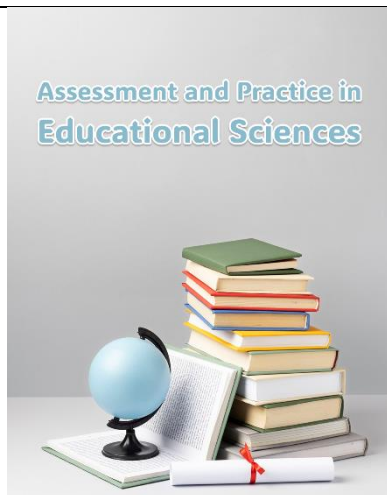




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Integrating Scenario-Based Instruction and Assessment: Effects on Iranian EFL Learners' Reading Comprehension

ABSTRACT

Despite growing interest in scenario-based approaches in language education, limited research has examined the combined use of Scenario-Based Instruction (SBI) and Scenario-Based Assessment (SBA), particularly for developing reading comprehension in Iranian EFL context. This study investigated the effect of SBI followed by SBA on the reading comprehension ability of Iranian intermediate EFL learners and explored whether its effectiveness differed across gender. A quasi-experimental design was employed with 200 intermediate EFL learners from private language institutes in Iran, who were assigned to an experimental group (n = 100) and a control group (n = 100). Data were collected through a standardized reading comprehension pre-test, six immediate post-tests, and a delayed post-test. The experimental group received reading instruction through SBI and was assessed through SBA, whereas the control group received conventional instruction and assessment. Independent-samples t-tests revealed that the experimental group significantly outperformed the control group on both the immediate and delayed post-tests, demonstrating the effectiveness of the SBI-SBA framework in enhancing reading comprehension. The findings also indicated that female learners achieved significantly higher reading comprehension scores than male learners following the intervention. The study highlights the potential of integrating scenario-based instruction and assessment to promote authentic, learning-oriented reading practices in EFL classrooms.

Keywords: Scenario-Based Instruction, Scenario-Based Assessment, Reading Comprehension, EFL Learners, Authentic Assessment

Introduction

Reading comprehension occupies a central position in second and foreign language learning because it enables learners to extract, interpret, integrate, and critically evaluate information conveyed through written texts. For learners of English as a

Foreign Language (EFL), reading is particularly consequential because exposure to English outside formal educational settings may be limited, making written materials an important source of linguistic input, vocabulary development, grammatical knowledge, and academic information. Effective reading therefore extends beyond recognizing words or retrieving explicitly stated information; it requires learners to establish relationships among ideas, activate relevant background knowledge, generate inferences, monitor understanding, and construct a coherent representation of textual meaning. Research on EFL reading has consequently emphasized the importance of instructional activities that promote active engagement with texts rather than treating reading as a passive process followed by isolated comprehension questions. Text-driven instructional practices that encourage learners to interact meaningfully with textual content have been associated with improved engagement and reading performance (1). Similarly, constructivist approaches to EFL reading indicate that contextualized and participatory activities can create opportunities for learners to construct meaning actively and develop more sophisticated understandings of texts (2).

Despite the recognized importance of reading comprehension, developing this ability remains challenging in many EFL settings. Learners may possess adequate knowledge of individual vocabulary items and grammatical structures but still experience difficulty synthesizing information, identifying implicit relationships, evaluating alternatives, and applying textual information to meaningful situations. Such problems can become particularly evident when classroom instruction emphasizes translation, teacher explanation, vocabulary memorization, and predetermined answers rather than purposeful interaction with texts. Contemporary educational perspectives increasingly question these decontextualized practices and instead emphasize learning environments in which learners actively use knowledge to accomplish meaningful objectives. This orientation is consistent with broader research on cognitive development suggesting that the characteristics of contemporary learning environments, including patterns of engagement with digital information, can influence attention, cognitive processing, and the development of higher-order abilities (3). Accordingly, language education requires pedagogical models that move beyond exposure to information and provide structured opportunities for learners to interpret information, make decisions, solve problems, collaborate with others, and reflect on the consequences of their choices.

The concept of authentic learning provides a particularly relevant foundation for such pedagogical reform. Authentic learning environments situate knowledge within meaningful contexts and engage learners in tasks resembling the intellectual and practical demands encountered beyond formal classroom exercises. Rather than separating knowledge from its application, authentic learning encourages learners to investigate complex problems, consider multiple perspectives, collaborate, reflect, and create products or decisions that have contextual significance (4). Within language education, this orientation is especially important because language is inherently situated: individuals read, speak, listen, and write for particular purposes in particular social and communicative circumstances. When reading tasks are embedded in realistic situations, comprehension can become a means of accomplishing an objective rather than an end defined exclusively by answering test questions. This shift has substantial implications for both pedagogy and assessment because authentic language education requires consistency between the activities through which learners develop language abilities and the tasks through which those abilities are evaluated.

Scenario-Based Instruction (SBI) represents one pedagogical response to this requirement. SBI organizes learning around realistic or plausible scenarios in which learners encounter a situation, identify a problem or objective, gather and interpret relevant information, consider possible courses of action, and use their knowledge to reach decisions or produce solutions. In foreign-language education, scenario-based instruction has been used to create purposeful contexts in which linguistic knowledge is integrated with communication, reasoning, and problem-solving rather than practiced as a collection of isolated language forms. Evidence from multidisciplinary university language education indicates that scenario-based instruction can establish contextualized conditions for active foreign-language learning and encourage learners to apply language knowledge to meaningful tasks (5). Scenario-based classroom contexts can also influence the pedagogical reasoning and decision-making

processes involved in language teaching, demonstrating that scenarios can function not merely as classroom activities but as organizing structures through which instructional choices and learner responses become more context-sensitive (6).

Several characteristics of scenario-based learning may explain its educational potential. First, scenarios provide learners with a reason to process information: textual information becomes relevant because it is necessary for solving a problem, evaluating a situation, assuming a role, or making a decision. Second, scenarios can promote higher-order cognitive processes by requiring learners to compare information, generate alternatives, predict consequences, justify interpretations, and reflect on their reasoning. Research with primary-school learners has demonstrated that scenario-based learning can contribute to scientific creativity and reflective thinking, suggesting that its benefits may extend beyond knowledge acquisition to the development of more complex cognitive abilities (7). Scenario design has similarly been linked to critical and creative thinking in interactive learning environments, particularly when learners are provided with meaningful choices, challenges, and opportunities to consider alternative responses (8). Reflection also constitutes an important component of scenario-based pedagogy, since the way scenarios are presented can shape learners' insights, interpretations, and empathetic responses to the situations under consideration (9).

The flexibility of scenario-based learning further allows it to be adapted to diverse educational environments and learner needs. Scenario-based learning has been incorporated into online courses alongside Universal Design for Learning principles to enhance accessibility and participation by providing multiple pathways through meaningful learning experiences (10). In technology-mediated environments, scenario-based gamified learning has also been associated with learner motivation, engagement, and interaction with the learning environment, although the effectiveness of particular design features can depend on learner characteristics and the organization of instructional activities (11). Within language education specifically, scenario-based frameworks have been designed to integrate linguistic objectives, meaningful communication, contextualized tasks, and structured progression in university-level language courses (12). Evidence from other professional fields also demonstrates the transferability of scenario-based pedagogy: scenario-based simulation has been used to enhance clinical competence by allowing learners to apply theoretical knowledge within realistic professional circumstances (13). Collectively, these findings suggest that scenarios can provide an instructional architecture capable of linking knowledge, cognition, motivation, and contextual application.

However, improvements in instruction alone may be insufficient when assessment remains disconnected from the conditions under which learning takes place. Conventional language assessments frequently consist of discrete, highly controlled tasks designed primarily to generate reliable scores. Although such assessments can serve important measurement purposes, they may provide limited opportunities for learners to demonstrate how linguistic resources are coordinated during realistic communicative activity. Authenticity has consequently become a major concern in second-language assessment, encompassing the extent to which assessment tasks meaningfully represent the contexts, purposes, interactions, and cognitive processes associated with target language use (14). Scenario-Based Assessment (SBA) responds to this concern by embedding multiple related tasks within a coherent situation or narrative and requiring learners to use information from the scenario as they progress through an assessment sequence. The development of scenario-based English assessments in university settings demonstrates how assessment can be organized around purposeful tasks that represent more integrated language use than isolated test items (15).

Scenario-Based Assessment is particularly compatible with learning-oriented conceptions of assessment. From this perspective, assessment should not be regarded solely as a terminal activity that measures what has already been learned. Rather, assessment can itself contribute to learning by eliciting productive cognitive processes, providing meaningful feedback, creating opportunities for reflection, and encouraging learners to apply strategies across related tasks. A learning-oriented

perspective on scenario-based assessment emphasizes this reciprocal relationship between assessment performance and learning processes (16). Empirical work with scenario-based assessments of written argumentation has further shown that performance can be sensitive to differences in curriculum and instruction, highlighting the importance of understanding assessment as situated within learners' broader educational experiences (17). Beyond language education, scenario-based capability assessment has also been examined in professional learning contexts as a means of evaluating whether individuals can mobilize knowledge and judgment in realistic circumstances rather than merely reproduce declarative knowledge (18).

Recent developments in language assessment provide further support for viewing SBA as a means of eliciting situated language proficiency. A learning-oriented language assessment framework has been employed to validate claims concerning a B1 scenario-based assessment of situated second- and foreign-language proficiency, emphasizing the need to connect assessment interpretations with the cognitive, contextual, and learning processes elicited by scenario tasks (19). Scenario-based assessment has likewise been applied to L2 academic speaking to investigate strategic competence as a cognitive dimension of performance. Findings indicate that scenario-based tasks can provide opportunities to observe how learners strategically manage communicative demands, process information, and employ cognitive resources while completing interconnected language activities (20). Such evidence is especially relevant to reading comprehension because successful reading similarly requires strategic coordination of cognitive and metacognitive processes, including identifying task demands, locating relevant information, making inferences, monitoring understanding, and selecting appropriate responses.

The potential of scenario-based assessment has also begun to receive attention in the Iranian EFL context. Research involving Iranian learners has demonstrated that SBA can influence writing performance when learners complete contextualized and interconnected assessment activities, providing evidence that scenario-based assessment can be implemented effectively within local EFL settings (21). Related research has shown that scenario-based assessment can contribute to writing self-regulation, including processes through which learners manage, monitor, and strategically direct their performance during language tasks (22). These findings are consistent with the broader literature on strategy-based instruction and self-regulated learning in second- and foreign-language education, which increasingly emphasizes the importance of enabling learners to assume an active role in planning, monitoring, evaluating, and regulating their learning processes (23). From this perspective, scenario-based environments may be especially valuable because they require learners to determine what information is relevant, select strategies according to evolving task demands, monitor their progress, and adjust their responses when initial interpretations prove insufficient.

Although SBI and SBA are conceptually compatible, the two approaches have frequently been investigated separately. Scenario-based instruction primarily concerns how learning experiences are organized, whereas scenario-based assessment concerns how learners' developing abilities are elicited and evaluated. Yet separating these components may overlook a central principle of effective educational design: instruction and assessment should be constructively aligned so that the competencies developed through learning activities correspond to those learners are expected to demonstrate during assessment. When instruction emphasizes contextualized interpretation, collaborative problem-solving, decision-making, and reflection but assessment relies predominantly on decontextualized recall, learners may encounter a mismatch between the nature of learning and the nature of evaluation. Conversely, integrating SBI with SBA may create continuity across teaching, practice, and assessment. Learners can first develop strategies and comprehension processes within meaningful instructional scenarios and subsequently demonstrate those abilities through assessments organized according to comparable principles of contextualization, authenticity, and purposeful language use. Such integration may allow assessment to reinforce rather than interrupt the learning process.

This potential alignment is particularly relevant to reading comprehension. Traditional reading instruction may encourage learners to read a passage and subsequently answer independent comprehension questions, whereas scenario-based reading can position the text as an informational resource needed to accomplish a larger objective. For example, learners may need to interpret several parts of a text to make a recommendation, determine the most appropriate response to a problem, compare possible actions, or justify a decision. These requirements can stimulate inferential processing, integration of information across textual sections, evaluation of evidence, and strategic rereading. When subsequent assessment adopts a similar scenario-based structure, learners are evaluated on their capacity to use comprehension functionally rather than simply recall isolated details. In this way, an integrated SBI–SBA framework may encourage deeper processing, increase the perceived relevance of reading tasks, support strategic engagement, and create stronger alignment among intended learning outcomes, instructional activities, and assessment demands.

Nevertheless, important empirical gaps remain. Much of the available scenario-based language research has concentrated on writing, speaking, self-regulation, strategic competence, instructional design, or broader educational outcomes, whereas the combined effect of scenario-based instruction and scenario-based assessment on EFL reading comprehension remains comparatively underexamined. The Iranian EFL context warrants particular attention because learners commonly study English in formal instructional environments where opportunities for authentic English-language interaction outside the classroom may be constrained. Under such conditions, classroom scenarios may provide valuable simulated contexts for purposeful language use. Moreover, although research has separately demonstrated the value of scenario-based instruction and scenario-based assessment, substantially less is known about whether systematically linking the two within the same instructional program produces measurable and sustainable improvements in reading comprehension. Another issue requiring investigation is whether learners benefit from such an integrated framework to the same extent across demographic groups. Gender-related variation in language-learning outcomes may reflect complex interactions among engagement, strategy use, prior experience, participation, and instructional context; therefore, examining male and female learners' performance can provide a more differentiated understanding of the intervention without assuming that scenario-based pedagogy inherently favors either group.

Addressing these gaps has both theoretical and practical significance. Theoretically, evaluating an integrated SBI–SBA framework can clarify whether the principles of authentic learning, situated language use, strategic processing, and learning-oriented assessment operate coherently when applied to EFL reading. It can also extend scenario-based research from predominantly productive language domains to a receptive skill that nevertheless requires active cognitive construction. Practically, evidence concerning such an approach can inform EFL teachers seeking alternatives to teacher-centered reading instruction, curriculum developers interested in designing contextualized reading materials, and assessment practitioners attempting to achieve closer correspondence between classroom learning and evaluation. If learners who experience scenario-based instruction followed by scenario-based assessment demonstrate stronger immediate and retained reading performance, the findings would support a model in which assessment is not detached from pedagogy but becomes an integral continuation of the learning experience.

Accordingly, the present study aimed to investigate the effect of Scenario-Based Instruction followed by Scenario-Based Assessment on the reading comprehension ability of Iranian intermediate EFL learners and to determine whether the effectiveness of this integrated approach differed between male and female learners.

Methods and Materials

Research Design

This study employed a quasi-experimental pretest–posttest control group design to investigate the effect of Scenario-Based Instruction (SBI) followed by Scenario-Based Assessment (SBA) on the reading comprehension ability of Iranian intermediate EFL learners. A quantitative approach was adopted because the study aimed to examine the effectiveness of an instructional intervention by comparing learners' performance across experimental and control groups using numerical data. The quasi-experimental design was considered appropriate because intact classes rather than individually randomized participants were used in the instructional setting.

Context and Participants

The study was conducted in several private English language institutes located in Tehran and Mashhad, Iran. Language institutes were selected because they provided a relatively homogeneous EFL learning environment and allowed the researchers to implement the instructional intervention under comparable conditions.

The participants consisted of both EFL teachers and learners. First, 20 Iranian EFL teachers participated in the study. The teachers were selected through purposive sampling based on their teaching experience, educational background, and willingness to participate in the study. Ten teachers were assigned to the experimental condition and implemented Scenario-Based Instruction followed by Scenario-Based Assessment, whereas the remaining ten teachers taught reading comprehension using conventional instructional and assessment practices.

The learner participants initially included 300 intermediate EFL learners studying at the selected language institutes. To ensure homogeneity of language proficiency, all learners completed a TOEFL-based placement test. Based on the test results, 200 learners whose scores fell within the intermediate proficiency range were selected as the main participants. They were subsequently assigned to either the experimental group ($n = 100$) or the control group ($n = 100$). The participants ranged in age from 17 to 23 years and shared Persian as their first language.

Participation in the study was voluntary. Prior to data collection, informed consent was obtained from all participants, and confidentiality of the collected data was assured.

Instruments

TOEFL Placement Test

A TOEFL-based placement test was administered at the beginning of the study to identify learners with intermediate English proficiency and to ensure a relatively homogeneous sample. The test results were used solely for participant selection and group assignment.

Reading Comprehension Pre-test

A standardized reading comprehension test adapted from the reading section of the Longman Preparation Course for the TOEFL Test (Phillips, 2005, pp. 238–247) was administered as a pre-test. The test consisted of five reading passages accompanied by 50 multiple-choice items assessing learners' ability to identify main ideas, infer meaning, and understand vocabulary in context.

The passages ranged from 284 to 435 words in length and were selected to match the proficiency level of the participants. The total administration time was 55 minutes. Each correct response received one point, resulting in a maximum possible score of 50.

Immediate Post-tests

To monitor learners' progress throughout the intervention, six immediate post-tests were administered at five-session intervals during the treatment period. The assessment format differed according to group assignment. For the experimental group, immediate assessments were conducted through scenario-based assessment tasks designed to evaluate learners' reading comprehension within authentic and contextualized situations. For the control group, traditional teacher-made reading comprehension tests consisting of two reading passages and 20 multiple-choice questions were administered.

Prior to implementation, the teacher-made tests were piloted with 20 learners who possessed characteristics similar to those of the target sample. Reliability coefficients ranged from .72 to .86, indicating acceptable internal consistency.

Delayed Post-test

At the conclusion of the intervention, a delayed post-test was administered to both groups to examine the overall effectiveness of the instructional treatment. The delayed post-test was adapted from the reading section of the Longman Preparation Course for the TOEFL Test.

The test consisted of five reading passages and 50 multiple-choice items measuring reading comprehension skills comparable to those assessed in the pre-test. Administration procedures and scoring criteria were identical to those used for the pre-test. The maximum obtainable score was 50.

Procedure

The study was conducted over two consecutive instructional terms comprising a total of 30 instructional sessions. Prior to the intervention, the participating teachers assigned to the experimental condition attended three training sessions designed to familiarize them with the principles and implementation procedures of Scenario-Based Instruction and Scenario-Based Assessment.

At the beginning of the study, all participants completed the reading comprehension pre-test. Following the pre-test administration, the experimental group received reading instruction through Scenario-Based Instruction, whereas the control group received reading instruction through conventional teaching methods.

In the experimental classes, reading lessons were organized around realistic scenarios related to the content of the reading passages. Learners were encouraged to engage in collaborative problem-solving, decision-making, discussion, and role-based activities that required active use of information presented in the texts. The instructional process generally involved three stages: preparation, scenario implementation, and reflection. During these stages, learners activated background knowledge, participated in scenario-based tasks, and reflected on their learning outcomes through teacher-guided feedback.

To maintain alignment between instruction and assessment, learners in the experimental group were assessed through Scenario-Based Assessment tasks at regular intervals throughout the intervention. In contrast, learners in the control group completed traditional reading comprehension assessments.

Following the completion of the treatment period, all participants completed the delayed post-test. The resulting scores were used to determine the effectiveness of Scenario-Based Instruction followed by Scenario-Based Assessment on learners' reading comprehension performance.

Data Analysis

The collected data were analyzed using SPSS version 26. Prior to conducting inferential analyses, the normality of score distributions was examined using the Kolmogorov–Smirnov test.

To address the research questions, descriptive statistics including means and standard deviations were calculated. Independent-samples t-tests were subsequently conducted to compare the reading comprehension performance of the experimental and control groups and to examine differences between male and female learners. Statistical significance was determined at the .05 level.

Findings and Results

Preliminary Analysis

Prior to conducting the main analyses, the normality of the data was examined using the Kolmogorov–Smirnov test. The results indicated that the distributions of scores for both the pre-test and delayed post-test were approximately normal, as all significance values exceeded the .05 criterion. Therefore, parametric statistical procedures were considered appropriate for addressing the research questions.

Table 1. Results of the Kolmogorov–Smirnov Test for Normality

Test	Group	Statistic	df	p
Pre-test	Control	.086	100	.064
Pre-test	Experimental	.076	100	.171
Delayed Post-test	Control	.075	100	.183
Delayed Post-test	Experimental	.070	100	.200

Findings Related to Research Question 1

Pre-test Equivalence

Before implementing the treatment, an independent-samples t-test was conducted to determine whether the experimental and control groups differed significantly in their reading comprehension ability.

Table 2. Descriptive Statistics for the Reading Comprehension Pre-test

Group	N	Mean	SD
Control	100	16.16	3.54
Experimental	100	17.11	3.89

The results of the independent-samples t-test are presented in Table 3.

Table 3. Independent-Samples t-Test for the Reading Comprehension Pre-test

Comparison	t	df	p	Mean Difference	Cohen's d
Experimental vs. Control	-1.805	198	.073	-0.95	0.26

The results revealed no statistically significant difference between the experimental and control groups on the pre-test, $t(198) = -1.81$, $p = .073$. This finding indicates that the two groups were comparable in terms of reading comprehension ability prior to the intervention. The effect size was also small (Cohen's $d = 0.26$), providing further evidence that the two groups were comparable prior to the intervention.

Delayed Post-test Results

At the end of the treatment period, a delayed post-test was administered to examine the effectiveness of Scenario-Based Instruction followed by Scenario-Based Assessment.

Table 4. Descriptive Statistics for the Delayed Post-test

Group	N	Mean	SD
Control	100	22.86	8.23
Experimental	100	32.92	8.19

The independent-samples t-test results are presented in Table 5.

Table 5. Independent-Samples t-Test for the Delayed Post-test

Comparison	T	df	p	Mean Difference	Cohen's d
Experimental vs. Control	-8.665	198	< .001	-10.06	1.23

The findings showed that the experimental group ($M = 32.92$, $SD = 8.19$) achieved substantially higher scores than the control group ($M = 22.86$, $SD = 8.23$) on the delayed post-test. The difference was statistically significant, $t(198) = -8.67$, $p < .001$. The magnitude of the difference was large (Cohen's $d \approx 1.22$), indicating a strong effect of Scenario-Based Instruction followed by Scenario-Based Assessment on learners' reading comprehension performance.

Therefore, the results provide support for the effectiveness of Scenario-Based Instruction followed by Scenario-Based Assessment in enhancing the reading comprehension ability of Iranian intermediate EFL learners.

Immediate Post-test Results

In addition to the delayed post-test, six immediate post-tests were administered throughout the intervention to monitor learners' progress.

Table 6. Descriptive Statistics and Significance Levels for the Six Immediate Post-tests

Immediate Post-test	Group	Mean	SD	p	Cohen's d
1	Control	7.46	2.33	.040	0.29
	Experimental	8.20	2.84		
2	Control	7.86	2.73	.040	0.29
	Experimental	8.68	2.89		
3	Control	7.65	2.63	< .001	0.50
	Experimental	9.23	3.67		
4	Control	7.97	2.90	< .001	0.48
	Experimental	9.66	4.09		
5	Control	8.51	3.61	< .001	0.47
	Experimental	10.47	4.63		
6	Control	8.84	4.17	< .001	0.70
	Experimental	12.22	5.37		

As shown in Table 6, the experimental group consistently obtained higher mean scores than the control group across all six immediate post-tests. Furthermore, statistically significant differences were observed in each administration ($p < .05$). These findings suggest that the positive effects of the intervention emerged during the instructional period and were maintained throughout the treatment process.

Findings Related to Research Question 2

To answer this question, the delayed post-test scores of male and female learners within the experimental group were compared using an independent-samples t-test. Table 7 shows the descriptive statistics for male and female learners on the delayed post-test.

Table 7. Descriptive Statistics for Male and Female Learners on the Delayed Post-test

Gender	N	Mean	SD
Male	60	31.00	8.20
Female	40	35.80	7.38

The results of the independent-samples t-test are presented in Table 8.

Table 8. Independent-Samples t-Test for Gender Differences on the Delayed Post-test

Comparison	t	df	p	Mean Difference	Cohen's d
Female vs. Male	-2.983	98	.004	-4.80	0.61

The results revealed a statistically significant difference between male and female learners on the delayed post-test, $t(98) = -2.98$, $p = .004$. Female learners ($M = 35.80$, $SD = 7.38$) obtained significantly higher reading comprehension scores than male learners ($M = 31.00$, $SD = 8.20$). Also, The effect size was medium (Cohen's $d = 0.61$), suggesting that the observed gender difference was not only statistically significant but also educationally meaningful.

Accordingly, the findings suggest that female learners benefited more from Scenario-Based Instruction followed by Scenario-Based Assessment than male learners in terms of reading comprehension achievement.

Discussion and Conclusion

The present study investigated the effectiveness of Scenario-Based Instruction (SBI) followed by Scenario-Based Assessment (SBA) in improving the reading comprehension of Iranian intermediate EFL learners and further examined whether male and female learners differed in their response to this integrated instructional-assessment approach. The findings provided clear evidence in favor of the intervention. Although the experimental and control groups did not differ significantly in reading comprehension before the intervention, learners exposed to SBI followed by SBA achieved significantly higher scores than those receiving conventional instruction and assessment. Significant differences emerged across all six immediate post-tests, indicating that the advantage of the scenario-based approach developed progressively during the instructional period. More importantly, the experimental group maintained substantially higher performance on the delayed post-test, with a large effect size, suggesting that the benefits were not limited to short-term performance but were retained after instruction. The second major finding concerned gender: within the experimental group, female learners obtained significantly higher delayed post-test scores than male learners, with a medium effect size. Taken together, the results suggest that integrating contextualized scenario-based instruction with authentic scenario-based assessment can substantially enhance EFL learners' reading comprehension, although the magnitude of the benefits may vary among learners.

The superior performance of the experimental group can first be explained by the authentic and contextualized nature of Scenario-Based Instruction. In conventional reading instruction, texts are frequently treated as objects of analysis followed by comprehension questions, vocabulary exercises, or translation activities. Under SBI, however, the text becomes a resource for accomplishing a meaningful purpose. Learners may be required to interpret information, recognize relationships among ideas, solve a contextualized problem, make a decision, or justify a particular course of action. Such activities are consistent with the

principles of authentic learning, according to which knowledge is more effectively developed when learners encounter meaningful tasks resembling the contexts in which that knowledge may ultimately be used (4). The results also align with Almazova et al., who demonstrated the applicability of scenario-based instruction in foreign-language education and emphasized its capacity to situate language learning within meaningful contexts requiring purposeful application of linguistic knowledge (5). In the present study, contextualizing reading within realistic scenarios may therefore have transformed comprehension from a relatively passive process into an active process of meaning construction and application.

The findings can also be understood in terms of the cognitive demands created by scenario-based activities. Successful reading comprehension requires more than recognition of explicit information; learners must activate prior knowledge, draw inferences, identify relationships, distinguish relevant from irrelevant information, monitor understanding, and integrate ideas across sections of a text. Scenario-based tasks are particularly suited to eliciting such processes because learners must use textual information to respond to evolving contextual demands. The significant improvement observed in the experimental group is therefore consistent with evidence that scenario-based learning can promote reflective and higher-order thinking. Güler found that scenario-based learning enhanced scientific creativity and reflective thinking, suggesting that scenarios encourage learners to move beyond simple knowledge reproduction toward more complex cognitive processing (7). Similarly, interactive scenario designs have been shown to support critical and creative thinking by requiring learners to engage with alternatives, consequences, and contextualized problems (8). These cognitive mechanisms are directly relevant to reading comprehension because learners who analyze information strategically and reflectively are more likely to construct coherent interpretations of complex texts.

Another important explanation concerns learner engagement. The progressive pattern across the six immediate post-tests suggests that the benefits of the intervention accumulated during continued exposure to scenario-based learning. Scenario-based environments can enhance engagement because learners are provided with objectives, contextual challenges, roles, and decisions that make academic content more purposeful. Evidence from technology-supported learning environments has shown that scenario-based approaches can improve motivation, engagement, and interaction with learning materials (11). Morgan similarly demonstrated that scenario-based learning can be productively incorporated into accessible learning environments and can provide multiple pathways for active participation (10). In EFL reading, greater engagement is particularly important because comprehension requires sustained attention to textual information and active interaction with meaning. The experimental learners may therefore have devoted greater cognitive effort to the texts because understanding the passages was necessary for successfully completing scenario-related tasks rather than merely answering disconnected questions.

The current results also correspond closely with language-specific evidence concerning meaningful and participatory reading instruction. Loi and Thanh showed that actively engaging EFL learners with texts through a text-driven instructional approach can improve reading performance (1). Likewise, constructivist drama-based activities have been successfully incorporated into EFL reading classes, indicating that contextualized interaction and active participation can facilitate learners' construction of textual meaning (2). Although the pedagogical techniques employed in these studies differ from those used in the present research, they share an important principle: reading becomes more effective when learners actively engage with textual meaning rather than passively receive teacher explanations. Scenario-Based Instruction extends this principle by embedding reading within purposeful situations in which textual comprehension becomes instrumental to problem-solving and decision-making.

A particularly important feature of the present intervention was the alignment between Scenario-Based Instruction and Scenario-Based Assessment. The superior delayed post-test performance cannot necessarily be attributed to instruction alone because the experimental learners experienced a coherent system in which both learning and assessment were organized around

scenario-based principles. This alignment may have reduced the mismatch that often occurs when learners are taught through interactive, contextualized activities but evaluated through isolated and decontextualized tasks. From a learning-oriented assessment perspective, assessment should contribute to the learning process rather than operate solely as a final mechanism for assigning scores (16). Scenario-based assessment is especially compatible with this orientation because assessment tasks can require learners to integrate information, employ strategies, respond to contextual demands, and reflect on their decisions. Consequently, repeated SBA experiences during the intervention may have provided additional opportunities for the learners to consolidate and extend the comprehension strategies initially developed through SBI.

This interpretation is supported by contemporary developments in scenario-based language assessment. Purpura et al. emphasized the value of evaluating language proficiency through situated scenario-based tasks within a learning-oriented language assessment framework, thereby connecting assessment performance with meaningful language use and learning processes (19). Kunnan et al. similarly demonstrated the feasibility of developing scenario-based English-language assessments consisting of meaningful and interconnected tasks rather than isolated test items (15). The current findings extend these perspectives to EFL reading comprehension by suggesting that SBA can function productively when integrated directly with scenario-based instruction. The learners were repeatedly required not merely to remember what they had read but to mobilize comprehension skills within contextualized tasks. Such repeated application may have strengthened transfer and contributed to the large difference observed on the delayed post-test.

The results are further consistent with Deane et al., whose work on scenario-based assessment demonstrated sensitivity to differences in curriculum and instruction (17). Their findings emphasize that performance on contextualized assessment tasks is meaningfully related to learners' instructional experiences. In the present research, this principle appears particularly relevant because the experimental learners experienced continuity between the manner in which reading comprehension was developed and the manner in which it was periodically assessed. Evidence from professional learning also indicates that scenario-based capability assessment can capture learners' ability to apply knowledge and judgment in complex situations rather than merely reproduce information (18). Although professional capability and EFL reading represent different domains, the underlying principle is similar: competence becomes more meaningful when learners demonstrate that they can use knowledge in context.

The present findings also correspond with recent empirical research on Scenario-Based Assessment among Iranian EFL learners. Rahimivand et al. found that scenario-based assessment enhanced Iranian EFL learners' writing performance, including important dimensions of written language production (21). In another investigation, SBA contributed to the development of writing self-regulation skills, including strategic processes involved in managing language performance (22). The current study extends these findings in an important direction. Whereas these previous investigations primarily addressed writing and self-regulation, the present results indicate that the benefits of scenario-based approaches can also extend to receptive language performance, specifically reading comprehension. This suggests that the effectiveness of SBA may not be restricted to productive skills but may reflect broader cognitive and strategic mechanisms applicable across language domains.

Self-regulation and strategic processing may be especially important mechanisms through which the intervention influenced reading performance. Research on strategy-based instruction and self-regulated learning demonstrates sustained scholarly interest in learners' capacity to plan, monitor, control, and evaluate their own second- or foreign-language learning (23). Scenario-based reading tasks may naturally activate these processes because learners need to identify the goal of the scenario, determine which textual information is relevant, monitor whether their interpretation adequately addresses the problem, and revise their understanding when necessary. Similar processes have been observed in scenario-based speaking assessment. Seong demonstrated that strategic competence constitutes an important cognitive dimension of L2 academic speaking performance within scenario-based assessment (20). Although speaking and reading involve distinct language processes, both

require strategic management of task demands. The present learners may therefore have improved partly because the intervention repeatedly encouraged strategic comprehension rather than routine answer selection.

The results are also consistent with Mohamed's scenario-based learning framework for university language education, which illustrates how scenarios can integrate linguistic objectives with meaningful communicative and cognitive demands (12). In a similar manner, Saeedian and Ghaderi demonstrated that scenario-based classroom contexts can reshape decision-making and pedagogical reasoning in second- and foreign-language educational settings (6). Together with the present findings, these studies suggest that scenario-based approaches should be understood as more than isolated classroom techniques. They can provide an organizing framework in which instructional content, learner activity, cognition, communication, and assessment are interconnected. This coherence may explain why the experimental group not only performed better during the intervention but also retained its advantage on the delayed post-test.

The persistence of the treatment effect is particularly noteworthy. The large effect observed on the delayed post-test suggests that scenario-based instruction and assessment may promote comparatively durable learning. One explanation is that contextualized learning creates richer cognitive representations than decontextualized practice. When learners connect textual information with goals, problems, roles, decisions, and peer interaction, multiple cognitive pathways may support later retrieval and application. Mead's research on scenario-based reflection indicates that the nature and representation of scenarios can shape the depth of learners' insight and reflective responses (9). Similarly, scenario-based simulation in professional education has demonstrated positive effects on learners' ability to apply knowledge in contexts demanding integrated competence (13). These findings provide indirect support for the view that active contextual application strengthens learning beyond the immediate instructional episode.

The emphasis on authentic task performance also helps explain why the integrated approach may have been particularly beneficial. Authenticity in second-language assessment concerns the correspondence between assessment demands and meaningful language-use situations (14). In the present study, the use of scenario-based assessment likely encouraged learners to perceive comprehension as purposeful information processing rather than merely a means of obtaining test scores. When learners repeatedly encounter reading as an activity with meaningful consequences, they may become more attentive to global meaning, textual relationships, inference, and strategic interpretation. The experimental learners' consistent superiority across the immediate assessments and their substantially higher delayed scores suggest that this form of contextualized practice facilitated both acquisition and consolidation of reading comprehension abilities.

The second major finding was that female learners in the experimental group achieved significantly higher delayed reading comprehension scores than male learners. The medium effect size indicates that this difference was educationally meaningful, although it should not be interpreted as evidence that scenario-based instruction is intrinsically better suited to female learners. One plausible explanation is that individual differences in engagement, interaction, strategic regulation, or responsiveness to collaborative and reflective activities influenced the extent to which learners benefited from the intervention. Scenario-based environments often require discussion, collaborative problem-solving, reflection, and active management of task requirements. Because the intervention emphasized precisely these processes, learners who engaged more consistently with them may have derived greater benefit.

The self-regulatory demands of the intervention offer another possible interpretation of the observed gender difference. Scenario-based assessment has been found to improve EFL learners' self-regulatory processes (22), while the broader language-learning literature emphasizes the role of strategic and self-regulated behavior in successful learning (23). It is therefore possible that differences in the ways male and female participants in the present sample monitored comprehension, engaged with scenario demands, collaborated, or employed reading strategies contributed to their different outcomes. Nevertheless, the

present study did not directly measure these processes, and the reference literature used here does not establish a causal gender-specific mechanism. Consequently, the finding should be interpreted as a contextual difference observed in this sample rather than as a general claim regarding male and female EFL learners.

Overall, the findings provide support for integrating Scenario-Based Instruction and Scenario-Based Assessment as a coherent approach to EFL reading education. The intervention appears to have created an instructional environment in which reading was embedded within authentic purposes, learners engaged actively with textual information, higher-order and strategic processes were repeatedly practiced, and assessment remained aligned with instruction. The progressive differences observed throughout the immediate post-tests and the large delayed post-test effect suggest that this alignment contributed both to continuing improvement and to retention of learning. The results therefore extend existing scenario-based research by demonstrating that an integrated SBI–SBA framework can be effective not only for productive language abilities, self-regulation, or strategic competence but also for reading comprehension among intermediate Iranian EFL learners.

The study nevertheless has several limitations. First, participants were intermediate EFL learners recruited from private language institutes in Iran, which limits the extent to which the findings can be generalized to younger learners, advanced or beginner students, public-school populations, university students, or learners in other linguistic and cultural contexts. Second, the quasi-experimental nature of the study and the use of intact educational settings restricted full randomization and therefore cannot completely exclude the influence of pre-existing classroom characteristics. Third, reading achievement was evaluated primarily through quantitative test scores, meaning that the study could not directly reveal how learners processed texts, which strategies they employed, or how they experienced the scenario-based activities. Fourth, the intervention combined Scenario-Based Instruction and Scenario-Based Assessment, making it difficult to determine the independent contribution of each component to the observed improvement. Fifth, although a statistically significant gender difference was identified, variables that could explain this difference—such as motivation, engagement, prior reading experience, self-regulation, learning strategies, or interaction patterns—were not measured directly. Finally, the study focused specifically on reading comprehension and therefore does not establish whether comparable effects would occur for other language skills or integrated language performance.

Future research should examine the integrated SBI–SBA approach across different proficiency levels, age groups, educational systems, and cultural settings to establish the robustness and generalizability of its effects. Experimental designs could compare four conditions—conventional instruction and assessment, SBI alone, SBA alone, and integrated SBI–SBA—to identify the unique and combined contributions of scenario-based teaching and assessment. Longer-term follow-up assessments would also help determine whether gains are sustained over several months. Researchers should additionally employ qualitative and mixed-methods designs involving interviews, classroom observations, stimulated recall, think-aloud procedures, and learner reflective journals to investigate how participants cognitively and strategically engage with scenario-based reading tasks. Future studies could test motivation, engagement, self-regulation, strategic reading, critical thinking, and collaborative participation as mediators or moderators of treatment effects. The gender difference identified in the present study also warrants focused investigation using balanced samples and direct measurement of potentially explanatory variables rather than relying exclusively on achievement comparisons. Finally, comparable interventions should be evaluated in listening, writing, speaking, vocabulary development, and integrated-skills courses.

In practice, EFL teachers should consider designing reading lessons in which texts function as resources for completing meaningful tasks rather than relying predominantly on explanation, translation, and post-reading multiple-choice questions. Teachers can construct realistic scenarios that require learners to identify information, compare alternatives, infer meanings, solve problems, make decisions, justify conclusions, and collaborate with classmates. Assessment should be aligned with these

learning experiences so that learners are evaluated through contextualized tasks resembling the cognitive and communicative work practiced during instruction. Scenario complexity should be introduced progressively, particularly for learners who are unfamiliar with learner-centered or problem-based activities, and sufficient scaffolding should be provided through modeling, prompts, guided questions, collaborative preparation, and formative feedback. Curriculum designers can likewise incorporate sequences of related scenario-based reading tasks into coursebooks and digital materials, while teacher-training programs should prepare instructors to design scenarios, manage collaborative activities, and develop assessment criteria that evaluate comprehension without sacrificing reliability or curricular objectives. Attention should also be paid to individual differences in participation and engagement so that scenario-based activities provide equitable opportunities for all learners to benefit.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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