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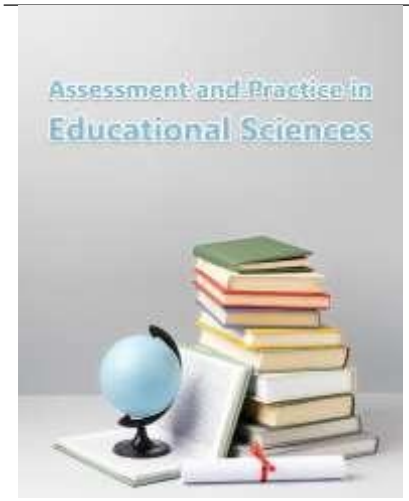

A Comparison of Learning the Speech Acts of Requesting and Apologizing among EFL Learners through Input Enhancement and Input Flooding Approaches: Computer-Mediated Method versus Traditional Method

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ABSTRACT

The present study investigated the effects of input enhancement and input flooding on the learning of the speech acts of apologizing and requesting by learners of English as a foreign language (EFL). A total of 120 intermediate-level male and female learners were randomly selected and assigned to four groups of 30 participants each (computer-mediated input enhancement, computer-mediated input flooding, traditional input enhancement, and traditional input flooding), who received instruction over a specified instructional period. The instructional method, taking learners' gender into account, was divided into two modes: computer-mediated and traditional. A pragmatics-based discourse completion test was used to collect the data. Independent-samples t-tests and one-way analysis of variance (ANOVA) were employed for data analysis. The findings indicated that the highest mean score for pragmatic knowledge belonged to the computer-mediated input flooding group (17.67), while the lowest mean score was observed in the traditional input enhancement group (12.90). No statistically significant differences were found between the other two groups. Overall, the results demonstrated that: (1) the computer-mediated method was more effective than the traditional method in promoting learners' acquisition of speech acts; (2) the input flooding approach was more effective than the input enhancement approach in facilitating the learning of speech acts; (3) gender had no significant effect on the learning of speech acts among male and female learners; and (4) the group receiving computer-mediated input flooding instruction showed the greatest improvement in learning the speech acts of apologizing and requesting. These findings can be useful for selecting appropriate instructional methods and for improving EFL learners' pragmatic knowledge in performing speech acts.

Keywords: pragmatics, speech act, gender, computer-mediated, input enhancement, input flooding.

Introduction

Developing learners' ability to use language appropriately in context has long been recognized as a core goal of second/foreign language education, extending beyond grammatical accuracy to include pragmatic appropriateness and

sociocultural sensitivity. Early work in sociolinguistics emphasized that communicative ability entails knowing not only what is formally possible in a language, but also what is feasible, appropriate, and performed in particular communities and situations (1). In applied linguistics, this view has been operationalized through broader models of communicative competence and language ability that explicitly incorporate pragmatic knowledge as a component of successful performance, particularly in relation to discourse, context, and strategic language use (2). From this perspective, the development of L2 pragmatic competence is not an optional "add-on" but a foundational dimension of educational outcomes, especially in settings where learners may achieve intermediate or even advanced grammatical proficiency yet still experience pragmatic failure in real interaction.

A central domain within interlanguage pragmatics is the acquisition and use of speech acts—conventionalized actions performed through language such as requesting, apologizing, refusing, and thanking. Requests and apologies are among the most frequently studied speech acts because they are both interactionally common and pragmatically high-stakes: they are strongly shaped by power relations, social distance, and degree of imposition, and they are particularly vulnerable to negative transfer and intercultural misunderstanding (3). Research on pragmatic development has repeatedly shown that learners' trajectories are complex and non-linear, influenced by limited input, incomplete sociopragmatic knowledge, and restricted opportunities for feedback or participation in authentic interaction (4, 5). Importantly, pragmatic development is sensitive to context of learning: classroom instruction, study abroad, and online environments can differ substantially in their affordances for noticing, practice, and reflection, which may differentially shape learners' pragmatic outcomes (6, 7). In many EFL settings, including Iran, learners may have relatively constrained access to sustained interaction with diverse interlocutors, thereby heightening the pedagogical responsibility of classroom-based and technology-mediated instruction to support pragmatic learning (8).

The question of whether and how pragmatics can be taught has moved from skepticism to evidence-based optimism. Influential syntheses and programmatic discussions have argued that instruction can facilitate pragmatic development, particularly when learners are supported to notice pragmatically relevant cues, compare alternatives, and reflect on appropriateness conditions (9, 10). From a developmental standpoint, L2 pragmatic competence has been conceptualized through multiple lenses, including cognitive, interactional, and sociocultural perspectives, each emphasizing distinct mechanisms such as attention, input processing, and participation in contextualized communication (5). Within language teaching research, pragmatics instruction has been strongly associated with form-focused approaches that guide learners' attention to target features while maintaining communicative orientation (11). Meta-analytic evidence has also indicated that L2 instruction is generally effective, while effects may vary as a function of instructional design, target feature type, and measurement practices (12). For speech acts specifically, classroom-based pedagogical interventions—particularly those that involve explicit awareness-building—have been shown to yield measurable gains in learners' pragmatic performance and knowledge (13).

A key theoretical foundation for these instructional approaches is the role of attention and consciousness in learning. The noticing hypothesis posits that learners must attend to and consciously register relevant features in input for learning to occur, especially for features that are subtle, infrequent, or not easily inferable from meaning alone (14). In pedagogical terms, consciousness-raising has been advanced as a mechanism through which instruction can make target forms and form–function mappings more salient, helping learners construct explicit or semi-explicit representations that subsequently support performance (15). When applied to pragmatic development, consciousness-raising typically involves guiding learners to observe contextual variables (e.g., power, distance, imposition), evaluate candidate realizations, and discriminate between pragmatically appropriate and inappropriate options. This orientation is consistent with broader input-based views in SLA that

underscore the importance of exposure to comprehensible input for acquisition, while also recognizing that input alone may not be sufficient when learners do not attend to relevant features (16). Relatedly, input processing accounts highlight that learners allocate limited attentional resources and may prioritize meaning over form unless instructional conditions are designed to redirect attention toward form–meaning relationships (17). In pragmatics learning, the challenge is often not understanding propositional meaning but perceiving pragmalinguistic devices and sociopragmatic constraints; therefore, instructional techniques that increase salience and frequency of pragmatically relevant input may be especially consequential.

Two widely used instructional techniques aligned with these principles are input enhancement and input flooding. Input enhancement involves manipulating the perceptual salience of target features in input—commonly through typographical cues such as bolding, italics, underlining, or color—so that learners are more likely to notice them. This technique has been extensively discussed within form-focused instruction and has shown benefits for various L2 targets, including vocabulary and grammatical patterns, though effects can vary by feature type and learner characteristics (11, 18). Input flooding, in contrast, increases the frequency of target forms in input without necessarily adding visual salience cues, thereby aiming to facilitate learning through repeated exposure and distributional learning while maintaining communicative flow (19). Because both techniques operate primarily through input manipulation, they are particularly suitable for EFL classrooms where interactional opportunities may be limited and where instructional time must balance multiple linguistic objectives.

Recent empirical work has compared these approaches across skill domains and target structures. Studies in lexical learning and collocation instruction have reported that both input flooding and input enhancement can contribute to learning, but their relative efficacy may depend on task conditions and the nature of the target item, as well as whether learners are required to process input deeply (20, 21). Comparable comparisons in grammar instruction suggest that both techniques can be beneficial, though differences may emerge in the magnitude and durability of effects (22). In reading-related outcomes, consciousness-raising through input flooding has also been contrasted with other enhancement approaches, indicating that input design can shape learners' attentional engagement and performance (23). Importantly, in pragmatics, the target is not merely form recognition but appropriate action in context; thus, the effectiveness of input manipulation needs to be examined in relation to pragmatic knowledge and performance measures rather than solely formal accuracy.

Within L2 pragmatics, requests and apologies are especially appropriate targets for examining input-based techniques because they comprise both relatively formulaic routines and context-sensitive variation. Classroom research has documented that learners' request behavior can develop through instruction that highlights contextual constraints and pragmalinguistic resources, including mitigation and modification devices that shape politeness and appropriateness (24). Similarly, instruction has been shown to support the pragmatic development of apologies and requests when learners' attention is directed to relevant features and when they engage in tasks that require discriminating among realizations (13). However, because request and apology performance often involves subtle pragmatic markers—downtoners, alerters, honorifics, and routinized expressions—learners may fail to notice them in unmodified input, especially in EFL contexts with limited authentic exposure. This underscores the pedagogical promise of input enhancement and input flooding for speech-act learning, while also raising questions about how these approaches should be implemented and evaluated.

A further issue concerns the instructional medium through which input manipulation is delivered. Over the last two decades, Computer-Assisted Language Learning (CALL) has expanded the range of pedagogical affordances for input design, practice, feedback, and learner engagement. Foundational work in CALL has emphasized that technology is not inherently beneficial; rather, effectiveness depends on how tools are aligned with learning objectives, pedagogy, and teacher expertise (25, 26). With the growth of web-based learning environments, research has demonstrated that online activities can support language learning through increased interaction opportunities, multimodal input, and individualized practice, including speech- and interaction-

oriented tasks enhanced by technological features (27). More recent syntheses highlight transformative applications of technology in English language education, including blended, virtual, and mobile-mediated environments that enable sustained exposure, collaborative engagement, and learning analytics (28). In parallel, there is growing interest in how AI-driven and technology-integrated professional development can support teachers in implementing technology-mediated instruction effectively and sustainably (29). From a pragmatic learning standpoint, technology-mediated contexts can provide controlled input manipulation (e.g., consistent enhancement in digital texts), repeated exposure at scale (input flooding), and structured tasks that prompt noticing and reflection—often with reduced logistical constraints compared to paper-based classroom delivery.

The interface between CALL and L2 pragmatics has therefore become a timely and consequential research area. Work explicitly focusing on L2 pragmatics and CALL underscores that technology can broaden pragmatic learning opportunities by enabling access to diverse discourse models, interactive simulations, and mediated peer interaction, while also cautioning that pragmatic instruction requires careful task design to ensure contextual richness and attention to appropriateness (30). Additionally, online and blended contexts can alter learners' participation patterns and the nature of interaction, which may influence pragmatic awareness and production. The growing literature thus calls for empirical studies that compare technology-mediated and traditional delivery modes for pragmatic instruction, particularly when the instructional manipulation targets noticing and exposure mechanisms.

Within this broader landscape, several recent studies have begun to examine computer-supported input enhancement and input flooding in EFL learning contexts. For example, computer-supported input enhancement has been investigated in relation to writing development and structural accuracy across flipped online and face-to-face settings, suggesting that the modality and learning environment can shape the degree to which enhanced input is processed and internalized (31). In speech and oral performance contexts, comparative investigations have addressed how computer-supported input flooding and enhancement may influence collaborative output in blended and virtual classes, further supporting the view that technology-mediated input design can yield measurable learning effects (32). Importantly, research also suggests that the relative efficacy of input enhancement and input flooding can differ depending on the pragmatic target. In the acquisition of request modifiers, for instance, comparisons among input enhancement, input flooding, and output-based approaches indicate that the instructional route matters and may differentially support pragmatic development, especially for mitigation and modification features that are central to polite requesting (33). Collectively, these findings motivate continued research that (a) focuses explicitly on pragmatic speech-act learning, (b) compares input enhancement and input flooding, and (c) evaluates whether computer-mediated delivery provides added value beyond traditional methods.

Another consideration for robust pragmatic research is measurement. Because pragmatic ability is context-dependent and multifaceted, the choice of assessment instrument is critical for valid inference. Discourse Completion Tests (DCTs) have been widely used in interlanguage pragmatics due to their practicality, ability to control contextual variables, and potential for scoring consistency, though they also capture elicited responses rather than naturally occurring interaction (5). In the Iranian EFL context, substantial effort has been devoted to developing and validating pragmatic assessment instruments, including multiple-choice DCT formats that can be efficiently administered and scored in educational research. Foundational work has described procedures for constructing multiple-choice DCTs for Iranian EFL learners and documenting their psychometric properties (34). More recent research has extended this line by developing multiple-choice DCTs that target multiple speech acts—including apologies and requests—and by providing evidence for their use in assessing interlanguage pragmatic knowledge (8). Anchoring instructional research in such validated instruments strengthens the interpretability of findings and supports accumulation of knowledge across studies.

Despite advances, notable gaps remain. First, while instruction in pragmatics has strong empirical support, fewer studies have systematically compared input enhancement and input flooding for the specific learning of apology and request speech acts in EFL contexts, particularly using comparable assessment tools and controlled instructional conditions (13, 19). Second, although CALL research has demonstrated benefits for language learning broadly, evidence specific to pragmatic speech acts—especially under input manipulation conditions—is still developing, and there is a need for direct comparisons of computer-mediated and traditional implementations of the same instructional techniques (26, 30). Third, learner variables such as gender are sometimes hypothesized to influence pragmatic performance due to differential interactional styles or sociocultural expectations; however, empirical findings are mixed, and gender effects may be small relative to instructional effects, making it important to evaluate them within well-designed experimental comparisons rather than assume their presence (3, 7). Finally, the rapid evolution of technology in education—including shifts toward blended, virtual, and AI-adjacent instructional ecosystems—creates an urgent need to reassess established pedagogical techniques (like input enhancement and flooding) under contemporary computer-supported conditions (28, 29).

The present study is situated at the intersection of these concerns. Building on theoretical accounts that emphasize the importance of exposure, attention, and consciousness for learning (14, 16, 17), and grounded in pedagogical research on form-focused instruction and pragmatic teachability (9, 11, 12), this study focuses on whether manipulating the salience and frequency of pragmalinguistic input can facilitate EFL learners' development of pragmatic knowledge for two essential speech acts: apologizing and requesting (3, 24). It also responds to recent calls to examine how technology-mediated environments can be leveraged to support pragmatic learning and how CALL can be integrated with principled instructional design rather than treated as a mere delivery channel (25, 30). By employing a validated multiple-choice DCT approach aligned with Iranian EFL assessment traditions (8, 34), the study seeks to provide rigorous evidence regarding instructional effectiveness and to contribute to pedagogy and curriculum decisions in EFL contexts where pragmatic competence is increasingly recognized as a core educational outcome.

The aim of this study was to examine and compare the effects of computer-mediated versus traditional implementations of input enhancement and input flooding on Iranian EFL learners' pragmatic learning of the speech acts of apology and request, while also testing whether learner gender moderates these instructional effects.

Methods and Materials

The present study employed a quasi-experimental research design. To this end, 180 Iranian male and female EFL learners (aged 18–25 years) volunteered to participate. All participants were at the intermediate level of language proficiency. To ensure homogeneity of language proficiency, the Preliminary English Test (PET) was administered. Based on the descriptive statistics of the obtained scores, 120 participants were selected and subsequently assigned to four experimental groups of 30 learners each (computer-mediated input enhancement group, traditional input enhancement group, computer-mediated input flooding group, and traditional input flooding group). Prior to the implementation of the instructional treatment, a multiple-choice Discourse Completion Test (DCT) was administered. This questionnaire consisted of 20 items, with the first 10 items measuring the speech act of apologizing and the second 10 items assessing the speech act of requesting. The same instrument was used as both the pretest and the posttest. In addition to consultation with two subject-matter experts, the reliability of the test was estimated through a pilot administration to a sample of 20 intermediate-level EFL learners. Using Cronbach's alpha, the reliability coefficient of the test was calculated to be 0.823. Given that this test has been used by several researchers, including Birjandi and Rezaei (2010), Derakhshan and Eslami Rasekh (2015), and Arab-Mofrad and Mahdi-Abadi (2022), it can be concluded that the instrument enjoys acceptable validity. The test comprised 20 situations focusing on the speech acts of

requesting and apologizing. The first 10 items evaluated learners' pragmatic knowledge regarding the realization of apologies, while the second 10 items assessed their knowledge of making requests. Participants were asked to read each situation, place themselves in the given roles, and then demonstrate their ability to provide an appropriate response by selecting the most suitable option.

The implementation procedure for the four experimental groups (input enhancement, input flooding, computer-mediated, and traditional), comprising a total of 120 learners (60 females and 60 males), was as follows. Two groups were randomly assigned to examine input flooding of the speech acts of apologizing and requesting through computer-mediated and traditional methods (30 learners per group), and the remaining two groups were selected to examine input enhancement of the same speech acts through computer-mediated and traditional methods. In the traditional input enhancement group focusing on the speech acts of apologizing and requesting, following the procedure proposed by Norris and Ortega (2000), enhancement was implemented through italicization, boldfacing, and color-coding on paper (traditional method), and learners completed the related activities accordingly. In the computer-mediated input enhancement group, the same techniques—italicization, boldfacing, and color-coding—were applied using Microsoft Word (computer-mediated method), and learners completed the activities via computer. In the traditional input flooding group, learners were repeatedly exposed to the speech acts of apologizing and requesting, and in line with Nassaji and Fotos (2011), a large number of exemplars of the target speech acts were made perceptually salient for learners through paper-based instruction. In the computer-mediated input flooding group, learners were similarly exposed repeatedly to the speech acts of apologizing and requesting, and following Nassaji and Fotos (2011), a large number of exemplars were made perceptually salient through computer-mediated instruction.

For the sake of brevity, one example is provided for each of the input enhancement and input flooding conditions. In the input enhancement groups, five examples of the speech act of apologizing and five examples of the speech act of requesting were taught to learners, and the distinctive features of apologies and requests were highlighted. For instance, when making a request to a person of higher status, such as a university professor, several request forms were presented to learners, including an appropriate form such as "Would it be possible to ask you to write a letter of recommendation, if convenient?" as well as pragmatically inappropriate alternatives such as "Write me a letter of recommendation." Learners were then asked to highlight the correct option using boldface or italics. In each session, one example of either a request or an apology was presented, and after 10 sessions, learners became familiar with five apology examples and five request examples. In the input flooding groups, learners were presented with the same request and apology examples as those used in the input enhancement condition, but with a larger number of instances. In each session, learners were exposed to one request and one apology, and accordingly, after 10 sessions, they became familiar with 20 examples of requests and apologies. In these groups, no enhancement techniques such as boldfacing or underlining were used. Similar to the input enhancement condition, instruction in the input flooding condition was delivered to one group through the traditional classroom-based method and to the other group through the computer-mediated method. It should be noted that all interactions took place via a virtual messaging platform (specifically Telegram) in a group created for this purpose. All learners logged in online at a specified time and received the instructions. Learners were required to take screenshots of their interactions and send them to their instructor via email. In the subsequent stage of the study, descriptive statistics such as means and standard deviations, as well as inferential statistics including one-way analysis of variance (ANOVA) and independent-samples t-tests, were employed. As an initial step, and based on the assumption that language proficiency could influence the research outcomes, a one-way ANOVA was conducted on the proficiency test scores across the four groups to ensure that there were no significant differences in language proficiency among them. Another one-way ANOVA was performed on the pragmatic pretest scores across the four groups to ensure that there were no significant differences in their initial pragmatic knowledge of the speech acts of apologizing and requesting. In

addition, statistical analyses were conducted to examine potential gender differences (between male and female learners) in the use of computer-mediated and traditional methods for learning the speech acts of apologizing and requesting. The posttest scores obtained by the four groups were compared with their pretest scores to determine which group demonstrated greater improvement. With respect to the first and second research questions, independent-samples t-tests were conducted on the pragmatic posttest scores to compare the effects of the instructional methods (input enhancement and input flooding) on the learning of speech acts. The Scheffé post hoc test was also employed for multiple comparisons at the 0.05 significance level to determine the effects of the treatments and instructional methods. Finally, the significant effect of computer-mediated input flooding was evaluated and discussed.

Findings and Results

In this section, with a focus on the role of input enhancement and input flooding in learning the speech acts of apologizing and requesting, the statistical calculations and results are presented, followed by a discussion of the findings related to each hypothesis. This section also reports the results obtained from the analysis of EFL learners' performance when exposed to computer-mediated and traditional methods using input enhancement and input flooding in learning speech acts.

In the present study, instructional methods (input flooding and input enhancement) and gender were considered as independent variables, while performance on the multiple-choice Discourse Completion Test (DCT) related to the two speech acts of apologizing and requesting and the posttest scores were treated as dependent variables. To this end, learners' pragmatic knowledge was assessed at the beginning and at the end of the term as the pretest and posttest, respectively. Table 1 presents the statistical analysis of the pretest and posttest data obtained from the multiple-choice DCT.

Table 1. Scores on the Multiple-Choice Discourse Completion Test in the Pretest and Posttest for Male and Female Learners

Row	Test (out of 20)	Experimental Group (Gender)	N	Mean	Max	Min
1	Pretest	Male	60	12.50	18	8
		Female	60	12.33	19	7
2	Posttest	Male	60	15.25	20	11
		Female	60	15.77	20	12

The first row of Table 1 reports the descriptive statistics of the multiple-choice DCT in the pretest for male and female learners, including the number of participants, maximum and minimum scores, and mean scores out of 20. As shown in Table 1, the range of pretest scores was from 7 to 19, and the mean scores for males and females were 12.50 and 12.33, respectively. According to the second row of Table 1, posttest scores on the multiple-choice DCT ranged from 10 to 20, with mean scores of 15.77 for females and 15.25 for males. As indicated in Table 1, there were no notable individual differences in pragmatic learning of speech acts before and after the treatment (implementation of the instructional methods). In addition, independent-samples t-tests were conducted for both the pretest and posttest. In the pretest, the significance level was 0.485, indicating no difference between the two groups (male and female), and the variances for the two groups were equal. In the posttest, the significance level was 0.636. After the instructional methods were applied in all four experimental groups, the results showed no significant difference between males and females in terms of pragmatic knowledge, and the variances were equal across groups. In this regard, the means of the experimental groups under both traditional and computer-mediated methods, using input flooding and input enhancement, did not differ significantly in statistical terms. However, both male and female learners showed greater improvement in the posttest, as the posttest means were higher than the pretest means in both groups. Based on these results, the third and fourth hypotheses were confirmed.

First, the pretest and posttest scores of participants in the computer-mediated and traditional instructional groups were compared to examine differences between the two methods. Table 2 presents the statistical data for the pretest and posttest scores of the two groups. The mean and standard deviation of the computer-mediated group in the pretest were 12.43 and 2.38, respectively, while the mean and standard deviation in the posttest were 16.63 and 2.15, respectively. Thus, both the mean and standard deviation of this group were higher in the posttest. Next, the mean and standard deviation of the traditional group were examined. Accordingly, the posttest mean (14.38) and standard deviation (2.91) were higher than the pretest mean (12.40) and standard deviation (3.34). Therefore, all groups demonstrated improvement after instruction. Moreover, according to the t-test results, a difference was observed between the computer-mediated and traditional groups, and both groups showed progress in learning the two speech acts of requesting and apologizing through the respective instructional methods. There was a difference between the t-value in the pretest (0.063) and the t-value in the posttest (4.812), indicating greater improvement after the implementation of the instructional treatment. Table 2 presents the comparison of pretest mean scores between the computer-mediated and traditional experimental groups using the t-test. In the next step, the posttest means and standard deviations of the two groups were compared to determine the extent of the difference. According to Table 2, the computer-mediated group showed greater improvement than the traditional group. The posttest means for the computer-mediated and traditional groups were 16.63 and 14.38, respectively.

Table 2. Comparison of Pretest and Posttest Mean Scores of the Computer-Mediated and Traditional Experimental Groups

Row	Test (out of 20)	Experimental Group	Mean	SD	Sig.
1	Pretest	Computer-mediated	12.43	2.39	0.950
		Traditional	12.40	3.35	
2	Posttest	Computer-mediated	16.63	2.15	0.000
		Traditional	14.83	2.91	

The second row of Table 2 shows the comparison of posttest mean scores between the computer-mediated and traditional experimental groups using the t-test. A comparison of pretest and posttest data indicates that the computer-mediated group achieved an average gain of 4 points, whereas the traditional group showed an average increase of only 2 points. Furthermore, the findings from the t-test revealed that the group that learned the speech acts of requesting and apologizing through the computer-mediated instructional method demonstrated greater improvement than the group that learned these speech acts through the traditional method. Subsequently, to examine differences in pragmatic knowledge between the input enhancement and input flooding groups, a pretest was first administered. Based on the findings, no significant difference was found between the input enhancement group and the input flooding group. In addition, an independent-samples t-test was conducted on the mean scores of the two groups (input enhancement and input flooding) that received computer-mediated and traditional instruction ($t = -1.26$). Moreover, the standard deviation of the input enhancement group was 2.79, and that of the input flooding group was 2.97, indicating no statistically significant difference. In other words, the t-test results did not reveal a difference between the means. Table 3 presents the comparison of pretest and posttest mean scores of the input enhancement and input flooding experimental groups using the t-test.

Table 3. Comparison of Pretest and Posttest Mean Scores of the Input Enhancement and Input Flooding Experimental Groups

Row	Test (out of 20)	Experimental Group	Mean	SD	Sig.
1	Pretest	Input enhancement	12.08	2.79	0.209
		Input flooding	12.75	2.97	
2	Posttest	Input enhancement	14.25	2.60	0.000
		Input flooding	16.77	2.39	

According to the second row of Table 3, although both groups demonstrated improvement in the posttest, pragmatic knowledge (use of the speech acts of requesting and apologizing) improved more in the computer-mediated instructional condition than in the traditional condition. Learners who were exposed to the input flooding instructional method achieved a mean score of 16.77, gaining approximately 2 points more in pragmatic knowledge compared to those in the input enhancement condition. This indicates that when learners are exposed to input enhancement and input flooding through computer-mediated instruction, their performance on the multiple-choice DCT in the appropriate use of speech acts yields better results than that of learners who are exposed only to traditional instructional methods of input enhancement and input flooding ($t = 4.8$, $p = 0.000$). Accordingly, the first hypothesis (corresponding to the first research question) was rejected, and the second hypothesis (corresponding to the second research question) was confirmed.

To evaluate the effects of input enhancement and input flooding on learning the speech acts of apologizing and requesting, a one-way analysis of variance (ANOVA) was conducted, and the sample means of the groups (computer-mediated and traditional methods) were compared. The pretest results indicated that there was no statistically significant difference among the groups (significance level = 0.503). As shown in Table 4, the group means did not differ significantly (the mean of computer-mediated input enhancement = 12.33, the mean of traditional input enhancement = 11.83, the mean of computer-mediated input flooding = 12.53, and the mean of traditional input flooding = 12.97).

Table 4. Multiple Comparisons of Group Means for the Pretest Scores of the Multiple-Choice Discourse Completion Questionnaire

Multiple-Choice DCT Score (out of 20)	Experimental Group (Type of Instructional Method)	Mean*	SD	Sig.
Pretest	Computer-mediated input enhancement	12.33	3.01	0.503
	Traditional input enhancement	11.83	2.59	
	Computer-mediated input flooding	12.53	1.59	
	Traditional input flooding	12.97	3.93	

Next, Table 5 presents the results of the one-way ANOVA conducted to compare the multiple group means on the posttest scores of the pragmatic questionnaire using one-way analysis of variance.

Table 5. Multiple Comparisons of Group Means for the Posttest Scores of the Multiple-Choice Discourse Completion Questionnaire

Multiple-Choice DCT Score (out of 20)	Experimental Group	Mean*	SD	Sig.
Posttest	Computer-mediated input enhancement	15.60	1.75	0.000
	Traditional input enhancement	12.90	2.63	
	Computer-mediated input flooding	17.67	2.04	
	Traditional input flooding	15.87	2.40	

To examine the four experimental groups after the implementation of the instructional methods (posttest), a one-way ANOVA was also employed. The results of this analysis indicated that there was a statistically significant difference among the mean scores of the multiple-choice Discourse Completion Test across the four groups. To determine which experimental groups exerted the greatest significant effect on the posttest scores of the multiple-choice DCT, a post hoc test was conducted. For the interpretation of variance in the Scheffé post hoc test, multiple posttest comparisons were performed at a significance level of less than 0.05. As shown in Table 5, the highest mean score on the multiple-choice DCT belonged to the computer-mediated input flooding group (mean = 17.67), whereas the lowest mean score was observed in the traditional input enhancement group (mean = 12.90). The results of the traditional input flooding group and the computer-mediated input

enhancement group did not differ substantially from each other. These findings indicate that the computer-mediated input enhancement group made greater progress than the traditional input enhancement group.

Based on a comparison of the pretest and posttest means in the traditional input flooding group (see Tables 4 and 5), it can be concluded that this group demonstrated improvement, as the pretest and posttest means were 12.97 and 15.87, respectively. However, because the posttest mean of the computer-mediated input flooding group was higher than that of the traditional input flooding group, and consequently higher than those of the other groups, this group showed the greatest improvement relative to the other groups. Accordingly, the first research hypothesis was rejected. In light of the Scheffé post hoc test results, learners who received instruction in the computer-mediated input flooding experimental group performed better than those in the other groups. Although the computer-mediated input enhancement group showed improvement, the computer-mediated input flooding group demonstrated substantially greater progress. In addition, both the traditional input flooding group and the traditional input enhancement group showed improvement after the instructional period in the present study; however, this improvement was not statistically significant in the traditional input enhancement group. It should also be noted that, with respect to gender, no statistically significant differences were found between male and female learners across the experimental groups, and both groups demonstrated improvement following the instructional period.

Discussion and Conclusion

The results of the present study provide clear evidence that instructional manipulation of input plays a decisive role in the development of EFL learners' pragmatic competence, particularly in relation to the speech acts of apology and request. The findings demonstrated that learners in all experimental groups showed some degree of improvement from pretest to posttest, indicating that exposure to pragmatically focused instruction—regardless of delivery mode or technique—can facilitate pragmatic development. This overall improvement aligns with a substantial body of research arguing that pragmatic competence is teachable and responsive to instruction when learners' attention is directed toward relevant form–function mappings and contextual constraints (9, 12, 13). However, beyond this general instructional effect, the results revealed systematic differences among the instructional conditions, highlighting the relative advantages of input flooding over input enhancement and of computer-mediated delivery over traditional instruction.

One of the most salient findings was the superior performance of learners exposed to input flooding compared with those who received input enhancement. Learners in the input flooding groups, particularly in the computer-mediated condition, achieved significantly higher posttest scores on the pragmatic DCT. This finding is consistent with theoretical accounts that emphasize the role of frequency and repeated exposure in learning, especially for features that are probabilistic, context-sensitive, and not easily reduced to simple rules (19, 24). Input flooding increases the distributional availability of target forms, allowing learners to abstract pragmatic regularities through repeated encounters across varying contexts. For speech acts such as requests and apologies, which often rely on conventionalized patterns and recurrent pragmatic routines, frequent exposure may be particularly effective in strengthening form–function associations (3, 4). The present findings therefore support previous studies reporting that input flooding can be more effective than enhancement alone, especially when learners are required to internalize pragmatic norms rather than merely notice isolated forms (20, 21, 33).

In contrast, while input enhancement also led to improvement, its effects were comparatively weaker, particularly in the traditional instructional condition. Input enhancement relies primarily on increasing perceptual salience through visual cues such as bolding or italics, which can promote noticing but do not necessarily ensure deeper processing or retention (14, 18). In pragmatic learning, noticing a highlighted expression may not be sufficient for learners to grasp the sociopragmatic conditions governing its use, such as power relations or degree of imposition. This may explain why enhanced input, especially when

delivered through paper-based instruction, did not lead to gains comparable to those observed in the flooding conditions. Similar patterns have been reported in previous research, where input enhancement showed mixed or limited effects unless combined with additional processing demands or richer contextualization (22, 23). The present study thus reinforces the view that, for pragmatics instruction, frequency-based exposure may be more robust than purely perceptual manipulation of input.

Another major finding concerns the mode of instructional delivery. Across both input enhancement and input flooding conditions, learners who received computer-mediated instruction outperformed those in traditional classroom-based settings. This result corroborates a growing body of CALL research suggesting that technology-mediated environments can amplify the effectiveness of instructional techniques by offering consistent input presentation, flexible pacing, and sustained learner engagement (25, 26, 28). In the present study, computer-mediated instruction likely facilitated pragmatic learning by allowing learners to repeatedly encounter target speech acts in a controlled yet interactive environment, reducing extraneous cognitive load and increasing opportunities for focused attention. Moreover, digital environments can standardize enhancement cues or flooding density across learners, which is more difficult to achieve reliably in traditional classrooms.

The superiority of computer-mediated input flooding is particularly noteworthy. Learners in this condition achieved the highest posttest scores, suggesting a synergistic effect between high-frequency input and technological mediation. This finding aligns with recent studies showing that computer-supported input flooding can be especially effective in promoting oral and collaborative performance in blended and virtual contexts (32). From an input-processing perspective, technology-mediated flooding may optimize learners' allocation of attentional resources by maintaining meaning-focused engagement while ensuring repeated exposure to pragmatically relevant forms (17). Additionally, online platforms can support multimodal input and asynchronous reflection, which may further enhance pragmatic awareness and retention (27, 30). The present results therefore extend previous CALL research by demonstrating that technology not only facilitates general language learning but can also significantly enhance pragmatic development when aligned with principled input-based instructional design.

The absence of significant gender differences in pragmatic learning across instructional conditions is another important outcome of the study. Both male and female learners benefited similarly from the instructional treatments, and no interaction between gender and instructional method was observed. This finding is consistent with research suggesting that, although sociocultural norms may shape pragmatic behavior, instructional effects often outweigh individual learner variables such as gender, particularly in controlled learning environments (5, 7). In the Iranian EFL context, where classroom instruction provides relatively uniform exposure and practice opportunities, gender-related differences may be attenuated. The present findings thus contribute to the mixed literature on gender and pragmatics by suggesting that, at least for the learning of apology and request speech acts through input-based instruction, gender does not play a decisive role (3, 8).

Taken together, the findings of this study lend strong support to instructional approaches that prioritize both the quantity and quality of pragmatic input. They reinforce the theoretical position that pragmatic development is driven by learners' ability to notice, process, and generalize from input, and that instructional techniques should be evaluated not in isolation but in relation to their cognitive and contextual affordances (11, 14). The results also underscore the importance of delivery mode, demonstrating that computer-mediated environments can substantially enhance the effectiveness of established pedagogical techniques such as input flooding and input enhancement. In this respect, the study bridges interlanguage pragmatics research with CALL scholarship, responding to calls for empirically grounded integration of technology into pragmatic instruction (29, 30). By using a validated multiple-choice DCT tailored to Iranian EFL learners, the study further strengthens the methodological basis for examining pragmatic outcomes and contributes to cumulative research in this area (8, 34).

Regarding limitations, several constraints should be acknowledged when interpreting the findings. First, the study relied on a multiple-choice Discourse Completion Test, which, although validated and widely used, measures elicited pragmatic

knowledge rather than spontaneous pragmatic performance in real interaction. Second, the instructional period was relatively limited in duration, and the study did not include a delayed posttest to examine the long-term retention of pragmatic gains. Third, the participants were all intermediate-level Iranian EFL learners, which may limit the generalizability of the results to learners at other proficiency levels or in different sociocultural contexts. Finally, the study focused exclusively on two speech acts, and the findings may not automatically extend to other pragmatic functions such as refusals or compliments.

With respect to future research, several directions can be suggested. Future studies could incorporate performance-based or interactional measures, such as role-plays or computer-mediated dialogues, to capture learners' pragmatic behavior in more dynamic contexts. Longitudinal designs with delayed posttests would also be valuable in assessing the durability of instructional effects, particularly for input flooding versus input enhancement. In addition, researchers may explore the interaction of input-based techniques with output-oriented or feedback-based approaches to determine whether combined instructional models yield stronger pragmatic outcomes. Finally, examining these instructional techniques across different proficiency levels, age groups, and cultural settings would contribute to a more comprehensive understanding of their effectiveness.

In terms of pedagogical implications, the findings suggest that language teachers and curriculum designers should place greater emphasis on systematic exposure to pragmatically rich input, particularly through input flooding techniques. Integrating computer-mediated platforms into pragmatics instruction can significantly enhance learning outcomes by enabling repeated exposure, consistency, and learner engagement. Teachers should be encouraged to move beyond purely form-based enhancement and design activities that provide learners with frequent, contextualized examples of target speech acts. At the curriculum level, pragmatic competence should be treated as a core component of language ability, and technology-supported instructional models should be adopted to support learners in developing the pragmatic skills necessary for effective and appropriate communication.

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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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