Explicit and Implicit Instruction of Refusal Strategies: Does Working Memory Capacity Play a Role?

Mohammad Javad Ahmadian
University of Leeds

This study investigated the differential effects of implicit and explicit instruction of refusal strategies in English and whether and how the impacts of instruction methods interact with learners' working memory capacity (WMC). 78 learners of English were assigned to three groups (explicit, implicit, and control). Implicit instruction was operationalized through input enhancement and provision of recast. In the explicit instruction group, participants received description and exemplification of refusal strategies and were provided with explicit corrective feedback. Prior to the treatment, all participants took WMC test, Discourse Completion Test (DCT) and completed a pragmatics comprehension questionnaire (CQ). Results revealed that explicit instruction was more effective than implicit instruction for both production and comprehension of refusals and that both implicit and explicit groups maintained the improvement in the delayed post-test administered two months later. In addition, whilst WMC scores were positively and strongly correlated with gains in the immediate and delayed post-test for both DCT and CQ in the implicit group, no meaningful relationship was found for explicit and control groups. The unique feature of this research is demonstrating that explicit instruction of refusal strategies equalizes learning opportunities for all learners with differential levels of WMC.

INTRODUCTION

Learning L2 pragmatics is a complex and cognitively demanding process. Learning a pragmatic feature, such as refusals which have multiple realizations in English, involves "multipart mappings of form, meaning, function, force, and context" (Taguchi, 2015, p. 1). Given the non-salient and opaque nature of such features for language learners, mere exposure to the target language will not necessarily result in development and acquisition. Therefore, particularly in English as a Foreign Language (EFL) contexts, where learners' opportunity to use the target language for communicative purposes is limited, principled instruction of L2 pragmatics seems necessary (Kasper & Schmidt, 1996). This study targeted refusal strategies because declining a request, invitation or offer is quite prevalent in everyday oral and written communication. In fact, owing to cross-cultural differences, "the inability to say 'no' clearly and politely, though not directly, has led many non-native speakers to offend their interlocutors" (Takahashi & Beebe, 1987, p. 133).

Since the late 1980's, there has been an upsurge in empirical research on whether and how L2 pragmatic features should be taught. By far, the majority of studies confirm that virtually all aspects of L2 pragmatics are amenable to instruction and that, broadly, the benefits of instruction outweigh non-instruction (Bardovi-Harlig, 2001; also see Taguchi, 2015 for a recent critical review). Most of the instructed L2 pragmatics studies conducted to date have been framed along the

implicit-explicit instruction continuum to compare the relative efficacy of different treatment conditions (Jeon & Kaya, 2006). Explicit instruction aims to promote intentional learning mainly through drawing learners' attention to target features (Ellis & Shintani, 2014). There is, however, an important difference between L2 pragmatics and general SLA in the way in which explicit instruction is operationalized. Whilst in L2 pragmatics literature, explicit teaching is operationalized through metapragmatic rules explanation, in the general SLA literature this is not necessarily the case (Taguchi & Roever, 2017). On the other hand, implicit instruction approaches do not involve rule explanation, are geared for learning without awareness of rules and "aim to draw learners' attention to the target so it can enter working memory and be processed by implicit learning mechanisms" (Taguchi & Roever, 2017, p. 218). The empirical studies conducted so far have utilized a diverse mix of treatment conditions (or different operationalizations of the same treatment), length of instruction (which are, at times, unequal for different groups), data elicitation instruments (role plays, DCTs, etc.), participants, and data analysis techniques (see Taguchi & Roever, 2017). Although this methodological and conceptual diversity could provide a fairly comprehensive picture of the impacts of L2 pragmatics instruction, it renders drawing definitive theoretical conclusions and pedagogical implications from the amassed evidence rather difficult. Therefore, it is imperative to both expand the scope of the investigation and conduct further rigorous research in this area (Bardovi-Harlig, 2012). This could involve looking at different target features, various contexts and the role of individual differences. In particular, attempts at comparing the relative effectiveness of explicit and implicit instruction of relatively 'complex' pragmatic features such as refusal strategies are scarce. Also, a host of research shows that learners with different cognitive characteristics such as language aptitude and working memory capacity can have differential gains from specific instructional methods (Vatz, et al., 2013). WM plays a key role in the allocation and regulation of attentional resources to various dimensions of language. Not unlike the development of grammar and lexis which have shown to be correlated with working memory capacity, Taguchi and Roever (2017) argue, development of L2 pragmatics depends on general cognitive mechanisms such as working memory. However, the interaction between L2 pragmatics instructional sets and cognitive individual difference (ID) variables such as WMC has yet to be examined. Investigating ID variables vis-à-vis L2 pragmatics instruction would offer a clearer and more nuanced picture of the mechanisms which underlie and drive the development of L2 pragmatics features. Therefore, the study reported in this paper investigated: (a) the differential effects of implicit and explicit instruction of refusal strategies on accurate production and comprehension of this pragmatic feature; and (b) whether and how participants' WMC mediates the effects of implicit and explicit instruction of refusal strategies. These two questions assume theoretical and practical significance. Examining the relative effects of different approaches to L2 pragmatics instruction as well as the way in which they interact with cognitive ID variables allows us to make more fine-tuned and generalizable predictions about the effects of various pedagogical options. It will also enable teachers, teacher educators, and educational

policy makers to equalize learning opportunities through identifying pedagogical conditions that cater to the needs of all learners regardless of their level of cognitive processing abilities (DeKeyser, 2012). In addition, the findings of such studies provide us with further insight as to the role of general cognitive abilities in the development of L2 pragmatics. This will in turn help to explain and illuminate some of the key findings of recent research on instructed L2 pragmatics.

REVIEW OF THE LITERATURE
Methodological Options in L2 Pragmatics Instruction
In the instructed SLA literature, the purpose of implicit instruction is to induce learners to infer grammatical or pragmatic rules without drawing their focal attention to them (Ellis, 2009). For Housen and Pierrard (2005, p. 10), implicit instruction is carried out spontaneously, is unobtrusive, presents the target features in a contextualized manner, and does not use metalanguage. However, in explicit instruction, learners' attention is directed to a target feature and, as DeKeyser (1995, p. 380) puts it, "some sort of rule is being thought about during the learning process". These definitions allude to the fact that the central construct for characterizing and operationalizing implicit and explicit instruction is 'attention' which constitutes "a core property of all perceptual and cognitive operations" (Chun, et al., 2011, p. 73) and is assumed to be limited, selective, and responsible for controlling access to consciousness (Schmidt, 2001). From this perspective, then, the main function of instruction is channeling learners' attentional capacity to the target features in the input (Indrarathne & Kormos, 2016).

There is no single approach for realizing implicit and explicit instruction in language classrooms (Ellis, 2009). But, broadly, implicit instruction is geared to 'incidental learning' where learners are not aware of the target feature(s). Therefore, teaching practices which are associated with it involve "creating a learning environment that is 'enriched' with the target feature, but without drawing learners' explicit attention to it" (Ellis, 2009, p. 17). This could be operationalized (as in the current study) through input enhancement and provision of recasts (i.e. reformulation of learner's utterances which entailed inaccurate refusals). Explicit instruction, on the other hand, caters to intentional learning where learners are made aware that they are going to learn about grammar, vocabulary, or pragmatic aspects of language and then to practice them in the class (Ellis & Shintani, 2014). There is a wealth of research suggesting that implicit and explicit instruction could have differential effects on L2 acquisition. For example, in a seminal and oft-cited meta-analysis, Norris and Ortega's (2000) showed that, overall, explicit form-focused instruction is far more effective than implicit instruction as far as L2 grammar acquisition is concerned. This state of affairs has not changed since then and several recent studies have corroborated this general conclusion. Most notably, Spada and Tomita's (2010) meta-analysis found large effect sizes for explicit instruction over implicit instruction of both simple and complex grammatical features.

Equally, in L2 pragmatics literature, numerous studies have compared the effectiveness of implicit and explicit instruction of different pragmatic features.

However, it should be emphasized that in L2 pragmatics, implicit instruction is all too often operationalized as mere exposure to TL input, which is somewhat different from the implicit form-focused instruction in instructed SLA literature. House (1996), for example, examined the relative effects of input and opportunity for communicative activities (i.e. implicit instruction) over explicit instruction of conversational routines on 'pragmatic fluency'. She compared two versions of a similar communicative course which took place over 14 weeks. In the implicit group, participants were asked to do extensive conversational practice, but they were not presented with any metapragmatic information. In the explicit group participants received explicit metapragmatic information about the use and function of routines both orally and through handouts. Based on descriptive statistics, House concluded that explicit instruction was more effective than implicit teaching in helping learners to use gambits and strategies.

Alcón-Soler (2007) investigated the relative effectiveness of implicit and explicit instruction on learners' pragmatic awareness of requests. In this study, implicit instruction was operationalized through presenting excerpts from a series called *Stargate*, using input enhancement and implicit consciousness-raising tasks. Explicit instruction consisted of presenting a scripted version of excerpts from the same series used in implicit group as well as explicit consciousness raising tasks. Drawing on Schmidt's (1993) conceptualization, Alcón-Soler defined awareness at two levels of noticing and understanding. However, she did not find any advantage for explicit instruction over implicit instruction except for the observation that only participants in the explicit group were aware of factors involving interlocutor social distance and level of imposition. She concluded that making use of explicit and implicit consciousness-raising activities in conjunction with feedback were beneficial for noticing requests.

Similarly, Takimoto (2007) compared the impact of three input-based approaches on pragmatic proficiency development. Participants in the first group received explicit information and carried out structured input tasks. In group two, participants did a problem-solving task but did not receive any explicit information. In group three, participants were asked to do structured input tasks without any explicit information. Takimoto found that the positive effects of giving explicit metapragmatic information alongside structured input tasks do not carry over from posttest to the follow-up test. He explained this finding by suggesting that requiring learners to work out the rules for themselves (i.e. inductive explicit teaching) would foster deeper levels of processing. In another study, which is closely related to the current research in terms of the target feature, Félix-Brasdefer (2008) examined the benefits of explicit and implicit instruction of refusal strategies in Spanish as a foreign language. The study did not benefit from a control group. In the experimental group (i.e. explicit instruction condition), participants were presented with metapragmatic information and the same material was shown on PowerPoint slides. In the implicit condition, learners merely performed role plays and nothing more. Félix-Brasdefer (2008) found that in the explicit instruction condition there was a significant decrease from pretest to posttest in the inappropriate use of direct refusals. That is to say,

after explicit instruction learners tended to use more indirect refusal strategies which is, in fact, considered to be politer. This finding was corroborated by Nguyen, et al. (2012) who compared the effects of explicit and implicit form-focused instruction on the acquisition of constructive criticism (a fairly complex pragmatic feature with multiple realizations). Nguyen, et al. operationalized explicit instruction through: consciousness-raising activities, metapragmatic explanation, follow-up discussions, productive activities, reflecting on output and attempting to improve it, and explicit correction of both grammatical and pragmatic errors (p. 420). Treatment in the implicit group involved: input enhancement, discourse completion tasks, reflecting on output and attempting to improve it, provision of recast (in the form of confirmation checks) and writing correct versions on the blackboard. They used a discourse completion task, oral role play and oral peer feedback to elicit constructive criticisms. Results revealed that explicit group outperformed the implicit and control group.

Ghavamnia et al. (2014) compared four instruction conditions which differed in terms of the way in which input was enhanced and made more noticeable for participant. The interesting point about their study design is that they have operationalized input enhancement on a continuum of explicit (i.e. metapragmatic explanation), less explicit (i.e. form comparison), and fairly implicit (i.e. typographically enhanced input plus input flooding) conditions Overall, results of their study showed that more explicit methods of instruction (i.e. form comparison and metapragmatic explanation) were more effective than both the control group and input flooding and typographical enhancement.

In another relevant study, Fordyce (2014) explored both immediate and long-term effects of explicit and implicit instructions on learners' use of epistemic stance forms in written production. Explicit instruction was operationalized through enhanced input as well as explicit instruction in the form of inductive activities and metapragmatic information. In the implicit group, the focus was on comprehension and analysis of texts in the absence of metapragmatic information. Fordyce found that explicit instruction was more effective than implicit instruction for most of the target features and the positive effects of instruction were, by and large, maintained after five months.

It seems that the above reviewed L2 pragmatics studies fall into two categories: those that operationalize implicit instruction as mere exposure/communicative practice, and those that operationalize implicit instruction in terms of input manipulation to attract learners' attention to form in an unobtrusive manner. It appears that the second body of literature is closer to mainstream L2 grammar research in terms of their operationalization of implicit instruction.[i] Also, as this review of the literature suggests, although explicit instruction has been found to be generally more effective than implicit instruction, the results are mixed and inconclusive. This could be ascribed to the differences among studies in terms of research design and instruments but also to learners' individual differences in cognitive abilities. Nguyen, et al. (2017), for instance, found that although input enhancement and recasts (i.e. confirmation checks) could benefit different aspects of L2 pragmatics, there are inter-individual variations in learners' scores. They attributed

this to learners' differential prior knowledge of target features as well as to the way in which their attentional resources are allocated to form and/or meaning. This interpretation of results makes theoretical sense and could explain part of the inconsistencies evident in the literature reviewed above. The vast majority of L2 pragmatics instruction studies have capitalized on Schmidt's (1993, 2001) conceptualization of awareness to operationalize treatment conditions (i.e., awareness or lack thereof, focal attention vs peripheral attention, etc.) and to interpret the results (e.g. Fordyce, 2014); but, no published empirical work has considered individual differences in learners' attentional and processing abilities as a possible explanatory factor. Empirical research in cognitive psychology has revealed that WM is an integral part of human's attentional capacity. For example, in Chun, et al.'s (2011, p. 77) taxonomy of attention, WM is conceptualized at the interface of internal attention (i.e., "selection and modulation of internally generated information") and external attention (i.e., "selection and modulation of sensory information, as it initially comes into mind"). Also, in SLA literature, several researchers have argued for the importance of the linkage between WM and learners' ability to notice linguistic features (Sawyer & Ranta, 2001; Robinson, et al., 2012); learners with larger WMC tend to notice, register and process information more efficiently. Therefore, it is theoretically warranted to hypothesize that learners with various levels of WMC might benefit from L2 pragmatics instruction methods differentially.

Working Memory Capacity
Working Memory is a limited capacity cognitive mechanism which is responsible for the temporary storage and manipulation of information (Baddeley, 2001). The theoretical model adopted in most of the SLA studies is the one originally developed by Baddeley and Hitch (1974). According to this model, WM is comprised of three main components: the central executive which controls the limited attentional capacity and is assisted by two subsidiary slave systems, the phonological loop, and, the visuo-spatial sketchpad. Recently the 'episodic buffer' component has been added to the model which is responsible for integrating information from various sources and modalities. It is generally assumed that WM establishes the link between human action and long-term memory, semantics, and perception (Baddeley, 2017). A large and growing body of research has shown robust WMC effects across various L2 learning mechanisms, production and comprehension skills and abilities (vocabulary learning, speaking, L2 reading and writing, etc.) (Juffs & Harrington, 2011; Linck, et al. 2014; Wen, et al., 2015) and there are theoretical grounds to hypothesize that learners with greater WMC are more likely to benefit from implicit instruction conditions. This hypothesis is motivated by two interrelated premises: (a) under implicit instruction conditions learners are predominantly left to their own devices to infer or extract regularities and patters (or the underlying rules) in the input; and, (b) learners with higher WMC are more prone to notice, identify and register linguistic/pragmatic rules and then to sustain those features "in an active and readily accessible state" (Conway, et al. 2005, p. 3) so as to establish the form-meaning-

context connections which are required for the acquisition of (pragma-) linguistic features. This latter assumption aligns with Doughty's (2001) argument that the efficacy of form-focused instruction depends on, *inter alia*, the extent to which learners' attention is focused on all three dimensions of form, meaning, and function which is itself regulated by WM system (Sawyer & Ranta, 2001).

Although, as it was noted above, no published work has attempted to explore the relationship between L2 pragmatic instructional sets and WMC, there are a number of studies which informed the study reported in this paper. Taguchi (2008) is the only published study which has examined the effects of WMC on processing L2 pragmatic features. This study explored whether and how speedy and accurate comprehension of conversational implicatures is affected by WMC as measured by Reading Span Test. However, it did not look into how WMC mediates the effects of different L2 pragmatics instruction methods. The findings did not reveal any statistically significant relationship between WMC and comprehension of implicatures. In the context of interactionist SLA, Yilmaz (2013) examined the degree to which learners with differential levels of WMC and language aptitude would benefit from explicit corrections and recasts. He measured WMC through an operation span task. Results revealed that WMC and language aptitude interacted with the effects of explicit feedback and recast. In addition, Yilmaz found that explicit feedback was more beneficial than recast only for learners with high WMC and LA. The researcher explained this finding by arguing that "explicit correction used in this study allowed learners to benefit from their WMC or LAA [Language Analytic Ability] by making them aware that they were being corrected" (p. 361). These findings support the idea that LA and WMC moderate explicit language learning (DeKeyser, 2000). However, there are other studies which have shown that implicit learning conditions are more favorable to learners with greater WMC. In another interaction study, Goo (2012) found that individual differences in terms of WMC mediate the effects of recast (but not oral metalinguistic feedback) on the acquisition of *that*-trace filter. More recently, Sanz, et al. (2016) investigated the mediating role of WMC in the *ab initio* development of Latin under explicit structured versus implicit less structured conditions. They found positive correlations between WMC and learning under implicit and less structured conditions and concluded that "grammar explanation, followed by practice with explicit feedback levels the field for all learners" (Sanz, et al., 2016, p. 688).

Rosen and Engle (1998, p. 419) cogently argue that individual differences in WMC would impact performance to the extent that: "monitoring for errors is required because elements of the task automatically induce thoughts and behaviors inappropriate to the current task", and/or "task performance would be improved by the suppression of those inappropriate thoughts or behaviors". As regards learning L2 pragmatic features, the sources of such irrelevant thoughts and behaviors are diverse. Learning an L2 pragmatic feature requires learner's attention not only to form and meaning but also to the context of use coupled with the status of and her relationship with the interlocutor. The difficulty will be compounded if the target feature has multiple realizations in the L2 and if there are L1-L2 differences in terms

of how that pragmatic feature is enacted. Allami & Naeimi (2011) found significant differences between Persian and American speakers in terms of the ways in which they realize refusals. Also, they found that with an increase in L2 proficiency, the amount of transfer of L1 sociocultural norms to L2 performance rises significantly. All this renders learning a pragmatic feature such as refusals under implicit instruction conditions enormously taxing, especially for learners with relatively smaller or reduced WMC who have been revealed to be less efficient in inhibiting and suppressing thoughts irrelevant to the task at hand (in this case, L1 sociocultural norms) (Rosen & Engle, 1998). However, this argument is rather conjectural and has not yet been empirically tested. In order to provide further insight into L2 pragmatics instruction and to better understand the nature of L2 pragmatics knowledge and the cognitive mechanisms involved in its acquisition and processing, this study, therefore, aims to address the following questions:

1- Do implicit and explicit instruction of refusal strategies have differential effects on learners' post-test and delayed post-test comprehension and production scores?
2- Do individual differences in WMC interact with the effects of implicit and explicit instruction of refusal strategies on learners' post-test and delayed post-test performance? And if so how?

THE STUDY
Participants
Participants of this study were 78 upper-intermediate EFL learners (42 females and 36 males) who were taking part in an IELTS preparation program at a private language center in Iran. All participants had taken IELTS mock test administered by the language center and their overall scores ranged from 5.5-6. They did not know any languages other than their L1 (Farsi) and English and did not have any previous cross-cultural experience (i.e. living or studying abroad). Their age ranged from 22-31. The preparation program consisted of 44 sessions (about 75 minutes each) distributed over 11 weeks. The aim of the program was to prepare students for their upcoming IELTS test and therefore focused on both language practice and test-taking strategy instruction. 84 students from four classes volunteered to stay for an extra 40 minutes for 24 sessions and participate in this research which was conducted over six weeks (4 sessions per week). They all signed informed consent forms. We made sure that the extra time they spent at the center benefited their communication skills. Participants who could not make one or more sessions were excluded from the analysis but they still could sit in on the remaining sessions and join the discussions. Out of 84 participants who had originally signed up to participate in this study, four did not attend one or more sessions and, in order to have an equal number of participants in each group, two other participants were randomly excluded from the study. Ultimately, the 78 participants were randomly assigned to one of the three conditions: implicit group (n = 26), explicit group (n = 26), and control group (n = 26).

Procedure

During the first week, WMC test, as well as DCT and CQ (all detailed below), were administered. Participants had 30 minutes to complete the DCT (2.5 minutes for each item) and 18 minutes for CQ (1.5 minutes for each item). Treatment for each group (see below) started in week 2 and lasted for six weeks. At the beginning of week 8, participants took scrambled versions of the original DCT and comprehension questions. Eight weeks later (week 16) they took another (i.e. a reshuffled) version of the DCT and CQ as the delayed post-test. In order to ensure treatment fidelity and given the fairly large number of participants in each group, two teaching assistants (TA) were employed. Both TAs, who participated in this research on a voluntary basis, held MA in applied linguistics and were familiar with the concept of speech act; yet, they attended two 30-minute training and coordination meetings with the researcher and discussed how treatment and data collection procedures differed across the three groups.

Target feature

The speech act of refusal, whereby a speaker "denies to engage in an action proposed by the interlocutor" (Chen, Ye & Zhang 1995, p. 73), is highly face-threatening and is considered to be more complicated than many other speech acts. This is mainly because refusals are produced in response to another's request, invitation, offer or suggestion and therefore do not allow for much pre-production planning and preparation (Gass & Houck 1999, p. 2). Whilst refusals are performed in virtually all languages, their realization strategies and frequency of occurrence and the reasons and excuses which the speaker provide differ across languages (Allami & Naeimi, 2011; Chang, 2011). For instance, comparing the use of refusal strategies in Korean and American English speakers, Kwon (2004) found that Korean speakers tend to hesitate more often and make much less use of direct refusal formulas than their English speaker counterparts. Kwon concluded that "Korean speakers' refusals sounded […] more tentative than those of English speakers" (p. 339). In addition to cross-cultural differences, there is evidence suggesting that learners tend to transfer refusal strategies from their L1. For instance, Keshavarz, et al. (2006) showed that even highly proficient Iranian EFL learners produce non-target-like refusal strategies which have been transferred from Persian (Farsi). Nevertheless, despite their highly complex nature (Allami & Naeimi, 2011), refusal strategies have shown to be amenable to instruction (see Eslami, 2010 for a review) and by virtue of constituting "a major cross-cultural sticking point for many nonnative speakers", they can provide invaluable information about language learners' overall pragmatic ability and are particularly appealing targets for instructed L2 pragmatics studies (Beebe, et al. 1990, p. 56).

Treatment conditions
Implicit condition

The overall aim of the implicit condition was to create a rich learning environment and to induce learners to infer realization strategies for themselves rather than provide them with metapragmatic information. To achieve this, a combination of input enhancement and recast was employed. Input enhancement involves increasing the salience of certain parts of the input (Sharwood Smith, 1993, p. 177). Salience has been shown to play a key role in the process of L2 acquisition (N. Ellis, 2006) and L2 pragmatic features in EFL context could be categorized as one of the most non-salient aspects of language. Given the limited and selective nature of human capacity, when learners are exposed to input, "multiple stimuli […] compete for selective attention" and more salient stimuli are more likely to be attended for further processing (Chun, et al. 2011, p. 75).   During each session which lasted for about 40 minutes, participants were asked to read and discuss in pairs five hypothetical speech situations in which a request was followed by a refusal strategy. Input enhancement was realized through underlining all refusal strategies in bold. Participants were then required to perform role plays based on hypothetical situations and the researcher-teacher and TAs moved around the class and reformulated their incorrect use of refusal strategies. Given the limited time for each session and in order to make sure all participants received equal amount of feedback, TAs were instructed to provide only one recast (in the form of confirmation checks) per performance (i.e., two for each pair) and move on to the next pair. They only provided recast for refusals and nothing else. At the end of the session, the researcher-teacher wrote all possible appropriate refusals for five situations on the board and asked learners to retrospect and see if they had used the strategies correctly.

Explicit condition
In the explicit condition, each session lasted for about 40 minutes in which participants read five hypothetical speech situations and were asked to work in pairs to identify refusal strategies and recognize the level of politeness in each (polite versus impolite). This activity was followed by teacher's description and exemplification of various types of refusals in English, based on Beebe, et al.'s (1990) classification, for 8-10 minutes. The aim of this part of the instruction was to draw participants' attention to various realizations of refusals in English through the provision of metapragmatic information and deductive rules (Norris & Ortega, 2001). Finally, participants were asked to perform role plays based on hypothetical speech situations and were advised to use the refusal strategies that had been discussed. The researcher-teacher and TAs then provided explicit corrective feedback (again, two for each pair) on their incorrect use of refusal strategies in the context of role plays. Any other error (e.g. grammar or lexis) that did not cause communication breakdown was ignored. This kind of explicit instruction is in line with Transfer-Appropriate Processing (TAP) hypothesis which suggests that "we can better remember what we have learned if the cognitive processes that are active during learning are similar to those that are active during retrieval" (Lightbown, 2008, p. 27). That is, metapragmatic information was not provided in the abstract but in the context of communicative activities that participants engaged in.

Control group

The main rationale for including a control group in the design of this research was to make sure that probable improvements were not due to practice effect (i.e., doing scrambled version of the same DCT and CQ on immediate and delayed post-test occasions) and/or learning as a result of being enrolled in an intensive IELTS program. Participants in the control group did not do any activities related to refusals nor did they receive metapragmatic information (implicitly or explicitly). However, they engaged in classroom discussions and dialogues led by their instructors. The researcher and the TA co-taught all three groups. All discussions were similar to IELTS speaking questions and participants received feedback on the grammatical and lexical aspects of their output from both the researcher-teacher/teaching assistant and their peers.

Instruments, analysis, and scoring
DCT

To assess participants' ability to produce refusals, Beebe, et al.'s (1990) Discourse Completion Test was adopted. Despite the criticisms leveled against DCTs for their rather low cognitive validity (see Labben, 2016), they provide useful information as to "whether learners have semantic formulas at their disposal to realize certain speech acts, and to a limited extent, they might also provide some information about learners' sociopragmatic awareness" (McNamara & Roever, 2006, p. 66). In addition, they make unobtrusive and efficient data collection possible (Beebe, et al. 1990; Labben, 2016). The DCT used in this study comprised 12 situations (three requests, three invitations, three offers, and three suggestions) each containing a blank which participants could only fill out with a refusal (see Appendix A in supplementary material). The same DCT was used for both groups in pre- post- and delayed post-test occasions but the items were scrambled for each occasion and the content remained the same.

As McNamara and Roever (2006, p. 58) point out, a refusal is "clearly inappropriate […] when it is so insulting that the interlocutor would simply cease communication […] or when it is not recognizable as a […] refusal". This could render coding and analysis of responses rather tricky as appropriacy is a matter of degrees and what might sound utterly inappropriate to a particular person in a specific context, might come across as fairly appropriate to another person or under different conditions. In the current study, following Beebe, et al. (1990), refusals were coded and analyzed in terms of semantic formulas. According to Cohen (1996, p. 265), a semantic formula refers to "a word, phrase, or sentence that meets a particular semantic criterion or strategy; any one or more of these can be used to perform the act in question". By way of illustration, in the following refusal, four semantic formulas are used by the teacher: *It's a shame that the book is not available* [expression of regret]. *I wish I could lend it to you* [wish] *but I've not yet finished reading it* [excuse]. *Have you tried other libraries?* [statement of alternative]. In order

to calculate the percentage of appropriate and pragmalinguistically correct refusal strategies, the following equation was used:

$$\frac{n\ indirect\ semantic\ formulas\ supplied}{n\ possible\ indirect\ semantic\ formulas} \times 100 = \text{Percentage of semantic formulas used}$$

To set a baseline for comparison, taking into account the findings of previous research investigating American English (Beebe, et al. 1990; Kwon, 2004), 36 was taken as the number of possible indirect semantic formulas for 12 situations as using three indirect semantic formulas for a refusal seems to be the most appropriate way of rejecting a request, invitation, or offer (e.g., expressing regret > giving reason > promise of future acceptance). An anonymous reviewer of LTR asked for a rationale for benchmarking students' pragmatic performance against native-speakers' standards. This is a valid concern. As Taguchi (2011) suggests, in the era of multilingualism and poststructuralism, native-speaker norms have been seriously challenged and might not be relevant to evaluation of pragmatic competence. However, the main purpose of this study was to investigate whether and how L2 pragmatic features could be taught under different instruction conditions and the way in which these conditions interact with learners' differential cognitive abilities regardless of the nature and origin of the conventions used. In addition, using conventions other than those used by native-speakers is enormously challenging. This is because "empirical descriptions of ELF [English as a lingua franca] pragmatics are under-represented in the literature" (Taguchi & Roever, 2017, p. 245). Even if ELF norms were available and we had used them, the results of the study would not have changed (i.e. explicit instruction of refusal strategies is more effective than implicit instruction and that explicit instruction equalizes learning opportunities for all learners regardless of their level of WMC).

In addition to the number and type of pragmalinguistically correct semantic formula, the order of using them is of paramount importance. That is to say, for native speakers of American English starting a refusal act by giving promise of future acceptance and then providing reason for not accepting and finally expressing regret seems rather odd and unnatural. Therefore, semantic formulas which had been produced out of native-like order were not awarded any point. This order was selected after consulting three native speakers of American English.

Comprehension questionnaire (CQ)
In order to assess the comprehension of appropriate refusal strategies, participants were required to evaluate "how well they *think* someone else performed pragmatically" (Cohen & Ishihara, 2010, p. 267). A validated 12-item questionnaire was developed (some of the items were adapted from Babai & Sharifian (2013)). Each item contained the description of a speech act situation followed by a multiple-choice section in which participants were asked to indicate how they would rate the appropriateness of the refusal strategies used (see Appendix B in supplementary material).

The CQ was sent to 5 educated native speakers of English and the answers provided by native speakers were considered as the basis of analysis. For example, if all native speakers chose one option (e.g. highly appropriate) then that single option was considered as the correct response; but, if two options were chosen by different native speakers (e.g. *highly appropriate; moderately appropriate*), then both options were considered as correct. For each correct answer one point was awarded and therefore the scores could range between 0 and 12. Scrambled versions of the same questionnaire were used for post-test and delayed-post-test.

WMC test

To assess working memory capacity, a validated Operation Span Test (OST) in participants' L1 (Farsi) was designed and used. OST is one of the frequently used tests which is assumed to tap into the central executive component of working memory. Central executive, as was noted above, "controls the flow of information" and attentional resources (Baddeley, 2017, p. 302). The test contained 56 items presented in four sets of two, three, four, and five items. Each item comprised an arithmetic operation which was either correct or incorrect and a word that appeared next to the operation (as in the English example below):

Is 8 + 5 = 14 correct?   Society

Upon presentation of each item, participants were asked to do two tasks: (1) deciding if the operation is correct and circling CORRECT/INCORRECT (written in Farsi) on the sheet of paper that they were provided with and (2) at the same time, remembering the words that appeared next to each operation. Half of the equations were correct and half of them were incorrect and in order to avoid rehearsal, following Conway, et al. (2005, p. 773), each item was presented immediately after completing the preceding item and participants were asked to perform the operations immediately. Participants were not allowed to take notes but at the end of each set and they were asked to write down as many words as they recalled. For each recalled word one point was awarded but, following Conway, et al.'s (2005) guidelines, if the accuracy of the processing component (i.e. the arithmetic part) was below 85% (i.e., less than 47 items), the data for that participant was discarded – this did not happen in the current study. Participants' WMC scores could range between 0 and 56.

RESULTS

This study had a within-subject variable (time), a between-subjects factor (instruction method), and one covariate (WMC). Correlation coefficients were used to calculate the interrater reliability: DCT (r = .998), CQ (r = .995), and WMC (r = 1.00). All correlations were statistically significant (p < .001). Also, coefficient alpha was used to estimate the internal consistency reliability for DCT (α = .96) and CQ (α = .91). After checking relevant assumptions, MANOVA, one-way ANOVA, repeated measures ANOVA, and Pearson correlation coefficients were run to find the answer to research questions.

The first research question concerned with the differential effects of implicit and explicit instruction of refusal strategies on the production and comprehension of this pragmatic feature in immediate and delayed post-tests. Table 1 presents descriptive statistics for the performance of all three groups in pre-tests for CQ and the DCT. Although there are minor mean differences between groups in terms of both production and comprehension, the results of MANOVA, Wilk's Lambda = .94, F (2) = 1.09, p = .36, μ^2 = .029, and the follow-up univariate analyses (Table 2) show that these differences are not statistically significant, DCT: F (2, 75) = .423, p = .65; CQ: F (2, 75) = 1.92, p = .15. This indicates that the three groups have begun the study on an equal footing in terms of comprehension and production of refusal strategies prior to the treatment.

Table 1 & 2 about here

Descriptive statistics in Table 1 show that, as far as DCT is concerned, there are fairly large between-group differences from pre-test to immediate post-test for implicit and explicit groups but not for the control group. The main effect of time is statistically significant, F (2, 75) = 553.56, p < .000, and the partial eta squared is .88 which is rather large. Follow-up pair-wise comparisons confirm statistically significant improvement from pre-test to immediate post-test (p <.000) but not from immediate post-test to delayed post-test (p = .612). Also, the interaction between time and group is significant, F (4, 75) = 152.824, p < .000, μ^2 = .80. As illustrated in Figure 1, although both implicit and explicit groups have had significant gains from pre-test to immediate post-test in terms of production of refusal strategies (DCT), there are sizable differences between the two groups in terms of their gains from instruction and, as displayed in Table 3, participants in the explicit group have outperformed those in both implicit and control groups. Results also show that the difference between implicit and control group was significant.

Table 3 about here

Table 1 also summarizes the descriptive statistics for CQ. Fairly large mean differences could be observed from pre-test to immediate post-test for both groups and the main effect for time is statistically significant with a fairly large effect size F (2, 75) = 77.414, p < .000, μ^2 = .50. Here again, the pair-wise comparison shows that there are significant improvements from pre-test to immediate post-test (p < .000) but not from immediate post-test to delayed post-test (p < .45). In addition, there is also significant interaction effect between time and group, F (4, 75) = 26.921, p < .000. However, the partial eta squared magnitude for the interaction of time and treatment is .41 which is smaller than that of DCT. In the case of CQ, too, participants in the explicit group have outperformed their counterparts in both implicit and control groups but both treatment groups have outperformed the control group (see Table 3). To sum up, these findings show that both implicit and explicit instruction of refusal strategies had positive and significant effects, but the effects of explicit instruction were considerably more than that of implicit instruction. Furthermore, as it is shown in Figures 1 and 2, despite some negligible changes (see Table 1), the positive effects of instruction have carried over to delayed post-tests which alludes to the relatively long-term benefits of both instruction methods.

To sum up, with regard to the first research question, the results of the statistical tests indicate that: (a) prior to treatment, participants in all groups were fairly similar in terms of CQ and DCT scores; (b) compared to the control group, both implicit and explicit groups have had significant gains from pre-test to post-test; and (c) explicit group outperformed both implicit and control groups on post-test assessment.

Figure 1 and 2 about here

The second research question asked whether individual differences in WMC interact with the effects of implicit and explicit instruction of refusal strategies on learners' post-test and delayed post-test performance. Descriptive statistics for WMC test are shown in Table 4 and although, as shown by the SD magnitude, there is a fair amount of variation in the WMC scores (Implicit group: M = 36.692, SD = 4.07; Explicit group: M = 37.576, SD = 2.87; Control group: M = 37.153; SD = 3. 081) there is no statistically significant difference among them in terms of WMC, F (2, 75) = .424, $p <$ .656.

Table 4 about here

Correlational analyses were performed with WMC test and immediate post-test scores for both DCT and CQ to see if WMC plays a mediating role in the effects of implicit and explicit instruction methods. Owing to the large number of correlations and in order to avoid committing Type I error, Bonferroni Correction was applied and the alpha value was set to .004, which means that in order for the differences to be statistically significant the p value should have been less than .004. Table 6 shows that there are strong correlations between WMC, DCT, and CQ in the implicit group (immediate DCT: r = .672, $p <$ .000; delayed DCT: r = .585, $p <$ .002; immediate CQ: r = .624, $p <$ .001; delayed CQ: r = .620, $p <$ .001) but not in the explicit group (immediate DCT: r = .307, p = .127; delayed DCT: r = .317, $p <$ .115; immediate CQ: r = -.159, p = .438; delayed CQ: r = .141, p = .493). These fairly strong correlations in the implicit group point to the important mediating role that WMC plays in the effectiveness of implicit instruction of refusal strategies.

In relation to the second research question, then, results revealed that: (a) all three groups were fairly equal in terms of WMC; (b) in the implicit group, participants' scores for both DCT and CQ significantly and positively correlated with their WMC capacity; (c) in the explicit group, no meaningful correlation was found.

DISCUSSION AND CONCLUSION

The aim of this research was to explore the differential effects of explicit and implicit instruction of refusal strategies on both production and comprehension of this pragmatic feature and to see if learners' WMC mediates the effects of different treatment conditions. The results showed that overall both implicit and explicit instruction led to significant improvement in both accurate production and comprehension of refusal strategies; yet, explicit instruction proved more effective than implicit instruction. Also, findings revealed that the positive effects of instruction carried over to the delayed post-test administered two months later. These findings, which confirm the results of previous studies in terms of the benefits of L2 pragmatics

instruction in general and explicit instruction in particular (House, 1996; Félix-Brasdefer, 2008; Nguyen, et al., 2012), highlight the pivotal role of instruction in allocating learners' limited attentional capacity to the desired target features. Schmidt (2001, p.3) argues that "SLA is largely driven by what learners pay attention to and notice in target language input and what they understand the significance of the noticed input to be". In EFL context, learners normally strive to, primarily, develop their repertoire of vocabulary and grammar and since there is very limited opportunity to interact with native speakers, L2 pragmatic features, such as refusal strategies, seem to be very low on learners' list of priorities for attention. According to Wickens (2007), if a feature is not salient and is not expected to have much value, it will not be selected for further cognitive processing. The findings of this study showed that instruction induces learners to attend to refusal strategies probably through enhancing their salience and expected value. However, whereas explicit instruction seems to have made the target feature critically salient and of high expected value for language use (Wickens, 2007) and has made learners aware of "the gap between what they can produce and what they need to produce" (Schmidt, 2001, p. 6), implicit instruction has been less successful in achieving this goal.

Another interesting aspect of the findings was the large effect sizes for both time and the interaction between time and group. This could be explained in the light of Jeon and Kaya's (2006) meta-analysis which yielded the arbitrary cut-off point of five hours of intervention for having durable and significant effects. In the current study, both implicit and explicit groups received about 12 hours of instruction which has led to both large effect sizes and durable effects as evidenced in the delayed post-tests administered two months later. These long-term benefits confirm Fordyce's (2014) findings that the positive effects of instruction were sustained after five months. They are also in alignment with TAP hypothesis discussed earlier in the paper: in both explicit and implicit conditions, participants engaged in communicative activities which bore a resemblance to the retrieval conditions and, more importantly, fostered deep levels of processing (Lightbown, 2008).

The results of this study also demonstrated that WMC mediates the effects of implicit instruction of refusal strategies, such that those with larger WMC obtained higher scores on both post-test and delayed post-tests across both production (DCT) and comprehension (CQ) measures. No meaningful relationship was found between WMC and outcome variables in the explicit group. Broadly, this finding supports Taguchi & Roever's (2017, p. 149) argument that "cognitive factors […] may strongly support pragmatic competence and development". As it was discussed in the background section, there is consensus among cognitive psychologists and SLA researchers that WMC and attention are closely linked (Chun, et al. 2011, Schmidt, 2001; Sawyer & Ranta, 2001). Also, implicit instruction conditions normally impose higher cognitive and attentional load on language learners than explicit instruction conditions where the learner is provided with the underlying rule and explicit corrective feedback. That is, whilst in the current study refusal strategies were typographically enhanced and learners received correct reformulations of their incorrect productions under implicit condition, inferring the underlying rules for

performing refusals accurately would still prove highly effortful and cognitively demanding. This will culminate in higher demands on WMC which, in addition to being "critically used to achieve storage in long-term memory" (Wickens, 2007, p. 177), selects and modulates both sensory information coming to the mind and the existing information (Chun, et al., 2011). Therefore, the implicit instruction condition is expected to be more favorable for learners with larger WMC who can regulate their limited attentional capacity more efficiently. Drawing on Rosen and Engle's (1998) findings, we could argue that learners with higher WMC are more adept in suppressing and inhibiting irrelevant information (e.g., L1 sociopragmatic norms or other aspects of the materials presented) and therefore would be more successful in benefiting from implicit instruction condition. This finding and interpretation are in accord with previous aptitude-treatment interaction research (e.g. Sanz, et al. 2016) which shows that WMC plays a major role in teaching situations where metalinguistic information is withheld and no explicit corrective feedback is provided. The implication of this for language education and policy making is profound as it suggests that explicit instruction of L2 pragmatic features has the potential to level the playing field for learners with various levels of cognitive abilities. Language teaching does not always involve teaching classes with students who are homogenous in terms of cognitive and processing abilities; far from it, in addition to learners who have relatively smaller WMC, learners with Specific Learning Difficulties (SpLDs) normally have reduced WMC, which will impair their ability to select and allocate sustained attention to target features (see Kormos, 2017 for an exhaustive account). This argument is in alignment with findings of Kormos and Mikó (2010 as cited in Kormos, 2017) that learners with SpLDs struggle to infer regularities and patterns under implicit instruction conditions and prefer explicit instruction. Therefore, in order to move towards inclusive language pedagogy, it is imperative to employ teaching practices which do not favor particular groups of language learners; but are responsive to all learners regardless of their SpLDs or differential level of WMC.

Despite these positive results, this research had some limitations which need to be acknowledged and taken into account in future research. First and foremost, as suggested by Taguchi (2015), in order for L2 pragmatics instruction research to come up with robust, generalizable, and reliable results, multiple tasks and elicitation instruments need to be used. In the current study, DCT and CQ were employed, but although these two instruments are quite common and convenient for eliciting L2 pragmatics knowledge, they might not adequately represent the social intricacies and cognitive demands of actual communication. Second, it might be worthwhile to utilize a battery of WM tests, and better still, the kind of tests which tap into phonological short-term memory – a construct that has been shown to be correlated with a myriad of L2 processing and acquisition mechanisms. Finally, focusing on various L2 pragmatic features which have multiple realizations could further shed light on the relative effectiveness of different instructional sets as well as whether and how such effects are moderated by individual differences in WMC.

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Table 1: Descriptive statistics for DCT and CQ (pre-test, post-test, delayed post-test)

	Pre-test DCT	Immediate post-test DCT	Delayed post-test DCT	Pre-test CQ	Immediate post-test CQ	Delayed post-test CQ
Explicit Group	36.846 (SD = 2.693)	56.269 (SD = 4.712)	56.769 (SD = 4.827)	6.3077 (SD = 1.010)	9.8462 (SD = 1.084)	9.7692 (SD = 1.031)
Implicit Group	37.192 (SD = 2.757)	49.846 (SD = 3.716)	49.653 (SD = 4.185)	5.9231 (SD = 1.128)	8.1154 (SD = 1.107)	8.0385 (SD = 1.280)
Control Group	36.461 (SD = 3.127)	36.615 (SD = 3.311)	36.961 (SD = 3.052)	6.461 (SD = .904)	5.923 (SD = 1.467)	6.730 (SD = 1.929)

Table 2: One-way ANOVAs for pre-tests

	Sum of Squares	df	Mean Square	F	Sig.
Pre-test DCT	6.949	2	3.474	.423	.657
Pre-test CQ	4.000	2	2.000	1.927	.153

Table 3: Pair-wise comparisons between groups

		Mean Difference		Std. Error		Sig.	
		DCT	CQ	DCT	CQ	DCT	CQ
Explicit Group	Implicit Group	4.667*	1.282*	.913	.248	.000	.000

	Control Group	13.282*	2.269*	.913	.248	.000	.000
Implicit Group	Control Group	8.615*	.987*	.913	.248	.000	.000

*. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

Table 4: Descriptive statistics for WMC test

Group		N	Minimum	Maximum	Mean	Std. Deviation
Explicit Group	Operation Span Task	26	33.00	45.00	37.576	3.177
Implicit Group	Operation Span Task	26	30.00	44.00	37.692	4.047
Control Group	Operation Span Task	26	32.00	44.00	37.153	3.081
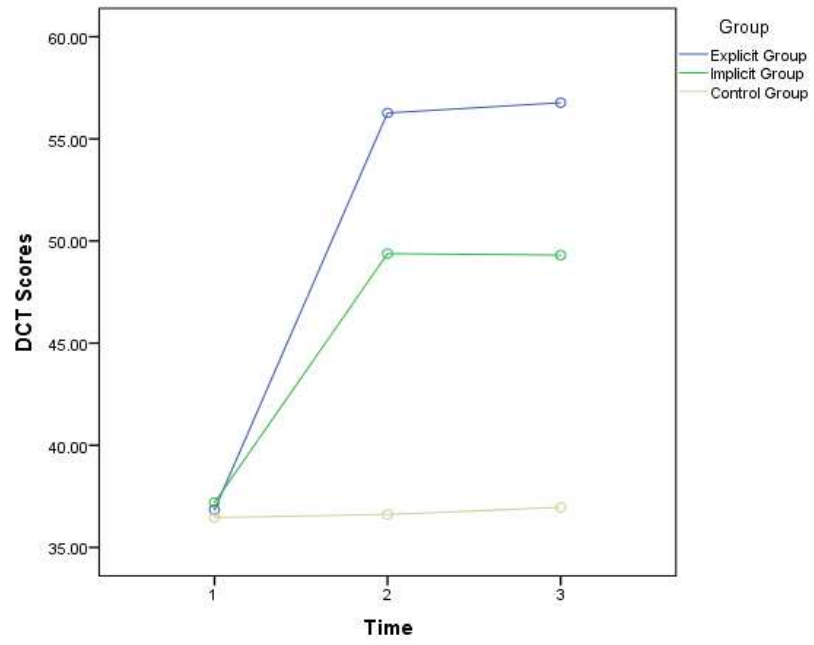
Figure 1: DCT scores

9.63

Figure 2: CQ scores