



## Interlanguage Pragmatic Learning Strategies (IPLS) as Predictors of Iranian EFL Learners' Comprehension of Conversational Implicature: Structural Equation Modeling Approach

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One important individual characteristic exerting influence over the acquisition of pragmatic knowledge is pragmatic learning strategies. As it is in nascent stages of research interest, an attempt was made to investigate whether Iranian EFL learners' comprehension of conversational implicature was predicted by memory, cognitive, metacognitive, social, compensation, and affective interlanguage pragmatic learning strategies. Totally, 376 upper-intermediate and advanced EFL learners, on the basis of their performance on a sample of Oxford Quick Placement Test, participated in this investigation. To carry out the present study, three data collection instruments were utilized including: Oxford Quick Placement Test, Interlanguage Pragmatic Learning Strategies Inventory, and Conversational Implicature Test. The hypothesized model was tested employing Amos 24 statistical package and revealed that Iranian EFL learners' conversational implicature was predicted by cognitive, metacognitive and compensation interlanguage pragmatic learning strategies. Moreover, EFL learners' cognitive IPLS was identified to be the strongest predictor ( $\beta = 0.45$ ,  $p < .05$ ) in predicting conversational implicature. This study concludes that the cognitive, metacognitive and compensation IPLS strategies can promote EFL learners' comprehension of conversational implicature. The findings of the study can contribute to EFL teachers to implement more interlanguage pragmatic learning strategies in their classroom activities to develop better comprehension of conversational implicature and integrate this knowledge into the overall learning experiences.

یکی از ویژگی‌های فردی مهم که بر کسب دانش منظور شناسی تأثیر می‌گذارد، استراتژی‌های یادگیری بین‌زبانی منظورشناسی است. از آنجایی که اینگونه پژوهش‌ها در مرحله ابتدایی پژوهشی قرار دارند، در این مقاله تلاش شد تا به بررسی این موضوع پرداخته شود که آیا درک زبان آموزان ایرانی از معانی ضمنی توسط استراتژی‌های حافظه‌ای، شناختی، فراشناختی، اجتماعی، جبرانی، و عاطفی پیش‌بینی می‌شود؟ در مجموع 376 زبان‌آموز زبان انگلیسی سطح متوسط و پیشرفته بر اساس عملکردشان در نمونه آزمون تعیین سطح برای انجام پژوهش انتخاب شدند. همچنین از سه ابزار جمع‌آوری داده از جمله آزمون تعیین سطح آکسفورد، پرسشنامه استراتژی یادگیری بین‌زبانی منظورشناسی و آزمون درک معانی ضمنی استفاده شد. نتایج معادلات ساختاری پژوهش حاضر نشان داد که استراتژی‌های یادگیری شناختی، فراشناختی و جبرانی، درک معانی ضمنی مکالمه زبان آموزان ایرانی را پیش‌بینی می‌کنند. همچنین، استراتژی یادگیری شناختی فراگیران زبان در پیش‌بینی درک مفاهیم ضمنی مکالمه نقش بسیار مهمی را ایفا می‌کند. یافته‌های این مطالعه می‌تواند به معلمان زبان انگلیسی کمک کند تا استراتژی‌های یادگیری شناختی، فراشناختی و جبرانی را در فعالیتهای کلاسی خود پیاده‌سازی کنند تا بدین وسیله به درک بهتری از مفاهیم ضمنی مکالمه دست یابند و از این دانش در تجربیات یادگیری کلی استفاده نمایند. کلمات کلیدی: استراتژی‌های یادگیری بین‌زبانی، درک مفهوم ضمنی مکالمه، معادلات ساختاری.

**Key words:** interlanguage pragmatic learning strategies, conversational implicature, SEM



## Introduction

The research on interlanguage pragmatic competence has rapidly gained an outstanding position in the literature (Bardovi-Harlig, 2013; Cohen, 2019; Ellis & Shintani, 2023; Ishihara & Cohen, 2022; Malmir, 2019; Plonsky & Zhuang, 2019; Taguchi, 2011; Taguchi, 2015; Taguchi & Roever, 2017; Tajeddin & Malmir, 2015). One significant individual characteristic that could influence EFL learners' comprehension of conversational implicature could be interlanguage pragmatic learning strategy (IPLS) since it is utilized by learners to obtain, retain, control, and organize pragmatic knowledge in the target language (Derakhshan et al., 2021).

Cohen (2010) supports the interlanguage pragmatic learning strategies (IPLS), stating that "given the challenges associated with learning L2 pragmatics, it makes sense for learners to develop their own repertoire of strategies for both learning and performing pragmatics" (p. 227). In 2015, Bardovi-Harlig demonstrated the nature of interlanguage pragmatic competence and asserted that it comprises of L2 learners' knowledge of both pragmalinguistic and sociopragmatic norms. According to this definition, the linguistic patterns include L2 learners' awareness of pragmalinguistic and sociopragmatic knowledge to understand the target language and make appropriate choices in lexicon and grammar based on the contextual features.

During interaction, L2 learners face various pragmatic difficulties in developing their pragmatic competence (Pratama et al., 2017). This includes challenges such as maintaining conversational length, using inappropriate formality, socializing ineffectively in the target culture (Yates & Major 2015), misunderstanding indirect utterance, being inflexible in pragmatics, using unnatural language (Lee 2011; Li, et al., 2015), and overusing and underusing some pragmatic features (Bada, 2010; Li & Suleiman 2017) which hinder the development of pragmatic competence. Beside these pragmatic difficulties, the development of an efficient pragmatic competence depends on many contextual and sociopragmatic factors (Bardovi-Harlig, 2013) and many internal and external individual characteristics (Cohen, 2019; Taguchi, 2019; Taguchi & Roever, 2017; Tajeddin & Dabbagh, 2015; Takimoto, 2010, 2013). Therefore, many researchers have attempted to study interlanguage pragmatic competence from different dimensions in both ESL and EFL contexts (Alcón Soler & Martinez-Flor, 2008; Felix-Brasdefer, 2008; Tajeddin & Dabbagh, 2015; Tajeddin & Malmir, 2015; Takimoto, 2010, 2013) and try to reveal not only students' underlying pragmatic strategies that use in pragmatic performance but further demonstrate their pragmatic difficulties, which might give teachers insights to foster pragmatic competence (Chen & Lin, 2021).

Due to its significance, it is necessary for many scholars, language teachers, and curriculum designers to be aware of the impact of memory, cognitive, metacognitive, social, compensation, and affective IPLS on conversational implicature, however; a limited number of research studies have been conducted on IPLS strategies used by L2 learners during L2 pragmatic learning and performance (Malmir, 2020; Derakhshan, et al., 2021). To the best of the researchers' knowledge, it seems no study has been conducted to see the simultaneous relation of IPLS with Iranian EFL learners' comprehension of conversational implicature.

Therefore, due to the significance of knowing such IPLS strategies on conversational implicature, on the one hand, and the limited number of studies on conversational implicature (Köylü, 2018; Taguchi & Yamaguchi, 2019), on the other hand, the present study was utilized to specify the strategies used by Iranian EFL learners in their L2 comprehension of conversational implicature. Moreover, most studies in this area are correlational, so it can be more beneficial to lend studies to advanced statistical modeling techniques in order to see the structural relationships among IPLS and comprehension of conversational implicature. As Walker and Maddan, (2008) state, SEM is a multivariate statistical analysis, utilized to test the complex relationship among theoretical model variables.

## Literature Review

### Interlanguage Pragmatic Learning Strategies (IPLS)

Pragmatic learning strategies (Cohen, 2005, 2010, 2019), or interlanguage pragmatic learning strategies (IPLS) (Tajeddin & Malmir, 2015) has achieved significant attention in academic research for over forty years (Cohen & Wang, 2018; Derakhshan & Eslami, 2015, 2020; Derakhshan & Shakki, 2020; Oxford, 2017). The first leading researcher who has researched extensively IPLS is Cohen (Cohen, 2005, 2007; Cohen & Ishihara, 2005; Cohen & Sykes, 2013). He developed the long-established categorization of IPLS and pragmatic performance strategies (PPS) on the basis of surveys conducted in the Japanese and Spanish L2 contexts, with focus on speech act (Cohen, 2005). Regarding the primary taxonomy of IPLS, Cohen (2005) has made a distinction between IPLS and pragmatic performance strategies (PPS). IPLS strategies refer to those past and currently used techniques that can be applied by L2 language learners to achieve L2 pragmatic knowledge, but PPSs pertain to those moment-by-moment strategies used by L2 language learners to produce and perceive speech acts appropriately (Cohen, 2019).

In 2010, Cohen expanded the initiative taxonomy of IPLS strategies by combining both pragmatic learning and pragmatic performance strategies into a rather integrated model which comprises of three subcategories including: strategies pertaining to the initial L2 speech acts; strategies responsible for the integration of previously and partially learned speech act knowledge; and strategies that are planning, monitoring, and evaluating pragmatic choices. Also, Cohen's (2010) model of IPLS strategies further subcategorized to some other micro-strategies for these three subgroups. It is assumed that a mutual relationship exists between IPLS and PPS with a focus on IPLS that facilitate the utilization of more PPS, and more use of PPS can intensify the utilization of IPLS and, in turn, facilitate control of L2 learners over what has been acquired formerly (Cohen, 2010; Cohen & Sykes, 2013).

Additionally, it is proved that Cohen's (2010) model of IPLS strategies can provide more incisive information regarding the mutual and cooperative interplay between IPLS and PPS strategies (Derakhshan, Malmir, & Greenier, 2021). As stated pragmatics strategies “deal specifically with the comprehension and production of language when the underlying sociocultural intentions are not necessarily straightforward, especially not to learners of that language” (Cohen, 2016, p. 142). Cohen (2010) asserted that utilization of efficient strategies depends on some crucial factors, namely individual characteristics, the type and level of difficulty of pragmatic task, and sociocultural context. For instance, age, gender, intelligence, aptitude, sociocultural factors, motivation, and proficiency exert influence over the utilization of IPLS strategies (Cohen, 2010; Cohen & Shively, 2007; Li, 2013).

Based on the findings of a mixed method research by Tajeddin and Malmir (2015), six types of IPLS strategies were extracted, namely memory, cognitive, metacognitive, compensatory, social, and affective strategies. Memory IPLS deals with storage and retrieval of pragmatic knowledge from short-term and long-term memory. Cognitive IPLS strategies stimulate the learning of pragmatic knowledge through noticing, focusing, and attending, while learners utilize metacognitive IPLS strategies to assess, organize, and plan the development of future pragmatic. Social IPLS strategies facilitate the acquiring of pragmatic knowledge through the use of peer interaction and feedback. Moreover, compensatory IPLS strategies are used by language learners to compensate for any pragmatic failure. Finally, affective IPLS strategies are responsible for learners' controlling their emotions during pragmatic performance and learning.

Although the literature on IPLS is restricted in both scope and breadth, several studies were carried out in this field. For instance, Félix-Brasdefer and Cohen (2012) began to investigate how language learners acquire strategies in order to comprehend input and output in terms of the pragmatics and what requires to take place for nonnative language learners to comprehend and produce language pragmatically appropriate. The results

indicated that L2 learner's pragmatics is obtained without any explicit instruction; although, they would take advantage of explicit instruction. According to the findings of the study, the sources of threats including limited L2 grammar ability, overgeneralization of perceived L2 pragmatic norms, and resistance to perceived L2 norms should be diminished for language learners to comprehend and produce pragmatically appropriate language.

In another study, Tajeddin and Dabbagh (2015) focused on the washback of pragmatic test tasks in the field of L2 pragmatic. For this purpose, the researchers studied the effects of a written discourse completion task (WDCT) on L2 teachers and learners in two different testing environments – one incorporating WDCT into summative assessment (pragmatic testing context) and another without such inclusion (non-pragmatic testing context). After analyzing interview and observation, the results demonstrated the inclusion of pragmatic test tasks resulted in heightened awareness among learners towards pragmatic elements in listening materials and teacher communication, while those in the non-pragmatic testing context were more focused on lexical and grammatical aspects. Moreover, teachers in the pragmatic testing context highlighted the effectiveness of activities focused on pragmatics. Consequently, the finding indicated that incorporating low-stakes pragmatic assessment can have a beneficial impact on teaching and learning practices.

Moreover, the impact of the duration of formal language study on pragmatic competence has been studied by Wijayanto (2019). To conduct the study, the researcher collected data through questionnaires and semi-structured interviews with one hundred EFL teacher trainees at a private university in Central Java, Indonesia. The results indicated that the duration of formal English language study played a significant role in the learners' comprehension of impoliteness.

Another study carried out by Youn and Bi (2019) who focused on reporting strategy use of test takers to explore the cognitive validity of task-based L2 pragmatic assessment. The result of the survey revealed that higher pragmatic ability test-takers applied various strategies relative to lower-ability test-takers and used different types of strategies appropriate for controlling the unique and complex pragmatic task situations. Gharibeh et al. (2022) studied how various types of intelligence-based teaching methods impact on second language pragmatics development, specifically regarding politeness markers. To carry out the study, thirty intermediate EFL learners were divided into groups based on their dominant intelligences identified through McKenzie's Questionnaires. The participants were then assigned to either experimental groups A and B or a control group. Results indicated that learners in the experimental groups performed better than those in the control group across comprehension and production posttests and delayed posttests. Furthermore, no significant difference was found between the two experimental groups. Finally, it was concluded that adopting teaching methods to align with learners' dominant intelligences can significantly enhance their pragmatic skills.

Moreover, in the field of pragmatics, Bui and Nguyen (2023) examined how Vietnamese upper-secondary school English language textbooks address the concept of disagreement. After examining elements such as disagreement forms, supportive context information, and instructional activities designed in the textbooks to enhance students' understanding of pragmatics, the study identified a discrepancy between the textbook content and real-life language use. It was observed that the textbooks feature were more instances of direct disagreement rather than disagreement. Moreover, the resources provided for managing disagreement in the textbooks were limited. The study underscores the importance of incorporating pragmatic skills in English language teaching materials, especially in the context of teaching disagreement. It offered suggestions for enhancing the quality of EFL textbooks to better address pragmatic competence among students.

In Iranian context, Malmir (2015) conducted a study to specify IPLS utilized by both high and low ILP achievers through the use of semi-structured oral interviews. The results of the study showed that high ILP achievers utilized more IPLS in all of these six-strategy taxonomies compared to low ILP achievers. In this study, the construct validity of IPLS was confirmed and it is proposed that IPLS strategies have crucial role in L2 speech act acquisition. Due to the lack of survey regarding correlation of IPLS with L2 social identity, an investigation carried out on this subject by Malmir (2020). The findings of the research verified all types of IPLS significantly predicted L2 social identity except memory strategy.

Moreover, research conducted by Malmir and Derakhshan (2020) to explore L2 pragmatic comprehension strategies utilized by Iranian EFL learners and find out any gender differences in the use of pragmatic strategies. The findings indicated socio-pragmatic, lexico-grammatical, and cognitive strategies were utilized by Iranian EFL learners, but no gender differences were found in pragmatic comprehension strategies used by learners. In 2021, Derakhshan et al. conducted a study to investigate whether IPLS predict L2 speech act knowledge. Data analysis revealed that all types of IPLS significantly correlated with L2 speech act pragmatic knowledge. Precisely, it was found that social and cognitive IPLS strategies can moderately predict L2 speech act and metacognitive and memory IPLS were fair contributors of L2 speech act and compensatory and affective IPLS strategies were found to be very weak predictors of the L2 speech act. Another study was carried out by Eslami et al. (2022) that explored the variations in pragmalinguistic and sociopragmatic aspects among Iranian EFL learners at various proficiency levels. The results of the study indicated advancements in both sociopragmatic and pragmalinguistic skills based on language proficiency levels and offered valuable insights for the creation of pragmatics-focused materials and pragmatic instructional strategies in second language acquisition.

### Conversational Implicature

In everyday conversation, individuals often convey proposition that goes above and beyond the proposition that individuals directly achieve. On the basis of this fact, Grice (1989) developed the concept of conversational implicature across “Logic and Conversation” and defined it as “Utterer’s Meaning and Intention” which refers to an implicit speech act: What is meant by a speaker is not part of what is directly stated. Consider the following examples:

- (1) A: Is John a good teacher?  
B: He’s got a beautiful handwriting.  
*[John is not a good teacher.]*
- (2) Benjamin: Are you having some of this chocolate cake?  
Amelia: I’m on a diet. B:  
*[she is not going to have any of the cake.]*

In the above instances, B’s utterance indicates a propositional meaning—the utterance demonstrated by the italicized sentences—which differs from what B has implicitly stated: while B in (1), for example, asserts that He’s got a beautiful handwriting, his main meaning is to express the proposition that John is not a good teacher. To explain how implicatures can be understood, Grice proposed the theory of conversation and states:

*"What is implicated is what it is required that one assume a speaker to think in order to preserve the assumption that he is observing the Cooperative Principle (and perhaps some conversational maxims as well), if not at the level of what is said, at least at the level of what is implicated"* (Grice, 1989b, p. 86).

Furthermore, Grice (1989) offers three required conditions that successful conversational implicatures meet including: Calculability (the implicature can be calculated), grasped Content (the speaker and audience have the same inferential regarding the implicated proposition), and inferential path sameness (both speaker and audience have the same intention regarding the implicated proposition). It is stated that if at least one of the above necessary conditions is not met, the comprehension of conversational implicature just succeeds by luck; therefore, it is a miracle (Lassiter, 2021). Grice also makes a distinction between conventional implicature and

conversational implicature. While both deal with contents of utterances, intentionally communicated, they differ in some ways.

Moreover, Grice points out what is said is part of the linguistically encoded meaning. But, conversational implicature conveys a content that is not part of its semantic content and its intention is specified by the context of the utterance. Also, Levinson (2000) divides conversational implicature into generalized conversational implicature and particularized conversational implicature. While particularized implicatures occur with respect to particular context, generalized implicatures inhere in utterance kinds and occur without reference to any particular contexts (Levinson, 2000). Moreover, he expanded generalized implicature into three kinds including: Q-implicature (be as informative as required), I-implicature (not be more informative than what is required), and M-implicature (avoid obscurity and prolixity).

There have been several surveys regarding conversational implicature. For example, Derakhshan (2014) conducted a study to explore the impact of video vignettes on the comprehension of implicatures among 78 Persian learners of English. The participants were categorized into role-play, form-search, metapragmatic, and control groups, and received instruction on 28 video prompts featuring implicatures over six sessions. The findings from the implicature listening test indicated that comprehension of idiosyncratic and formulaic implicatures improved across all teaching methods following the intervention, with all groups demonstrating better performance compared to the control group. In another study, Pratama et al. (2017) began a study to investigate the most problematic factors affecting learners' comprehension of implicatures on 110 college students. The researchers found that indirect criticism was the most problematic implicature for L2 learners. It was also found proficiency (vocabulary and grammar) has significantly correlated with implicature comprehension. Also, Puczyłowski and Ziembicki (2018) studied the relationship between questions and implicatures and found questions can comprise of implicature.

Köylü (2018) conducted research to examine the capacity of 54 learners across three differing proficiency levels, as well as five English native speakers, to deduce conversational implicatures in English. The participants viewed 20 scenes from the TV show and illustrated orally their understanding of the conversational implicatures. The study found a positive relationship between the understanding of conversational implicatures and the learners' proficiency in the English language. Additionally, Chen and Lin (2021) compared the effects of peer collaboration and individual group on EFL learners' comprehension of conversational implicatures. The findings showed no significant differences between collaborative and individual groups on comprehension of conversational implicature. But it was reported that the two groups utilized different strategies to comprehend implicature. In Iranian context, Derakhshan (2019) explored relationship between EFL learners proficiency and their implicature knowledge of 102 (35 males & 76 females) Iranian EFL learners and investigated the possibility of any differences between male and female EFL learners with respect to their proficiency level. The results revealed no difference between male and female EFL learners' proficiency level and their implicature knowledge and the results of the analysis indicated that proficiency level significantly predicted Iranian EFL learners' implicature knowledge.

Moreover, Kentmen et al. (2023) carried out a study to assess foreign language learners' comprehension of conversational implicatures by employing a multiple-choice discourse test (MCDT) and their performance in a discourse completion test (DCT). The findings showed that the learners exhibited a lack of proficiency in identifying and understanding patterns related to formulaic implicatures. This deficiency may stem from their preference for semantic comprehension abilities over the recognition of situational contexts, specifically sociopragmatic characteristics. Also, it was reported that learners lacked sufficient competence in generating speech acts and would benefit from additional training in language application. During the production test, participants demonstrated misuse of specific pragmalinguistic (form and function) and sociopragmatic (function and context) elements.

As the literature indicates, no study has been carried out to investigate how IPLS contribute to the understanding of conversational implicatures. Consequently, the purpose of the present study was to identify

whether Iranian EFL learners' comprehension of conversational implicature could be predicted by memory, cognitive, metacognitive, social, compensation, and affective IPLS. Therefore, in order to investigate the interrelationship among the variables of the study including memory, cognitive, metacognitive, social, compensation, affective IPLS and conversational implicature, a structural model was anticipated and based on the previous research findings, the hypothetical model was formulated. Figure 1 depicts the hypothesized model of the study. Also, a valid model of interrelationships among the variables of the study in Iranian language learning context was identified.

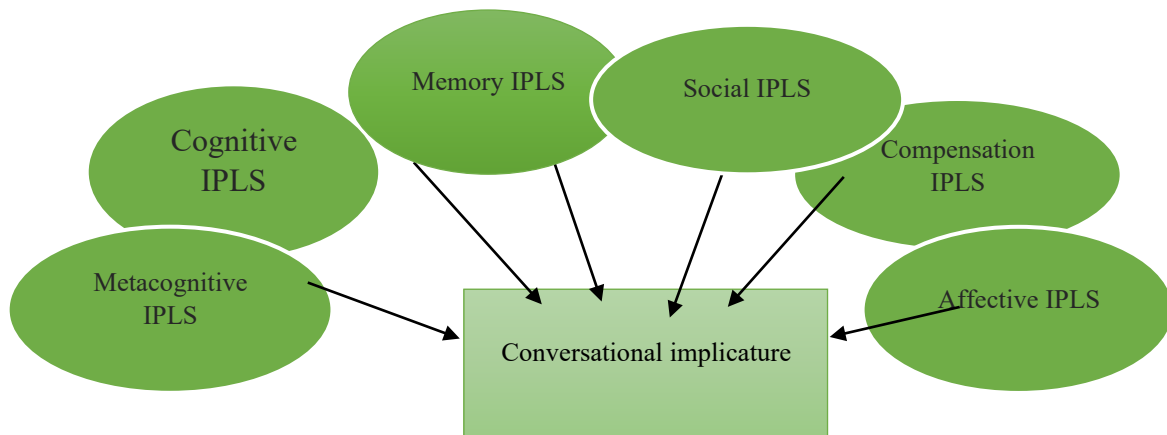


Figure 1: The hypothetical model.

On the basis of the hypothesized model, the research questions were formulated specifically as follows:

- 1) Does memory IPLS predict Iranian EFL learners' conversational implicature?
- 2) Does cognitive IPLS predict Iranian EFL learners' conversational implicature?
- 3) Does metacognitive IPLS predict Iranian EFL learners' conversational implicature?
- 4) Does social IPLS predict Iranian EFL learners' conversational implicature?
- 5) Does compensation IPLS predict Iranian EFL learners' conversational implicature?
- 6) Does affective IPLS predict Iranian EFL learners' conversational implicature?
- 7) What is a valid model of interrelationships among the variables of the study in Iranian language learning context?

## Method

The design of the study, the subjects of the study, data collection instruments, collection procedure, and data analysis are respectively presented and discussed.

## Design

To see the interrelationship among the selected variables, namely memory, cognitive, metacognitive, social, compensation, and affective IPLS and comprehension of conversational implicature, a quantitative research method was designed in which IPLS strategies were considered as independent variables and comprehension

of conversational implicature as dependent variable of the present study. After data collection procedure, the hypothesized model was tested through AMOSE program.

## **Participants**

In the current study, 376 upper-intermediate and advanced EFL learners via convenience sampling procedure selected for the present investigation. The participants' age was ranged between 18 to 35 ( $M=26.5$ ,  $SD=2.4$ ), 203 of them were males (54%), and 173 were females (46%). All participants were upper-intermediate to advanced level Iranian EFL learners whose experience of studying English at private language institutes ranged from 6 to 10 years ( $M=8$ ,  $SD=1.4$ ). The participants were chosen based on their performance on a Michigan Test of English Language Proficiency (MTELP). Out of 796 participants, 376 learners who got scores of 30 or above was considered as upper-intermediate and advanced EFL learners. It should be noted that the majority of the learners were Persian with various sociocultural backgrounds.

## **Instruments**

Oxford Quick Placement Test (OQPT) as a homogeneity test, Conversational Implicature Test, and the interlanguage pragmatic learning strategies (IPLS) Inventory were employed as three major data collocation instruments.

### **Oxford Quick Placement Test (OQPT)**

To choose a rather homogeneous group of learners in terms of their language proficiency at upper intermediate to advanced levels, a sample test of Oxford Quick Placement Test (version 2, 2002) was utilized in this study. This test is suitable for students aged 15 years and above and was administered in different studies for selection processes of participants as an internationally recognized and widely-used language proficiency test. It consists of 60 multiple-choice, pictorial, cloze test, and grammatical and vocabulary items. Approximately, 45 minutes were required to take the test and those who got a score between 31 – 40 were considered as upper-intermediate and those who obtained a score between 41-60 advance learners.

### **Interlanguage Pragmatic Learning Strategies Inventory**

Interlanguage Pragmatic Learning Strategies Inventory originally was developed by Tajeddin and Malmir (2015) as an instrument to evaluate frequency of interlanguage pragmatic strategies employed by speakers of other languages. This instrument comprises of 58 items and 6 subscales including: memory (8 items), cognitive (19 items), metacognitive (8 items), social (8 items), compensatory (9 items), and affective (6 items) IPLS. This instrument is a five-point Likert scale ranging from 0 to 5 including: Strongly Disagree (0), Disagree (1), Slightly Disagree (2), Agree (3), Slightly Agree (4), and Strongly Agree (5). In its main study, the Cronbach Alpha was used to estimate the reliability and reported to be .82. Also, Malmir (2015) respectively reported Cronbach alpha reliability indices of .83, .80, .79, .78, .82, .80, and .79. for the 7 subcomponents of the scale. In this study, the internal consistency reliability of the scale turned out to be .94, .87, .85, .94, .96, .90, .91 for each segment (memory IPLS, cognitive IPLS, metacognitive ILPS, social IPLS, compensation IPLS, affective IPLS) respectively. In providing evidence for content validity, an expert in the Department of English Language teaching reviewed the item pool.



## Conversational Implicature Test

A sample of implicature comprehension test originally developed by Roever (2005) was utilized to evaluate EFL learners' comprehension of conversational implicature that it has been indicated to be a reliable and practical instrument in testing ESL/EFL pragmatics (Roever, 2006). The test comprises of three sections including speech acts, implicatures, and routines that each segment contains 12 items, making a total of 36. In this test, it is expected that a person will contribute whatever is relevant to the context of the exchange. Additionally, to cross-validate the test to refine and improve the test, Roever (2005) piloted the study and carried out the study with different groups at different times. The aim of collecting pilot study data from such distinctly different groups was to determine the test items with malfunctioning response options. Also, Roever (2005) reported an alpha reliability of .91 for the whole sections of the test. For this purpose, only implicature segment was employed consisting of the idiosyncratic and formulaic implicatures so that Cronbach's alpha reliability indices of this section was calculated in the present study that it turned out to be .91.

## Data Collection Procedure

To specify the structural correlation between Iranian EFL learners' IPLS and comprehension of conversational implicature, the data were collected in three phases. Initially, a sample of 796 EFL learners took the Oxford Quick Placement Test (OQPT); however, those 376 learners who scored at or above 50 (out of 100) were regarded as upper-intermediate to advanced learners and selected as participants in the current study. Secondly, the modified version of Roever' (2005) test was filled out by the participants. Finally, after two weeks interruption, Tajeddin and Malmir' s (2015) interlanguage pragmatic learning strategies (IPLS) inventory was distributed among the selected participants in a separate session. During data collection procedure, the questions and procedures for giving the related tests and completing the questionnaire were elucidated to the participants.

## Data Analysis

Preliminary analyses comprise of the reliability coefficient estimates, descriptive statistics, and Pearson's correlations between major variables. In general, preliminary analyses check presumptions of structural equation modeling approach. To check the internal consistency of the adopted instruments, Cronbach's alpha coefficient was employed and the obtained reliability coefficient estimates were reported. Checking the normality of the data was another step to verify the normality of data distribution; therefore, the Kolmogorov-Smirnov test was conducted. Furthermore, Pearson correlation coefficients were carried out to estimate the strength of correlations among the variables being studied (i.e., memory, cognitive, metacognitive, social, compensation, affective IPLS, and conversational Implicature) and to minimize unreliable results from the SEM analysis (Kline 2005).

Main analyses comprise of the exploratory analysis and confirmatory analysis that, for exploratory factor analysis, multiple regression was applied to find the predictability power of independent variables (i.e., memory, cognitive, metacognitive, social, compensation, and affective IPLS) for the conversational implicature. Therefore, a series of multiple hierarchical regression analyses were run. Variables respectively were be fed into the regression equation on the basis of the hypothesized model. For the confirmatory analysis, SEM was employed to (1) detect if the model aligns with the hypothesized model and (2) report the final model accordingly (Lei & Wu, 2007).

The proposed model (Figure 1) was tested using Amos 24 statistical package to examine the structural relations. Firstly, the goodness of fit of measurement model was assessed as it is prerequisite for valid interpretations of structural relationships of the variables (Kline, 2005). Moreover, various fit indices including

the chi-square magnitude, Chi-square/df ratio, the normed fit index (NFI), the good fit index (GFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA) were examined to evaluate the model fit. In order to get a valid model of the study, the non-significant direct paths were removed and the results of the study were reported.

## Results

### Preliminary Analyses

Preliminary analyses comprise of the descriptive statistics, and Pearson's correlations between major variables. In general, preliminary analyses check presumptions of structural equation modeling approach.

### Normality of Data Distribution

Checking the normality of the data was another step that was taken thoroughly. To verify the normality of data distribution, a sample of the Kolmogorov-Smirnov test was conducted, the results of which are reported in Table 1.

TABLE 1  
*One-Sample Kolmogorov-Smirnov Test*

		Memory Cognitive	Metacognitive	Social	Compensation	Affective	Conversational
		IPLS	IPLS	IPLS	IPLS	IPLS	Implicature
<i>N</i>		370	370	370	370	370	370
Normal Parameters <sup>a,b</sup>	Mean	26.8811	64.5838	25.4676	28.0946	27.2000	26.5459
	<i>SD</i>	6.76288	17.36878	6.52494	6.18935	6.62246	5.50296
Most Extreme Differences	Absolute	.062	.067	.066	.064	.069	.067
	Positive	.054	.067	.066	.041	.060	.067
	Negative	-.062	-.060	-.060	-.064	-.069	-.065
Kolmogorov-Smirnov <i>Z</i>		1.194	1.298	1.274	1.234	1.333	1.298
Asymp. Sig. (2-tailed)		.115	.069	.078	.095	.057	.069

Note. <sup>a</sup>Test distribution is Normal.

Note. <sup>b</sup>Calculated from data.

As shown in Table 1, the Sig. values for the scores of the variables of the study (i.e., memory, cognitive, metacognitive, social, compensation, affective IPLS, and conversational implicature) were 0.115, 0.069, 0.078, 0.095, 0.057, 0.069, and 0.212, respectively. Consequently, it can be stated that they were above the critical value (0.05). Therefore, the normality of distribution for the scores of the aforementioned variables was supported.

### Descriptive Statistics of Scores

The descriptive statistics with respect to the obtained scores of the study variables (i.e., memory, cognitive, metacognitive, social, compensation, affective IPLS, and conversational implicature) are shown in details in Table 2. The displayed details include mean and standard deviation of the calculated scores that are depicted in Table 2.

TABLE 2  
Descriptive Statistics of the Score

	N	Minimum	Maximum	Mean	Std. Deviation
Memory IPLS	370	12.00	40.00	26.881	6.762
Cognitive IPLS	370	22.00	94.00	64.583	17.368
Metacognitive IPLS	370	12.00	40.00	25.467	6.52494
Social IPLS	370	12.00	40.00	28.094	6.18935
Compensation IPLS	370	9.00	40.00	27.200	6.62246
Affective IPLS	370	10.00	30.00	20.629	5.50296
Conversational Implicature	370	12.00	40.00	26.545	6.49906
Valid N (listwise)	370				

As specified in Table 2, the mean and standard deviation of EFL learners’ memory IPLS were 26.88 and 6.76 respectively, for cognitive IPLS M= 64.58 and SD= 17.36, for metacognitive IPLS M= 25.46 and SD=6.52, for social IPLS M= 28.09 and SD= 6.18, for compensation IPLS M=27.20 and SD=6.62, for affective IPLS M=20.62 and SD=5.50, and for conversational implicature M=26.54 and SD=6.49.

### Correlational analysis

To check the correlation of interlanguage pragmatic learning strategies (memory IPLS, cognitive IPLS, metacognitive IPLS, social IPLS, compensation IPLS, affective IPLS) with EFL learners’ comprehension of conversational implicature, Pearson product-moment correlation was carried out. The findings are presented in Table 3.

TABLE 3  
Results of Pearson Correlation Between EFL Learners’ Interlanguage Pragmatic Learning Strategies, and Conversational Implicature

		Memory IPLS	Cognitive IPLS	Metacognitive IPLS	Social IPLS	Compensation IPLS	Affective IPLS
Conversational Implicature	Pearson Correlation	.300**	.719**	.681**	.507**	.635**	.551**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	370	370	370	370	370	370

Note. \*\*Correlation is significant at the 0.01 level (2-tailed).

As the results of Pearson correlation indicated, the significant positive association between Iranian EFL learners’ conversational implicature and their memory IPLS ( $r= 0.300$ ,  $n=370$ ,  $p=0.00<.05$ ), cognitive IPLS ( $r= 0.719$ ,  $n=370$ ,  $p=0.00<.05$ ), metacognitive IPLS ( $r= 0.681$ ,  $n=370$ ,  $p=0.00<.05$ ), social IPLS ( $r= 0.507$ ,  $n=370$ ,  $p=0.00<.05$ ), compensation IPLS ( $r= 0.635$ ,  $n=370$ ,  $p=0.00<.05$ ), and affective IPLS ( $r= 0.551$ ,  $n=370$ ,  $p=0.00<.05$ ) was confirmed.

Moreover,  $R^2$  (or common variance) which is the effect size for correlation came out to be 0.090, 0.516, 0.463, 0.257, 0.403, and 0.303, respectively. That is, a small effect size was found for the correlation between EFL learners’ conversational implicature and their memory IPLS ( $R^2=0.090$ ), and social IPLS ( $R^2=0.257$ ) (Cohen, 1992; Larson-Hall & Herrington, 2010). Moreover, a moderate effect size was found for the correlation between EFL learners’ conversational implicature and their metacognitive IPLS ( $R^2=0.463$ ), compensation IPLS ( $R^2=0.403$ ), and affective IPLS ( $R^2=0.303$ ) (Cohen, 1992; Larson-Hall & Herrington, 2010). Additionally, a high effect size was found for the correlation between EFL learners’ conversational implicature and their cognitive IPLS ( $R^2=0.516$ ) (Cohen, 1992; Larson-Hall & Herrington, 2010).

### Exploratory Analyses

To test the hypothesized model presented in Figure 1, a series of multiple hierarchical regression analyses were run to find the predictability power of independent variables (i.e., memory IPLS, cognitive IPLS, metacognitive IPLS, social IPLS, compensation IPLS, and affective IPLS) for the conversational implicature. Variables respectively were fed into the regression equation on the basis of the hypothesized model. Generally, the results of these series of regression analyses are summarized. Table 4 indicates the model summary.

TABLE 4  
*Model Summary*

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate
1	.806 <sup>a</sup>	.649	.644	3.879

Note. <sup>a</sup>Predictors: (Constant), Affective IPLS, Memory IPLS, Cognitive IPLS, Social IPLS, Compensation IPLS, Metacognitive IPLS.

According to Table 4, the values of R and R Square were calculated to be 0.649, and 0.644, respectively. In order to further analyze the issue, the results of the conducted ANOVA are presented in Table 5.

TABLE 5  
*Regression Output: ANOVA Table*

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	10121.012	6	1686.835	112.050	.000 <sup>b</sup>
Residual	5464.707	363	15.054		
Total	15585.719	369			

Note. <sup>a</sup>Dependent Variable: Conversational Implicature

Note. <sup>b</sup>Predictors: (Constant), Affective IPLS, Memory IPLS, Cognitive IPLS, Social IPLS, Compensation IPLS, Metacognitive IPLS.

As it is apparent in Table 5, the results of ANOVA ( $F_{6, 363} = 112.050, p = 0.000 < 0.05$ ) were significant.

TABLE 6  
*Regression Output: Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	2.603	1.183		2.201	.028
Memory IPLS	-.017	.034	-.018	-.504	.614
Cognitive IPLS	.175	.015	.467	11.670	.000
Metacognitive IPLS	.245	.054	.246	4.579	.000
Social IPLS	.071	.048	.067	1.486	.138
Compensation IPLS	.203	.050	.207	4.045	.000
Affective IPLS	-.030	.056	-.026	-.538	.591

Note. <sup>a</sup>Dependent Variable: onversational Implicature

As shown in Table 6, cognitive, metacognitive, and compensation IPLS were significant predictors of EFL learners' conversational implicature. However, it was found that Memory, Social, and Affective IPLS did not predict Iranian EFL learners' conversational implicature. Consequently, it can be concluded that among the six independent variables of the study (i.e., memory, cognitive, metacognitive, social, compensation, and affective

IPLS), Iranian EFL learners' cognitive IPLS with Beta and t value of 0.467 and 11.670, respectively, was the strongest predictor of their conversational implicature.

### Confirmatory Analyses

Confirmatory analyses were used to (1) explore whether the measurement model accords with the hypothesized model and (2) present the last model accordingly (Lei & Wu, 2007). The hypothesized model is indicated in Figure 2.

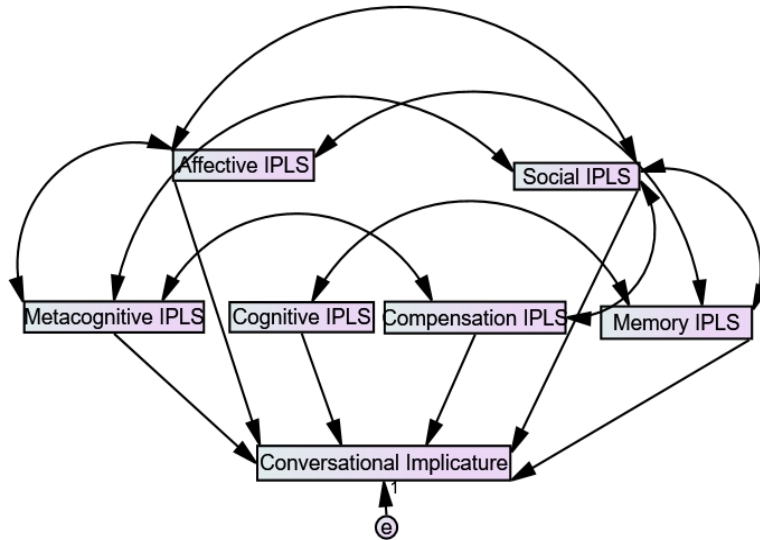


Figure 2. The Hypothesized structural model of the variables.

The proposed model in Figure 2 was tested using the Amos 24 statistical package to investigate the structural relationships. Several fit indices were assessed to determine the model fit, including the significance of the chi-square value (which should not be significant), the chi-square/df ratio (which should be below 3), the normed Fit Index (NFI>0.90), the good fit index (GFI>0.90), the comparative fit index (CFI>0.90), and the root mean square error of approximation (RMSEA) of approximately 0.08 (Schreiber et al., 2006). The results of evaluating these fit indices are presented in Figure 2, illustrating the model.

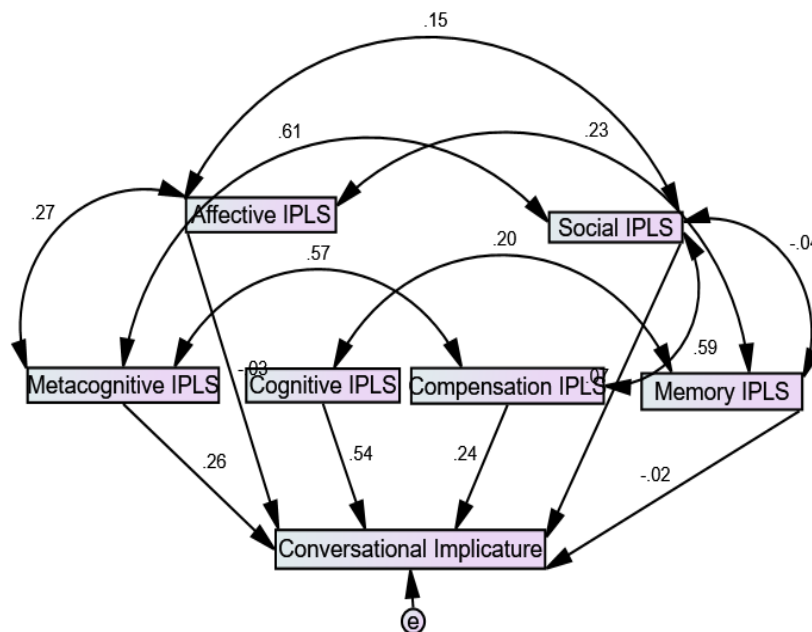


Figure 3. The model of interrelationship among variables.

Moreover, Table 7 shows goodness of fit indices.

TABLE 7  
Goodness of Fit Indices

	$X^2/df$	NFI	GFI	CFI	RMSEA
Acceptable fit	<3	>.90	>.90	>.90	<.08
Model	67.976	.675	.739	.675	.426

As shown in Table 7, none of the fit indices met the acceptable thresholds for model fit. Therefore, in order to establish a valid model that demonstrates the interrelationship among the variables in language learning contexts, modifications were necessary. The model was adjusted by removing the non-significant direct paths from affective, memory, and social IPLS. Additionally, some covariances were introduced to the model. Subsequently, the fit indices were reevaluated, and the findings are displayed in Table 8.

TABLE 8  
Goodness of Fit Indices after Modification

	$X^2/df$	NFI	GFI	CFI	RMSEA
Acceptable fit	<3	>.90	>.90	>.90	<.08
Model	.996	.998	.998	1.000	.000

As indicated in Table 8, all of the fit indices (chi-square/df ratio = 0.996, RMSEA = 0.000, NFI = 0.998, GFI = 0.998, and CFI = 1.000) meet the acceptable fit thresholds. Thus, it can be concluded that the modified model exhibits a perfect fit with the collected data. Furthermore, Figure 4 depicts the interrelationships among the variables in the model after the modifications.

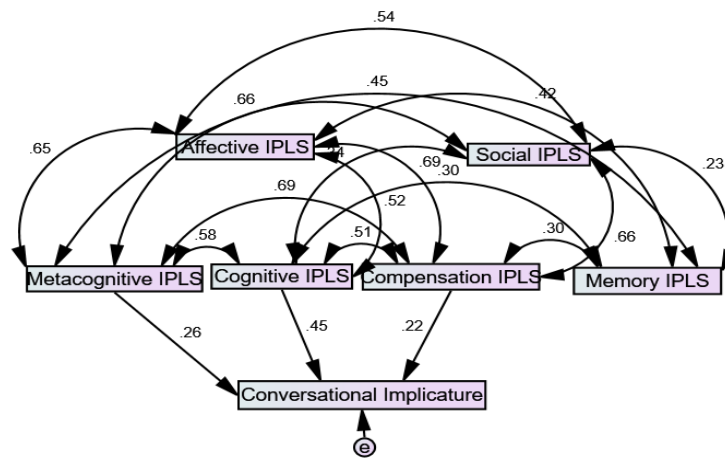


Figure 4. The model of interrelationship among variables after modification (The valid model).

The results revealed that Figure 4 was a valid model of Iranian EFL learners' memory, cognitive, metacognitive, social, compensation, affective IPLS, and conversational implicature, in which cognitive, metacognitive and compensation IPLS predicted EFL learners' conversational implicature. Furthermore, EFL learners' cognitive IPLS was found to be the strongest predictor ( $\beta = 0.45$ ,  $p < .05$ ) of their conversational implicature.

## Discussion

The current study indicated two significant findings. Firstly, comprehension of conversational implicature was predicted by cognitive, metacognitive and compensation IPLS; however, it was not predicted by memory, social, and affective IPLS. Secondly, EFL learners' cognitive IPLS was investigated to be the strongest predictor of their conversational implicature. Based on the result of the study, it can be stated that cognitive IPLS due to its nature can contribute more to the EFL learners' comprehension of conversational implicature. As Ellis (2008) argued they are in charge of retrieving the information from the short-term memory, matching it to the information in the working memory, and retaining them in long term memory. In a similar vein, Derakhshan et al. (2021) stated that "the significant contribution of cognitive strategies is in line with the contribution to language learning in general and communicative competence in particular" (p. 240).

The results of this study align with previous investigations that have shown a significant correlation between cognitive IPLS and various speech acts for acquiring pragmatic knowledge (Cohen, 2005, 2010; Li, 2013; Youn & Bi, 2019). For example, Cohen (2005, 2019) found in his study that both cognitive and metacognitive IPLS are necessary for initial acquisition of pragmatic knowledge. Additionally, Youn and Bi (2019) reported a positive relationship between cognitive and metacognitive IPLS and L2 learners' pragmatic performance. Malmir and Derakhshan (2020a) found cognitive strategies play significant role in interlanguage pragmatic comprehension that the majority of participants in the study discussed employing a combination of top-down and bottom-up cognitive strategies. Bottom-up processing involves analyzing the linguistic elements and grammar of the discourse within working memory, while top-down processing involves utilizing socio-pragmatic and contextual cues to reconstruct and understand the intended meaning, as articulated by Perez

(2017). Additionally, Malmir and Derakhshan (2020a) reported that the participants typically employed a sequence of both top-down and bottom-up processing strategies. Initially, they would utilize bottom-up processing to decode contextual and grammatical cues, followed by engaging in top-down processing to leverage their collective world knowledge through socio-pragmatic strategies.

However, the findings of this study differ from those of Malmir (2020), who discovered that cognitive IPLS indirectly contribute to the formation of social identity. The contribution of metacognitive IPLS is taken into consideration in this study, as mentioned by Cohen (2019), the significant role that metacognitive IPLS plays can be attributed to the involvement in recalling, controlling, storing, sorting, and planning future pragmatic knowledge acquisition. The result of this study is aligned with the findings of Cohen (2005, 2019) who emphasized the significant role it plays in learning various speech acts. Moreover, Youn and Bi (2019) attributed higher ability of test-takers to the cognitive and metacognitive of task-dependent strategies. Additionally, the findings are not in harmony with the studies of Derakhshan et al. (2021) and Malmir (2020) who cannot justify its significant role in their studies and just referred to its indirect role. Accordingly, social IPLS plays a critical role in acquiring the speech-act pragmatic knowledge considering the sociocultural nature of most speech acts employing in authentic conversations (Derakhshan et al., 2021; Malmire, 2020). As social interactions involve interpersonal, intercultural, and intersocial settings, it can significantly contribute to the acquisition of speech-act pragmatic knowledge (Derakhshan et al., 2021). Additionally, pragmatic knowledge is constructed, reconstructed, and constantly revised through social interactions based on the recent theories of pragmatic development (Bardovi-Harlig, 2013).

The role of compensatory IPLS in the comprehension of EFL learners' conversational implicature is supported in this study. As Malmir (2020) believed that compensatory IPLS contribute to EFL learners to use more techniques and strategies such as asking other peers and native speakers, utilizing any available source of information, and asking authorities to compensate for their failure in conversation. Furthermore, he believes that it can contribute in promoting EFL learners' motivation and empathy toward the target language and develop their identity. The result of the study can be justified by Norton and Toohey (2011), Derakhshan et al. (2021) who stress the significance of compensatory strategies.

The non-significant path from memory, affective, and social IPLS to comprehension of conversational implicature indicates in comparison with cognitive, metacognitive, and compensatory IPLS can be accounted for by no significant role they play in comprehension of conversational implicature. As Cohen (2010) and Tajeddin and Malmir (2015) referred to more psycholinguistic and neurolinguistic features of memory strategies. In fact, social and affective strategies have more significant role in the exchange of socio-pragmatic knowledge (Derakhshan et al., 2021). However, the finding of the study is not in line with Taguchi (2017) who argued that having an understanding of socio-pragmatic knowledge is essential for grasping interlanguage pragmatic comprehension. This knowledge plays a crucial role in determining politeness, formality levels, directness, indirectness, as well as guiding the use of semantic and syntactic structures within a contextualized discourse in practical contexts. Furthermore, it is not harmony with Sykes and Cohen (2018) who demonstrated a particular focus on the importance of emotional awareness and learner identity within the context of using pragmatic strategies. Their argument highlights the advantages of incorporating a visualization technique to enhance learners' emotional and self-awareness by considering the potential impact of executing a specific speech act (Tajeddin & Bagherkazemi, 2021).

## **Conclusion and Implications**

This study examined interlanguage pragmatic learning strategies on upper-intermediate and advanced EFL learners and motivated by the dearth of research on comprehension of conversational implicature in everyday



interaction and conversations. As stated in research questions whether Iranian EFL learners' comprehension of conversational implicature could be predicted by memory, cognitive, metacognitive, social, compensation, and affective IPLS, findings of the current structural study found that from among IPLS, three of them including cognitive, metacognitive and compensation IPLS predicted EFL learners' conversational implicature. Furthermore, EFL learners' cognitive IPLS was found to be the strongest predictor of comprehension of their conversational implicature. A valid model of interrelationships among the variables of the study in Iranian language learning context was adjusted through removing the non-significant direct paths from affective, memory, and social IPLS.

Due to the findings of the study, second language teachers should take into consideration technical conformity and teaching approaches. These three IPLS (cognitive, metacognitive & compensation IPLS) should be reinforced to EFL learners to enhance their resilience in learning and not simply give up when they misunderstand difficult English pragmatic features. By investigating these IPLS recommended strategies, it is hoped that students will utilize them to improve their communication and interaction skills in English. Consequently, due to the importance of pragmatic in comprehension of conversational implicature, much attention should be spent on raising the students' awareness of implicature to explain how it is possible to understand the implied meanings of their interlocutors and explain to them that speakers rely heavily on cognitive, metacognitive, and compensatory pragmatic strategies when interpreting utterances that include implicature. Equally important, L2 curriculum developers should integrate these three types of strategies into the curriculum to increase students' awareness to deal with difficult matters and misunderstandings.

Textbook writers could enrich the textbooks by integrating findings from pragmatics research (Bui & Nguyen, 2023). It is also advised that the teaching strategies presented in textbooks should mirror second language (L2) research in order to improve students' educational achievements, as emphasized by Tomlinson (2016). Moreover, studies show that textbooks frequently do not completely correspond with L2 instructional approaches (Tomlinson, 2016), emphasizing the importance for educators to thoroughly evaluate and tailor textbooks prior to incorporating them into classroom teaching (Bui & Nguyen, 2023). Therefore, there is need for textbook writers to assess and modify textbooks according to the findings of the present study to promote the integration of pragmatic in teacher training and professional growth programs.

This research could expand L2 learners' comprehension of conversational implicature. The findings have illuminated the issue of instructing interlanguage pragmatics learning strategies to EFL learners that encourage L2 educators to create a range of pragmatic assignments to elicit feedback and negotiate meaning among learners. This has the potential to inspire L2 learners' pragmatic education and enhance their metapragmatic understanding and awareness of the desired pragmatic strategies (Chen, 2016). Moreover, the current study suggests to L2 learners to provide opportunity for joint discussions to delve into their employment of strategies in comprehending conversational implicatures. These findings not only indicated their underlying cognitive procedures (Chen, 2015) in pragmatic but also revealed their pragmatic challenges.

Another significant finding that highlights the importance of the present study is its impact on washback effect. The notably positive washback effect observed in Tajeddin and Dabbagh (2015)' study with the introduction of a new pragmatic subtest indicates that the nature of washback, whether positive or negative, is intricately linked to the examination format and any associated modifications. Regardless of changes in examination structure and the inclusion of the pragmatic subtest, teachers consistently viewed pragmatic competence as a valuable requirement in language proficiency (Ellis, & Shintani, 2023). It can be inferred that individuals' attitudes towards pragmatic and its evaluation profoundly influence their reception of a new exam and its resultant washback effects. This underscores the importance of aligning testing practices with cognitive, metacognitive and compensatory interlanguage pragmatic learning strategies upheld by teachers. Without this alignment, even well changes aimed at enhancing comprehension of conversational implicature may inadvertently lead to negative washback consequences.

Additionally, language teachers can easily decide what kinds of IPLS should be taught, practiced in the classroom to help them promote their comprehension of conversational implicature. L2 researchers can also compare the IPLS employed by successful ILP achievers are thought to be the focus of attention to other less successful learners. In the light of the results gained, it is suggested that EFL teachers should sensitize their students toward the use of cognitive IPLS in order to decipher pragmatic meaning and provide them with insights to apply different types of follow-up activities to enhance comprehension of conversational implicature. This said, cognitive IPLS should be treated seriously by EFL instructors in the classroom. Moreover, the teachers could teach their students in a way to apply various pragmatic techniques in order to better understand the pragmatic meaning and to be "more effective pragmatically in L2" (Cohen, 2010, p. 227). As Cohen (2010) makes argument in favor of the instruction of IPLS, asserting that "given the challenges associated with learning L2 pragmatics, it makes sense for learners to develop their own repertoire of strategies for both learning and performing pragmatics" (p. 227).

Due to the pervasiveness of this inferencing processes in individuals' daily interactions, it is undeniable that IPLS can be highly significant in interpreting and conveying a message. Therefore, future studies should incorporate different factors to reveal the other precise factors that may influence the comprehension of conversational implicature. In the future, it is worth utilizing corpora of naturally occurring conversations to study comprehension of conversational implicature in order to reduce the used artificial methods in the current investigation. Fortunately, it is possible to carry out longitudinal investigation to illustrate EFL learners' pragmatic strategies are utilized during the process of comprehension of conversational implicature.

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