."
Critical cultural awareness	Reflective evaluation of assumptions	"I used to think Western therapy was the standard, but now I see how culture influences views on counseling."

These reflections highlight the nuanced ways in which the new ESP materials influenced students' ICC development. For example, the journals illustrate increases in openness and reduced hesitation to discuss cultural differences, providing concrete evidence beyond the numerical gains captured by the ICCQ. Students' reflections also reveal a deeper understanding of cultural variations in psychological practices, conscious analysis of cross-cultural communication cues, and proactive engagement in learning from diverse cultural contexts. Most notably, the data illuminate the development of critical cultural awareness, as students reflected on prior assumptions and recognized how cultural perspectives shape counseling practices. Overall, the qualitative findings enrich the quantitative results by offering contextualized evidence of students' growth across all five ICC dimensions.

4.2. Research Question Two

This section addresses the second research question: To what extent do the newly-developed ESP materials enhance the cultural awareness of Iranian undergraduate psychology students? To explore this, qualitative data derived from pre- and post-intervention interviews with the experimental group were systematically analyzed. This analysis was specifically framed around Byram's (1997) five components of ICC. The subsequent findings detail how the instructional materials specifically influenced students' cultural awareness and sensitivity within relevant psychological contexts.

4.2.1. Attitudes (Savoir Être)

To assess students' attitudes, specifically their open-mindedness and curiosity, participants were asked: "How do you recognize and handle your own bias when trying to understand someone from a different culture?" Analysis of their responses revealed a significant shift in the experimental group post-intervention.

- **Pre-Intervention (Experimental Group):** Many students struggled to define bias, often assuming that treating everyone identically negated personal bias. A common response was, "I try to treat everyone the same way, so I don't think bias is an issue."
- **Post-Intervention (Experimental Group):** Students demonstrated significantly increased self-awareness, acknowledging the pervasive role of cultural background in shaping perceptions. For instance, one student articulated, "I now realize that I have unconscious bias that can affect my judgment. To handle them, I must first recognize them and then actively listen to the client's perspective."

4.2.2. Knowledge (Savoirs)

To evaluate the acquisition of cultural knowledge, the participants responded to: "How can cultural background influence the way people experience and talk about mental health?"

- **Pre-Intervention (Experimental Group):** Students generally offered generic responses, lacking concrete explanations of cultural influences. A typical comment was, "Mental health problems are the same everywhere, but maybe some cultures don't talk about them."
- **Post-Intervention (Experimental Group):** These students demonstrated a nuanced understanding of cultural variations in mental health expression, conceptualization, and treatment-seeking behaviors. For instance, one student explained, "Some cultures view depression as a physical illness rather than a mental one. Others may not even have a word for anxiety, which affects how people seek help."

4.2.3. Skills of Interpreting and Relating (Savoir Comprendre)

To gauge students' skills in interpreting and relating across cultures, they were asked: "If you had a client from a very different culture, how would you try to understand their feelings and experiences?" Responses indicated a marked improvement in cultural sensitivity within the experimental group.

- **Pre-Intervention (Experimental Group):** Students predominantly emphasized applying universal psychological theories without accounting for cultural context. A typical response was, "I would diagnose them using what I learned in class. Culture doesn't change psychological conditions."
- **Post-Intervention (Experimental Group):** These students clearly acknowledged the imperative for culturally sensitive questioning and interpretation. One student articulated, "I would ask open-ended questions to understand their experiences before applying any psychological model. It's important to respect their cultural beliefs."

4.2.4. Skills of Discovery and Interaction (Savoir Apprendre/Faire)

To assess skills related to discovery and interaction, participants were asked: "If you had the chance to work with people from another culture, what would you do to learn more about their values or communication style?"

- **Pre-Intervention (Experimental Group): (Added for consistency)** Students showed little initiative for cultural learning, often relying on existing knowledge. A representative comment was, "I would just follow what I know from psychology; I don't think I need to learn more about their culture."
- **Post-Intervention (Experimental Group):** Students expressed a significantly greater appreciation for cultural diversity and articulated practical strategies for navigating cross-cultural communication and learning. One student stated, "I'd try to learn about their customs and ask colleagues from similar backgrounds. Understanding their worldview helps me build trust."

4.2.5. Critical Cultural Awareness (Savoir S'engager)

To evaluate critical cultural awareness, participants' responses were analyzed for their ability to critically evaluate cultural practices and assumptions.

- **Pre-Intervention (Experimental Group):** Many students assumed the universality of psychological principles and believed stereotypes had minimal impact on professional judgments. A sample reflection showed: "Everyone should be treated the same; culture doesn't really matter in psychology."
- **Post-Intervention (Experimental Group):** Students exhibited a profound recognition of the pervasive impact of stereotypes on diagnosis and treatment, and the need for cultural adjustment. For example, one student insightfully stated, "I realized that my judgments

come from my own culture. I need to question those and avoid stereotypes when interpreting clients' behavior."

Table 6 is a summary of thematic shifts in ICC across the five components of Byram's ICC model.

Table 6.

Development in ICC Components (Experimental Group)

Component	Pre-Intervention (Experimental Group)	Post-Intervention (Experimental Group)
Attitudes (Savoir Être)	Did not recognize own bias; assumed treating everyone the same is fair.	Acknowledged bias and the need for cultural self-awareness.
Knowledge (Savoirs)	Limited understanding of cultural impact on mental health.	Recognized how different cultures define and express mental health differently.
Skills of Interpreting (Savoir Comprendre)	Applied psychological theories without cultural adaptation.	Prioritized active listening and culturally sensitive questioning.
Skills of Discovery (Savoir Apprendre/Faire)	Limited exposure to cultural diversity; no strategies for learning about other cultures.	Showed greater interest in learning through interaction, research, and engagement.
Critical Cultural Awareness (Savoir S'engager)	Assumed stereotypes had minimal impact on treatment.	Recognized how stereotypes can lead to misdiagnosis and misinterpretation.

Table 7 shows the frequency and percentage of students in the experimental group across Byram's ICC components, illustrating the observed changes.

Table 7.

Frequency and Percentage of Students across ICC Components

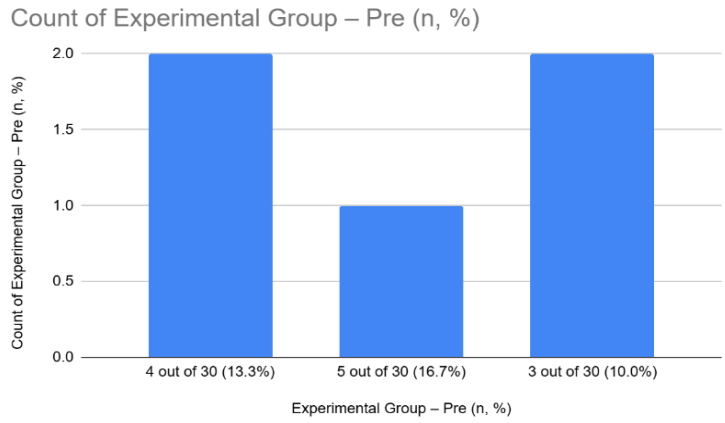
ICC Component	Experimental Group – Pre (n, %)	Experimental Group – Post (n, %)	Magnitude of Change (Experimental)
Attitudes	4 out of 30 (13.3%)	21 out of 30 (70.0%)	+56.7%
Knowledge	5 out of 30 (16.7%)	22 out of 30 (73.3%)	+56.6%
Skills of Interpreting	3 out of 30 (10.0%)	23 out of 30 (76.7%)	+66.7%
Skills of Discovery	4 out of 30 (13.3%)	20 out of 30 (66.7%)	+53.4%
Critical Cultural Awareness	3 out of 30 (10.0%)	24 out of 30 (80.0%)	+70.0%

As illustrated in Table 7, the mixed-methods analysis reveals a systematic and substantial progression across all ICC components within the experimental group. The percentage of students demonstrating development in each area rose significantly post-intervention, particularly in Critical Cultural Awareness (Savoir S'engager), which experienced the most dramatic increase of 70.0% (climbing from 10.0% pre-intervention to 80.0% post-intervention). Large gains were also observed in Skills of Interpreting and Relating (+66.7%) and Attitudes (+56.7%), resulting in

76.7% and 70.0% of students demonstrating competence in these areas, respectively. These frequency data reinforce the detailed qualitative findings (Tables 5 and 6) and provide robust, triangulated evidence that the instructional materials resulted in a profound shift from a limited understanding of cultural influences on psychological practice to a much deeper comprehension of cultural nuance. The consistency between these qualitative shifts and the large quantitative effect size (Cohen's d=1.19) observed in the ICCQ provides strong convergence for the efficacy of the intervention.

Figure 2.

Post-Intervention ICC Component Levels



Notably, there was a clear quantitative progression across all components following the intervention. For instance, the experimental group exhibited a remarkable increase of 56.7 percent in recognizing and managing their own bias (Attitudes), rising from 13.3% pre-intervention to 70.0% post-intervention. Similarly, their critical cultural awareness experienced an even more dramatic increase of 70 percent, climbing from 10.0% to 80.0%. These significant gains indicate a substantial shift from a limited or naive understanding of cultural influences on psychological practice to a much deeper comprehension of cultural nuances and the impact of stereotypes.

This clear progression in the magnitude of change, particularly in the most complex dimensions of ICC, provides robust, triangulated evidence that the instructional materials were highly effective in fostering deeper cultural awareness and competence among the EFL psychology learners.

5. Discussion

The findings of this convergent parallel mixed-methods study provided compelling empirical evidence that embedding Intercultural Communicative Competence (ICC)-focused content into English for Specific Purposes (ESP) materials significantly enhances students' ICC and cultural awareness. The study's results offer a robust, dual-strand validation: a statistically significant quantitative gain in ICC for the experimental group, which was richly explained and contextualized by the qualitative evidence detailing the deep, nuanced shifts in students' attitudes, knowledge, and critical awareness. This synthesis confirms that the intentional design of the new materials was the attributable factor for the observed development.

Quantitatively, the significant increase in ICC scores observed in the experimental group, coupled with a large effect size (d=1.19), aligns with research highlighting the positive impact of targeted intercultural interventions in language education (Deardorff, 2006; Fantini, 2000). This large effect size is particularly notable, suggesting that the materials' focus on discipline-specific, reflective inquiry within the context of psychology was uniquely effective, exceeding typical gains reported in studies that rely on general language-learning or short-term mobility. The concurrent lack of improvement in the control group's ICC scores supports earlier findings that conventional ESP curricula often fail to foster ICC development (Nemouchi & Byram, 2025). This divergence underscores that the substantial gain was attributable to the intervention materials rather than general learning or maturation.

Complementing these quantitative results, the qualitative data from student reflections and interviews illustrated the depth of change in accordance with Byram's five-component ICC model, providing tangible evidence for the statistical gains.

The enhancement in Attitudes (Savoir Être) was vividly demonstrated by post-intervention interview statements (see Results, 4.2.1), where students shifted from denying the presence of personal bias to actively articulating the need for cultural self-awareness. This shift indicates the materials successfully promoted openness to cultural diversity and curiosity, foundational components of ICC.

Students' Knowledge (Savoirs) likewise expanded to include a nuanced understanding of culturally embedded psychological practices and expressions of mental health. For example, students recognized how cultures define mental health differently, directly addressing the need for future psychology professionals to recognize these influences. Improvements in Skills of Interpreting and Relating (Savoir Comprendre) and Skills of Discovery and Interaction (Savoir

Apprendre/Faire) were also evident, indicating that the materials effectively facilitated the interpretation of cultural nuances and encouraged active, proactive engagement in intercultural contexts, aligning with earlier recommendations to integrate experiential and reflective learning into ESP.

Most significantly, the marked increase in Critical Cultural Awareness (Savoir S'engager) demonstrated the materials' effectiveness in enhancing students' ability to critically evaluate their own assumptions. Post-intervention, students exhibited a profound recognition of how cultural stereotypes and dominant Western theories might influence diagnosis and treatment, moving them toward a state of necessary culturally sensitive adaptation in professional judgment.

This research carries significant implications for both theoretical models of materials design and practical curriculum development. Theoretically, this study provides a clear model for integrating the affective, cognitive, and skill-based domains of ICC into an ESP context guided by Tomlinson's principles of impact and authenticity. It demonstrates that the development process can be rigorously guided by frameworks like Byram's ICC model to bridge the gap between language study and professional competence.

Practically, these findings indicate that psychology programs in multicultural contexts could substantially benefit from integrating ICC-focused ESP modules to promote culturally competent professional practice and improve client outcomes. ESP curriculum designers are strongly encouraged to embed structured intercultural tasks and reflective exercises into their materials, particularly for students preparing for multicultural professional contexts, thereby addressing key gaps in traditional ESP instruction.

Despite these encouraging results, several limitations must be acknowledged. The sample size was limited to 60 students from a single university, which potentially restricts the generalizability of the results, although the large effect size observed (d=1.19) indicates sufficient statistical power to detect meaningful intervention effects.

Furthermore, data collection relied in part on self-reported reflections and interviews, which are susceptible to subjectivity and social desirability bias. However, these issues were mitigated through triangulation with the quantitative questionnaire data and reflective questioning, thereby enhancing interpretive rigor.

The relatively short duration of 10 weeks also limited the ability to capture long-term ICC development. Additionally, the findings are situated within the Iranian educational and socio-cultural context, which may influence student engagement and limit their transferability to other

contexts. Finally, reflecting on one of the researcher's positionalities, being both instructor and researcher provided unique insights into classroom dynamics but also introduced potential bias. To mitigate this, a rigorous two-researcher coding protocol was implemented.

Future research should build on these findings by exploring how the benefits of ICC integration can be sustained and extended across diverse contexts and disciplines, potentially using longitudinal and behavioral measures to capture long-term impact on professional practice.

6. Conclusion

This study provided robust empirical evidence in support of integrating intentional Intercultural Communicative Competence content and reflective tasks into ESP materials designed for psychology students. The findings demonstrated that this approach led to significant and practically meaningful improvements in students' ICC scores, cultural awareness, and professional readiness. This research offers a theoretically grounded and empirically supported model for cultivating globally competent practitioners through integrated, intentional instruction.

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APPENDIX A

INTERCULTURAL COMMUNICATIVE COMPETENCE QUESTIONNAIRE (ICCQ)

Sex: Female O Male O

Age: Under 20 O 21–25 O Over 26 O

➢ **Imagine** you are living and working in the United States. Now, you are discussing with your native classmate about your reflection on different concepts in different cultures and giving your opinion truthfully.

✓ Tick the number that best corresponds to your level of agreement with each statement below.

Strongly disagree	**Disagree**	**Neither agree nor Disagree**	**Agree**	**Strongly agree**
1	2	3	4	5

Statements	1	2	3	4	5
1. When I am uncertain about cultural differences, I take a tolerant attitude.					
2. I believe that intercultural experiences can add some information to my previous knowledge.					
3. I am eager to read articles on foreign cultures.					
4. I cannot easily deal with ambiguities during the communication in L2.					
5. I do not make an effort to discover the norms of the L2 culture that I am communicating with.					
6. The right of people from other cultures to have different values from my own is respectable.					
7. I try to encounter well with the different dress customs of people in other countries.					
8. When I meet foreign adolescents, I cannot open a conversation in a culturally appropriate manner.					
9. I rarely accept the others' values and norms during the communication in L2.					
10. I can cope well with spoken language and body language of people from different cultures.					
11. I can take part in any L2 conversation dealing with daily life issues.					
12. Most of the time when I am communicating in L2, I try to learn through discovery during actual experience.					
13. I believe that marriage between different cultures is wrong.					
14. I am often motivated by curiosity to develop my knowledge of my own culture as perceived by others.					
15. I watch more national news than international news on TV.					
16. I am not always aware of differences of the foreign cultures.					
17. I believe the social system of where the person is from has effect on the decision-making process.					
18. I am able to deal tactfully with the ethical problems while communicating in L2.					
19. I take pleasure in listening to music from another culture.					
20. Religious arrangements in different cultures are not fascinating for me.					
21. When I am reading a story book written in L2, I always try to analyze, interpret, and relate concepts to each other.					
22. I think we are responsible for people of other races as our people.					

THANK YOU FOR YOUR COOPERATION AND HONESTY!

Appendix B

Interview Introduction and Conclusion Scripts

Introduction: "Thank you for agreeing to participate in this interview. This session is part of our study on the newly developed ESP materials and will take approximately 20–30 minutes. I will ask questions about your experiences and perspectives on cultural communication within a psychology context. Your responses are completely confidential, and participation will not affect your grades. Do I have your permission to record this session and use your responses for research purposes?"

Conclusion: "That concludes the interview. Thank you very much for your time and for sharing your thoughtful insights. Your contributions are greatly appreciated and will help us better understand the impact of the ESP materials."

Interview Guide Questions

Dimension (Byram, 1997)	Interview Questions
Attitudes (Savoir Être)	How do you recognize and manage your own biases when trying to understand someone from a different culture? Can you share a specific example of a time you needed to do this?
Knowledge (Savoirs)	In your experience or opinion, how can cultural background influence the way people experience and talk about mental health?
Skills of Interpreting and Relating (Savoir Comprendre)	If you were working with a client from a very different cultural background, how would you try to understand their feelings and experiences? What steps would you take to avoid misunderstandings?
Skills of Discovery and Interaction (Savoir Apprendre/Faire)	When interacting with people from different cultures, what new skills or knowledge have you developed in order to communicate effectively? Can you describe a situation where you had to adjust your approach?
Critical Cultural Awareness (Savoir S'engager)	How do cultural stereotypes influence the way psychologists perceive and treat their clients?To what extent do you think psychological theories and practices should be universal, or adapted to different cultural contexts? Can you give an example?Why is it important for psychologists to communicate effectively with people from diverse cultural backgrounds?

Appendix C

UNIT ONE

Building Rapport: The Foundation of Therapeutic Relationships

Establishing strong rapport is crucial for creating a therapeutic alliance that fosters client growth and positive change. Rapport, the harmonious connection between two individuals, is fundamental to effective counseling and therapy. It establishes a safe and trusting environment where clients feel comfortable sharing their thoughts and feelings. Building rapport is an ongoing process that begins from the very first interaction and continues throughout the therapeutic relationship.

Core Components of Rapport:

- **Active Listening:** Paying close attention to both verbal and nonverbal cues, demonstrating genuine interest and understanding. (e.g., maintaining appropriate eye contact, nodding, using verbal affirmations).

- **Empathy:** Understanding and sharing the feelings of another. This involves recognizing the client's emotional state and responding with sensitivity. (e.g., reflecting the client's feelings, validating their experiences).

- **Respect:** Valuing the client as an individual, regardless of their background, beliefs, or behaviors. (e.g., using preferred pronouns, and acknowledging cultural beliefs without judgment).

- **Warmth:** Conveying a sense of acceptance, caring, and genuine positive regard. (e.g., using a warm tone of voice, or offering a genuine smile).

Cultural Considerations and Intercultural Competence (ICC):

Building rapport becomes even more nuanced when working with clients from diverse cultural backgrounds. Intercultural Competence (ICC) is the ability to effectively communicate and interact with people from different cultures. It involves understanding one's own cultural biases and being open to different worldviews. Cultural norms and communication styles can significantly influence how rapport is established and maintained.

For example, in some cultures, direct eye contact is a sign of respect, while in others, it may be considered disrespectful. Similarly, the appropriate level of physical touch can vary greatly across cultures. Communication styles can also differ; some cultures value direct and explicit communication, while others prefer more indirect and subtle communication. Concepts of time can also vary (monochronic vs. polychronic). Understanding these differences is crucial for effective cross-cultural communication.

Example Scenario:

Dr. Lee, a therapist with experience working with immigrant populations, is meeting with a new client, Maria, who recently immigrated from Mexico.
Dr. Lee: "Hello Maria, welcome. Please, have a seat." (Offers a warm smile and gestures towards a chair).
Maria: "Thank you." (Sits down, maintaining a slightly lowered gaze, her voice tinged with a hint of sadness).
Dr. Lee: "How was your journey here today?" (Starts with a neutral, non-intrusive question).
Maria: "It was fine, thank you."
Dr. Lee: "I understand you've recently moved to this city. How are you finding it so far?" (Open-ended question, showing interest in Maria's experience).
Maria: "It's… different. I miss my family and friends back home." (Expresses feelings of homesickness).
Dr. Lee: "Moving to a new place can be challenging. It's understandable to miss the familiar. Many people experience similar feelings when they relocate. It's important to acknowledge and process those feelings."
Important Considerations:

- Nonverbal Communication: Be mindful of your own nonverbal cues (e.g., facial expressions, body language, tone of voice) and how they might be interpreted by clients from different cultures.

- Communication Styles: Be aware that communication styles can vary across cultures. Some cultures may value direct communication, while others may prefer more indirect or subtle communication.

- Cultural Sensitivity: Avoid making assumptions or generalizations about clients based on their cultural background. Instead, strive to understand each client as an individual.

Exercises:

1. Analyzing the Scenario: Identify examples of active listening, empathy, respect, and warmth in the interaction between Dr. Lee and Maria.

2. Cultural Awareness: Research different cultural norms related to greetings, eye contact, and physical touch. Discuss how these norms might impact the process of building rapport.

3. Dialogic Interaction: Rewrite the scenario to demonstrate a less effective approach to building rapport. Then, rewrite it again to show how dialogic interaction could be used to address a potential misunderstanding or cultural difference in communication style. For example, what if Maria's lowered gaze was interpreted by Dr. Lee as disinterest? How could Dr. Lee use dialogic interaction to clarify this?

4. ICC Application: Imagine you are meeting a client from a culture you are unfamiliar with. What steps would you take to ensure you are demonstrating intercultural competence and building rapport effectively?

Multiple Choice Exercises:

Instructions: Choose the best answer for each question.

1. **Which of the following is NOT a key element of building rapport?** a) Active listening b) Empathy c) Imposing personal beliefs d) Respect

2. **Active listening involves:** a) Waiting for your turn to speak b) Paying attention to both verbal and nonverbal cues c) Offering unsolicited advice d) Interrupting to clarify points

3. **Empathy can be defined as:** a) Feeling sorry for someone b) Understanding and sharing the feelings of another c) Offering solutions to someone's problems d) Judging someone's emotional response

4. **Cultural awareness in building rapport means:** a) Assuming all clients from the same culture are the same b) Recognizing and respecting the values, beliefs, and practices of different cultures c) Ignoring cultural differences to treat everyone equally d) Imposing your cultural norms on clients

5. **Which of the following demonstrates cultural sensitivity in a therapeutic setting?** a) Making generalizations about a client based on their ethnicity b) Asking open-ended questions to understand a client's individual experience c) Assuming a client's communication style based on stereotypes d) Avoiding any discussion of cultural differences

6. **In some cultures, avoiding direct eye contact is a sign of:** a) Disinterest b) Respect c) Dishonesty d) Confusion

7. **Which of the following is an example of a culturally sensitive approach to building rapport?** a) Insisting on a handshake even if the client seems uncomfortable b) Being mindful of personal space and physical touch c) Immediately discussing highly personal topics d) Making assumptions about a client's beliefs based on their cultural background

8. **If a therapist notices a client from a different cultural background consistently avoids direct eye contact, a culturally sensitive response would be to:** a) Insist on maintaining eye contact to build trust b) Assume the client is being dishonest c) Consider that this might be a cultural norm and adjust their behavior accordingly d) Confront the client about their lack of eye contact

9. **Dialogic interaction in the context of building rapport emphasizes:** a) The therapist's expertise and authority b) A one-way flow of information from the therapist to the client c) Mutual respect, active listening, and collaborative communication d) The client's responsibility to adapt to the therapist's communication style

10. **Which scenario best exemplifies intercultural competence?** a) A therapist assumes all clients from a particular country share the same values. b) A therapist adapts their communication style to be sensitive to a client's cultural background. c) A therapist avoids discussing cultural differences to prevent misunderstandings. d) A therapist insists on using their preferred communication style regardless of the client's background.

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Exploring Iranian Primary-Level EFL Teachers' Perceptions toward Social Identity

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Abstract

Social identity plays a significant role in the professional life of teachers; however, the social identity of English as a foreign language (EFL) teachers is an under-investigated research area in general and in the context of Iran in particular. This study aimed to explore Iranian primary-level EFL teachers' perceptions toward social identity. To this end, phenomenological design was adopted. Participants included 15 teachers (7 males and 8 females) from private language schools of Tehran and Tabriz who were selected through convenience sampling. Data were collected through face-to-face semi-structured interviews. Based on the results of the thematic analysis, five main themes were identified: social communication skills, professional development experiences, using collaboration, group activities, and negotiation strategies to understand students' social identity, effect of social identity on teaching profession, and effect of social identity on teacher interactions. This study has some implications for primary-level EFL teacher educators and primary-level EFL teachers. Primary-level EFL teacher educators should use the findings to train pre-service teachers on the construction and reconstruction of their social identity. Besides, primary-level EFL teacher teachers should be attentive to the reconstruction of their social identity based on the insights taken from this study.

Key Words: Primary-level EFL Teaching, Professional Identity, Social Identity, Teacher Identity

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1. Introduction

In recent years, scholars have increasingly focused on the construction of teacher identity. Their efforts have aimed to illuminate both the visible and invisible dimensions of the teaching profession. The visible dimension involves observable activities such as student evaluation and material preparation, while the invisible dimension comprises individualized traits like motivation, perceptions, beliefs, and assumptions (Haslam et al., 2023). An examination of teachers' identities proves valuable when exploring both these aspects (Haslam et al., 2023).

In general, identity is recognized as a dynamic construct that evolves through individual experiences and social interactions (Bosma & Kunnen, 2001). Theoretical frameworks emphasize their multifaceted nature, characterized by (1) multiplicity and fluidity, often presenting conflicts (Brewer, 2012); (2) their grounding in social, cultural, and political contexts (Tajfel & Turner, 1979); and (3) their formation through discourse and social interaction (Vygotsky, 1978). Identity comprises various categories, including Personal Identity (PI), Relational Identity (RI), Social Identity (SI), Collective Identity (CI), Ego Identity (EI), and Imposed Identity (II) (Kim et al., 2022).

PI is conceptualized as the stream of consciousness reflecting an individual's unique values, beliefs, and experiences (Kinsella et al., 2022). RI focuses on how individuals perceive themselves through the lens of their relationships (Burford et al., 2020). SI, which is the primary concern of the present study, is grounded in affiliations with various social groups, providing a sense of belonging and context within the sociocultural framework. Affiliations related to ethnicity, gender, and social roles contribute to an individual's self-concept and position within the societal structure (Kim et al., 2022). These group memberships not only affirm identity but also enhance well-being, as individuals derive meaning and support from their collective affiliations (Haslam et al., 2023). The interrelation between group identity and individual well-being indicates that social identities serve as critical resources during life transitions, offering a foundation for resilience (Mawson et al., 2016). CI embodies a shared sense of belonging that transcends individual identities, fostering unity among group members based on common values and goals (Kim et al., 2022). EI, distinct from the identities mentioned above, encapsulates how individuals perceive their worth and place in the world. EI is shaped by personal experiences, particularly successes and failures, which inform the self-concept (Burford et al., 2020). II refers to identities assigned by external societal expectations, often through stereotypes and cultural norms. This phenomenon can lead to internal conflicts as individuals grapple with identities that are not freely chosen but ascribed by societal forces (Kinsella et al., 2022). Moreover, teachers' PI plays a significant role in their pragmatic awareness in the EFL context (Samani et al., 2024).

In sum, identity, as investigated through these various lenses, reflects a complex interplay of personal experiences and social interactions. Each aspect interacts to form a cohesive understanding of self that dynamically evolves through time and context (Samani et al., 2024). Therefore, the concept of identity is not merely a reflection of a personal narrative but is deeply embedded within the relational and social frameworks that shape human experience and well-being.

Social identity is a kind of identity that has been shown to be important in the professional life of teachers. As far as social identity is concerned, it reflects the social view of the teacher and is formed through becoming a member of society (Wenger, 1999). There is a deep and significant link between social identity and practice (Wenger, 1999). We determine "who we are" by connecting with other group members and being involved in society. Social identity is different from self-identity since social identity refers to feelings towards a group membership, while self-identity refers to the individual themselves (Ko & Kim, 2021). However, the common trend is that social membership is taken as part of one's social identity. The fact is that social identity conceptualization is different across cultures because of differences in context and experiences (Ko & Kim, 2021). With a view to this, some scholars such as Betancourt and López (1993) and Brewer (2012) have recommended the incorporation of culture into mainstream psychology theories to expand its theoretical domain. Our practices and experiences within society are significantly the answer to "who we are?" and how we feel and think as a person. Instead of being a simple process, this is part of a trajectory and involves various membership shapes in the society (Ko & Kim, 2021).

Understanding the role social identity plays in shaping teachers' experiences is paramount due to the challenging conditions of teacher employment and retention. High proportions of teachers' work leaving have been reported among teachers within the first years of their job (Griffin et al., 2024). By uncovering how teachers develop their social identity, teacher educators can better support and train pre-service teachers by addressing the work-leaving challenge more systematically. For instance, as documented in recent research, developing teachers' social identity through encouraging them to participate in joint research projects with their students is an effective strategy to prevent them from leaving their job (Haslam et al., 2023). This view, coupled with the other challenges with which teachers encounter, calls for further research on teachers' social identity development.

Among different factors influencing teachers' identity construction, learners' characteristics, including their English proficiency level, can be mentioned. Closely related to this,

teaching English at the primary level to young learners demands knowledgeable teachers who can deal with children. According to Roberts (1998), primary teachers should have psychological knowledge, considering the specific learning styles of young learners who may need different cognitive adjustments in teaching methods. The primary stage is undoubtedly important because it functions as a foundation for more advanced grades. Therefore, authorities and school principals search for critically minded, creative, and responsible primary English language teachers (Roberts, 1998). In the same vein, Mortazavi Nezhad et al. (2024) found that among Iranian EFL instructors, positive emotionality, such as responsiveness, pleasure, emotional support, and flexibility, significantly predicts informative identity, while it negatively predicted diffuse-avoidant identity. Negative emotionality, such as anxiety and exhaustion, significantly and negatively predicts a person's informational and normative identities. Additionally, instructors who report feeling positively about themselves tend to have a weak diffuse-avoidant identity characteristic, according to the research. Ultimately, the close link between EFL instructors' emotionality and identity is evident. To help shape their personality in a positive and genuine way, EFL teachers should strive to feel more joyful emotions than negative ones (Mortazavi Nezhad et al., 2024).

Even though a great deal of research has been carried out in the field of EFL teachers' identity (He & Lin, 2013; Hera et al., 2020; Karimi & Mofidi, 2019; Lebrouj & Solhi, 2024), little attention has been given to primary-level EFL teachers' social identity. More specifically, although Avraamidou (2014a) showed that social identity is extensively relevant to education, it has been under-investigated in the field of education (Lee et al., 2013). While relevant to education, by combining group identity and self-categorization theory (Haslam et al., 2011), social identity accounts for the role of social context in determining an individual's sense of self and identity. In this way, investigating the social identity of teachers can lessen the problems of teachers as a key part of the education process. Thus, the researchers of the current study were motivated to explore Iranian primary-level EFL teachers' social identity, and thus, formulated the following research question:

RQ. How do primary-level Iranian EFL teachers perceive their social identity?

2. Review of the Related Literature

2.1. Theoretical Framework

Social Identity Theory (Tajfel & Turner, 1979), as the theoretical framework of this study, suggests that individuals shape their identities based on social groups to safeguard self-identity. This process involves aligning with an "in-group" concerning an "out-group" and showing a predisposition towards viewing one's own group positively compared to others. The outcome is an association with a collective, depersonalized identity rooted in group membership and characterized by positive attributes (Tajfel & Turner, 1979).

Social Identity Theory was introduced as a social-psychological theory to explain group processes and behaviors. The theory arose from the critique of previous approaches to understanding and interpreting social behaviors, such as psychology, sociology, biology, and social psychology (Tajfel & Turner, 1979). Social identity theory was developed to counter the individualistic approach of social psychology to inter-group interactions and group processes (Tajfel & Turner, 1979). A fundamental premise of Social Identity Theory is that groups are the primary vehicle for social reform and conflicts, not individuals. Tajfel's view recognizes the existence of human self-interest. He argued that focusing entirely on individual identity would not displace the knowledge base from what is already known. Furthermore, it would remove the impact of social identity on behavior within a given social context. The theory describes the limited dimensions of selves relevant to certain limited forms of social activity at a given point in time (Tajfel & Turner, 1979).

Tajfel and Turner (1979) suggested that social and personal identity are hypothetical cognitive structures that form most of the concept of self. Each structure is constructed of more narrow cognitive elements such as particular social categorizations of gender, race, political affiliation, religion, and personal features, for example, bodily attributes and personal preferences. In other words, a person's self-concept is extracted from two primary sources: personal and social identity. Personal identity contains a person's individual attributes, accomplishments, and qualities. Social identity involves collective affiliations that are accepted as part of a person's identity. Therefore, individuals' total characteristics that define a social group are used to identify themselves and produce their social identity.

2.2. Teacher Social Identity

Social identity refers to the manner in which we define ourselves based on shared terms and categories with others. Unlike personal identity, which can be unique to individuals, social

identity includes commonalities among groups of people (Deaux, 2001). This process of social identity formation promotes the development of shared values and a sense of belonging among individuals within these groups (Deaux, 2001).

It is argued that other people's role in forming social identity is vital. An individual's social identity evolves and develops through engagement in social life and membership in particular groups (Griffin et al., 2024). When an individual is identified because of membership in a group and creates a sense of membership within themselves, it leads to the conceptualization of social identity (Griffin et al., 2024; Tajfel & Turner, 1979). However, we might depend on several groups simultaneously; therefore, this relationship is dynamic instead of being static and unchangeable. We may also encounter different levels of dependability and correlation of the groups we belong to. Therefore, our roles and characters may adjust to various interactions and settings (Deaux, 2001). Our dependence on broader structures and social cultures could be part of this. As a result of these processes, it can be said that social identity is constructed, shaped, and converted (Deaux, 2001; Haslam et al., 2023).

In summary, the notion of social identity necessarily entails the meanings related to the person and also their experience as a member of the society. Talking about identity includes personal, cognitive, psychological, and emotional notions. On the other side, social identity involves sociological aspects like gender, race, age, and nationality, and it also involves social, cultural, and historical factors. Although these two views have been raised separately by sociologists and psychologists, precisely identifying where the personal aspect of identity ends and the social aspect of identity begins is a challenging task. Therefore, the analysis concentration should be on the process of their reciprocal creation (Hera et al., 2020; Wenger, 1999). Small discoveries that have been achieved about the notion of identity so far may not contain the minimum features for providing the exact definition of this notion. In explaining this subject, the notion of identity has been interpreted based on individual and social aspects. However, both processes attempt to answer "Who am I?" or "Who are you?". This answer can be expressed extensively in two complicated realms: one sees the person as an individual, and the other sees them as a social community member (Hera et al., 2020).

Reviewing the literature, it was found that few studies have been conducted on the significance of social identity in shaping teachers' professional roles and authority in the classroom. In a study, Chesler and Young (2007) explored the relationship between social identity and classroom authority of faculty members. According to the results of document analysis, social identity contributes to higher classroom authority among faculty members. Wells (2015)

addressed social identity in teacher education. He examined some teacher education courses and concluded that student teachers need to be informed about their social identity. It is through recognition of social identity that their selves are constructed.

Stenberg et al. (2014) studied teachers' identity through the lens of didactical position. They believed that teachers should orchestrate and encourage student learning. Regarding 'orchestrating position', teachers should learn how to organize their teaching activities to support students' learning. The teacher is a facilitator and should be aware of different ways that he can use to create an environment that leads to productive interaction among learners. In a study conducted by Nguyen (2016) in Vietnam, the ways English teachers attempted to enhance their practice and shape their identity in a local setting were scrutinized. According to the results of the data analysis, at first, these participants believed that self-education as well as learning from their colleagues in primary schools was inadequate for professional growth. Consequently, they sought other ways to enhance their professional identity by forsaking pedagogical and epistemological restrictions to find new practices and identities.

Jetten et al. (2017) explored the effect of social identity on health and well-being of educators and learners. According to the results, health and well-being are jointly influenced by social identity significantly. Zahid and Ghani's (2018) study on social identity and language anxiety of learners showed that these relationships are deeply embedded within specific social contexts and are influenced by interacting personal factors such as age, gender, and proficiency level. Henry (2019) explored the social identity development of an English teacher in a case study. To this end, he employed semi-structured interviews. According to the results, three I-positions were recognized for the teacher: The student-apprentice I-position, the emerging practitioner, and the challenged practitioner.

3. Method

3.1. Design

The present study adopted a phenomenological design to investigate the lived experiences through which Iranian primary-level EFL teachers perceive and construct their social identity.

3.2. Participants

The target population of the study included primary-level male and female English

teachers teaching at private language schools in Tehran and Tabriz because Tabriz was the hometown and Tehran was the living place of the first researcher. 15 teachers (7 males and 8 females) from the private language schools in Tehran and Tabriz voluntarily took part in the study by participating in semi-structured interviews. They were selected through purposive sampling because the main criterion for their inclusion in the study was teaching at English at the primary-level. Sample size was justified based on data saturation point. The age range of the participants was 25-50. Research ethics were observed in the sampling procedure by informing the participants of the aims of the present study. Moreover, they were assured about the anonymity and confidentiality of their personal information.

3.3. Instruments

Semi-structured interviews were conducted to explore primary-level Iranian EFL teachers' perceptions of social identity. It consisted of five open-ended questions, which the researchers developed through consulting the existing literature on exploration of teachers' perceptions in general (rather than the literature on social identity of primary-level teachers) and the experts in the field. The questions addressed teachers' definition of their social identity, professional development experiences which have led to enhancement of teacher social identity, strategies used by teachers to understand their students' social identity, the effect of teachers' social identity on their profession, and the role of teachers' social identity in their interactions with their students and colleagues (See Appendix). The interviews were conducted face-to-face. Each participant was interviewed individually. All the interviews were audio-recorded and transcribed verbatim for the purpose of further data analysis. The interviews were conducted in Persian. To check the dependability of interview data, member checking was used. That is, the researchers showed some parts of the analyzed interviews to the interviewees to see whether their perceptions were the same as the extracted themes. The credibility of interview data was confirmed by using low-inference descriptors. That is, some direct quotations from the interviewees were provided in presenting the results of thematic analysis.

3.4. Date Analysis

The collected audio-recorded data from the interviews were transcribed verbatim to be further analyzed. Data analysis was conducted through the qualitative manual thematic analysis through open coding, axial coding, and selective coding. Open coding entailed highlighting specific phrases and sentences and assigning corresponding codes to encapsulate the content of the emphasized portions. Axial coding included relating codes together to reveal categories. Selective coding involved categorizing all the themes under a main category, namely, primary-

level Iranian EFL teachers' perceptions of social identity.

4. Results

To answer the research question 'How do primary-level Iranian EFL teachers perceive their social identity?', through thematic analysis of the data, the following themes and sub-themes were identified about primary-level Iranian EFL teachers' perceptions of social identity:

Theme 1: Social Communication Skills

According to this theme, social identity is the acquisition of social communication skills. This theme was supported by two main codes of 'the skill of collaboration, teamwork and cooperation', and 'group leadership skills'. The following excerpts illustrate this theme:

Participant 8:

> *Social identity means social life skills. Social life skills are one of the teacher's skills. The social identity of the teacher means the art of teaching social skills to students and preparing them for large gatherings. Social identity means the skill of collaboration. Collaboration can lead to beneficial results in education. The teacher should have the skill of using collaboration in a good way.*

Participant 5:

> *Social identity means social communication skills. The class is a collective community that requires collective communication to advance it. Therefore, the English teacher should have mass communication skills. Social identity means teamwork skills. One of the most important teaching skills is teamwork. Teaching is a group category, and without the use of group skills, it is not possible to achieve its specific goals.*

Participant 3:

> *Social identity means cooperation skills. If the language teacher can create cooperation between the students as well as between himself and the students, he is much more successful in teaching. Part of the learning takes place inside the classroom, and another part outside the classroom. What this means is that extracurricular relationships should not be ignored. The teacher should create and maintain extracurricular relationships.*

Participant 12:

> *Social identity means group leadership skills. Group activities related to the group, including group and social activities, are essential parts of the teaching job. This means*

that the language teacher should be able to manage the group and group activities well.

As reflected in the above quotes, the participants noted *that it is social communication skills that could shape their social identity*. They perceived that the main skills of collaboration, cooperation with others, and mastery of group work build their social identity. They also perceived group leadership skills play a key role in the formation of their social identity. This finding is compatible with Social Identity Theory's proposition that individuals shape their identities based on social groups and activities to safeguard self-identity.

Theme 2: Professional Development Experiences

According to this theme, some professional development experiences lead to the enhancement of the social identity of teachers. This theme was supported by two main codes of 'cooperation skills' and 'problem-solving skills'.

Participant 1:

Cooperation skills, coordination skills, and community life skills are essential. Cooperation skills involve working effectively with colleagues and students. Coordination skills refer to the ability to organize and align different activities, as well as manage interpersonal coordination. Community life skills include all skills related to social interaction and participation in social life.

Participant 7:

Participation and cooperation skills, along with resilience skills developed in difficult situations with the support of the group, encourage active classroom participation. These skills increase students' endurance and tolerance and ultimately contribute to strengthening their social identity. Cooperation skills include mutual aid and friendship, relationship-building abilities, recognizing boundaries in relationships, and managing interpersonal relationships. Through cooperation, altruism, and relationship building, the social personalities of both teachers and students are strengthened.

Participant 4:

Group problem-solving and group activity skills help foster stronger social relationships in the classroom. These relationships contribute to strengthening the social identity of both teachers and students, which in turn supports more effective problem management. When the teacher manages knowledge, classroom issues, and the class as a whole effectively, the social factors that shape social identity are also well managed.

Participant 11:

> *The skill of group problem-solving and seeking solutions from others empowers both students and teachers. Finding solutions collaboratively helps students become socially confident and enables teachers to work more effectively. It also helps all participants recognize and understand the potential of the group.*

According to the above quotes, participants believed that some professional development experiences, including cooperation skills and problem-solving skills help them enhance their own social identity. This finding is congruent with the emphasis on collective priorities and cooperative attitudes in Social Identity Theory.

Theme 3: Using Collaboration, Group Activities, and Negotiation Strategies to Understand Students' Social Identity

This theme aims to help teachers understand their students' social identity. This theme was supported by three main codes of 'collaboration strategy', 'group activities', and 'negotiation strategy'.

Participant 3:

> *Collaboration strategies and relationship management are essential for strengthening social identity. By involving students and guiding their interpersonal relationships, I can explore and support the development of their social identity. Collaboration with students plays a key role in this process: first, it helps them rebuild, change, and improve their social identity; second, it allows their social identity to be expressed and recognized.*

Participant 2:

> *Group activity and group formation strategies help reveal students' social intelligence and their ability to participate. Grouping and group work in the classroom effectively highlight students' social identities. Through these activities, the teacher can gain deeper insight into students' social identities. By placing students in different group situations and observing their behavior, the teacher can more accurately assess and understand each student's social identity.*

Participant 15:

> *Negotiation strategies emphasize interaction and dialogue as effective ways to identify students' social identities. Conversation is a powerful tool for achieving multiple goals, including understanding social identity. Through meaningful dialogue and interaction,*

teachers can explore, recognize, and better understand the social identities of their students.

Participant 7:

Here is a fluent and polished version:

Through discussion, participation, and negotiation, the teacher creates opportunities for students to reveal their social identities. Students express their social identities by responding to the issues raised during discussions and negotiations.

Participants pointed out that to reveal their students' social identity, they resort to different strategies, including collaboration strategies, group activities, and negotiation strategies, which means that teachers involve students in interpersonal relationships and collaborate with them, arrange group activities within the classroom, and through discussion, participation, and negotiation, put students in a position to reveal their social identity. As mentioned above, in Social Identity Theory, intergroup communication and depersonalized group membership are highly emphasized.

Theme 4: Effect of Social Identity on Teaching Profession

According to this theme, teachers' social identity influences their teaching as a profession. This theme was supported by three principal codes of 'teacher motivation', 'using new teaching methods', and 'professional development'.

Participant 1:

Social identity strengthens cooperation and enhances motivation. It makes both the teacher and the classroom more effective and productive. A strong social identity also increases the teacher's motivation and energy, contributing to professional development and career growth.

Participant 10:

Social identity encourages the teacher to learn new teaching methods and facilitates the resolution of classroom challenges. It also enhances the effectiveness of the teaching and assessment methods used by the teacher, while fostering greater motivation for teaching.

Participant 15:

> *Social identity enhances the teacher's professional knowledge and creates satisfaction for both teachers and students. It supports the teacher's professional growth and acts as a catalyst for development. Additionally, social identity fosters closer relationships between teachers and students, promoting friendship and mutual understanding.*

Participants believed that social identity makes them more motivated and involved. They also noted that it encourages them to learn and try new teaching methods. Finally, social identity leads to professional development among them by increasing their professional knowledge. This confirms a closed tie between social and professional identity, as supported in Identity Theory.

Theme 5: Effect of Social Identity on Teacher Interactions

According to this theme, there is a causal relationship between teachers' social identity and their relations with students and colleagues. This theme was supported by three main codes of 'positive relationships', 'life construction', and 'controlling children's emotions'.

Participant 13:

> *Social identity enables the teacher to build positive relationships with others by leveraging their potential. The teacher's social interactions with students and colleagues are generally more productive than working alone, as these relationships allow the teacher to utilize the diverse talents and abilities of different individuals.*

Participant 7:

> *A teacher with a strong social identity tends to have better relationships with others. Higher social identity leads to stronger social connections, and teachers can enhance their relationships by cultivating their social identity. Building both small and large relationships in the classroom is a key responsibility of a language teacher, and this skill should be prioritized in their work. Without it, the teacher's social relationships may weaken.*

Participant 6:

> *Social identity provides an opportunity to build and shape life. Through social identity, individuals can develop meaningful interpersonal relationships. Without it, students and colleagues may naturally distance themselves from the teacher. Living a full and successful life requires social identity. If a teacher has not learned the principles of social identity, how can they effectively teach others or maintain positive relationships?*

Participant 12:

> *Children's emotions can sometimes hinder their learning or, conversely, enhance it. Teachers can use social identity to help manage and guide students' emotions and behavior. Conflicts of interest between students and teachers are inevitable at times, and this is where the teacher's role in peacemaking and reconciliation becomes important. Social identity provides a foundation for establishing and maintaining peace in the classroom.*

Participants perceived that social identity helps the teacher create positive relationships with students and colleagues. They also considered social identity as a tool which could serve to control learners' emotions and behavior and help them reconstruct their behaviors and thoughts. This finding is in line with Social Identity Theory's motto that one's "self" is constructed and reconstructed through social relations with others. In Social Identity Theory, 'other' acts as a mirror for the self. Hence, individuals cannot identify themselves without being connected and related to others.

5. Discussion

Based on the results of the thematic analysis, five main themes were identified as Iranian primary-level EFL teachers' perceptions toward social identity: social communication skills, professional development experiences, using collaboration, group activities, and negotiation strategies to understand students' social identity, effect of social identity on teaching profession, and effect of social identity on teacher interactions. More specifically, according to the perceptions of Iranian primary-level EFL teachers, social identity means social communication skills, collaboration, teamwork, cooperation, and group leadership skills. Additionally, Iranian primary-level EFL teachers perceived that cooperation and problem-solving skills can enhance social identity. Besides, they used a collaboration strategy, group activities, and a negotiation strategy to understand their students' social identity. Regarding the effect of social identity on the teaching profession, their perception was that social identity increases teacher motivation, helps teachers use new teaching methods, and leads to professional development. Concerning the effect of social identity on teacher interactions, according to them, social identity helps primary-level EFL to create positive relationships, is helpful for life construction, and helps teachers in controlling children's emotions.

The findings of the present study are consistent with previous research highlighting the

close relationship between social identity and key educational variables. For instance, Karimi and Mofidi (2019) reported a reciprocal relationship between social identity and professional development, suggesting that each reinforces the other. Similarly, Jetten et al. (2017) demonstrated a strong link between social identity and motivation, emphasizing the motivational function of social belonging. In line with these results, Ko and Kim (2021) found that group activities both influence and are influenced by social identity, underscoring the dynamic role of social interaction in shaping identity within educational contexts.

The alignment between social identity and social communication skills appears justified, as social identity is largely constructed through primary-level EFL teachers' social interactions. Social ties and interpersonal relationships serve as the foundation upon which social identity is formed. As primary-level EFL teachers engage in ongoing communication with others, their social identity gradually develops and is reshaped (Griffin et al., 2024; Tajfel & Turner, 1979). Furthermore, the conceptualization of social identity in terms of collaboration, teamwork, and cooperation can be explained by the influence of collective work on teachers' social dimensions. Collaborative practices not only affect teachers' social images but also contribute to the reconstruction and strengthening of their social identity, supporting earlier findings that highlight the reciprocal relationship between collaboration and identity formation (Karimi & Mofidi, 2019; Tajfel & Turner, 1979).

Similarly, group leadership skills enable primary-level EFL teachers to engage more actively in group and social activities, which in turn reshape their social relationships and networks and contribute to the ongoing construction and reconstruction of their social identity. In addition, cooperation and problem-solving skills provide teachers with alternative modes of social interaction, encouraging new forms of social living. These experiences prompt teachers to reflect on and revise their social attitudes and ideologies, ultimately strengthening their social identity (Jetten et al., 2017; Tajfel & Turner, 1979). Moreover, understanding students' social identities requires the use of diverse social strategies (Burford et al., 2020). Accordingly, primary-level EFL teachers in the present study benefited from cooperation strategies, group activities, and negotiation practices to better explore and interpret their students' social identities. Finally, regarding the impact of social identity on teacher motivation, prior research suggests that a strong social identity increases teachers' social engagement and interaction (Hera et al., 2020). Greater participation in social activities fosters a more socially oriented professional stance, which enhances motivation. Increased motivation, in turn, encourages teachers to experiment with new instructional approaches, thereby contributing to ongoing professional development. As such,

engagement with novelty and innovation appears to be a key mechanism linking social identity to professional growth.

Overall, the findings suggest that social identity among primary-level EFL teachers is a multidimensional construct composed of several interrelated layers. Consistent with Social Identity Theory, various forms of social behavior contribute to the formation and development of social identity (Griffin et al., 2024). Specifically, social communication skills, collaboration, teamwork, cooperation, and group leadership emerge as key social behaviors that shape teachers' social identity. Importantly, social identity should not be viewed as a fixed or inherent trait; rather, it is dynamic and continuously constructed and reconstructed through social interaction. Accordingly, the use of strategies such as cooperation and problem-solving enables primary-level EFL teachers to revise and redefine their social attitudes and ideologies, thereby enhancing their social identity.

Given that social identity is fundamentally a social construct, its understanding necessarily involves social action (Kim et al., 2022). This perspective explains teachers' reliance on cooperation strategies, group activities, and negotiation practices to explore and interpret their students' social identities. Social Identity Theory further provides a framework for understanding patterns of intergroup interaction and conformity, emphasizing groups—rather than individuals—as central agents of social change and conflict. In line with this view, a strong social identity fosters greater social involvement and interaction among teachers, characterized by increased participation in social activities and events. Such engagement contributes to higher levels of motivation, which may mediate the relationship between social identity and the adoption of innovative teaching methods. In this sense, social identity empowers teachers to experiment with new pedagogical approaches, thereby supporting their professional development, which is partly shaped by the instructional strategies they employ.

Finally, social identity encourages primary-level EFL teachers to engage more willingly in communication with others (Griffin et al., 2024). This increased communicative orientation facilitates stronger relationships with both students and colleagues and promotes a more positive professional self-image. When teachers' social needs and relational aspects of life are adequately fulfilled, they are better positioned to manage classroom dynamics, including the regulation of students' emotions. Collectively, these findings underscore the central role of social identity in shaping teachers' professional practices, interpersonal relationships, and classroom effectiveness.

6. Conclusion

The findings of this study indicate that social communication skills, collaboration, teamwork, cooperation, and group leadership skills play a significant role in facilitating the development of social identity among primary-level EFL teachers. To establish and strengthen their social identity, teachers need to pay particular attention to cooperation and problem-solving skills, which appear to be central to effective primary-level EFL teaching and pedagogical innovation. Moreover, the results suggest that without the use of cooperation and negotiation strategies, it becomes challenging for primary-level teachers to fully understand their students' social identities.

In addition, the findings highlight the positive impact of social identity on teachers' motivation, as it encourages them to experiment with new teaching methods and contributes to their ongoing professional development. Finally, a well-developed social identity enables primary-level EFL teachers to build stronger interpersonal relationships, improve their overall quality of life, and more effectively manage students' emotions in the classroom. Collectively, these results underscore the importance of social identity as a key factor in enhancing both professional practice and classroom interaction in primary-level EFL contexts.

By fostering an educational environment that values social identity, primary-level educators can enhance their teaching practices while also creating a more inclusive classroom atmosphere. Such an environment allows students to feel recognized and respected, which may lead to improved academic outcomes as well as personal growth. When schools prioritize social identity within their curricula, they promote a sense of belonging among students. This supportive context encourages collaboration and empathy—skills that are essential for success in both academic and social domains. Through the cultivation of these competencies, educators equip students to navigate diverse environments with confidence and understanding. Ultimately, this holistic approach to education benefits not only individual learners but also contributes to the strength and cohesion of the wider school community.

The findings of this study also carry important implications for primary-level EFL teacher educators and practicing teachers. Teacher educators can use these results to prepare pre-service teachers to construct and reconstruct their social identity as part of their professional development. That is, they can use perceptions identified in this study to give useful insights to student teachers to be used for (re)construction of their social identity. Similarly, in-service primary-level EFL teachers are encouraged to reflect on and actively develop their social identity by drawing on the insights provided by this study. For instance, they can use the strategies

pinpointed by the participants of this study to develop their social identity.

Despite its contributions, this study has certain limitations. The sample consisted of only 15 primary-level EFL teachers, selected based on availability and feasibility. Future studies may address this limitation by employing larger and more diverse samples. In addition, data were collected solely through semi-structured interviews; therefore, future research could incorporate other qualitative data collection methods, such as narratives, reflective diaries, and classroom observations, to further validate and extend the findings. Finally, as the present study focused exclusively on primary-level EFL teachers, future research may examine teachers' social identity at other educational levels to provide a more comprehensive understanding of this construct.

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Appendix

Semi-Structure Interview Prompts

1. How do you define social identity?
2. What professional development experiences have helped you strengthen social identity in the classroom?
3. As an English teacher, what strategies do you use to understand your students' social identities?
4. To what extent does your social identity influence your profession as a teacher?
5. What role does your social identity play in your relationships and interactions with students and colleagues?

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EFL Teachers' Professional Competencies in Online Environment: Their Creativity, and Readiness for Online Teaching

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Abstract

This study explored the association between Iranian EFL teachers' professional competencies in digital teaching contexts, their level of creativity, and their preparedness for online instruction. A correlational research design was adopted to address the study's objectives. A total of 306 English language teachers from Iranian high schools were selected through convenience sampling to participate in the investigation. The research utilized standardized and validated instruments to measure teachers' online professional competencies, creativity, and online teaching readiness. Findings from the Pearson correlation analysis indicated statistically significant relationships among the study's core variables. Moreover, the dimensions of online professional competencies were found to be important predictors of teachers' readiness to engage in virtual instruction. The findings underscore the importance of adopting a holistic and cohesive approach to professional training, curriculum planning, and instructional design tailored to the needs of Iranian EFL educators operating in online learning environments such as the need to enhance the technological proficiency of EFL teachers.

Key Words: EFL Teachers, Online Learning Environment, Online Teaching Readiness, Professional Competencies, Teacher Creativity

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1. Introduction

Online learning has had a profound impact on various fields in the twenty-first century, particularly on the educational environment (Gluchmanova, 2015; Moore et al., 2011). Online learning refers to any learning activity that is supplied by the use of technology outside of official teaching or assisted as a complement to traditional education. Li et al (2013) asserted that the advent of e-learning education has increased students' exposure to language and their time spent learning languages outside of the classroom. Teachers are crucial in creating and facilitating e-learning settings. In order to verify student achievement, the online instructor should possess a wider range of skills and competencies since teaching in a technologically advanced setting is challenging (Li et al., 2013).

The transition from a face-to-face setting to a completely online environment is not easy, and teachers and teacher educators need to adopt new creative practices to promote engaging classrooms (Bigatel et al., 2012). Thus, the online instructor should acquire a broader set of skills and competencies in order to promise learner success**.** Teachers' professional competencies are one of the major aspects of the educational system, which leads to the success of that, so teachers need to develop skills and knowledge to be more competent in the teaching process (Bigatel et al, 2012). According to Diamond and Lee (2012), instructors need to expand their profession and update their knowledge and retain professional skills such as digital competence to enhance students' learning quality and corresponding to the new educational environment.

Another important factor to be considered in the online learning environment is teacher readiness for online teaching (Young, 2006). According to Cutri et al. (2020), the education system asks teachers to make the transition to teach online even if they are not properly ready for online teaching. In order to promote and enforce online teaching, teachers' preparation can be operationally assessed as a pre-assessment of their mental and physical preparedness (Andrea, 2020). Cutri et al. (2020) have critiqued these assessments of teacher preparedness for online learning since the majority of them lack criticality of power and fairness.

Meanwhile, the role of creativity in online teaching is increasingly recognized as a vital component of effective English as a Foreign Language (EFL) instruction (Yang, 2025). When teachers actively employ strategies that foster creativity and acknowledge their influence in shaping the educational experience, they are more likely to reach their professional potential (Han & Abdrahim, 2023). This, in turn, enables them to guide students in cultivating creative thinking skills—an essential competency for navigating an unpredictable and evolving future. Moreover, integrating creativity into teaching practice can simplify the process of identifying and training

effective educators by incorporating practical, experience-based learning modules (Khodabakhshzadeh et al., 2018). In line with 21st-century educational demands, Andree (2020) emphasized that creative teachers should increasingly design and implement classroom activities that nurture innovation and original thought. According to Alishahi et al. (2024), students' needs and interests should be assessed by teachers to offer various types of tasks which can help students achieve their objectives.

Therefore, the present study sought to find out the relationship between Iranian EFL teachers' professional competencies in the online environment, their creativity, and readiness for online teaching by focusing on the three research questions:

RQ1. Is there any significant relationship between Iranian EFL teachers' professional competencies in an online environment and their readiness for online teaching?

RQ2. Is there any significant relationship between Iranian EFL teachers' professional competencies in an online environment and their creativity in online teaching?

RQ3. Which subcomponent of Iranian EFL teachers' professional competencies in an online environment can best predict their readiness for online teaching?

2. Review of Literature

2.1. Theoretical Frameworks

This study is grounded on a combination of theoretical frameworks that collectively provide a comprehensive lens to investigate EFL teachers' professional competencies, creativity, and readiness for online teaching. These frameworks—namely the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006), Bandura's (1997) Self-Efficacy Theory, and Amabile's (1983) Componential Theory of Creativity—offer robust foundations for understanding the complex dynamics involved in effective online English language instruction.

2.2. Online Environment

An online learning environment refers to a setting where teaching and learning occur without a shared physical space, with instructors and students interacting across distances (Moore, 2016). According to Means et al. (2013), online learning can take place either entirely through digital platforms—referred to as fully online learning—or in a hybrid format known as blended learning, which combines both online and in-person components. With the rapid

expansion of digital education, a wide array of terms has emerged to describe these learning modes. Commonly used expressions include e-learning, virtual learning, cyber learning, internet-based learning, distributed learning, web-facilitated learning, web-based instruction, distance education, computer-based learning, resource-based learning, and technology-enhanced learning (Ally, 2008; Moore et al., 2011; Moore & Kearsley, 2011; Rudestam & Schoenholtz-Read, 2010).

Online learning environments offer several advantages for students. These include increased flexibility in learning schedules, opportunities for both real-time (synchronous) and delayed (asynchronous) collaboration, enhanced interaction with peers, access to diverse educational resources, and support for authentic, context-rich learning experiences (Ally, 2008; Davies, 2014; Fuller & Yu, 2014). However, it is essential to recognize that online education should not be viewed as a complete replacement for traditional face-to-face learning (Palloff & Pratt, 2013). Furthermore, educators must remain mindful that no single online learning model can universally meet the needs of all students and instructors (Palloff & Pratt, 2013).

2.3. Teacher Professional Competency in Online Environment

A competency is generally understood as the combination of knowledge, skills, and abilities that enable individuals to perform specific professional tasks effectively and in alignment with industry standards (Richey et al., 2001). Guerrero and De los Ríos (2012) further explained that professional competencies are closely tied to a person's capacity to collaborate, solve problems, and succeed in dynamic work environments. These competencies also reflect one's ability to adapt to evolving professional contexts.

Pacevicius and Kekyte (2008) defined competence as an integration of professional expertise, practical abilities, and personal aptitudes, along with the capability to apply them meaningfully in real-world work settings. In the realm of online education, this becomes especially critical. Teaching in digital environments presents unique challenges that often place additional demands on educators, sometimes leading to discomfort or uncertainty (Johnson et al., 2016). This underscores the importance of defining and developing the competencies required for effective online instruction (Albrahim, 2020).

Seyf (2008) emphasized that successful teachers are those who can sustain student engagement, manage classrooms efficiently, provide appropriate support, and implement suitable teaching strategies. Moreover, great educators are those who inspire a sense of fulfillment and enjoyment in learning. Accordingly, Koehler et al. (2013) argued that effective teaching in

technology-rich environments depends largely on the extent to which instructors possess well-developed professional competencies.

2.4. Teacher Readiness for Online Teaching

Teacher readiness for online learning refers to their willingness, their preparation for basic technical and communication skills, and training in new teaching methodology for learning (Phan & Dang, 2017)**.** According to Penna and Stara (2008), readiness for online teaching is considered one of the most outstanding aspects for the success of performing e-learning programs in higher education . E-readiness is defined by Parasuraman (2000) as a person's mental motivators and hurdles to utilizing new technologies (Parasuraman, 2000).

E-readiness is the extent to which a community is willing to engage in a technologically improved environment, as evaluated by monitoring the community's expected development in key areas for technology adoption (Dorathy & Mahalakshmi, 2014, as cited in Parasuraman & Colby, 2015). The notion of online readiness has developed through time, particularly with the increasing adoption of Internet-based technologies and e-learning in education, into technical readiness, a larger term that incorporates many elements of e-learning and associated technology-based training. Machado (2007) defined technological-readiness in education as educational institutions' and institutional stakeholders' ability to develop e-learning possibilities by supporting computer-based technologies; in other words, how e-ready an academic environment is to advance with educational technology.

As a consequence, teachers' e-readiness and competence are highly related to their motivation to employ educational technology in their instructional situations (Stumbriene et al., 2023). According to Meadows and Leask (2002), technology integration is contingent on well-informed and passionate instructors who are motivated and prepared to put technology to work on behalf of their students. A considerable corpus of research exists on the relationship between teachers' use of technology and their degree of teaching skill. Singh and Chan (2014) observed, for example, that teachers' attitudes toward educational technology use vary based on their years of experience and level of technological expertise.

2.5. Teacher Creativity

Creativity is often defined as the ability to generate novel, valuable, and contextually appropriate solutions to problems or produce original and meaningful ideas across various fields (Zhou & George, 2001). As technological advancements continue to reshape the world, creativity has gained significant prominence, particularly for its influence on teaching, learning, and its

broader implications for learners' future trajectories (Chien & Hui, 2010; Wang et al., 2009). In this context, educators' perceptions of creative teaching become essential, as they directly shape instructional practices and educational philosophies (Pishghadam et al., 2012).

Given these developments, teacher education should evolve to move beyond traditional, lecture-based methods—often characterized by one-way communication and reliance on rote learning—and instead embrace creative pedagogical approaches (Sawyer, 2012). Preparing teachers for this shift means equipping them to navigate uncertainty and rethink their roles, not simply as transmitters of knowledge but as facilitators who encourage exploration and independent thought (Forrester & Hui, 2007, as cited in Jindal, 2020).

Fostering creativity and critical thinking is increasingly recognized as a core objective of 21st-century education (Terry et al., 2018). Creative teaching has the potential to transform the classroom into an interactive and dynamic learning environment, enabling meaningful change in how students engage with content (Terry et al., 2018). To be truly effective, teachers themselves should be creative professionals, as their innovation and adaptability are closely linked to student motivation and academic achievement (Terry et al., 2018).

2.6. Related Studies

Barbour et al. (2024) presented evidence and suggestions for improving teacher preparation for online teaching. They underscored the critical need to revise teacher education curricula and policies to include online teaching competencies. Tafazoli (2021) also explored teachers' experiences of online teaching and concluded that several layers of micro, meso and macrosystems are needed for teachers' development. Furthermore, Gunes and Adnan (2023) investigated online EFL teachers' competencies and found five roles and 28 competencies for teachers as being crucial. Nevertheless, instructors asserted that they cannot perform most of these roles and competencies in their online classes because of some challenges.

Apak et al. (2021) explored how teachers' creativity relates to their preparedness for managing 21st-century classrooms in online settings. Their findings revealed that teachers' creativity-promoting behaviors significantly differed depending on their years of teaching experience. Moreover, it was indicated that such creativity-fostering behavior positively influenced educators' readiness for modern classroom management in virtual environments. Likewise, Dashtestani and Karami (2020) examined the self-perceived preparedness and skills of Iranian EFL teachers in online instruction. The results showed that many of these teachers lacked adequate technological, pedagogical, and assessment-related competencies required for

effective online language teaching within the Iranian EFL context.

Albrahim (2020) identified six essential categories of competencies for teaching online courses in higher education: (a) pedagogical abilities, (b) subject matter expertise, (c) instructional design skills, (d) technological proficiency, (e) institutional and managerial capabilities, and (f) interpersonal and communication skills. Similarly, Mohalic (2020) conducted a study during the COVID-19 pandemic to investigate student teachers' e-readiness and attitudes toward online education. While most participants viewed online learning as a practical alternative during the crisis, they did not consider it a replacement for traditional face-to-face instruction.

In another study, Aslami et al. (2017) examined the professional competencies of teachers in e-learning environments, focusing on six core dimensions: social, ethical, organizational, personal, technical, pedagogical, and evaluative competencies. They recognized that competencies could be useful to design the career development plans and determination of the training needs for education courses with high quality. This leads to the development of the instructors' competencies in order to perform their right roles and competencies in the e-learning environment. Despite these valuable insights, there remains a noticeable gap in the literature, particularly in the Iranian context, regarding the interconnectedness of professional competency, creativity, and readiness of Iranian EFL teachers for online teaching. This highlights the need for further research that integrates these critical dimensions to better support educators in digital learning environments.

3. Methodology

3.1. Design

The current paper investigated the relationship between EFL teachers' professional competencies, their creativity, and readiness in the online environment; therefore, a correlational design was followed, and a quantitative method was used to conduct the study.

3.2. Participants and Setting

A group of 306 EFL teachers was selected randomly as the participants of the study, who took part in the process of data collection. The sample size was determined based on Krejcie and Morgan's table (1970) out of 1500 teachers (confidence level=95%, margin of error 0.5%). They were both males and females with BA, MA, and PhD degrees, having various teaching experiences in teaching at high schools. They were from different age ranges, with Persian as

their first language, and had experience of teaching in online classes at schools.

Participants were recruited using convenience sampling method. The researchers distributed the survey link through professional teacher networks, high school administrators, and social media groups commonly used by Iranian EFL teachers, such as Telegram and WhatsApp channels. Participation was entirely voluntary, and no incentives were offered. To reduce sampling bias, the invitation message encouraged teachers from different cities, school types, and experience levels to participate. Table 1 below shows detailed information about these participants.

Table 1.

Demographic information for teachers in the validation process

		Frequency	Percent
Gender	Male	145	47.3%
	Female	161	52.6%
	Total	306	100%
Age	30- 35	52	17%
	36- 40	82	26.7%
	41- 45	73	23.8%
	46- 50	51	16.6%
	51- 55	48	15.6%
	Total	306	100%
City	Mashhad	69	22.5%
	Torbat	23	7.5%
	Birjand	31	10.1%
	Sabsevar	29	9.4%
	Tehran	61	19.9%
	Shiraz	57	18.6%
	Neyshaboor	36	11.7%
	Total	306	100%
Teaching experience	5- 10	49	16%
	10- 15	95	31%
	15- 20	97	31.6%
	20- 25	65	21.2%
	Total	306	100%

3.3. Instruments

Three different instruments were employed in the present study to collect the required data to achieve the purposes.

3.3.1 Teacher Readiness for Online Teaching Scale

To assess Iranian EFL teachers' readiness for online instruction at the high school level, the Teacher Readiness for Online Teaching (TRTO) Scale developed by Hosny et al. (2021) was employed (See Appendix A). This instrument comprises 30 items measured on a 5-point Likert scale and is structured around five key factors. The first factor, online teaching and course design skills, includes 12 items. The second factor, digital communication, contains 6 items, while basic computer skills and advanced computer skills are represented by 5 and 3 items, respectively. The fifth factor, use of a learning management system (LMS), consists of 4 items. . It needs to be mentioned that it took about 15 minutes to complete the scale. The internal consistency of the scale, as indicated by Cronbach's Alpha, was reported to be 0.94, demonstrating a high level of reliability

3.3.2. Teacher Creativity in Online Teaching scale

To investigate the Iranian EFL teachers' creativity in online teaching, the "EFL Teachers' Creativity in Online Classes" questionnaire developed by Pishghadam et al. (2012) and modified by the researcher was used (See Appendix B). The questionnaire contained 61 items in the form of 5-point Likert scale. Furthermore, this questionnaire has 7 components namely originality and elaboration with 9 items, fluency and flexibility with 11 items, person (teacher) with 10 items, press (environment) and materials with 7 items, motivation with 10 items, independent learning (autonomy) with 8 items and brainstorming with 6 items. To be used in the present study, this questionnaire was modified by the researcher, and the items were changed in the way that teachers can be the respondents. For instance, item 1, which was 'interrupts the learners while expressing their ideas', was changed into ' I interrupt my learners while expressing their ideas'. It needs to be mentioned that it took about 25 minutes to complete questionnaire. In addition, the reliability of the questionnaire was checked by Cronbach's Alpha, and the reliability was reported to be 0.96.

3.3.3. Iranian EFL Teachers' competency for online environment scale

To assess Iranian EFL teachers' professional competencies in online instruction, the researchers used a researcher-made scale consisting of 47 items across five dimensions (pedagogical, technological, professional, communicative, and psychological competence). It was designed in the form of 5-point Likert scale. The instrument was previously subjected to a rigorous development and validation process, including expert review, exploratory and confirmatory factor analysis, and internal consistency estimation (See Appendix C).

The full validation study, which includes detailed evidence of construct validity, reliability, and standardization procedures, has been submitted for a publication and is currently under review in another peer-reviewed journal (Shalchi et al., forthcoming). Therefore, only a brief description is provided here. The Cronbach's Alpha for the current sample was 0.96, indicating excellent internal consistency. Although the complete psychometric validation cannot be reproduced in this manuscript due to the journal's policy on duplicate publication, the scale underwent a systematic validation process and met accepted standards for use in empirical educational research. It needs to be mentioned that it took about 20 minutes complete this questionnaire.

3.4. Procedure

To meet the objective of the study, which was Iranian EFL teachers' professional competency in the online environment, their creativity, and their readiness in online teaching, the following steps were taken. First, a group of 306 EFL teachers teaching at different high schools in various cities in Iran was selected based on a convenience sampling method and according to Krejcie and Morgan's table (1970). Then, three questionnaires were chosen to collect the required data. The firs questionnaire was the teacher readiness for online teaching scale (TRTO) by Hosny et al. (2021), the second one was the "EFL Teachers' Creativity in Online Classes" questionnaire developed by Pishghadam et al. (2012) and modified by the researcher and the last one was the Iranian EFL teachers' competency for online environment scale developed and validated by the authors. After that, these three questionnaires were changed into a Google Docs form, and the electronic links were sent to the participants via social media such as Telegram and WhatsApp. Finally, SPSS software version 26 was used to analyze the collected data to come up with sound results and answer the research questions through conducting various data analysis methods.

4. Results

4.1. Preliminary Analysis

To evaluate the normality of the data collected through the competency questionnaire, the Kolmogorov-Smirnov test was employed. The outcomes of this analysis are presented in Table 2.

Table 2.

Results of the Test of Normality for the Questionnaires

	Statistic	Df	Sig.
Competency Questionnaire	.02	306	.20
Creativity Questionnaire	.01	306	.20
Readiness Questionnaire	.02	306	.20

As shown in Table 2, the significance values for all three instruments exceeded the threshold of 0.05, indicating that the data derived from the competency, creativity, and readiness questionnaires followed a normal distribution.

To summarize the participants' responses, descriptive statistics—namely, the sum, mean, and standard deviation—were calculated using SPSS (Version 26). These results are detailed in Table 3.

Table 3.

Results of Descriptive Statistics for the Competency, Creativity, and Readiness for Online Teaching Questionnaires

	N	Sum	Mean	Std. Deviation
Competency	306	57034.34	186.38	26.71
Creativity	306	67547.89	220.74	35.40
Readiness	306	22011.49	71.93	22.26

According to Table 3, the competency questionnaire yielded a total score of 57034.34, with a mean of 186.38 and a standard deviation of 26.71. For the creativity questionnaire, the total score was 67547.89, the mean was 220.74, and the standard deviation was 35.40. Finally, the readiness questionnaire scores totaled 22011.49, with a mean of 71.93 and a standard deviation of 22.26.

4.2. Addressing RQ1

The first objective of the study was to examine the relationship between Iranian EFL teachers' professional competencies in online teaching and their readiness for virtual instruction. The corresponding research question was: "Is there any significant relationship between Iranian EFL teachers' professional competencies in an online environment and their readiness for online teaching?" To address this, Pearson's correlation coefficient was calculated, as presented in Table 4.

Table 4.

The Results of Pearson Correlation for Teachers' Competencies and Their Readiness for Online Teaching

		Competency	readiness
Competency	Pearson Correlation	1	.13
	Sig. (2-tailed)		.02
	N	306	306
Readiness	Pearson Correlation	.13	1
	Sig. (2-tailed)	.02	
	N	306	306

As indicated in Table 4, the correlation between professional competency and readiness was statistically significant ($p < .05$), with a Pearson correlation coefficient of .13. This suggests a weak but significant positive relationship between the two variables.

4.3. Addressing RQ2

The second aim was to investigate the relationship between Iranian EFL teachers' online professional competencies and their creativity in online instruction. The corresponding research question was: "Is there a significant relationship between Iranian EFL teachers' professional competencies in an online environment and their creativity in online teaching?" Pearson's correlation analysis was again used, with the results displayed in Table 5.

Table 5.

The Results of Pearson Correlation for Teachers' Competencies and Their Creativity for Online Teaching

		Competency	Creativity
Competency	Pearson Correlation	1	.73
	Sig. (2-tailed)		.000
	N	306	306
Creativity	Pearson Correlation	.73	1
	Sig. (2-tailed)	.000	
	N	306	306

Table 5 reveals a statistically significant and strong positive correlation ($r = 0.73$, $p < .001$) between professional competency and creativity. This indicates that higher levels of professional competency in online contexts are strongly associated with increased creativity among Iranian EFL teachers.

4.4. Addressing RQ3

The final objective of the study was to determine the extent to which various components of Iranian EFL teachers' professional competencies in an online setting could predict their readiness for online instruction. The corresponding research question was: "Which subcomponent of Iranian EFL teachers' professional competencies in online environments best predicts their readiness for online teaching?" To address this, a multiple regression analysis was conducted. The summary of the regression model is presented in Table 6.

Table 6.

The Results of Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.20	.04	.02	21.99

As indicated in Table 6, the model yielded an R value of .20 and an adjusted R square of .02, suggesting that the collective components of professional competency accounted for approximately 2% of the variance in teachers' readiness for online instruction. The analysis of variance (ANOVA) results is shown in Table 7.

Table 7.

Results of ANOVA Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6128.42	5	1225.68	2.53	.02
	Residual	145109.09	300	483.69		
	Total	151237.51	305			

As shown in Table 7, the model reached statistical significance ($p = .02$), indicating that the combination of competency components significantly predicts teachers' readiness for online instruction. Table 8 presents the coefficients for each subcomponent of professional competencies.

Table 8.

Results of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	64.26	9.60		6.69	.000
	Pedagogical	.72	.24	.22	2.96	.003
	Technological	1.23	.91	.16	1.34	.18
	Professional	-.12	.49	-.03	-.25	.79
	Communicative	.04	.28	.01	.16	.86
	Psychological	.36	.46	.11	.78	.43

According to the data in Table 8, among the five subcomponents, only the pedagogical competency emerged as a statistically significant predictor of readiness for online teaching ($p = .003$). The standardized Beta coefficient (0.22) suggests that pedagogical competence accounts for 22% of the explained variance in online teaching readiness. In contrast, the other components; that is, technological, professional, communicative, and psychological did not significantly contribute to the prediction model.

5. Discussion

The results showed that there was a significant relationship between Iranian EFL teachers' professional competencies in an online environment and their readiness for online teaching, and also there was a significant relationship between Iranian EFL teachers' professional competencies in an online environment and their creativity in online teaching. The results of multiple regression showed that the subcomponents of Iranian EFL teachers' professional competencies in the online environment could best predict their readiness for online teaching.

The results of the study are in line with the study conducted by Aslami et al. (2017), who demonstrated teachers' professional abilities in an e-learning environment. Aslami et al. (2017) suggested that the identified competences might be effective in designing career development plans and determining training needs for high-quality education courses. This resulted in the teachers' competencies being developed in order for them to fulfill their proper responsibilities and competencies in the e-learning environment. The results of the study are in line with the study conducted by Albrahim (2020) who discussed the abilities and competences needed to teach online courses in higher education. He suggested that the abilities and competences are divided into six categories: (a) educational abilities, (b) content abilities, (c) design abilities, (d) technology

abilities, (e) management and institutional abilities, and (f) social and communication abilities. Likewise, the findings of the study are in line with the study conducted by Apak et al. (2021), who investigated the relationship between teachers' creativity and their readiness for the 21st-century classroom management in online classes. The results demonstrated that instructors' creativity-nurturing behavior varies considerably by teaching experience.

The findings of the study suggest that while many teachers have achieved a basic level of technological competence, there is a notable disparity in advanced skills necessary for creating a fully immersive and interactive learning experience. Teachers who have prior exposure to digital tools and online resources have higher levels of competency, underscoring the importance of continuous professional development in technology integration. The model indicates that competency is foundational; without it, efforts in creativity and readiness are significantly hindered.

The research revealed that Iranian EFL teachers exhibit varying degrees of creativity, often constrained by limited access to resources and insufficient training in creative pedagogical strategies. However, teachers who employ a mix of multimedia content, interactive activities, and gamified learning experiences are more successful in maintaining student engagement and enhancing learning outcomes. The findings suggest that creativity is not just an added value but a crucial element that amplifies the effectiveness of online teaching. Encouraging a culture of experimentation and sharing best practices among teachers can foster greater creativity in the online environment.

Readiness for online teaching encompasses both the psychological and practical preparedness of teachers to transition from traditional classrooms to virtual ones. The study found that while many Iranian EFL teachers were initially apprehensive about online teaching, their readiness improved with experience and support. Factors such as institutional support, access to reliable technology, and ongoing professional development play significant roles in enhancing readiness. The findings of the study illustrated that readiness is an evolving trait, heavily influenced by external support and personal resilience. Providing structured training programs and robust technical support can significantly boost teachers' confidence and preparedness for online teaching.

The integrative model used in this study highlights the interplay between competency, creativity, and readiness, suggesting that these elements are interdependent and collectively contribute to the overall effectiveness of online teaching. Enhancing teacher competency in digital tools and pedagogies can lead to more creative teaching practices, which in turn foster a greater

sense of readiness and confidence in the online environment. In conclusion, the transition to online education presents both challenges and opportunities for Iranian EFL teachers. By addressing the interconnected elements of competency, creativity, and readiness, educators can be better prepared to deliver effective and engaging online instruction. The results of this study serve as a framework for understanding and improving the capabilities of EFL teachers in the online environment, ultimately contributing to the broader goal of enhancing educational outcomes in the digital age.

An interesting contradiction emerged in the regression model. While professional competency strongly correlated with creativity (r = 0.73), only the pedagogical competency subscale significantly predicted readiness. This finding suggests that being technologically or communicatively competent does not necessarily make teachers feel ready to teach online. Such results challenge the assumption that readiness is purely skill-based and imply that psychological and contextual factors such as confidence, institutional support, and workload may have stronger predictive power.

Although the study identified significant relationships among professional competency, creativity, and online teaching readiness, the effect sizes, particularly the weak correlation between competency and readiness (r = .13), indicate that additional variables may play a more substantial role in shaping readiness. This unexpected weak association suggests that external factors such as institutional policies, access to digital infrastructure, prior online teaching experiences, and teacher beliefs could influence readiness more strongly than competency alone. These findings contradict assumptions from earlier studies (e.g., Dashtestani & Karami, 2020) that competencies directly translate into readiness, pointing to the need for more nuanced models incorporating contextual and affective variables.

6. Conclusion

The purpose of this study was to examine the relationships between Iranian EFL teachers' professional competencies in online environments, their creativity in online teaching, and their readiness for online instruction. The findings showed a weak but statistically significant correlation between professional competencies and readiness for online teaching (r = .13, p = .02). This suggests that while competence contributes to readiness, the effect is relatively small and likely influenced by other factors not measured in this study. This aligns with previous work (e.g., Aslami et al., 2017), which emphasizes that competency is one of several elements shaping teacher

performance in digital contexts. A second major finding was the strong positive correlation between professional competencies and creativity ($r = .73$, $p < .001$). This indicates that teachers who report stronger pedagogical, technological, communicative, professional, and psychological competencies are also more likely to implement creative online teaching practices. This result is consistent with Apak et al. (2021), who reported that teachers with higher professional capability tend to demonstrate greater creativity in their instructional approaches. Regarding prediction, the regression analysis showed that only pedagogical competence significantly predicted teachers' readiness for online teaching ($\beta = .22$, $p = .003$). Other components (technological, professional, communicative, and psychological competencies) did not make significant contributions. This finding highlights the central role of pedagogical expertise—specifically the ability to structure, facilitate, and manage online learning—in shaping teachers' readiness. The low overall R^2 (.02), however, indicates that readiness is influenced by multiple variables that fall outside the scope of this study, such as institutional support, access to technology, and prior experience with online platforms.

One of the key pedagogical implications is the need to enhance the technological proficiency of EFL teachers. Some studies have revealed that many Iranian EFL teachers possess basic digital skills but lack the advanced technological competencies required to create engaging and interactive online lessons (Dashtestani & Karami, 2019). To address this, teacher training programs should include comprehensive modules on the use of digital tools, online teaching platforms, and multimedia resources. By improving their technological proficiency, teachers can more effectively utilize digital tools to facilitate language learning, create dynamic lesson plans, and provide real-time feedback to students.

Creativity in online teaching is essential for maintaining student engagement and fostering a stimulating learning environment. The research indicates that Iranian EFL teachers need support in developing creative pedagogical strategies. Educational institutions should encourage teachers to experiment with various digital formats, such as interactive videos, virtual reality, and gamification, to make learning more engaging. Workshops and collaborative projects can provide platforms for teachers to share creative ideas and innovative practices. Additionally, incorporating creative assignments and activities into the curriculum can help students develop critical thinking and problem-solving skills.

Active learning is a crucial component of effective online education. Techniques such as collaborative projects, peer reviews, and discussion forums can create an interactive online classroom environment. Teachers should be trained in designing activities that require students

to apply their language skills in practical contexts, thereby enhancing their learning experience. By focusing on active learning strategies, teachers can help students become more autonomous learners and improve their language proficiency. The readiness and confidence of teachers to transition to online teaching are critical for successful implementation. Institutions should provide ongoing professional development and emotional support to help teachers adapt to the online teaching landscape. Mentoring programs and peer support networks can be instrumental in building teachers' confidence. Moreover, creating a supportive community where teachers can discuss challenges and share solutions can enhance their readiness for online teaching.

Teachers should be encouraged to collaborate with their peers, share successful online teaching practices, and learn from each other's experiences. Establishing professional learning communities (PLCs) can foster a culture of experimentation and innovation, leading to more creative and effective teaching methods. Educators should engage in reflective practice to assess their teaching methods, identify areas for improvement, and adapt their strategies to better meet the needs of their students. Reflective practice can help teachers become more aware of their strengths and weaknesses in the online environment, leading to continuous improvement. Educational institutions must ensure that teachers have access to reliable technology and digital resources. Investing in robust technological infrastructure and providing necessary tools and software can alleviate the challenges faced by teachers in the online environment. Institutions should also ensure that all teachers have equitable access to these resources.

Overall, the study contributes to understanding how professional competency, creativity, and readiness interact in online EFL teaching; however, the findings also reveal the complexity of this relationship. Future work should employ mixed-methods approaches, longitudinal tracking, and classroom observations to gain deeper insights into how these constructs evolve over time. Incorporating teachers' lived experiences through interviews and reflective journals may uncover additional psychological and contextual factors shaping readiness.

To operationalize this research, a mixed-methods approach can be particularly effective. Quantitative data collected through surveys can map the prevalence of various competencies, while qualitative data from interviews and observations can provide deeper insights into the experiences and perceptions of teachers. Additionally, longitudinal studies could track changes in competencies over time, particularly in response to targeted interventions or ongoing professional development programs. Further research on Iranian EFL teachers' competencies in online environments should adopt a multifaceted model that includes technological proficiency, pedagogical adaptability, and psychological readiness. This approach will not only illuminate the

current state of teachers' preparedness but also guide future efforts to enhance their effectiveness in online teaching. By addressing these dimensions comprehensively, the research can contribute significantly to the broader field of online education and the professional development of EFL teachers in Iran.

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Appendix A

Iranian EFL Teachers' Readiness for Online Environment Scale

Dear respondents:
The purpose of the present questionnaire is to collect data on the Iranian EFL teacher's readiness in online environment.

Demographic Information:
Gender: male female Years of Teaching Experience:……
Academic Degree: BA MA Ph.D. Years of Online teaching Experience:……
Place of Teaching: …….. Age:……

Instruction:
Please choose one of the choices given to state to what extent you agree with the following statements about your job as a teacher:
Not really / To a minor extent / To a moderate extent / To a great extent / To a very great extent
1 2 3 4 5

		Not really	To a minor extent	To a moderate extent	To a great extent	To a very great extent
	In my online English classes, ……..					
1	I can use Microsoft Office tools such as Word and PowerPoint to create documents and presentation					
2	I can perform file management on my computer, such as coping, moving, renaming and deleting files or folders.					
3	I can encrypt (lock with passwords) files on my personal computer to protect important data					
4	I can send and receive emails, including opening and sending email attachments					
5	I can use internet browsers, such as Google Chrome, Firefox, or Safari, to locate resources for teaching.					
6	I can record audio/ video using phone, tablet or computer					
7	I can add audio/ video files to my presentations					
8	I feel comfortable communication through writing					
9	I feel comfortable communicating through speaking					
10	I feel comfortable using social media tools to communicate with students and colleagues					
11	I am ready to timely respond to communication requests from students and colleagues					
12	I am comfortable using the learning management system tools to develop an online course.					
13	I am comfortable using tools in the learning management system (such as: uploading learning materials [reading materials, audio/video files…], synchronous and asynchronous communication, posting feedback, building forums… etc.) to facilitate student learning.					
14	I am comfortable using the learning management system or other online assessment tools (such as: quizzes, exams,					

	assignments, rubrics… etc.) to evaluate student performance.					
15	I am comfortable using the learning management system to record and report student grades.					
16	I am familiar with at least one synchronous online teaching platform, like Zoom, Microsoft Teams, Canvas… etc.					
17	I expect online teaching to take more time than face-to-face instruction, and I am prepared for it					
18	I enjoy online lecturing to my students for most of the class period.					
19	During teaching, I incorporate online learning activities that are connected to real-world applications (ie, using real clinical cases, reflecting on applying knowledge in life uses… etc.)					
20	I am willing to provide timely and constructive feedback to student performance					
21	I am available to my students on a regular basis for questions and assistance.					
22	I feel comfortable conducting interactive learning activities (eg, small group case-based discussions, PBL, TBL, seminars…) where students can interact with their peers and tutor					
23	I know how to check for plagiarism in student's written assignments.					
24	I am always keen to participate as a learner in online workshops, discussion forums, webinars… etc., to update my knowledge and skills in online teaching.					
25	I am oriented with online course planning.					
26	I am good at creating online teaching materials (eg, lectures, handouts, manuals, assignments… etc.).					
27	I am able to create schedules for myself and stick to them.					
28	I feel comfortable writing measurable learning outcomes based on the taxonomy of the cognitive domain					
29	I feel comfortable designing online interactive learning activities that provide students opportunities to interact with their peers, their instructor, and course content					
30	I understand the copyright law and Fair Use guidelines when using copyrighted materials in education.					

Appendix B

Iranian EFL Teachers' Creativity for online environment scale

Dear respondents:
The purpose of the present questionnaire is to collect data on the Iranian EFL teacher's creativity in online environment.

Demographic Information:
Gender: male female Years of Teaching Experience:……
Academic Degree: BA MA Ph.D. Years of Online teaching Experience:……
Place of Teaching: …….. Age:……

Instruction:
Please choose one of the choices given to state to what extent you agree with the following statements about your job as a teacher:
Not really / To a minor extent / To a moderate extent / To a great extent / To a very great extent
1 2 3 4 5

No.	Statement	Not really	To a minor extent	To a moderate extent	To a great extent	To a very great extent
In my online English classes ……						
1	I interrupt my learners while expressing their ideas.					
2	I ask them synonyms and antonyms.					
3	Students are required to guess the meaning of the new words in the first place.					
4	I administer various teaching methods.					
5	I don't get tired of my students' numerous questions.					
6	I use supplementary books along with the main coursebook.					
7	I assign several rules for the students to obey.					
8	I appreciate students' right and wrong responses.					
9	I offer students more than a single topic to choose for the writing task.					
10	I teach them how to learn more effectively.					
11	I ask students open- ended questions rather than multiple choice.					
12	I care a lot for class discussions.					
13	I make use of flash cards and videos in my teaching.					
14	Mocks learners' seemingly irrelevant ideas.					
15	I comment on the truthfulness of students' responses on the spot.					
16	I talk more than the students in the class.					

17	I answer different questions immediately without getting help form students.					
18	I value students' learning more than their grades.					
19	I remind students dos and don'ts.					
20	After teaching new grammatical forms, I help them make similar examples.					
21	Before starting a new conversation or reading I let students guess the theme from the provided pictures.					
22	I accepts learners' ideas that contradict mine.					
23	I asks students to talk about their favorite topics for a couple of minutes.					
24	I encourages students' novel and original ideas.					
25	I help students to be clear in discussions.					
26	Learners who comment more are encouraged more.					
27	Students are required to put the learned materials into use.					
28	The students who do not observe the class rules are punished.					
29	I insist on carefully covering the whole book.					
30	It is necessary for students to learn the basic materials accurately.					
31	I applies students' favorite topics in the class as far as possible.					
32	I chooses writing topics that are closely related to everyday life.					
33	Students are expected to check their work before I do.					
34	We play different games in the class.					
35	I write the meaning of the new words on the board without asking students' interpretations.					
36	Some of the exercises are done in groups.					
37	Asks students to listen to a conversation for the first time while their books are closed.					
38	Before starting a new topic I review students' background knowledge.					
39	Students read their writings in the class for their classmates.					
40	Competitions are chiefly cooperative rather than individual.					
41	I ask successful learners to talk about their learning strategies.					
42	I mention the goal of each exam or exercise.					
43	I take students' opinions serious and follows them up.					
44	My behavior in class is predictable.					
45	I point to the title of each section and appreciates students to guess the subject.					
46	Encourages students' original and novel interpretations.					
47	I ask the similarities and differences of the pictures, sentences and texts.					
48	I ask questions to make students think deeper.					
49	I ask students repetitive questions.					
50	Students are allowed to give *only* one response to my questions.					
51	I believe that questions constantly have one correct answer.					
52	Students are allowed to talk about their experiences in the class.					
53	Some questions are left unanswered for students to explore.					
54	Examples of grammatical points are related to everyday life.					
55	I listen carefully to students' questions and answers.					
56	I take exams regularly.					

57	I interpret the text irrespective of students' opinions and interpretations.					
58	I chooses students' favorite topics for class discussions.					
59	I keep the atmosphere of the class happy.					
60	To facilitate the process of writing, I review students' background knowledge and write them on the board in categories.					
61	After covering each conversation, I expect students to make a change or create a new conversation based on the situation.					

Appendix C
Iranian EFL Teachers' competency for online environment scale

Dear respondents:
The purpose of the present questionnaire is to collect data on the Iranian EFL teacher's competency in online environment.

Demographic Information:
Gender: male female Years of Teaching Experience:……
Academic Degree: BA MA Ph.D. Years of Online teaching Experience:……
Place of Teaching: …….. Age:……

Instruction:
Please choose one of the choices given to state to what extent you agree with the following statements about your job as a teacher:
Not really / To a minor extent / To a moderate extent / To a great extent / To a very great extent
1 2 3 4 5

		Not really	To a minor extent	To a moderate extent	To a great extent	To a very great extent
	In my opinion, to be a successful teacher in online classes teachers should……..					
1	possess technological skills					
2	have online communication skills					
3	have pedagogical knowledge					
4	know teaching methods for online classes					
5	know teaching strategies for online classes					
6	pass some training courses about online education					
7	be able to design online content					
8	own field expertise					
9	be proficient in facilitation of online learning					
10	know planning for online teaching					
11	be prepared for online classes					
12	be proficient in course management in online context					
13	know about online evaluation and testing					

14	have high amount of self- efficacy					
15	possess digital competencies					
16	be familiar with online learning difficulties					
17	provide a research- based situation					
18	have the ability to use the resources to enhance their teaching quality					
19	be able to maintain a useful syllabus for their online classes					
20	be able to manage their time effectively during the class					
21	select instructional tasks and exercises based on students' needs					
22	choose materials based on students' needs and abilities					
23	select appropriate resources for the students					
24	be able to sustain students' motivation					
25	be able to actively engage students in self-assessment					
26	be able to engage students in setting their personal goals					
27	be able to model ethical practices for using technologies					
28	have the ability to teach students with diverse learning styles					
29	have friendly social relations with students					
30	be patient during the online class					
31	be available for the students outside the class					
32	be flexible professionally					
33	have self- confidence in teaching online					
34	have high level of leadership					
35	use the newest pedagogical and technological materials					
36	have the ability to promote collaboration and interaction among students					
37	give students prompt feedback					
38	respect diverse talents among students					
39	encourage active learning in class					
40	establish a student- centered environment					
41	respect the privacy of individuals in and out of the class					
42	help students take responsibility for their own learning					
43	challenge and support participants in class					
44	encourage their students to share their expertise with the class					
45	assist students in resolving conflicts and misunderstandings during the class					
46	create a safe and supportive online learning environment					
47	demonstrate proficiency in helping students to solve problems in teamwork					

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The Effects of Interactionist Versus Interventionist Dynamic Assessment Models on Vocabulary Learning of Iranian EFL Learners with Different Cultural Dimensions: A Mixed-methods Study

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Abstract

Dynamic Assessment (DA) is the integration of assessment and training into a single, continuous activity. This combination enhances linguistic skills by providing targeted mediation to students' needs and abilities. This mixed-methods study aimed to investigate the contribution of the two approaches of DA, namely interactionist and interventionist, to vocabulary learning among Iranian EFL learners with diverse cultural backgrounds, with a focus on learners' attitudes. To meet the objectives, 90 male and female students aged 15-18, at the intermediate level from two language schools in Sarab, Iran, were recruited through convenience sampling. Oxford Quick Placement Test, Vocabulary Knowledge Scale, Vocabulary Test, Cultural Dimension Questionnaire, and recorded instructional sessions were used to gather the required data. The analysis of the quantitative data revealed that students in the interactionist individualism/collectivism group scored significantly higher on the vocabulary posttest than students with other cultural orientations within the same group and students in the interventionist group. Inductive thematic analysis of the qualitative data revealed that the influences of both approaches differed in terms of the degree of negotiated mediations, the development of different learning strategies, and the promotion of different preparation orientations. The findings of the study have some pedagogical implications.

Key Words: Cultural Orientations, Interactionist Dynamic Assessment, Interventionist Dynamic Assessment, Sociocultural Theory, Vocabulary Learning

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1. Introduction

Vocabulary is essential to language and crucial for language learners. Humans cannot express their intended meaning without words, which are the basic building blocks of a language, because they serve to identify things, behaviors, and ideas. The exceptional role that vocabulary knowledge plays in learning a second or foreign language (L2 or FL) has recently been recognized by theorists and researchers (Derakhshan & Janebi Enayat, 2020). As a result, a variety of methods, strategies, and activities have been introduced into the field to teach vocabulary (Vu & Peters, 2021).

The assessment of students' learning is a crucial part of education because it tries to show that the predetermined goals have been met (Levy-Feldman, 2025). Through assessment, the teaching and learning process can be examined, and any possible problems can then be addressed and a potential solution offered (Liu et al., 2024). Nevertheless, establishing the causes of students' learning problems and working on them might be a very complex task (Daniel et al., 2025). Static Assessment (SA), the most popular method of student evaluation, is typically done at the end of the learning process and separates testing from teaching. However, given the need to assess students' performance based on the entire learning process, Dynamic Assessment (DA) is recommended (Orhon & Mirici, 2023).

With the belief that teaching and assessment are inseparable, DA aims to alter traditional assessment. According to Nazari (2012), DA demonstrates how teaching and assessment are closely linked as a single activity. While DA can help differentiate students' performance based on what they are learning or what they can learn through interaction, SA represents what students have already learned (Tabatabei & Bakhtiarvand, 2014).

An interactionist approach and an interventionist approach are the two primary schools of thought in DA introduced by Lantolf and Poehner (2004). The fundamental difference between these approaches lies in their mediation techniques. Lantolf and Poehner (2007) asserted that interactionist DA is intricately linked to Vygotsky's notion of cooperative dialogue, where mediation emerges through the interactive engagement between the teacher or assessor and the learner. The interactionist DA model primarily seeks to enhance learners' competencies without focusing on variables such as effort or time invested, nor does it define a specific achievement threshold. In contrast, Lantolf and Poehner (2011) indicated that interventionist DA is more closely associated with the psychometric principles of traditional assessment. This approach employs systematic assistance strategies to generate quantifiable outcomes suitable for both between-group and within-group comparisons. Unlike the interactionist model, interventionist DA treats

pre-planned mediations as indicators of the learning trajectory, thereby estimating the necessary effort and time required to attain a predetermined endpoint. In this instructional framework, mediation progresses from implicit to explicit forms to elicit accurate responses; when learners can't complete a task, the teacher provides targeted prompts to facilitate task accomplishment.

Sternberg and Grigorenko (2002) mentioned two formats for the interventionist approach: sandwich and cake. The interactionist format, also known as the train-within-test design, offers learners mediation in the form of prompts, hints, and instructions that are arranged either from general to specific or from the most implicit to the most explicit (Ebadi, & Yari, 2017). Vygotsky's emphasis on cooperative discourse serves as the foundation for interactionist DA. This approach facilitates interaction between moderators and students. Comparable to a sandwich, interventionist DA, or a test-train-test design, incorporates the intervention in a separate session between the pre- and post-assessment (Ahmadi Safa & Jafari, 2017).

Hofstede (1980) defined cultural dimensions as several important factors that influence language acquisition, including individualism versus collectivism, power distance, uncertainty avoidance, masculinity versus femininity, long-term orientation, and indulgence versus restraint. These dimensions have a significant impact on learners' attitudes toward language acquisition, preferred learning modalities, and their reactions to different pedagogical approaches. For instance, collectivist cultures are perceived as tightly integrated societies, whereas individualist cultures are described as loosely integrated societies (Liu, 2016). In individualist societies, everyone is expected to take responsibility for themselves and their family, whereas in collectivist societies, tradition and anything rooted in tradition are highly valued (Alqarni, 2023). Because of this, EFL students from collectivist cultures might prefer collaborative learning settings, while students from individualistic cultures might do better in more autonomous learning environments (Ghonsooly & Hassanzadeh, 2019). Hofstede's framework of cultural dimensions provides an in-depth approach for recognizing and managing cultural variations in diverse areas, such as education. Some studies have examined how certain cultural dimensions affect learning behaviors and styles. Alqarni (2022), in a detailed analysis, investigated the impact of Hofstede's dimensions on language acquisition in various cultural and educational contexts. The results showed that factors like power distance, individualism versus collectivism, uncertainty avoidance, and masculinity compared to femininity significantly influence learning preferences, engagement levels, and academic outcomes.

In order to effectively tailor vocabulary instruction to the diverse needs of EFL learners, it is imperative to acknowledge these cultural dimensions. Based on the above-mentioned issues,

this study attempted to enhance the current literature by investigating the impact of interactionist and interventionist dynamic assessment on vocabulary learning. Because learners' cultural orientations (e.g., individualism–collectivism, power distance, uncertainty avoidance) have been shown to influence their learning preferences, responsiveness to mediation, and classroom interaction styles, this study also investigated whether learners with different dominant cultural dimensions responded differently to each type of dynamic assessment. Through an analysis of the performance of EFL learners characterized by differing cultural dimensions, this research sought to uncover the intricacies of vocabulary learning and the influence of dynamic assessment within this process.

Based on the issues identified in previous research, the present study aimed to contribute to the literature by examining how two major models of dynamic assessment—interactionist and interventionist—affect EFL learners' vocabulary development. By integrating these two areas of inquiry, the study sought to provide a clearer understanding of how dynamic assessment works across diverse learner profiles and to identify which model is more effective for vocabulary learning within different cultural orientations.

2. Review of the Related Literature

2.1. DA and Theoretical Foundation

DA is grounded in Vygotsky's cultural-historical psychology, positing that training within ZPD facilitates development (Lantolf & Thorne, 2006). In applied linguistics and second language acquisition (SLA) research, Vygotskian cultural-historical theory is commonly referred to as sociocultural theory (SCT). This theory presents a paradigm for studying cognition that emphasizes the significance of social context. According to Lantolf and Pohner (2004, p. 1), "despite the label "sociocultural", the theory is not a theory of the social or the cultural aspects of human existence….it is, rather, a theory of mind…that recognizes the central role that social relationships and culturally constructed artifacts play in organizing uniquely human forms of thinking". The ZPD is Vygotsky's approach for comprehending the interplay between learning and development. It is intricately linked to two significant and interrelated concepts: mediation and internalization (Lantolf & Thorne, 2006). This theory posits that humanity is perpetually influenced by social practices, activities, and cultural objects; additionally, individuals may also be mediated when working alone (Lantolf & Thorne, 2004). Grounded in SCT, DA is a procedure wherein the assessor aids the examinee through intervention to enhance performance on specific items or

the whole test, typically involving the examiner's intention to evaluate the outcomes of the intervention. This approach may yield a final score that represents a gain score, indicating the difference between pre- and post-test scores, or it may simply reflect the post-test score (Sternberg & Grigorenko, 2002).

Two fundamental DA approaches are presented in the literature. The initial one is predominantly quantitative. Lantolf and Poehner (2004) referred to this approach as 'interventionist' DA. The mediator, in interventional approaches for DA, standardizes the mediation process to provide uniformity for all learners. The second approach which emphasizes education and learning rather than statistical measurement employs an interpretive approach for assessment. Lantolf and Poehner (2004) call this approach as 'interactionist' DA. The mediator, within interactionist approach to DA, engages with the learner and perpetually evaluates their existing developmental stage. This 'interaction' justifies the employment of the term 'dynamic' (Fulcher, 2010).

The interventionist DA employs standardized forms of assistance to achieve measurable outcomes, which facilitate comparisons of students' abilities pre- and post-intervention, and enable predictions regarding their future test performance. Scores are regarded as a measure of the assistance required for a learner to successfully attain a certain objective (Poehner, 2008), and as an “index of speed of learning” (Brown & Ferrara, 1985, p. 300). Sternberg and Grigorenko (2002) presented two interventionist DA procedures, termed the 'sandwich' and 'cake' approaches. The sandwich structure closely resembles a classic experimental research design by incorporating pretest, mediation, and post-test designs. This approach involves placing mediation or treatment like a sandwich between a pre-test and a post-test. The examinees' performances on the post-test and pre-test are compared to assess the degree of improvement (Poehner, 2005). In a layer-cake style, assessment incorporates the teacher's intervention during the test administration. In this style, if the examinee fails to answer an item correctly, the teacher intervenes and provides preselected and tailored hints to mediate the test taker's performance. Simultaneously, his learning capacity is assessed during the intervention procedure. Feedback is provided until the examinee completes the specified task (Poehner, 2008). Conversely, interactionist DA is grounded in Vygotsky’s concepts regarding the significant function of collaborative dialogue. This approach ensures that support is entirely aligned with the learner's ZPD and may be discerned through the interaction between the learner and the mediator (Sternberg & Grigorenko, 2002). Interactionist DA focuses solely on the progression of an individual learner or a group of learners, rather than the preconceived outcomes of learning or the

effort required in this process (Poehner, 2005).

2.2. DA and Culture

Cultures are determined by structures of power, which affect both the roles of individuals as well as their relationships with one another. These roles and relationships have a significant role in educational contexts for L2 learners and EFL instructors (Liu, 2016). In the same vein, Breen (2001) argued that social relationships in the classroom help organize what is learned, how learning takes place, and what we achieve. According to Hofstede (1997), in communities with low power distance, everyone expects teachers to treat learners equally because the educational process is student-centered. However, education in societies with great power distances tends to be teacher-centered, because people expect teachers to outline the intellectual paths that learners should follow (Hofstede, 1997).

The concepts of collectivism and individualism have implications for classroom contexts. In a collectivist culture, learners are expected to be the recipients of knowledge from a more knowledgeable person (e.g., a teacher), while in individualist cultures, learners are seen as autonomous people having the right to explore and learn freely (Alqarni, 2022). Such orientations in collectivist cultures can contradict interactionist dynamic assessment which needs the active participation of learners in interaction and feedback processes. Learners with individualistic orientations may benefit from interactionist DA since learners are more ready for exploration and individual involvement (Liu, 2016).

Despite some studies (Bahramlou & Esmaeili, 2019; Ebadi & Yari, 2017, Ghonsooly & Hassanzadeh, 2019) examining vocabulary learning, and the recent emphasis on DA practices in educational contexts (Ghorbanian et al., 2024; Zarei & Shishegarha, 2024), to the best knowledge of the researchers, little attention has been paid to the effect of interactionist and interventionist DA on vocabulary learning considering cultural dimensions. The objective of this study was to examine the educational effects of interactionist and interventionist DA approaches on vocabulary learning among Iranian intermediate EFL learners with varying cultural orientations. To this end, the following research questions were proposed.

- **RQ1.** Do interactionist and interventionist DA have different effects on the vocabulary acquisition of Iranian intermediate EFL learners with different cultural dimensions?
- **RQ2.** How do Iranian intermediate EFL learners with different cultural dimensions react to interactionist and interventionist DA in their vocabulary learning process?

3. Method

3.1. Design

This study employed a concurrent mixed-method experimental design to address the main research questions. Riazi (2016) described this design as a methodology wherein researchers concurrently gather quantitative and qualitative data, subsequently integrating the two data types to interpret the overall findings, hence offering a more holistic understanding of the research problem than a standalone approach.

The quantitative phase of the study employed a pre-test, post-test comparison group quasi-experimental design. In the qualitative phase, data were gathered from the two experimental groups, interventionist and interactionist groups, during the treatment stage of the quantitative phase. All instructional sessions for participants were recorded, transcribed, and utilized as raw data for interpretative phenomenological analysis (IPA). Inductive thematic analysis was utilized to examine the dataset. According to Zhang and Wildemuth (2009), deductive analysis is intended to test theories or address questions created from theories or earlier empirical studies, but inductive analysis initiates the examination of topics and themes, in addition to the inferences drawn from them in the data.

This method was selected for its theoretical adaptability and ability to generate themes directly from participants' accounts, assuring that findings were rooted in lived experiences rather than predetermined categories (Smith et al., 2009). In other words, this method helped focus on how participants reacted and felt regarding their experiences of vocabulary learning through two types of dynamic assessments.

3.2. Participants

This mixed-methods study was carried out with the participation of 90 male and female students aged 15-18, at the intermediate level, from among 180 students. 40 of them were male learners, and 50 were female learners. These participants were selected through convenience non-random sampling from two language schools in Sarab, Iran. Homogeneity of the participants was established through Oxford Quick Placement Test (OQPT). The study considered participants whose scores fell between one standard deviation above and below the mean. All the participants were native speakers of the Azari language. Then, they were randomly assigned to two experimental groups (interactionist and interventionist groups, 45 participants in each group).

Regarding the ethical research protocol, all volunteers were informed of the aims and the

procedure of the study. Furthermore, participants were informed that they could leave the study at any time should they feel uncomfortable. The participants granted their written informed consent to the researchers at the beginning of the study and confirmed their voluntary participation. They were assured that their personal names would remain confidential and that their responses would be managed meticulously to preserve privacy. The intervention sessions were arranged based on the participants' availability and preferences to guarantee their comfort.

3.3. Instruments and Materials

3.3.1. Oxford Quick Placement Test (OQPT)

The first instrument used in the current study was OQPT. It was administered to help the researchers select homogenous participants out of 180 students. According to this test, the students whose scores fell between one standard deviation above and below the mean were determined as intermediate and were considered the target participants of the study. This test consisted of 60 objective items (vocabulary, grammar, and reading comprehension), and its reliability reached 0.90 (Geranpayeh, 2003), and α=0.80 in the current study, which indicates an acceptable level of reliability.

3.3.2. Vocabulary Knowledge Scale (VKS)

Paribakht and Wesche (1993) proposed five levels or stages in the acquisition of individual words in their vocabulary knowledge scale (VKS). The VKS scale rating varies from total unfamiliarity through the recognition of the word and some idea of its meaning to the ability to use the word with grammatical and semantic accuracy in a sentence. These five levels include:

1. I do not remember having seen this word before.
2. I have seen this word before, but I do not know what it means.
3. I have seen this word before, and I think it means …….. (synonym or antonym).
4. I know this word. It means …… (synonym or antonym).
5. I can use this word in a sentence……..

VKS served as a criterion for selecting vocabulary items that students were unfamiliar with. Consequently, students were provided with 100 vocabulary items selected from ten units of Vocabulary in Use and were asked to assign numbers 1, 2, 3, 4, or 5 to these items. The five criteria of VKS were translated into Persian to reduce ambiguity in this context. Subsequently, the researchers picked 40 vocabulary items for the study based on the students' scores. The vocabulary items were those that the students assigned ratings of 1 or 2 on the VKS. The included vocabulary items were those with which the students had the least familiarity, as indicated by the

first two levels of the VKS scale: “1. I do not remember having seen this word before” and “2. I have seen this word before, but I do not know what it means.”

3.3.3. Vocabulary Test

To test the vocabulary knowledge of the participants after the treatment, a vocabulary test devised by the researchers was used. For this purpose, 40 vocabulary items rated 1 or 2 by participants based on VKS were included in the test. The following procedures were taken to ensure the validity and reliability of the test.

After constructing the test, it was checked by a panel of experts for its content validity. To this end, a group of English teachers with an MA and a PhD in TEFL, and at least 18 years of teaching experience, reviewed the test items and made changes to improve clarity, simplicity, and representativeness. As a result, it was proved that the test had construct validity.

Moreover, to ensure the reliability of the test, test-retest procedures were implemented. To this end, the test was administered twice to the intermediate students with a time interval of 15 days. Next, a Pearson correlation formula was employed to analyze the scores. The results indicated a satisfactory reliability index of 0.82. Moreover, the internal consistency of the test was confirmed by employing the Kuder-Richardson Formula 20 test. This test was employed to check the internal consistency of instruments with dichotomous choices. The results showed the reliability index of 0.86, which is an acceptable level (See Appendix A).

3.3.4. Cultural Dimensions Questionnaire:

The cultural dimension questionnaire developed by Saboori et al. (2015) was used in the present study. It had 26 items on a 4-point Likert scale, which measured 6 dimensions of culture consisting of:

- Power distance (Items: 8, 12, 14, 15)
- Individualism/ collectivism (Items: 3, 9, 13, 16, 17)
- Masculinity/ femininity (Items: 10, 19, 23, 24, 25)
- Uncertainty avoidance (Items: 2, 5, 6, 26)
- Long/short term orientation (Items: 1, 4, 7, 11)
- Indulgence/ restraint (Items: 18, 20, 21, 22)

This instrument has an acceptable level of validity and reliability and its reliability index has been reported to be 0.79 (Saboori et al., 2015). This questionnaire was administered to the participants, and the learners’ scores for each component were rank-ordered. Next, following the descriptive midpoint approach commonly used in cultural dimension research conducted by

Ghonsooly and Hassanzadeh (2019), the learners whose scores were above 10, 12, 12, 10, 10 and 10 for the dimensions Power distance, Individualism/ collectivism, Masculinity/ femininity, Uncertainty avoidance, Long/short term orientation, Indulgence/ restraint respectively, were regarded to be oriented towards that dimension more (See Appendix B).

3.3.5. Vocabulary in Use

Vocabulary in Use, published by Cambridge University Press and authored by Michael McCarthy and Felicity O'Dell (2017), is designed to enhance vocabulary knowledge in English. It was used as the teaching material during the intervention. Units 1–10 of the book were covered. The books focus not only on individual words but also on phrases and collocations, aiding learners in grasping complex concepts such as the differences in usage among similar terms. Each unit introduces over 3,000 new words and expressions, providing clear contexts and examples to support learning. These books are suitable for both classroom use and self-study, helping users build confidence alongside their vocabulary skills.

3.4. Procedure

After selecting homogenized learners in terms of language proficiency through a non-random convenience sampling technique, they were randomly assigned to two groups (45 participants in each). The interactionist dynamic assessment was used in one experimental group, while the interventionist dynamic assessment was used in the other. Then, the cultural dimension questionnaire developed by Saboori et al. (2015) was given to the participants to determine their cultural orientations. The researcher asked the participants to fill out the questionnaire within 40 minutes carefully.

After identifying the cultural orientations of the students, the VKS suggested by Wesche and Paribakht (1993) was used, and the learners in all groups were asked to rate the vocabulary items in 100 vocabulary list based on the scale. Then, 40 vocabulary items were selected by the teacher researchers. Vocabulary items were those that the participants rated 1 or 2 on the VKS; 1 means "I do not remember having seen this word before" and 2 means "I have seen this word before, but I do not know what it means". Ten sessions were determined to teach these 40 selected words to all students in two experimental groups during the treatment period. These vocabulary items were taught to them using the *Vocabulary in Use* book.

Experimental Group One: Mediations in the interactionist group

The interactionist mediations were not pre-constructed but emerged from a thorough analysis of the mediator's collaborative dialogues with each learner during every session. The mediations were designed following Aljaafreh and Lantolf's (1994) Regulatory Scale. The fundamental principle of the regulatory scale is contingency, signifying that support is provided based on learners' needs and is progressively modified according to their answers. Nevertheless, the interactionist DA's defining feature creates flexible foundations for successful learner development. Hence, the instructor did not regard the Regulatory Scale as specific and prescriptive rules or standards. The primary objective was to gradually diminish teacher intervention as students developed greater independence. The interactionist interventions fulfilled two objectives: firstly, to address the learners' challenges, and secondly, to assess the participants' perception of the mediations' efficacy. The following excerpt illustrates the interactionist mediation provided to the student during the dialogue with the teacher in the interactionist group.

1. **The Initial Hypothesis and Diagnostic Probe**
    - **Teacher:** "Ali, you underlined 'prevalent' in this sentence: 'Cell phones have become truly common in our society.' What do you think it means here?"
    - **Student:** "Hmm, I'm not sure. Maybe it means... important?" (Ali's initial hypothesis shows he's trying to infer, but lacks the necessary tools.)
2. **First Level of Mediation (Contextual Hint):**
    - **Teacher:** "Okay, let's look at the context again. "Cell phones have become truly prevalent in our society.' What do you know about cell phones today?"
    - **Student:** "Everyone has them. They are everywhere."
    - **Teacher:** "Excellent! So, if cell phones are 'everywhere,' what might 'prevalent' mean in this context?"
    - **Student:** "Oh! Maybe it means 'everywhere'?" (Ali makes a stronger connection, but still needs help.)
3. **Second Level of Mediation (Semantic Scaffolding):**
    - **Teacher:** "That's very close! Can you think of another word that means 'present everywhere' or 'found everywhere'?"

- **Student:** "Like... common? Or widespread?" (Ali offers synonyms, demonstrating a deeper grasp of the concept.)

4. **Third Level of Mediation (Consolidation & Application):**

- **Teacher:** "Those are great synonyms! So, 'prevalent' means something present, appearing, or found everywhere. Now, can you use 'prevalent' in a new sentence, perhaps about something else that is prevalent in your life?"
- **Student:** "Okay... Uhm, fast food restaurants are quite prevalent in my city." (Ali successfully applies the word in a novel context, showing genuine understanding and ability to produce.)

Experimental Group Two: Mediations in the interventionist group

The second experimental group was the interventionist DA. After completing the vocabulary teaching in each session, the teacher began to mediate the learners within 60 minutes in this group. The teacher used the graduated prompt model of the interventionist approach. Mediation in this group followed Brown's Graduated Prompt Model (1987). It provided mediation in the form of predefined prompts that were ordered from the implicit to the most explicit. The prompts were also provided based on the information generated by an individual, and the number and type of the prompts in the sequence were presented in a ramification sequence.

The taxonomy of the Graduated Prompt Model for the Intervention Program was as follows:

1. Request for reading the stem or looking at the picture carefully.
2. Request for verification (Are you sure it is the correct answer?).
3. Asking the participants to guess the meaning of the word from the context.
4. Specify the word family to which the unknown word belongs or introduce another known word(s) from that word family.
5. Introducing synonym(s) or antonym(s).
6. Using flash cards.
7. Reading aloud the stem or offering the Persian translation of the stem.
8. Providing the correct response (if the 7 previous stages could not lead the learners to the correct answer).
9. Explaining the word.

The mediation started with the implicit prompts (asking the person to read the stem attentively) and ended with the most explicit prompts (giving the right answer). The mediator employed several mediation strategies during interventionist treatment sessions through a dialogic interaction with the participants to enhance their understanding of unknown vocabulary items. For example:

Introducing synonym(s) or antonym(s). This kind of mediation was employed when the word in question was abstract. The mediator gave the participants a synonym, an antonym, or both to assist them in discovering the right word. The following excerpt illustrates such a situation.

"The movie was so tedious that many people left before it ended."

Student: "Does tedious mean exciting?"

Teacher: "Not quite. Think about how people felt when they left the movie early—were they bored or thrilled?"

Student: "They were bored, maybe tired of it."

Teacher: "Good! So, if tedious makes people bored, what's another word that means almost the same?"

Student: "Maybe boring or dull?"

Teacher: "Exactly. Tedious means dull. The opposite would be interesting or exciting.

Can you make your own sentence with tedious?"

Student: "Doing the same homework every day is really tedious."

After the ten sessions were completed, the researchers administered a vocabulary test one week later to assess the participants' vocabulary knowledge. For this purpose, 40 vocabulary items that the participants had previously rated as 1 or 2 on the VKS were included in the test.

4. Results

4.1. Quantitative Results

The normality of the present data was assessed by examining the skewness and kurtosis indices (Table 1). Skewness indices reflect the symmetry of the distribution, while kurtosis indices indicate the peakedness of the data curve. In an ideal normal distribution, both values would be zero.

Table 1.

Skewness and Kurtosis Indices of Normality

Group	CD		N	Skewness		Kurtosis	
			Statistic	Statistic	Std. Error	Statistic	Std. Error
Interactionist	Individualism/collectivism	OPT	6	.994	.845	-1.461	1.741
		Posttest	6	-.562	.845	.246	1.741
	Power distance	OPT	9	.233	.717	.032	1.400
		Posttest	9	1.040	.717	.750	1.400
	Masculinity/ femininity	OPT	7	-1.113	.794	.076	1.587
		Posttest	7	-.823	.794	1.377	1.587
	Uncertainty avoidance	OPT	8	-.598	.752	-.410	1.481
		Posttest	8	.608	.752	-.003	1.481
	Long-short term orientation	OPT	8	-.191	.752	-.438	1.481
		Posttest	8	-.145	.752	-.978	1.481
	Indulgence restraint	OPT	7	.535	.794	-1.481	1.587
		Posttest	7	.190	.794	-.215	1.587
Interventionist	Individualism/collectivism	OPT	7	.872	.794	-.862	1.587
		Posttest	7	-.138	.794	-1.102	1.587
	Power distance	OPT	6	-.472	.845	-1.586	1.741
		Posttest	6	-.780	.845	.682	1.741
	Masculinity/ femininity	OPT	6	-.254	.845	-1.828	1.741
		Posttest	6	.075	.845	-1.550	1.741
	Uncertainty avoidance	OPT	8	1.153	.752	.378	1.481
		Posttest	8	.000	.752	-.700	1.481
	Long-short term orientation	OPT	8	.531	.752	-.600	1.481
		Posttest	8	.627	.752	-.859	1.481
	Indulgence restraint	OPT	10	.989	.687	.615	1.334
		Posttest	10	.347	.687	.062	1.334

As seen in the table, the observed skewness and kurtosis values fell within the conventional ±2 benchmark, suggesting no substantial departure from normality.

Homogenizing Groups on the Oxford Placement Test

A two-way ANOVA was conducted to compare the mean OPT scores of the interactionist and interventionist groups across six cultural dimension categories, to determine whether the groups were homogeneous in terms of general language proficiency before the main study. Before presenting the results, it should be noted that the assumption of homogeneity of variances was examined using Levene's test. The non-significant result of Levene's test ($F_{(17, 117)}$=0.760, p > .05) (Table 2) indicated that the variances across the groups were homogeneous on the OPT test.

Table 2.

Test of Homogeneity of Variances of Oxford Placement Test by Groups

		Levene Statistic	df1	df2	Sig.
OPT	Based on Mean	1.990	17	117	.017
	Based on Median	.760	17	117	.735
	Based on Median and with adjusted df	.760	17	62.832	.730
	Based on the trimmed mean	1.826	17	117	.032

Table 3 shows the two groups' means on the OPT test. The results showed that the interactionist (M=36.59, SE=4.38), and interventionist (M=36.67, SE=4.41) groups had almost the same means on the OPT test.

Table 3.

Descriptive Statistics of Oxford Placement Test by Groups

Group	Mean	SD	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Interactionist	36.590	4.38	.653	35.297	37.883
Interventionist	36.678	4.41	.658	35.375	37.981

Table 4 shows the results of the Two-way ANOVA. The results ($F_{(2, 117)}=1.54$, $p > .05$, $p\eta^2=0.026$, representing a weak effect size) indicated that there were no significant differences between the two groups' means on the OPT test. That is to say, interactionist and interventionist groups were homogeneous in terms of their general language proficiency before the administration of the treatments.

Table 4.

Two-Way ANOVA of Oxford Placement Test by Groups by Cultural Dimensions

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Group	58.395	2	29.198	1.547	.217	.026
CD	71.002	5	14.200	.753	.586	.031
Group * CD	571.388	10	57.139	3.028	.002	.206
Error	2207.707	117	18.869			
Total	188917.000	135				

Note. CD stands for Cultural Dimensions.

Table 5 shows the mean scores of the six cultural dimension groups on the OPT test. The results showed that individualism/collectivism (M=37.38, SD=4.35), power distance (M=37.35, SD=4.42), masculinity/femininity (M=33.88, SD=4.35), uncertainty/avoidance (M=36.06,

SD=4.35), long-short term orientation (M=38.33, SD=4.35), and indulgence restraint (M=36.62, SD=4.39) groups had almost the same means on the OPT test.

Table 5.
Descriptive Statistics of the Oxford Placement Test by Cultural Dimensions

CD	Mean	SD	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Individualism/collectivism	37.381	4.35	.999	35.402	39.360
Power distance	37.352	4.42	.903	35.564	39.140
Masculinity/ femininity	36.881	4.35	.999	34.902	38.860
Uncertainty avoidance	36.060	4.35	.908	34.262	37.857
Long-short-term orientation	38.333	4.35	.887	36.577	40.089
Indulgence restraint	36.621	4.39	.861	34.915	38.327

To answer the first research question of whether there was any significant difference between interactionist and interventionist DA in terms of their effects on vocabulary learning of EFL learners with different cultural dimensions, an independent-samples *t*-test was conducted to compare the overall mean scores of the two groups on the posttest of vocabulary. Table 6 presents the descriptive statistics for both groups on the posttest of vocabulary. The findings revealed that the interactionist group (M=28.09, SD=4.89) had a higher mean than the interventionist group (M=18.16, SD=4.87) on the posttest of vocabulary.

Table 6.
Descriptive Statistics for the Overall Posttest of Vocabulary by Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest	Interactionist	45	28.09	4.898	.730
	Interventionist	45	18.16	4.871	.726

Table 7 outlines the results of the independent-samples *t*-test. Before interpreting these findings, it is important to note that the assumption of normality and homogeneity of variances was upheld for the posttest of vocabulary. As shown in Table 7, the non-significant results of Levene's Test ($F=_{(0.137)}$, $p > .05$) confirmed that both groups had similar variances in their posttest of vocabulary. Consequently, the first row of Table 7, "Equal variances assumed," was reported.

The independent-samples t-test results ($t(88)=9.64$, $p < .05$, Cohen's d=4.88, indicating a large effect size) demonstrated that a significant difference existed between the two groups' mean scores on the posttest of vocabulary. Therefore, it can be concluded that the interactionist group had a significantly higher mean than the interventionist group

on the posttest of vocabulary. Thus, the null-hypothesis that "there was no significant difference between interactionist dynamic assessment and interventionist dynamic assessment in terms of their effects on vocabulary learning of EFL learners," was rejected. Figure 1 shows the two groups' mean scores on the posttest of vocabulary.

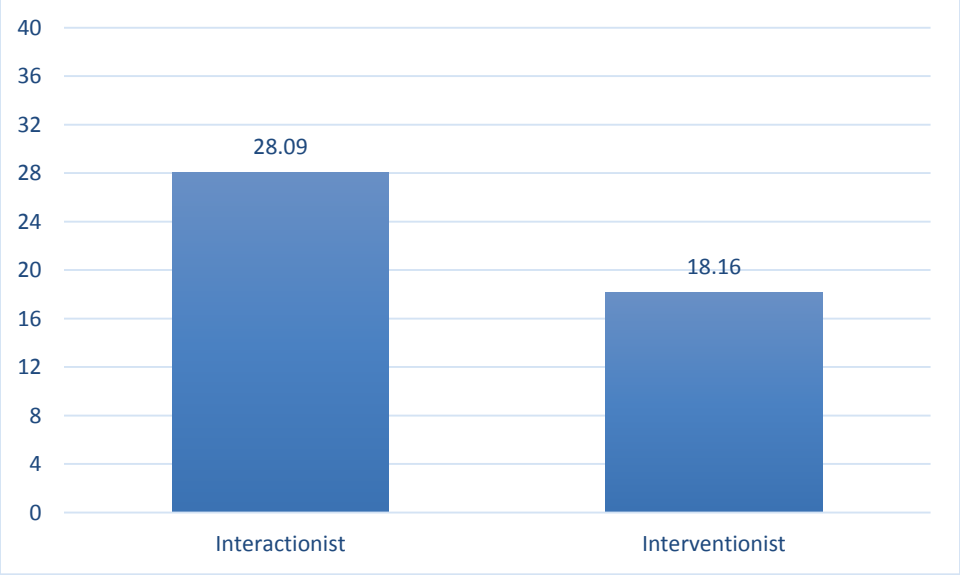
Table 7.

Independent Samples Test for the Overall Posttest of Vocabulary by Groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.137	.712	9.646	88	.000	9.933	1.030	7.887	11.980
Equal variances not assumed			9.646	87.997	.000	9.933	1.030	7.887	11.980

Figure 1.

Mean Scores for the Overall Posttest of Vocabulary by Groups



Moreover, Two-Way ANOVA plus Simple Effect Analysis was run to compare the two groups, i.e., interactionist and interventionist dynamic assessment groups' performance, considering each of the six cultural dimensions. Simple Effect Analysis, as noted by Field (2024), enabled the researcher to compare the six cultural dimensions across the two groups, two by two.

Before discussing the results, the main results of Two-Way ANOVA will be reported (Table 9). The results indicated that there was a significant difference between the interactionist and interventionist groups' overall means on posttest of vocabulary ($F_{(1, 78)}$=182.13, p < .05, η²=.700, indicating a large effect size).

Table 8.

Tests of Between-Subjects Effects for Posttest of Vocabulary by Groups by Cultural Dimensions

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	2040.907	1	2040.907	182.137	.000	.700
CD	1178.295	5	235.659	21.031	.000	.574
Group * CD	32.983	5	6.597	.589	.709	.036
Error	874.015	78	11.205			
Total	52437.000	90				

There were significant differences among the six cultural dimensions disregarding groups ($F_{(5, 78)}$=21.03, p < .05, η²=.574, indicating a large effect size); and finally, there was not any significant interaction between group and cultural dimensions ($F_{(5, 78)}$=.589, p > .05, η²=.038, indicating a weak effect size).

Table 9 shows the results of the Simple Effect Analysis: the interactionist individualism/collectivism group (M=34.17) significantly outperformed the interventionist individualism/collectivism group (M=26.29) on the posttest of vocabulary (MD=7.88, p < .05). The interactionist power distance group (M=30.56) significantly outperformed the interventionist power distance group (M=22.33) on posttest of vocabulary (MD=8.22, p < .05). The interactionist masculinity/femininity group (M=26.00) significantly outperformed the interventionist masculinity/femininity group (M=15.33) on posttest of vocabulary (MD=10.66, p < .05). The interactionist uncertainty avoidance group (M=26.88) significantly outperformed the interventionist uncertainty avoidance group (M=17.00) on posttest of vocabulary (MD=9.87, p < .05). The interactionist long-short term orientation group (M=27.00) significantly outperformed the interventionist long-short term orientation group (M=15.63) on the posttest of vocabulary (MD=11.37, p < .05); and finally, the interactionist indulgence restraint group (M=24.43) significantly outperformed the interventionist indulgence restraint group (M=14.60) on the posttest of vocabulary (MD=9.82, p < .05). Figure 2 shows the two groups' means across six cultural dimensions.

Table 9.

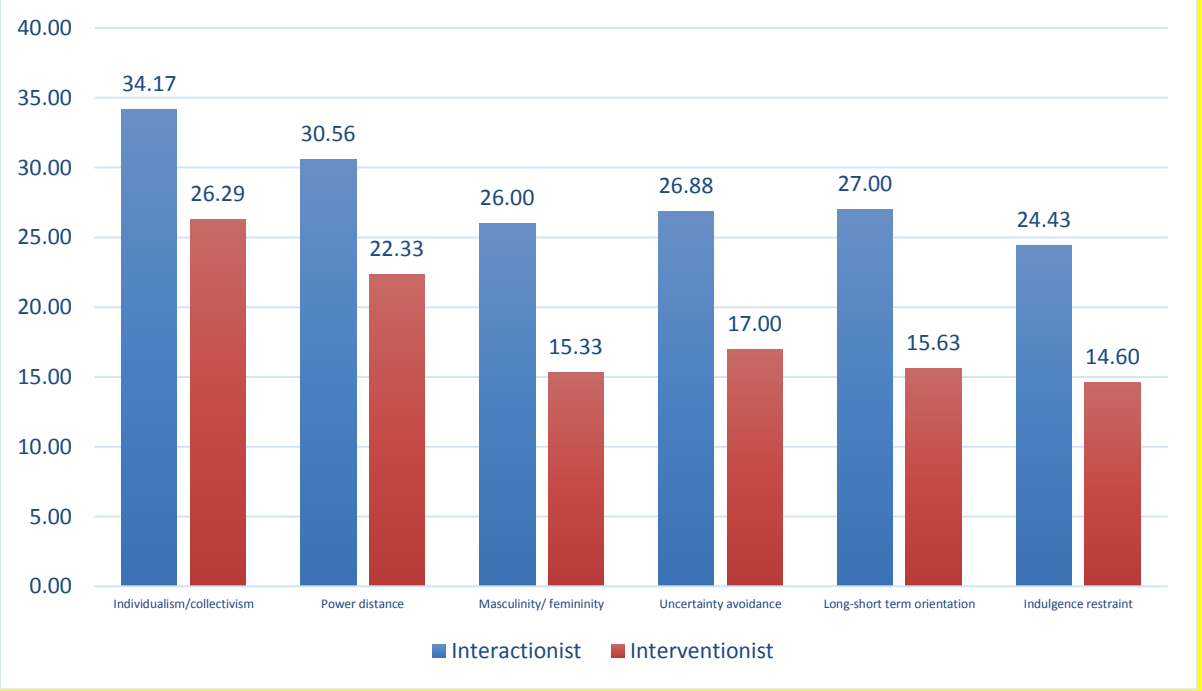
Simple Effect Analysis for Posttest of Vocabulary by Groups by Cultural Dimensions

CD	Group	Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
						Lower Bound	Upper Bound
Individualism/ collectivism	Interactionist	Interventionist	7.881*	1.862	.000	4.173	11.589
	Interventionist	Interactionist	-7.881*	1.862	.000	-11.589	-4.173
Power distance	Interactionist	Interventionist	8.222*	1.764	.000	4.710	11.735
	Interventionist	Interactionist	-8.222*	1.764	.000	-11.735	-4.710
Masculinity/ femininity	Interactionist	Interventionist	10.667*	1.862	.000	6.959	14.374
	Interventionist	Interactionist	-10.667*	1.862	.000	-14.374	-6.959
Uncertainty avoidance	Interactionist	Interventionist	9.875*	1.674	.000	6.543	13.207
	Interventionist	Interactionist	-9.875*	1.674	.000	-13.207	-6.543
Long-short term orientation	Interactionist	Interventionist	11.375*	1.674	.000	8.043	14.707
	Interventionist	Interactionist	-11.375*	1.674	.000	-14.707	-8.043
Indulgence restraint	Interactionist	Interventionist	9.829*	1.650	.000	6.544	13.113
	Interventionist	Interactionist	-9.829*	1.650	.000	-13.113	-6.544

*The mean difference is significant at the .05 level.

Figure 2.

Mean Scores for Overall Posttest of Vocabulary by Groups by Cultural Dimenions



4.2. Qualitative Results

In the qualitative phase, data were gathered from the two experimental groups, interventionist and interactionist groups, during the treatment stage of the quantitative phase. All instructional sessions for participants were recorded, transcribed, and utilized as raw data for qualitative analysis. Inductive thematic analysis was utilized to examine the dataset. This method was selected for its theoretical adaptability and ability to generate themes directly from participants' accounts, assuring that findings are rooted in lived experiences rather than predetermined categories (Smith, 2019). In other words, this method helped focus on how participants see and feel regarding their experiences of vocabulary learning through two types of dynamic assessments.

Findings regarding how Iranian EFL learners felt about the effects of DA models on their vocabulary learning are outlined in this section. The different individual themes derived from the data were categorized into three main themes: (a) the degree of negotiated mediations, (b) developing different learning strategies, and (c) promoting different preparation orientations.

4.2.1. The Degree of Negotiated Mediations

Students' cognitive and emotional involvement differed considerably between the two DA models. In interactionist DA, learners demonstrated a sense of active engagement and shared responsibility in the learning process, and the negotiation between mediator and learner was clearly deeper. For instance, the teacher asked, "What do you think it means here?" when a student came across the term "unique" in a reading assignment. "Not common... maybe special," the student responded after pausing. "Yes, good!" was the mediator's response. Is it similar to "normal" or "rare"? "Not normal," the student promptly answered. "Oh, so unique means very special, not just different," the teacher continued, smiling. Students frequently asked questions or repeated prompts to clarify their thinking. "Can I ask what kind of person gives money to poor people?" a student asked after being asked to guess what the word "generous" meant. "Then generous is kind?" the student concluded after the teacher nodded. Her tone conveyed not just recall but also confidence and discovery.

On the other hand, interventionist DA adhered to a predetermined series of prompts, such as "Is it a noun or an adjective?" and "What is a synonym for 'affluent'?" Even while some students answered rapidly, their verbalizations were shorter, and fewer demonstrated a sense of ownership over meaning-making. When asked to define affluent, one student did not say anything until the third prompt: "It means rich, right?" His tone ended with a rise — a question, not a statement —

suggesting doubt and reliance on the teacher. After being told that "ample means enough or more than enough," another student merely repeated, "Ample=enough," and continued without providing any additional elaboration.

These patterns show that whereas many students in interventionist DA appeared to passively wait for the "correct" prompt, suggesting a more one-sided, teacher-driven experience, students in interactionist DA felt heard and active in solving their own difficulties.

4.2.2. Developing Different Learning Strategies

Students' strategies for dealing with unfamiliar vocabulary also varied between the two models, as seen by their spontaneous language during activities. Students regularly used self-questioning and contextual guessing in interactionist DA. A student pointed to the sentence, "He visits his grandparents frequently," when asked about frequently. "Hmm'", she remarked. It means... several times? Like, often? "Is that right?" she asked the teacher after that. This demonstrates metacognitive awareness -she identified and deduced meaning from context, and verified her hypothesis. In an attempt to comprehend the term “enormous”, another student remarked, "Big... very big? Like, huge? "Wait — in the sentence: 'an enormous mistake,” he continued. A big mistake, but worse? Important mistake? His verbalization demonstrated strategic thinking by breaking down the sentence, connecting it to significant previous knowledge, and refining his understanding.

Such self-initiated strategies were uncommon in interventionist DA. Rather, students relied on translation or often clear clues. One student hesitated before responding, "It's wealthy." Like, rich person. Context was not used in any way. Another said "Ample" in response to the question "Think of a synonym for 'plentiful,'" but remained silent when asked, "How did you know?" Later in the lesson, one student admitted, "I just wait for the clue... then I remember." This indicates a preference for cue-based recall over active problem-solving.

Thus, although interventionist DA promoted prompt-driven retrieval and limited spontaneous strategy use, interactionist DA seemed to elicit and reinforce a wider range of learning strategies, such as inference, self-monitoring, and word analysis.

4.2.3. Promoting Different Preparation Orientations

The two DA models also influenced how students handled learning vocabulary beyond the session. During interactionist sessions, students reviewed vocabulary on their own, discussed meanings with classmates, and asked questions before being prompted. One student asked his partner after learning the term ‘fundamental’; "That means highly important, right? For example,

water is fundamental for life; we cannot survive without it. He demonstrated deeper conceptual engagement and intrinsic motivation by using the phrase beyond the task. After learning ‘common and uncommon’, another student started identifying vocabulary cards with "common?" or "uncommon?"—a behavior that the teacher did not model. "Because some words are rare... better to know," she responded when asked why. Her behavior demonstrated a growth mindset, viewing vocabulary learning as a skill to acquire rather than merely data to commit to memory.

On the other hand, students displayed less spontaneous initiative both during and after interventionist sessions. Anticipating the next prompt or memorizing definitions were the main methods of preparation. ‘Ample=plenty, Affluent=rich’ were repeated by one student as they went over the flashcards. He had trouble using the words in a sentence. "When I see the hint, I know what the word means, but alone, I forget," remarked another. This shows that while interventional DA is systematic, a diagnostic approach, and was useful for identifying errors, it did not necessarily transfer confidence or independence in vocabulary use. Additionally, students in interventionist DA were more likely to avoid risk. They either inquired, "What's the next hint?" or remained silent when they weren't sure, instead of guessing. Even wrong guesses were made with more assurance during interactionist sessions. For example, one person asked, "Is 'generous' like... friendly?" and smiled when corrected, demonstrating comfort with making mistakes as a necessary part of learning.

In brief, the students' opinions of the two DA models are evident in their verbal behavior and observed engagement throughout instructional sessions. They saw vocabulary learning as cooperative, significant, and empowering in interactionist DA; they actively employed strategies, negotiated meaning, and prepared with depth and curiosity. They frequently felt guided but passive in interventionist DA, relying on prompts rather than investigation and preparing for performance rather than understanding. These emotional and cognitive reactions, which are derived from their actual classroom experiences, clearly address the research question and correspond with the patterns found in the data.

5. Discussion

The results of Two-Way ANOVA and Simple Effect Analysis revealed that the interactionist individualism/collectivism group significantly outperformed the interventionist individualism/collectivism group on posttest of vocabulary. Both interactionist and interventionist DA approaches positively influenced vocabulary acquisition; however, the interactionist approach

demonstrated superior efficacy in enhancing learners' vocabulary learning compared to the interventionist approach. Interactionist DA adheres to Vygotsky's collaborative dialogue framework. In this DA model, assistance is generated through the interaction between the mediator and the student, and is therefore well attuned to the students' ZPD. Conversely, interventionist DA is more intimately linked to psychometric aspects of certain static assessment methods (Ahmadi Safa et al., 2015).

In relation to this feature of interventional DA, Luria (1961) contends that statistical methods, like as psychometric assessments, fail to provide a complete representation of students' potentials. He also asserts that, to acquire a comprehensive understanding of students' abilities, two critical pieces of information are essential: the students' performance with the mediator's support and the degree to which the learners can progress. Additionally, Luria (1961) suggested that "the most important problem is that we have to pay more attention not only to the diagnosis, but also to the prognosis of the developmental potential of the children" (p. 5).

Moreover, interventionist DA employs standardized administration protocols and support to produce scientific results that facilitate comparisons of various metrics both within and across groups, as well as to predict the students' performance in additional tasks (Lantol & Poehner, 2011). These considerations suggest that the interactionist DA is more aligned with the foundational principles of DA, rendering it more effective than the interventionist approach.

Ahmadi et al. (2017) affirmed the beneficial impact of DA on second language acquisition, noting that interactionist methodologies of DA are more efficacious than interventionist methodologies. One explanation for the findings pertains to the interactionist DA greater sensitivity to an individual's ZPD (Fulcher, 2010), which may render it a more effective framework for accounting for the psychological processes underlying learning and a powerful means for identifying appropriate forms of mediation and instruction (Poehner, 2008). Interactionist DA may aid teachers in providing students with suitable feedback and assist students in identifying the roots of their linguistic difficulties through meaning negotiation and mediation.

Furthermore, engaging the entire class as secondary interactants and conducting a series of one-on-one interactions, interactionist DA may enable students to obtain tailored and progressive instruction that precisely addresses their specific needs. The interactionist approaches to DA may be more clinical than psychometric, as a sequence of one-on-one interactions could provide teachers insights into psychological processes that are otherwise available solely through individual engagement. Consequently, it can be argued that both primary and secondary interactants may benefit from the advantageous role of interactionist DA.

Interventionist approaches to DA, conversely, seem to emphasize the psychometric characteristics of conventional assessment methods or static evaluation, perhaps lacking alignment with learners' ZPDs.

Regarding the effects of two types of DA, interactionist and interventionist, on Iranian EFL learners' vocabulary learning with different cultural orientations, the findings revealed that learners in the interactionist DA group with an individualism/collectivism cultural orientation significantly outperformed all learners in the other culturally oriented groups. The results of the present study can be explained in terms of the attributes of these cultural dimensions. The findings indicated that the collectivism/individualism dimension was primarily linked to DA and vocabulary learning. It means that DA exerted the most pronounced influence on learners with collectivist or individualist orientations. The pronounced impact of the collectivism/individualism dimension suggests that individualistic learners may derive the greatest advantages from dynamic assessment, whilst collectivist learners may gain the least from it.

In educational contexts, cultural values profoundly influence students' perceptions of learning, the methods by which it should occur, and the most effective teaching approaches. To put in other words, the objective of education is viewed distinctly in individualistic and collectivist societies. Individualistic cultures teach students coping with novel and unpredictable situations, whereas collectivist cultures aim to equip individuals to align with the collective values (Nelson & Shavitt, 2002). From an individualistic point of view, a primary objective of education is to cultivate independent, autonomous learners, with academic achievement is evaluated through individual assessments and individual grades. In collectivist classrooms, the objective is group success rather than individual achievement, leading students to depend on and assist one another.

Students in individual settings are urged to engage in their learning process, express their opinions, and challenge their teachers (Al-Issa, 2005). In individualist cultures, teaching is not only the delivery of knowledge to students; it involves the sharing and negotiation of knowledge. Teachers in these environments promote risk-taking, competition, and problem-solving. According to Triandis (1995), collectivist cultures perceive individuals as integral components of one or more groups, prioritizing the objectives of the collectives over personal ones. Students from collectivist societies perceive teachers as more knowledgeable, more competent, and responsible for all educational decisions. The failure of students is attributed to the teachers and their success is credited to the teachers too. In contrast to individualistic cultures, competition is discouraged, and education serves just as a means to attain prestige and an elevated social position within one's social group (Hofstede, 1986).

Regarding the qualitative findings, the highly negotiated mediation characteristic of interactionist DA prompted students to actively reformulate their vocabulary knowledge and engage in metacognitive processes. A richer semantic network for new words and more durable learning are the results of this deep processing, which is aided by the collaborative dialogue (Nation, 2013). Conversely, less negotiated, more directive mediation may result in shallower processing, where words are learned but may not be as thoroughly incorporated into the learner's preexisting lexical framework, even though it is effective for instant word recognition.

Moreover, the strategies that are encouraged have long-term effects on vocabulary autonomy. By encouraging metacognitive and contextual strategies, interactionist DA gives students skills they can use to deal with new vocabulary outside of assessment settings. This is in line with O'Malley and Chamot's (1994) Cognitive Academic Language Learning Approach (CALLA), which stresses the importance of teaching and practicing learning strategies. Learners gain more independence and strength as they learn new words. Interventionist DA can help students remember certain vocabulary words, but it might not help them become as strategically independent, which could mean they still need help from others. Finally, a learner's preparation orientation significantly influences the durability and depth of their learning. An intrinsic, growth-oriented mindset fostered by interactionist DA encourages not only the acquisition of individual words but also a lifelong passion for learning and a proactive approach towards language development. Learners take charge of their own vocabulary development. Interventionist DA can be very helpful for targeted remediation and building foundational knowledge, but it could also unintentionally limit the growth of this important internal drive and self-efficacy (Bandura, 1997) that is necessary for continued vocabulary development.

6. Conclusion

The findings of this study showed that both interactionist and interventionist DA methods improved students' vocabulary learning; however, the group using the interactionist method significantly outperformed the interventionist group. Particularly, the orientation towards individualism or collectivism resulted in the most significant impact, indicating that learners with individualistic dimensions gained more from the interactionist approach than those from collectivist backgrounds. These findings suggest that the focus of interactionist DA on negotiated mediation fits better with the autonomy-focused learning styles common in individualistic cultures. On the other hand, while interventionist DA is still helpful, it seems to be less sensitive to these cultural differences.

The findings of this study indicate that Iranian EFL teachers may initially capitalize on learners' cultural orientations and DA in the context of vocabulary teaching. The teacher can transcend simple static testing and promote greater learning by providing appropriate mediation according to the needs of the learners. This interactive and dynamic approach to vocabulary learning will enhance efficiency in outcomes and ensure that learners own responsibility for their learning. Moreover, the study's findings suggest that language teachers should perform a comprehensive assessment of their students' ZPD. Therefore, they can identify more proficient learners and categorize their classes into distinct groups, assigning greater responsibilities to the more capable learners and designating them as group leaders. The group leaders can adopt the roles of mediators, subsequently offering support to their peers. By utilizing scaffolding provided by more competent peers, the ZPD of other learners may be broadened.

Material developers and syllabus designers may recognize the advantages of DA and learners' cultural orientations, ensuring that their textbooks are designed to facilitate the implementation of DA. Language teacher trainers may emphasize the integration of DA into their curriculum to adequately equip teachers for implementing DA, considering cultural orientations. Teachers should receive training on the integration of DA strategies into their instructional methodologies.

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Appendix A

A Sample of Vocabulary Test

Choose the correct answer.

1. Which phrase means the same as the words underlined? Prices have increased slowly.
   A. risen gradually C. fallen slowly.
   B. dropped sharply D. gone up sharply

2. Which phrase is not correct?
   A. the worth of living B. the cost of living C. a good standard of living

3. Which of the following expressions is not informal or spoken English?
   A. The flat is handy for shopping. C. Excuse me, where's the loo?
   B. If you require further assistance, contact the manager. D. I reckon you'll get the job.

4. Fill the gap with the correct word. Where is the film ……?
   A. about C. take place
   B. set D. happening

5. Which sentence has the wrong verb?
   A. Joe is making a lot of progress at school. C. Can you make me a favour?
   B. Please take a seat. D. Kim is doing the shopping.

6. Complete the sentence with the correct word.
When you want to drive past a car in front of you, you should wait until it is safe to ..... .
   A. park C. overtake
   B. pull out D. brake

7. Which of these collocations is not correct?
   A. a heavy traffic C. a weak accent
   B. hard work D. a strong coffee

8. Fill the gap with the correct word. 'You can…… the file from the Internet.'
   A. browse C. collect
   B. download D. save

9. Which prefix makes the opposite of all these words: appear, like, honest, agree?
   A. mis- C. dis-
   B. in- D. un-

10. Fill the gap with the correct phrasal verb.
'What time does your alarm clock …….. in the morning?
   A. go off C. go out
   B. get through D. give up
11. Which noun forms an adjective with the suffix *-able*?
   A. fashion C. danger
   B. comfort D. correct

12. Which of these sentences is not correct?
   A. I have too much homework. C. I want to buy some new jeans.
   B. Put your luggage under the seat. D. I don't like modern furnitures

13. Choose the correct preposition for these verbs: apologize, apply, wait
   A. for C. to
   B. on D. from

14. What colour do you get when you mix together red and blue?
   A. turquoise C. purple
   B. beige D. grey

15. Which expression can you use as a reply to 'thank you'?

A. Please C. It doesn't matter
B. No problem D. Sorry

16. Choose the correct preposition to fill the gap. 'The plane flew…… the Atlantic Ocean.'
A. along B. above C. over

17. Fill the gap with the correct word. 'Sam was …. in a car accident.'
A. wounded C. beaten up
B. injured D. shot

18. Which one is not a fruit?
A. pineapple C. broccoli
B. plum D. grapes

19. What does the idiom 'make up your mind' mean?
A. don't worry C. decide
B. no problem D. it's your decision

20. Which of the following does not make a fixed expression with 'by'?
A. accident C. my own
B. hand D. mistake

21. Which verb can be used with all these nouns?
A. find C. get
B. catch D. take

22. Finish the sentence with the correct phrase. 'The police have arrested a man and .....
A. charged him with murder C. investigated a crime
B. broken the law D. proved he is guilty

23. Fill the gap with the correct word. "Don't eat too many cream cakes – they are very ……."
A. chilled C. healthy
B. fattening D. spicy

24. What does the word 'stuff' refer to in this sentence?
'Will you please pick up your stuff and put it in the washing basket?!'
A. rubbish C. books
B. make-up D. clothes

25. Which phrase can be used with all these nouns?
A. a packet of C. a piece of
B. a slice of D. a box of

26. Which noun forms an adjective with the suffix *-able*?
A. comfort C. danger
B. correct D. fashion

27. Which of these jobs is not a skilled manual job?
A. electrician C. mechanic
B. plumber D. pilot

28. Choose the correct phrase to complete the sentence. The food was ..... .
A. very delicious C. absolutely delicious
B. a bit delicious D. quite delicious

29. Which of the followings is not in an office?
A. chest of drawers C. wastepaper basket
B. filing cabinet D. photocopier

30. Which phrase has the wrong preposition?
A. for ages C. by 8 o'clock
B. at midnight D. during two hours

31. Fill the gap with the correct word. '. ……I watered the plants, they didn't grow.'
A. however C. although
B. also D. in spite of

32. Which word means the same as 'the latest'.
A. the last C. the best
B. the oldest D. the newest

33. Fill the gap with the correct word. 'The center of Rome is always……..with tourists at this time of year.'
A. lively C. cosmopolitan
B. busy D. packed

34. Which word cannot be both a noun and a verb?
A. kiss C. dream
B. rest D. meet

35. Which expression means 'be careful'?
A. Do not disturb B. Out of order C. Mind the step

36. John broke his arm and went to the hospital. The underlined word is:
A. a direct object C. a transitive verb
B. a personal pronoun D. an uncountable noun

37. Which of these expressions is the odd one out?
A. I don't mind this film. C. I can't stand this film.
B. I quite like the film. D. I'm really into this film.

38. Which phrase means the same as the underlined phrase. 'There is an election every four years.'
A. Elections are held C. An election is made
B. The election happens D. We are electing the president

39. Which of the following verbs is the odd one out?
A. hit C. whistle
B. throw D. kick

40. Complete the definition with the correct word. 'A ……. is when there is no rain for a long time.'
A. famine C. drought
B. flood D. disaster

Appendix B
Cultural Dimensions Scale

To what extent do you agree with the following statements?	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I maintain that traditions belong to the past and no longer need to be respected					
2. I often feel nervous or tense.					
3.A psychologically healthy person is supposed to have no dependence on his/her family					
4. It is important to me to have unchangeable beliefs and behaviors that do not depend on shifting circumstances.					
5. For a good class, there is no need for structured learning situations with precise objectives, detailed assignments, and strict timetables					
6. I prefer a predictable and routine life to a life with unpredictable events.					
7. In my personal life. thrift (not spending more than needed) is important.					
8. In my view, Children should be obedient toward and respect their parents					
9. For me, collective interests prevail over individual interests.					
10. Women are better teachers for young children than are men.					
11. Having long-term goals is of high importance to me, even at the price of present hardships.					
12. The authority of a father (teacher) should not fade away through his friendly relationship with his child (students)					
13. I believe marriage is a contract between families, not individuals.					
14. I treat my teachers with respect, even outside the school or university.					
15. My behavior toward others does not depend on their age or social status.					
16. In my opinion, children had better live with their parents until they get married.					
17. My family's opinion is very important to me in making an important decision in life					
18. In my life, having friends is not an important issue.					
19. In the family, the standard pattern is that the father earns and the mother cares					
20. All in all, my state of health is good these days.					
21. In my personal life, I keep some time free for fun.					
22. Taking all things together, I would say that I am a happy person.					
23. In my ideal job, the opportunity for advancement to higher-level jobs is more important than the job security.					
24. I care more about working with people who cooperate well with one another than about getting the recognition one deserves for doing a good job.					
25. In my ideal job, I prefer more leisure time over more money.					
26. When coming across a novel and unknown situation, I am more prudent than curious.					

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Grammatical Errors in Iranian Academic Journal Abstracts: A Surface Strategy Taxonomy Analysis

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Abstract

For non-native researchers, grammatical accuracy is essential for successful communication with the Academic community. Therefore, the aim of this study was to identify the types of errors found in the academic writings of Iranian researchers and their distribution. To this end, 50 abstracts were randomly selected from two Iranian academic journals to identify the possible grammatical errors. A qualitative descriptive approach was utilized to analyze these abstracts. To achieve this, Surface Strategy Taxonomy was used to detect and categorize errors into four groups: omission, addition, misformation, and misordering. As a result, 120 errors were identified in 10 abstracts out of the 50. The results showed that the most prevalent errors in academic writings were omissions, whereas additions were the least common. These findings demonstrated the importance of the Surface Strategy Taxonomy for analyzing error patterns in academic writing and highlighted the most frequent grammatical errors in several published articles. Researchers and journal editors can benefit from these results to enhance the linguistic quality of English-language abstracts.

Key Words: Academic Writing, Abstract; EFL Researchers, Error Analysis, Grammatical Errors, Surface Strategy Taxonomy

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1. Introduction

Academic writing is the most essential element in professional and scholarly communication, and its quality frequently depends on how accurate and clear its abstract is (Klimova, 2013). Readers can comprehend a study's contributions without reading the whole paper thanks to abstracts, which provide an overview of the study's objectives, methods, results, and implications. Meanwhile, the acceptance of articles in academic journals for non-native English speakers largely depends on grammatical accuracy (Khansir, 2022; Nameni, 2021). Although significant developments have been observed in Iranian academic publishing, authors' inadequate English proficiency often makes it difficult for them to compose linguistically accurate abstracts.

Academic writing errors seem to be more systematic than random, and by analyzing them, teaching and professional writing practices can be improved through the discovered patterns in the analysis (Corder, 1967). The writing errors of omission, addition, misformation, and misordering are the four types of grammatical errors that are categorized by the Surface Strategy Taxonomy (SST) (Dulay et al., 1982). A systematic identification and categorization of errors in written texts can be done by this framework. Interlanguage Theory (Selinker, 1972), which underpins SST, outlines how non-native authors generate a distinct linguistic system shaped by their first language and internal processes by which the error patterns can be predicted.

So far, to the best of the researchers' knowledge, most of the previous studies that have been conducted on grammatical errors have focused on theses or classroom assignments that were written by students (Ayar, 2020; Taşçı & Aksu Ataç, 2018), and the most frequent errors were reported were articles, prepositions, verb tenses, word order, and sentence structure. Only a few studies have thoroughly examined published academic abstracts by Iranian authors in different disciplines. For instance, in student-submitted journal papers that were investigated by Salehi and Bahrami (2018), it was found that the errors were mostly related to word choice, articles, prepositions, connectors, and verb tenses, suggesting L1 interference played an integral role in making such errors. Therefore, there is a noticeable research gap as their study did not investigate other academic domains or emphasize abstracts.

2. Literature Review

A precise and accurate writing can make an academic communication more effective, especially when the abstracts are clearly and accurately written (Klimova, 2013). Non-native English writers may encounter challenges in their academic writing due to differences between

their first language and English structures (Elhami & Shafiee, 2021). EFL researchers often have grammatical, syntactic, and cohesive errors that affect academic writing's clarity and acceptability (Lee & Macaro, 2021). These errors are systematic and predictable as they are caused by the individuals' interlanguage development (Ortega, 2020).

One of the essential points that non-native English authors should keep in mind is maintaining grammatical accuracy, because errors can lower the chance of publication (Elhami & Shafiee, 2021; Khansir, 2022). Suitable phraseology and vocabulary selection are another issue that EFL authors struggle with after the grammatical accuracy issue (Nameni, 2021). Based on the studies, the appropriate use of collocations, cohesive devices, and discipline-specific terminology is challenging for writers (Ayar, 2020). Fostering these skills requires targeted writing practice and extensive reading of academic materials.

Although the number of Iranian journals is increasing, the researchers encounter linguistic challenges, which means that a systematic investigation of grammatical errors in abstracts is critically needed. Additionally, studies have shown that there is a close association between the author's knowledge about genre conventions like the IMRAD (Introduction, Methods, Results, and Discussion) structure and their academic writing proficiency (Taşçı & Aksu Ataç, 2018). Acquiring these conventions in addition to grammatical accuracy greatly increase the chance of publishing in international journals for non-native researchers.

Some studies have investigated the grammatical errors in academic publications (Ayer, 2020; Salehi & Bahrami, 2018). According to Ayar (2020), the most frequent errors in the academic writings occurr with verbs, prepositions, and articles in Turkish learners' writing. Taşçı and Aksu Ataç (2018) noticed that adult learners made similar types of errors. Although these studies were beneficial and informative, they could not show professional academic writing contexts. The first (and maybe the only) part of a paper that is checked by the readers is the abstract, which is an essential part of research papers. A concise and persuasive abstract encourages the reader's decision to read the entire paper by offering a brief overview of the study's objectives, methodology, results, and conclusions. Abstracts that lack clarity may minimize the importance of the study and lower the chances of citations.

Salehi and Bahrami (2018) found errors in word choice, articles, prepositions, connectors, and verb tenses in 40 journal articles written by master's and PhD students in Iran. However, published abstracts from various fields were not investigated in the study. In EFL contexts, maintaining thoroughness, and conciseness are essential in abstract writing. In order to preserve grammatical accuracy and logical flow, researchers must reduce complicated concepts to a small number of

words (Cargill & O'Connor, 2020). Hence, it is especially important to pay attention to tenses, passive voice, and cohesive devices to maintain coherence and credibility.

Error analysis provides a suitable methodological framework for identifying, classifying, and understanding linguistic errors in written works (James, 2013; Gass & Selinker, 2008). This approach analyzes language proficiency, discovers error patterns, and supports instructional interventions (Hafsah, 2022; Richards et al., 1992). Additionally, it discusses preventive strategies, in which authors modify constructs to reduce errors instead of pursuing full precision. (James, 1998; Elyildirim, 2017; Schachter, 1974). Intralingual elements (developmental or overgeneralization errors) and interlingual influences (first-language interference) can be detected by a systematic error analysis (Corder, 1967; Selinker, 1972).

Dulay, et al.'s (1982) Surface Strategy Taxonomy (SST) is a significant model in error analysis to identify how learners modify or manipulate the surface structure of their sentences. SST defines errors according to the cognitive procedures that students use to produce a sentence, rather than dividing them solely into grammatical groups (Dulay et al., 1982). In this model, the surface-level errors are included in four primary types: First, omission is a common error among EFL learners and speakers in which they omit the essential parts of a sentence, such as articles, plural markers, auxiliary verbs, or prepositions. Due to the limited semantic weight of such grammatical morphemes that may not exist in the same form in the learners' first language, it frequently happens. Second, by adding extra components to the structure of the sentence, addition happens. Double markings, irrelevant auxiliaries, or the inappropriate use of certain grammatical structures are some types of unnecessary parts. Overgeneralization and misinterpretation among comparable structures are the common causes of additions. Third, misformation errors occur if students use morphemes or structures incorrectly. They do not add or remove anything; they just use the wrong word form, tense, or grammatical marker. The reasons for such errors are an inadequate understanding of morphological and syntactic rules. Fourth, by putting the components of a sentence in an incorrect arrangement, misordering errors arise. First language transfer can cause this type of error to happen. Thus, identifying patterns of structural deviation in academic writing and highlighting the underlying cognitive processes that influence authors' writing performance may be facilitated by using SST. The particular use of this taxonomy is for abstract analysis because all the challenges that EFL writers may encounter are highlighted by this taxonomy.

An increasing number of studies have investigated the researchers' problems in writing academic texts. In a study, Ayar (2020) analyzed the grammatical errors that he found in the

assignments of Turkish EFL students. 60 undergraduate students' essays were collected, and their errors were categorized by a descriptive error-analysis framework. According to the findings of this study, verb misuse, incorrect prepositions, and article-related errors were the most common errors. He observed that due to the negative transfer from Turkish grammar, the most significant challenge for the students was about tense consistency and the appropriate use of English articles. This study's findings suggest that such errors are evidence of more general interlingual and intralingual difficulties that EFL students frequently face. This study provided valuable information on students' writing errors, but it did not address academic or professional writings like published research abstracts, which call for a higher degree of linguistic precision. In another study, Taşçı and Aksu Ataç (2018) investigated adult Turkish EFL learners' academic writings' errors. 120 writing samples were collected from them. The samples had problems with verb tenses, prepositions, and determiners. Although adults had been studying English for many years, they still had trouble with syntactic and morphological issues. As the authors claimed, developmental issues and L1 interference were apparent in the forms of errors. Also, 40 journal articles authored by Iranian Master's and doctoral students were checked for grammatical errors by Salehi and Bahrami (2018). They used a mixed-methods approach to detect the frequent errors that were mostly related to incorrect word choice, misuse of articles and prepositions, faulty connectors, and tense inaccuracies. The researchers claimed that first-language interference was the main reason for such errors. This study examined academic writing, but not specifically the abstracts.

Grammatical errors detection has been the topic of several other studies, such as Rahman and Darus (2021), who did research on Bangladeshi postgraduate students' written abstracts. In their abstracts, sentence structure, verb forms, and article usage inaccuracies were seen frequently. In a similar vein, Aghagolzadeh and Davari (2020) examined the challenges faced by Iranian researchers in their academic English and found that L1 interference was the predominant reason for such difficulties. According to the findings of these study, it can be claimed that grammatical inaccuracies are common international problem among non-native English writers in academic composition. However, discipline-specific and context-specific research is required due to the distinctions in methodology, context, and objective.

Considering the above points, a number of limitations were found in the available literature on the EFL learners' writings. The majority of the prior studies have focused on samples of essays, theses, or classroom assignments that had been composed by students (Ayar, 2020; Taşçı & Aksu Ataç, 2018). However, professional academic writing has its own standards and demands,

which were not represented accurately in these studies. Even in Salehi and Bahrami's (2018) study on the journal articles authored by postgraduate students, they did not explicitly focus on published academic papers. Due to the importance of the abstract in research papers, it should be written accurately and concisely. In addition, with the rapid development of academic publishing in Iran, the literature shows a dearth of studies on Iranian researchers' published abstracts. There are also insufficient studies using Surface Strategy Taxonomy (SST) to analyze grammatical errors, and it is another apparent gap that was found in the literature. These deficiencies show that more targeted, context-specific studies should be done on Iranian researchers' published abstracts to check their grammatical accuracy.

To bridge these gaps, this study focused on the grammatical errors of 50 published abstracts. It used Surface Strategy Taxonomy (SST) as an analytical framework to classify omission, addition, misordering, and misformation errors systematically. Abstract is a part that has an enormous impact on grabbing readers' attention and journal acceptance decisions, and this study may be distinctive because of its focus on this less attended section of the academic papers. As the Iranian authors, journal reviewers, and academic writing instructors are eager to reduce the potential grammatical inaccuracies in academic writing and improve the quality of abstracts, they may benefit from the implications of the current study. Hence, the aim of this study was to answer the following research questions:

RQ1. What types of grammatical errors are most prevalent in research paper abstracts written by Iranian researchers?

RQ2. How are grammatical errors distributed, and what is their density across research paper abstracts?

3. Methodology

3.1. Design

This study identified and classified grammatical errors in published abstracts using a qualitative descriptive design. This design aimed to provide a thorough, transparent, and accurate assessment of an issue, rather than relying solely on theoretical conceptualization (Lambert & Lambert, 2012). This design made it possible to properly represent the occurrence of grammatical errors in actual published academic writing. This was done by using the Surface Strategy Taxonomy (SST) to identify, record, and classify errors.

3.2. Instruments

Iranian Journal of Medical Sciences and *Iranian Journal of Public Health* were the two Iranian journals that were analyzed. Fifty abstracts were randomly selected (25 from each journal) from issues published between 2020 and 2025. While all abstracts were examined, only those containing grammatical errors were analyzed in detail for classification and frequency counts. All abstracts were written by those authors whose first language was Persian. Ethical approval was not required for this study because all abstracts analyzed were publicly available, and no identifiable private information was used.

3.3. Procedure

The clarity, transparency, and reliability of this study were ensured by a well-organized data collection and data analysis procedure. Initially, a scrutinized examination of each abstract was done to detect possible grammatical errors. This analysis focused on words, phrases, or morphemes. In the next phase, those errors were classified into four groups according to the Surface Strategy Taxonomy (SST), including omission, addition, misformation, and misordering (Dulay et al., 1982). To ensure accurate classification, both researchers independently coded the errors and compared the assigned codes. By estimating the Cohen's Kappa coefficient, a value of 0.85 was obtained, and a strong inter-rater agreement was proved. The researchers discussed the inconsistent codes and reached an agreement.

Following the categorization phase, the frequency counts of category frequency were estimated, and the percentages were calculated based on the total number of errors found in the abstracts. The consistency between all the percentages and the number of observed errors was ensured by this approach. The acquired data were then displayed in tables to exhibit the distribution of errors in the categories of omission, addition, misordering, and misformation. This meticulous representation ensures the coding transparency, reliability, and clarity in the use of SST, ensuring the replicability of the study and its results.

4. Results

4.1. Overview of Errors

To address the first research question, the errors in the abstracts were identified and coded. The frequency of errors noticed in the abstract the papers for each category of errors is shown in Table 1. Although 50 abstracts were analyzed, only 10 contained grammatical errors and were used for detailed classification, and the others were error free in their abstracts.

Table 1.

Frequency of Grammatical Errors in Each Abstract

No.	Omission	Addition	Misformation	Misordering
1	4	2	6	8
2	4	0	4	0
3	18	2	2	2
4	6	4	4	2
5	8	0	2	2
6	2	0	2	0
7	2	1	3	4
8	9	1	1	1
9	3	2	2	1
10	4	0	1	1
Total	60	12	27	21

As can be seen in Table 1, omission errors were the most frequent type o error while addition errors were the least one. Table 2 also illustrates that the omission category was the most frequent while the addition category the least. Frequencies were added up across all abstracts to give a more comprehensive picture of the error rate.

Table 2.

Total frequency of grammatical error types

Error Type	**Frequency**
Omission	60
Misformation	27
Misordering	21
Addition	12
Total	120

As shown by Table 2, omission errors represent half of all detected errors (n = 60), confirming that missing grammatical elements were the most common structural problems in the analyzed abstracts. Addition errors were comparatively scarce (n = 12), indicating that unnecessary grammatical insertions were infrequent.

To address the second research question, error percentages were calculated using the formula:

$P = F / N \times 100\%$

Where

P = Each error's percentage

F = the error frequency

N = the sum of all errors

The grammatical error percentage was calculated by the following formula, and the results are represented in Table 3 and its corresponding figure (Figure 1). The analysis revealed that omission errors accounted for 50% of the total errors. The least percentage, which is 10% of the total, accounted for the addition error. Misformation represented 22.5% and misordering errors was the next, constituting 17.5% of the total errors.

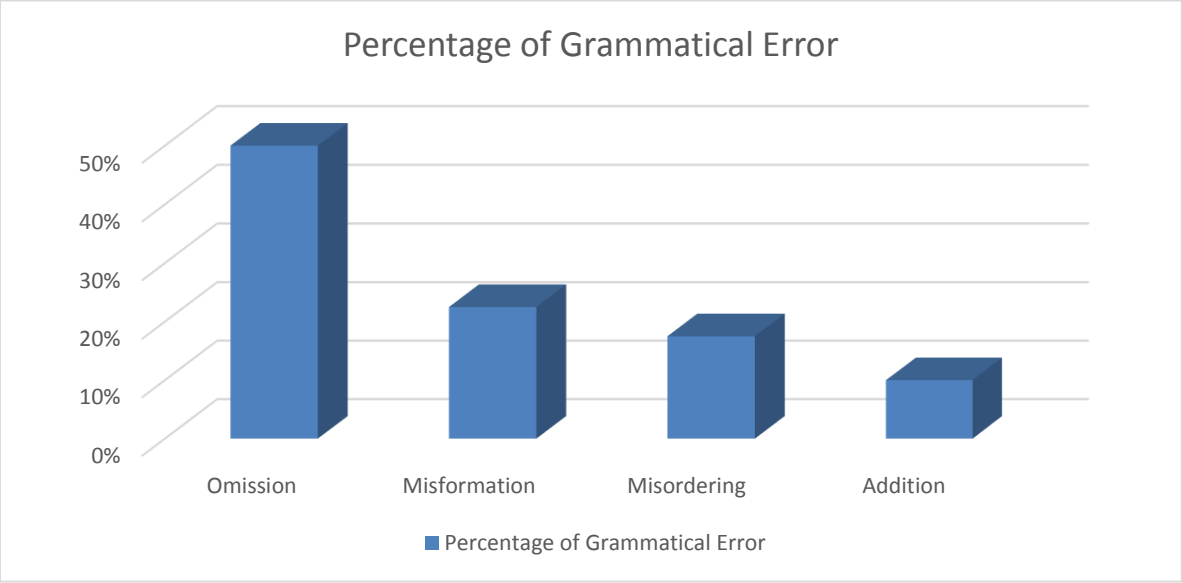
Table 3.

Percentage distribution of grammatical error types

Error Type	***Frequency***	***Percentage (%)***
Omission	*60*	*50.0%*
Misformation	*27*	*22.5%*
Misordering	*21*	*17.5%*
Addition	*12*	*10.0%*
Total	*120*	***100%***

Figure 1.

Percentage of Grammatical Errors by Type



To further illustrate each error category, sample from each group are presented below:

4.2. Errors by Category

4.2.1. Omission Errors

Sentences that lacked necessary components resulted in incomplete structures. Examples:

- **Missing Subject**
    - Original: "Analyzed the data from the study."
    - Corrected: "The researchers analyzed the data from the study."
- **Missing Verb**
    - Original: "Data collected from various sources."
    - Corrected: "Data were collected from various sources."
- **Missing Article**
    - Original: "Research highlights importance of collaboration in science."
    - Corrected: "The research highlights the importance of collaboration in science."
- **Missing Preposition**
    - Original: "Participants showed improvement test scores."
    - Corrected: "Participants showed improvement in test scores."

4.2.2. Addition Errors

The structure was broken by the addition of unnecessary items. Examples:

- **Unnecessary Modifier**
    - Original: "The results were very significant and important."
    - Corrected: "The results were significant."
- **Redundant Phrase**
    - Original: "To achieve the goal successfully."
    - Corrected: "To achieve the goal."

- **Extra Word**
    - Original: "The results were obtained from the experiments that were conducted."
    - Corrected: "The results were obtained from the conducted experiments."

4.2.3. Misformation

An incorrect term or structural form can make ambiguity. Examples:

- **Incorrect Verb Tense**
    - Original: "The researchers find that the results are significant."
    - Corrected: "The researchers found that the results were significant."
- **Incorrect Noun Form**
    - Original: "The data shows a clear trend."
    - Corrected: "The data show a clear trend."
- **Wrong Adjective Form**
    - Original: "The experiment was very success."
    - Corrected: "The experiment was very successful."

4.2.4. Misordering Errors

Clarity was impacted by improper word or sentence order. Examples:

- **Incorrect Subject-Verb Order**
    - Original: "Significant the results were."
    - Corrected: "The results were significant."
- **Misplaced Adjective**
    - Original: "The study is for future research important."
    - Corrected: "The study is important for future research."
- **Improper Adverb Placement**
    - Original: "Successfully, the method was applied in the experiment."
    - Corrected: "The method was applied successfully in the experiment."

4.3. Error Density per Abstract (Standardized per 100 Words)

A typical academic abstract is between 150 and 250 words in length. A standard density metric (per 100 words) was employed to calculate the density and create uniform comparisons.

Table 4.

Estimated Error Density per 100 Words

Abstract No.	Total Errors	Density (per 100 words)
1	20	13.3
2	8	5.3
3	24	16.0
4	16	10.6
5	12	8.0
6	4	2.6
7	10	6.6
8	12	8.0
9	8	5.3
10	6	4.0

Values in Table 4 reflect the number of errors likely to appear per 100 words. Abstract 3 exhibits the highest estimated error density (16 per 100 words), indicating substantial structural instability. Abstracts 6 and 10 show the lowest density, suggesting comparatively more grammatical control.

To have a deep understanding of the error analysis, Table 5 presents which abstracts contained which combinations of error categories.

Table 5.

Co-occurrence patterns of error categories across abstracts

Abstract No.	Omission	Addition	Misformation	Misordering	Co-Occurrence Pattern
1	✓	✓	✓	✓	All four types
2	✓	–	✓	–	Omission + Misformation
3	✓	✓	✓	✓	All four types
4	✓	✓	✓	✓	All four types
5	✓	–	✓	✓	Omission + Misformation + Misordering
6	✓	–	✓	–	Omission + Misformation
7	✓	✓	✓	✓	All four types
8	✓	✓	✓	✓	All four types
9	✓	✓	✓	✓	All four types
10	✓	–	✓	✓	Omission + Misformation + Misordering

Note. ✓ indicates the presence of a given error type in the abstract.

Most abstracts contained multiple categories of errors, demonstrating that grammatical issues rarely occur in isolation. While addition errors were present in less than half of the abstracts, omission errors could be found in all of them. This co-occurrence matrix adds analytical depth beyond simple frequencies.

5. Discussion

Article use, subject–verb agreement, and tense consistency were major error patterns that were found in the abstracts analysis. The credibility of this study is approved by the consistency between its findings and the prior studies' results. Specifically, the results of the current study align with the prior literature on EFL academic writing. For example, Al Fadda (2012) and Hyland and Jiang (2017) claimed that the most frequent error even at an advanced level is related to article use and agreement issues.

Subject-verb agreement errors occurred quite frequently, especially in sentences with long noun phrases or multiple modifiers. Biber et al. (2011) claimed that when a structure is more syntactically complex, it is more challenging for the EFL authors to attain proper subject-verb agreement, and this assertion supports the detected patterns of this study. Since the current study showed similar tendencies in published abstracts, the results broaden its generalizability. That is, complexity-related subject-verb agreement errors also occurs in formal academic publications.

Another prominent feature identified in the data was tense inconsistency. Shaw and Liu (1998) noted that conventions of tense usage vary across academic disciplines, which can lead to inconsistent tense patterns among EFL scholars. The findings of the present study support this observation. Although the intended meaning of the abstracts was generally clear, greater consistency in tense use could have improved textual clarity and cohesion. A key strength of this study lies in its focus on different disciplines within Iranian journals, allowing it to illustrate how such challenges emerge in a specific national research context—an aspect that has not always been addressed in earlier cross-national studies.

Errors related to word order, unnecessary additions, and lexical misformation occurred less frequently. As Hyland and Jiang (2017) observed, advanced writers typically have strong control over basic syntactic structures. In line with this view, the relative infrequency of these error types in the current dataset suggests that the authors are capable of producing readable academic prose, despite the presence of occasional minor grammatical issues. This finding extends the existing literature by demonstrating that grammatical competence in published EFL

writing is not uniform across all categories: while some areas reflect considerable strength, others remain problematic.

Although the findings align closely with established patterns reported in previous research, the present study contributes additional insights by focusing on published research abstracts rather than student or novice writing. This distinction represents an important strength, as it indicates that certain grammatical challenges persist regardless of authors' experience level or publication status. Moreover, the inclusion of multiple journals provides a broader perspective on linguistic accuracy within the Iranian academic context and helps identify grammatical features that recur across different disciplinary fields.

Nevertheless, the findings should be interpreted with some caution. The relatively small sample size and the descriptive nature of the analysis limit the generalizability of the results. Additionally, although error classification was based on well-established taxonomies, a degree of researcher interpretation was unavoidable when assigning specific error types. These limitations do not detract from the value of the study; rather, they highlight directions for future research and underscore the importance of examining authentic published texts to better understand persistent grammatical issues in EFL academic writing.

By comparing its findings with those of previous studies and concentrating on authentic published abstracts, this investigation contributes to a deeper understanding of recurring grammatical errors in EFL scholarly communication. While the focus on professional writing contexts offers novel insights beyond much of the existing literature, the validity of the findings is reinforced by their consistency with well-established research in the field.

6. Conclusion

In this study, grammatical errors were examined in a sample of 50 randomly selected abstracts from two Iranian academic journals. Of these abstracts, 40 were found to be free of grammatical errors, while the remaining 10 contained a total of 120 errors. Among all identified errors, omission errors were the most frequent, accounting for 60 cases (50%). These were followed by misformation errors with 27 instances (22.5%), misordering errors with 21 instances (17.5%), and addition errors with 12 instances (10%). Although most of the abstracts were error-free, the presence of grammatical errors in a number of them indicates that such issues still occur. It appears that many of the observed errors, despite their differing surface forms, may stem from multiple underlying causes. Factors such as time constraints during writing, pressure to publish,

and differences in researchers' language proficiency may have contributed to these errors. Overall, the findings provide a detailed overview of grammatical errors within a limited sample of Iranian journal abstracts. However, given the small sample size and the fact that most abstracts did not contain errors, the findings cannot be generalized to all Iranian researchers or academic journals.

The scope of this study may assist researchers in improving abstract writing. When EFL authors are sufficiently informed about common grammatical errors in academic writing, they can gain better control over their written production. Journals and academic institutions may also benefit from these findings by offering training courses that focus on complex grammatical structures and the most frequent errors in academic writing. Such initiatives may help reduce the number of grammatical errors in future submissions.

Several limitations should be considered when interpreting the findings of this study. First, only 50 abstracts from two Iranian academic journals were analyzed, which constitutes a small sample and limits the applicability of the results. Second, the study focused exclusively on grammatical errors; other important aspects such as coherence, vocabulary use, and content organization were not examined. Although the frequencies of the errors were reported, raw data for individual abstracts were not provided, which may limit transparency for replication or further analysis. Finally, because the identification and classification of errors were based on the researcher's own judgment, the possibility of subjective bias cannot be entirely ruled out, despite careful analytical efforts.

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Curriculum Research

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Desirable Difficulties and long-term Learning Outcomes in German as a Foreign Language: Evidence from Iranian Learners

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Abstract

This paper explores how the application of desirable difficulties—spacing, interleaving, retrieval, and generative learning—affects long-term retention and productive performance among Iranian learners of German as a Foreign Language (GFL). Building on a cognitive framework that distinguishes the durability of stored knowledge from its momentary accessibility, the study adopted a mixed-methods design with A1-level learners from Tehran. A total of twenty participants (N = 20) were randomly assigned to an experimental group (n = 10) receiving instruction based on desirable difficulties and a control group (n = 10) following massed-practice routines. Quantitative analysis showed that the experimental group had significantly higher retention and production skills scores in the delayed post-tests, and the results were statistically significant ($p < 0.01$). Qualitative data derived from semi-structured interviews with six volunteer learners from the experimental group indicated that participants associated increased cognitive challenge with deeper understanding and enhanced motivation. The results show that including challenging but beneficial activities helps make language knowledge more lasting and easier to use in different situations. This offers support for the idea of using spaced retrieval and interleaved practice in teaching foreign languages in a structured way to help learners develop strong and long-term language skills.

Key Words: Desirable Difficulties, Educational Design, German as a Foreign Language, Iranian Learners, Long-Term Retention

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1. Introduction

Foreign language acquisition, as extensively discussed in applied linguistics, requires sustained cognitive effort and effective memory consolidation (Ellis, 2015). In instructional contexts such as Iran, where pedagogical goals often emphasize immediate communicative performance, classroom practices frequently rely on extensive repetition and **massed (blocked) practice**, which are known to support short-term fluency gains (Bjork & Bjork, 1992; Dunlosky et al., 2013). Although these techniques can lead to rapid initial improvement and perform well on immediate assessments, **research** has repeatedly shown that knowledge acquired through **massed practice is more fragile and susceptible to accelerated forgetting when recall is delayed** (Cepeda et al., 2006; Roediger & Karpicke, 2006).

Desirable difficulties refer to learning conditions that deliberately introduce manageable challenges during the learning process in order to enhance long-term retention and transfer, even if they temporarily reduce short-term performance (Bjork & Bjork, 1992). The central premise of this framework is that learning activities requiring greater cognitive effort—such as retrieving information after a delay, discriminating between similar linguistic forms, or generating responses rather than recognizing them—strengthen underlying memory representations and improve future accessibility. From this perspective, momentary struggle or reduced fluency during practice is not a sign of ineffective instruction, but rather an indicator of deeper processing that supports durable and transferable learning outcomes (Bjork, 1994; Bjork & Bjork, 2011).

This research directly applies these concepts to the specific context of German as a Foreign Language (GFL) instruction for Persian-speaking beginners at the A1 level. A growing body of empirical research has demonstrated the effectiveness of desirable difficulties in second and foreign language learning, particularly in English-language contexts. For example, retrieval practice and spaced repetition have been shown to significantly enhance long-term vocabulary retention among EFL learners (Pan & Schmitt, 2023; Roediger & Karpicke, 2006), while interleaved practice has been found to improve grammatical discrimination and transfer across linguistic structures (Vaughn & Rawson, 2023). More recent studies have extended these findings to non-English contexts, indicating that effortful learning strategies can also support speaking accuracy and retention among Iranian EFL learners (Zhao & Li, 2025).

Despite these advances, empirical evidence examining the combined application of spacing, interleaving, and active retrieval within German as a Foreign Language (GFL) instruction, particularly among Persian-speaking beginners, remains scarce. The present study addressed

this gap by investigating whether structured desirable-difficulty-based instruction led to more durable retention of grammatical structures and vocabulary, and whether these gains could be transferred to complex productive skills such as speaking and writing within the Iranian educational context.

2. Review of the Related Literature

2.1. The New Theory of Disuse (NTOD)

The theoretical underpinning of this study rests primarily on Bjork and Bjork's (1992) New Theory of Disuse (NTOD). This model revolutionized the understanding of memory consolidation by proposing two distinct parameters governing memory traces:

Storage Strength (SS): This represents the enduring strength of the memory trace encoded in long-term memory. A high SS indicates that the information is deeply rooted and resistant to forgetting.

Retrieval Strength (RS): This denotes the immediate accessibility of the information at a given moment. High RS allows for quick, almost automatic recall.

Massed practice (cramming) is highly effective at rapidly boosting retrieval strength (RS), often creating a subjective sense of proficiency immediately after study. However, because it contributes little to the gradual accumulation of storage strength (SS), such gains tend to be short-lived and result in poor long-term retention (Bjork & Bjork, 1992; Dunlosky et al., 2013). Conversely, desirable difficulties are intentionally designed to slow the initial growth of RS; by requiring effortful searching and reconstruction of memory traces, these conditions promote stronger and more durable storage strength, thereby supporting long-term learning (Bjork, 1994; Bjork & Bjork, 2011).

2.2. Operationalizing Desirable Difficulties

The principle of desirable difficulties is operationalized through several specific laboratory and classroom techniques, four of which are central to this investigation:

Spacing (Distributed Practice): Instead of reviewing material in one long session, learning sessions are spread out over increasing intervals (Cepeda et al., 2006). This forces the memory system to work harder to retrieve moderately faded information.

Interleaving (Mixing Practice): Rather than practicing one skill or grammatical structure exhaustively before moving to the next (blocked practice), interleaving involves mixing tasks from

different, related concepts within a single study session. This forces the learner to continuously discriminate between concepts and select the appropriate retrieval strategy, enhancing pattern recognition (Borromeo-Ferri et al., 2021).

Retrieval Practice (Testing Effect): The act of successfully recalling information without cues (e.g., self-testing, flashcards, short quizzes) is significantly more beneficial for long-term retention than restudying the material (Roediger & Karpicke, 2006). This directly strengthens SS. Recent studies have expanded the framework of Desirable Difficulties to foreign language learning, showing that making learning effortful enhances long-term retention and transfer across linguistic domains (Bjork & deWinstanley, 2022; Pan & Schmitt, 2023; Vaughn & Rawson, 2023).

Generative Learning: This involves applying learned forms to create novel sentences, paragraphs, or solutions that were not explicitly taught, requiring the learner to synthesize existing knowledge flexibly (DeKeyser, 2007).

Studies in cognitive and educational fields have repeatedly shown that introducing challenging but beneficial obstacles can improve how well information is remembered and applied over time. For instance, Dunlosky et al. (2013) synthesized extensive experimental evidence showing that spacing and retrieval practice reliably outperform massed rehearsal across learning tasks. In the context of second and foreign language learning, empirical studies have reported similar benefits. For example, retrieval-based practice and spaced repetition have been shown to significantly improve long-term vocabulary retention (Pan & Schmitt, 2023; Roediger & Karpicke, 2006), while interleaved practice has been found to enhance grammatical discrimination and flexible application of linguistic forms (Vaughn & Rawson, 2023). Recent studies conducted in classrooms show that carefully planned teaching methods help students engage more deeply and better develop useful skills like speaking and writing (Tullis & Finley, 2024).

Despite this growing body of evidence, most empirical investigations have been conducted in laboratory settings or within English as a Foreign Language (EFL) contexts, often focusing on isolated techniques rather than their combined, systematic application. Consequently, there remains a shortage of localized, classroom-based studies examining how multiple desirable difficulty strategies operate together within German as a Foreign Language (GFL) instruction, particularly for Persian-speaking beginner learners in Iranian educational contexts.

To address this gap, the present study empirically examined the integrated implementation of spacing, interleaving, retrieval practice, and generative learning within a six-week GFL program at the A1 level. By combining quantitative measures of retention and

productive performance with qualitative learner perspectives, this study contributed context-specific evidence to the desirable difficulties literature and extended its applicability beyond dominant EFL settings. Accordingly, the study pursued the following research objectives: (a), whether instruction grounded in desirable difficulties led to greater long-term retention of grammatical structures and vocabulary compared to massed practice. (b), whether gains in retention could be transferred to improved productive skills, specifically speaking and writing. (c) learners' perceptions of effortful learning strategies in GFL instruction.

Based on these objectives, the study attempted to address the following research questions:

RQ1. Does the application of desirable difficulties result in significantly higher delayed post-test performance than conventional massed practice among Iranian GFL learners?

RQ2. Do learners exposed to desirable difficulties demonstrate superior performance in productive skills (speaking and writing)?

RQ3. How do learners perceive the cognitive challenge associated with desirable difficulty-based instruction?

3. Method

3.1. Design

This study adopted a mixed-methods design, integrating quantitative and qualitative data to comprehensively examine the effects of desirable difficulties on learning outcomes in German as a Foreign Language (GFL). A mixed-methods approach was selected because quantitative measures alone could capture differences in retention and productive performance but could not sufficiently explain learners' experiences of cognitive effort and perceived usefulness of the instructional approach.

The quantitative phase employed a quasi-experimental pretest–posttest control group design, comparing an experimental group instructed through desirable difficulties with a control group following conventional massed practice. Immediate and delayed post-tests were used to assess short-term performance, long-term retention, and transfer to productive skills. The qualitative phase consisted of semi-structured interviews conducted with a purposively selected subset of learners from the experimental group. These interviews explored learners' perceptions of effortful learning, cognitive challenge, and the perceived impact of desirable difficulty-based

instruction on understanding and motivation. Integrating qualitative data provided deeper interpretation of the quantitative findings and increased the explanatory power of the study.

3.2. Participants

The study population comprised twenty (N = 20) native Persian speakers enrolled in an intensive, beginner-level (A1) German course at a private language center in Tehran, Iran. Participants were selected through convenience sampling from intact classes and voluntarily agreed to take part in the study. Eligibility criteria required that learners had no prior formal instruction in German, which was confirmed through a screening questionnaire administered prior to the intervention. Participants were randomly assigned to either an experimental group (n = 10), receiving instruction based on desirable difficulties, or a control group (n = 10), following conventional massed-practice instruction.

All participants were adult learners (M = 22.5 years, SD = 1.8). To ensure baseline comparability between groups, participants' initial homogeneity was assessed using scores from a preliminary Persian language aptitude test and their stated motivations for learning German (e.g., university entrance, employment). Based on these measures, no systematic differences were observed between the two groups prior to the intervention. The sample consisted of 14 female and 6 male learners, with a comparable gender distribution across the experimental and control groups. Informed consent was obtained from all participants prior to data collection.

3.3. Instruments and Materials

Three types of instruments were employed in this study to measure learners' receptive knowledge, controlled production, and complex productive performance. All instruments were aligned with A1-level objectives as specified by the Common European Framework of Reference (CEFR).

Immediate Post-Test (IPT) and Delayed Post-Test (DPT) Learners' short-term achievement and long-term retention were assessed using two parallel, researcher-developed tests: an Immediate Post-Test (IPT) and a Delayed Post-Test (DPT). Both tests consisted of 100 items equally weighted across receptive knowledge and controlled productive use of grammatical and lexical structures covered during the instructional period. The receptive component included multiple-choice items and cloze tests targeting A1-level grammar and vocabulary. The controlled production component consisted of short sentence transformation tasks requiring learners to apply learned grammatical forms accurately. Each test required approximately 45 minutes to complete. All items were scored dichotomously (1 = correct, 0 = incorrect), resulting in a maximum

possible score of 100. The IPT was administered immediately following the six-week intervention, whereas the DPT was administered four weeks later without any intervening review or practice. Parallel versions of the tests were employed to minimize test–retest effects.

Productive Skills Assessment (PSA) Learners' complex productive performance was assessed through a Productive Skills Assessment (PSA), administered exclusively during the delayed post-test phase to measure the transfer of learning to spontaneous language use. The PSA consisted of two independent tasks: a speaking task and a writing task. The speaking task took the form of a semi-structured interview conducted individually with each participant.

The semi-structured interviews were also used as the third tool for research, giving qualitative information about how learners felt about the level of mental effort, the difficulty, and the teaching method. The interview was guided by a fixed set of prompts focusing on familiar A1-level topics (e.g., self-introduction, daily routines, personal preferences). While the prompts were predetermined, follow-up questions were used to elicit spontaneous responses and encourage extended production. Each interview lasted approximately 8–10 minutes and was audio-recorded for scoring purposes. The writing task required participants to produce a short descriptive essay of approximately 150 words on a familiar topic aligned with the instructional content (e.g., describing their daily routine or living environment). Participants were given 25 minutes to complete the task without access to reference materials. Before the interviews started, the participants were told why the interviews were happening, promised that their information would stay private and not be shared, and were made clear that they could choose not to take part. They signed a document agreeing to take part, and all the audio recordings were only used for research.

Scoring procedures and inter-rater reliability performance in both the speaking and writing tasks was evaluated using a holistic analytic rubric focusing on two dimensions: accuracy (grammatical correctness and appropriate use of lexical items) and effectiveness (clarity of expression and successful communication of meaning). Each dimension was scored on a 10-point scale, yielding a maximum combined score of 20 for each task. All PSA performances were independently rated by two trained native German speakers who were blinded to participants' group assignment. Prior to scoring, the raters were familiarized with the rubric and jointly rated a subset of samples to establish scoring consistency. Inter-rater reliability was calculated using Pearson correlation coefficients, yielding satisfactory agreement for both speaking ($r = 0.87$) and writing ($r = 0.84$). Discrepancies in scoring were resolved through discussion.

3.4. Procedure

A six-week intervention was implemented. Instruction for both groups was delivered by the same instructor to control for potential teacher effects. The instructor followed identical curricular content and instructional objectives for both groups, with differences limited to the practice conditions specified by the experimental design. Instruction took place over 18 instructional sessions, with three sessions per week. Each session lasted approximately 90 minutes, resulting in a total of 27 hours of classroom instruction for each group. The instructional syllabus for both groups was identical in terms of content coverage, instructional objectives, and total exposure time.

The curriculum targeted core A1-level competencies as specified by the Common European Framework of Reference (CEFR), with a particular focus on foundational grammar (e.g., basic sentence structure, modal verbs, case marking), essential vocabulary sets, and controlled communicative use of these forms. Listening and reading activities were integrated as supportive input skills, while speaking and writing were emphasized primarily as outcome measures. Given the study's primary focus on examining the effects of desirable difficulties on long-term retention and transfer to productive performance, the six-week instructional period was deemed sufficient for introducing and practicing targeted A1 structures while maintaining experimental control. The study did not aim to provide full balanced development of all language skills, but rather to investigate how differing practice schedules influenced the durability and functional use of newly learned grammatical and lexical knowledge.

All participants completed a German A1 pre-test aligned with CEFR descriptors, consisting of 60 multiple-choice and cloze items assessing basic grammatical structures and essential vocabulary. The test was administered solely to ensure baseline homogeneity across groups and was not included in the main statistical analyses. Following the pre-test, the 20 selected participants were randomly assigned to experimental and control groups, with ten students in each group.

Experimental Group (DD; n=10): This group engaged in using desirable difficulties as detailed below:

- **Spacing:** Previously taught grammatical structures were systematically reviewed after delayed intervals rather than immediately following initial instruction. For example, grammatical structures introduced in Week 1 (e.g., nominative and accusative case marking) were revisited only in Weeks 3 and 5 through brief review tasks and practice exercises. The

teacher did not provide advance reminders or summaries before these reviews; instead, learners were required to retrieve prior knowledge independently. The teacher's role was limited to providing feedback after task completion.

- **Interleaving:** Practice activities were designed to mix multiple grammatical structures within a single session. For instance, learners completed worksheets in which sentences requiring Präteritum verb forms, separable verbs, and adjective declensions appeared in random order rather than in separate blocks. Students first identified which grammatical rule applied before producing the correct form. The teacher monitored performance and provided delayed corrective feedback, encouraging learners to explain their rule selection when errors occurred.
- **Retrieval Practice:** Each instructional week included mandatory retrieval-based activities at the beginning of selected sessions. Learners were asked to perform short "brain dump" tasks, in which they wrote everything they could recall about previously studied grammar rules and vocabulary without access to notes or textbooks. These were followed by brief, ungraded quizzes consisting of short-answer or sentence-completion items. The teacher did not correct errors immediately, using the tasks solely to prompt effortful recall rather than formal evaluation.
- **Generative Learning:** Learners regularly engaged in productive tasks that required generating novel language beyond rote repetition. For example, students wrote short dialogues or descriptive paragraphs (e.g., describing their apartment or daily routine) that explicitly required the use of grammatical structures taught in different weeks, such as locative prepositions, adjective endings, and separable verbs. Students worked individually or in pairs, while the teacher acted as a facilitator, providing prompts and post-task feedback without modeling complete responses in advance.

Control Group (CP; n = 10): The control group followed a conventional blocked-practice instructional approach. Each session began with the explicit presentation of a new grammatical structure by the teacher, including rule explanation and model sentences written on the board. This was followed by extensive guided practice focusing on one grammatical feature at a time. Practice activities included repetitive sentence construction, fill-in-the-blank exercises, verb conjugation tables, and pattern-completion worksheets targeting a single structure (e.g., only Präteritum forms or only separable verbs) within each session. Students practiced the same form repeatedly until a high level of immediate accuracy was achieved. The teacher played an active, directive role by providing frequent explanations, modeling correct responses, and supplying immediate corrective feedback after each student response. Errors were corrected instantly to

prevent persistence of incorrect forms, and correct answers were often provided when students hesitated. Review sessions were typically massed at the end of each instructional unit. During these sessions, previously taught material was revisited through summary explanations, repetition drills, and short practice exercises designed to reinforce recently learned forms. Students' primary role was to apply explicitly taught rules accurately, with an emphasis on fluency and correctness during practice, rather than on effortful retrieval or rule selection.

Following the intervention, the following post-tests were administered:

1. Immediate Post-Test (IPT) which was administered immediately following the six-week intervention to measure short-term proficiency achieved by both groups.

2. Delayed Post-Test (DPT): which was administered four weeks after the instruction concluded (i.e., without any specific study or review time allocated during this four-week gap) to measure long-term retention. Both post-tests employed parallel versions of the same German A1 proficiency test. The two tests were matched in format, content coverage, and level of difficulty, and included identical task types as described in Section 3.3 (i.e., multiple-choice items, cloze tests, and controlled sentence transformation tasks). The same scoring procedures were applied to both tests, and all post-tests were administered under standardized classroom conditions without access to instructional materials. Testing conditions were identical for both groups. The four-week delay was selected to reduce retrieval strength while allowing storage strength to be meaningfully assessed, in line with the predictions of the New Theory of Disuse. Finally, six representative participants from the experimental group were invited to voluntary participate in the semi-structured interviews to elicit their reflections on the activities they were engaged in during the intervention.

3.5. Data Analysis

The pre-test scores were used solely to establish baseline equivalence between the experimental and control groups and were not included in the main statistical analyses. Quantitative data from the Immediate Post-Test (IPT) and Delayed Post-Test (DPT) were analyzed using independent-samples t-tests to compare group differences in short-term learning outcomes and long-term retention. Retention loss was calculated by comparing IPT and DPT scores within each group.

For the Productive Skills Assessment (PSA), total scores for speaking and writing were computed by summing the accuracy and effectiveness ratings assigned by two independent raters. Independent-samples t-tests were conducted to examine group differences in productive

performance. Inter-rater reliability coefficients were calculated prior to analysis and indicated acceptable agreement levels. Significance was set at $p < .05$ for all statistical tests.

The data collected from the interviews were audio recorded, transcribed verbatim, and then analyzed using thematic analysis. This method, based on a six-step process developed by Braun and Clarke in 2006, helped develop common themes and patterns about how learners viewed mental effort, difficulties in learning, and the benefits they felt from what they had learnt.

4. Results

This section reports the quantitative and qualitative findings of the study, comparing the Desirable Difficulties (DD) group and the Control Practice (CP) group in terms of long-term retention and productive skill development.

4.1. Quantitative Findings

Long-Term Retention Performance (IPT vs. DPT)

After confirming normality and homogeneity of variances, an independent-samples t-test was conducted. Initial Post-Test (IPT) results indicated minimal differences between the two groups, suggesting comparable immediate learning outcomes following instruction. An independent-samples *t*-test confirmed that the difference was not statistically significant ($p > .05$), supporting the assumption that desirable difficulties do not accelerate short-term acquisition.

Table 1.

Mean Scores and Retention Rates for IPT and DPT by Group

Group	IPT Mean (SD)	DPT Mean (SD)	Retention Rate (%)	Retention Drop (%)
Control Practice (CP)	88.56 (4.23)	68.23 (5.11)	68.9	31.1
Desirable Difficulties (DD)	88.17 (4.08)	82.75 (4.67)	75.9	6.7

Note. IPT = Immediate Post-Test; DPT = Delayed Post-Test. Scores are reported out of 100. Retention rate reflects the proportion of IPT performance maintained at DPT.

As shown in Table 1, learners in the DD group demonstrated significantly higher retention scores after a four-week interval compared to the CP group. While the DD group retained approximately 75.9% of their previously acquired knowledge, the CP group exhibited a markedly larger decline, retaining only about two-thirds of the learned material. These results give evidence for the New Theory of Disuse, showing that actively recalling information increases how well it's stored and helps keep learning results from fading over time.

An independent-samples *t*-test indicated that this difference was statistically significant, $t(18) = 4.15$, $p < .001$, with a large effect size (Cohen's $d = 1.89$). The descriptive and inferential statistics for the delayed post-test are shown in Table 2.

Table 2.

Independent-Samples t-Test Results for Delayed Post-Test Performance

Group	Mean	SD	*t*(18)	*p*	Cohen's *d*
Control Practice (CP)	68.23	5.11	4.15	< .001	1.89
Desirable Difficulties (DD)	82.75	4.67			

Note. DPT = Delayed Post-Test. Values represent group means and standard deviations. Effect size is reported as Cohen's d.

Productive Skills Assessment (PSA)

Productive language skills were assessed through speaking and writing tasks designed to measure both accuracy and communicative effectiveness. Descriptive statistics for both groups are presented in Table 3.

Table 3.

Productive Skills Assessment (PSA) Scores by Skill and Group

Skill	Group	Accuracy	Effectiveness	Total
Speaking	CP	5.1	6.3	11.4
Speaking	DD	6.8	7.5	14.3
Writing	CP	4.8	5.1	10.7
Writing	DD	6.8	7.1	13.9

Note. Maximum possible score per skill = 20. PSA scores represent combined rater judgments of grammatical accuracy and communicative effectiveness.

As shown in Table 3, The DD group performed better than the CP group in both speaking and writing tasks, scoring higher in total PSA across all assessment areas. In both speaking and writing, the DD group achieved higher total PSA scores compared to the CP group.

Following checks for normality and homogeneity of variances, the independent-samples t-test was run. The descriptive and inferential statistics for the Productive Skills Assessment (PSA) are presented in Table 4.

Table 4.

Independent-Samples t-Test Results for Productive Skills Assessment (PSA)

Measure	Group	Mean	SD	*t*(18)	*p*	Cohen's *d*
PSA (Total)	Control Practice (CP)	11.05	1.1			
	Desirable Difficulties (DD)	14.1	1.25	3.02	< .01	1.35

Note. PSA = Productive Skills Assessment. Scores represent aggregated speaking and writing performance (combined accuracy and communicative effectiveness). Maximum possible score = 20.

Rater comments further indicated that learners in the DD group demonstrated greater syntactic flexibility and more confident use of verb tense and case marking, particularly in tasks requiring spontaneous production. Although minor grammatical inaccuracies persisted, these did not substantially impede communicative effectiveness.

4.2. Qualitative Findings

To further explore learners' instructional experiences, semi-structured interviews were conducted with a subset of participants from the DD group (*n* = 6). The interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis following Braun and Clarke's (2006) six-step framework. The analysis yielded three recurrent themes, summarized below.

Theme 1: Initial Cognitive Difficulty

Participants consistently reported that early instructional stages felt demanding and occasionally confusing, particularly during interleaved retrieval tasks. For example, participant 4 noted that; "At first, recalling the dative case verbs without looking felt stressful and confusing".

Theme 2: Delayed Perceived Benefit

Despite early difficulty, learners later recognized the long-term benefits of effortful practice. As participant 6 expressed: "Weeks later, when the test came, I remembered it naturally, without forcing myself".

Theme 3: Enhanced Metacognitive Awareness

Several learners described a shift in how they perceived learning, viewing struggle as an integral part of progress rather than a sign of failure. For instance, participant 2 expressed that: "I used to think that if learning was hard, it meant I was doing something wrong. But then I realized that facing challenges actually helped me learn more and remember things better".

These findings align with mastery-oriented learning perspectives (Dweck, 1986), in which

sustained effort and productive struggle contribute to deeper learning and motivation.

5. Discussion

The present study investigated the effects of integrating desirable difficulties into German as a Foreign Language (GFL) instruction for beginner Iranian learners. The results of both quantitative and qualitative data supported the idea that instruction methods which require active recall can be very effective, especially when it comes to remembering information over time and using it in real-life language situations.

First, the quantitative results revealed a dissociation between short-term performance and long-term retention. While immediate post-test outcomes showed no statistically significant differences between groups, delayed post-test scores favored the desirable difficulties (DD) group, indicating a substantially lower rate of knowledge decay (6.7% vs. 31.1%). This pattern aligns with core assumptions of the New Theory of Disuse (Bjork & Bjork, 1992), indicating that retrieval effort may play an important role in strengthening long-term memory representations, even when short-term retrieval strength appears comparable across instructional conditions. Within this framework, learning activities that require effortful retrieval after a delay are expected to promote more durable storage strength, resulting in greater resistance to forgetting over time.

Second, the higher performance of the DD group on the Productive Skills Assessment (PSA) suggests that desirable difficulties may contribute not only to improved retention of linguistic forms, but also to enhanced transfer to complex communicative tasks. Learners exposed to spacing, interleaving, and retrieval-based practice exhibited greater syntactic flexibility and communicative effectiveness in both speaking and writing tasks. These findings are consistent with prior research indicating that retrieval-based practice supports flexible language use rather than surface-level fluency driven by repeated exposure (Tullis & Finley, 2024; Van Merriënboer & Sweller, 2010). In contrast, the control group's reliance on blocked practice may have fostered temporary fluency driven by immediate accessibility, which deteriorated once retrieval pathways weakened.

The qualitative findings further helped illuminate the mechanisms underlying these quantitative outcomes. Participants initially perceived effort-inducing instructional activities as demanding or confusing; however, this early cognitive challenge came to be perceived as beneficial when learners observed improved recall and greater confidence in delayed assessments. Such reflections are the characteristic of mastery-oriented learning, in which

learners view struggle as an integral component of learning rather than a signal of failure (Dweck, 1986). The alignment between learners' experiences and objective performance gains contributes to the explanatory coherence of the findings.

From a pedagogical perspective, these results suggest that instructors may need to be prepared to tolerate slower initial progress when implementing desirable difficulties in GFL instruction. Rather than treating retrieval-based and interleaved activities as supplementary or optional, these strategies may be more effective when systematically embedded into instructional design to promote durable learning and transferable communicative competence.

6. Conclusion

This study investigated the effects of incorporating desirable difficulties, specifically spacing, interleaving, and retrieval practice, on long-term retention and the functional application of language knowledge among GFL learners. Quantitative findings demonstrated that while immediate post-test performance did not differ significantly between groups, learners exposed to desirable difficulties exhibited substantially higher delayed retention and significantly stronger productive skills in both speaking and writing tasks. Complementary qualitative data further indicated that learners initially perceived these instructional conditions as more demanding, yet later recognized their contribution to deeper understanding, increased self-monitoring, and more durable learning outcomes.

From a pedagogical perspective, these findings underscore the importance of prioritizing long-term learning gains over short-term performance. Instructional practices that generate immediate fluency or accuracy may create an illusion of effectiveness, whereas effort-inducing learning conditions appear to foster more robust and transferable language competence. For GFL programs, the systematic integration of spacing, interleaving, and retrieval-based activities may therefore serve as a viable means of enhancing both retention and productive language use, particularly when instructional goals emphasize sustainability and communicative functionality.

The study shows there's a big difference between what works in the short term and what leads to real, long-lasting learning. While practicing a lot quickly might seem better in the short run, it does not help build lasting language skills. For programs that aim to develop true fluency, using learning methods that require effort is not just helpful, it is essential. This idea matches recent research on flipped learning that involves working together or competing (Marashi & Mokhlesi, 2025). The study also corroborates the idea of using teaching methods that create mild

challenges, which help build strong and lasting language abilities. By treating these short-term difficulties as a normal and useful part of learning and not as a sign that something is wrong, teachers can create learning environments that lead to deeper understanding, better memory, and more reliable language skills.

Several limitations of the present study should be acknowledged. First, the sample size was relatively small and limited to A1-level learners within a specific instructional context, which may restrict the generalizability of the findings. Second, productive skills were assessed within a controlled classroom setting, potentially limiting the extent to which results reflect real-world communicative performance. Finally, learner perceptions were explored through interviews with a subset of participants, which, while informative, may not fully capture the range of experiences across the entire cohort.

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