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## L2 Learners' Enhanced Pragmatic Comprehension of Implicatures via Computer-Mediated Communication and Social Media Networks

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### Abstract

Second or foreign language (L2) learners' development of interlanguage pragmatic (ILP) competence to understand and properly interpret utterances under certain social and cultural circumstances plays a pivotal role in the achievement of communicative competence. The current study was designed to explore the effects of synchronous computer-mediated communication (SCMC) and asynchronous computer-mediated communication (ACMC) course modules delivered through social media networks (SMN) on the development of the Iranian L2 learners' comprehension of implicatures. The participants of the study were 90 English-as-a-foreign-language (EFL) undergraduate students attending three intact classes. The classes were randomly assigned to one control and two experimental (SCMC and ACMC) groups. An open-ended implicature comprehension test was used to assess students' ILP development in this pretest-posttest comparison-group study. The control group received the traditional teacher-fronted instruction, and the S/ACMC groups received instruction via synchronous and asynchronous modules of SMNs for 4 months, respectively. Students' attitudes towards the CMC-based courses were also sought. Split-plot ANOVA results indicated that both experimental groups developed significant ILP ability to comprehend and interpret L2 implicatures after the instruction; however, by comparison, the ACMC group improved more considerably. It is concluded that, first, comprehending L2 implicatures is not impervious to computer-mediated instruction and, second, different CMC affordances may result in differential ILP developmental effects in teaching L2 pragmatics. The findings can help L2 teachers decide how to use CMC affordances and SMN modules to raise L2 learners' pragmatic awareness.

**Keywords:** Implicatures; Computer-mediated communication; Social media networks; Synchronous CMC; Asynchronous CMC modules

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### **1. Introduction**

Over the past few years, L2 education has witnessed profound shifts from positivism to post-positivism and from behaviorism to cognitivism (and linguistic competence) which has gradually given way to communicative approach (Jacobs & Farrel, 2001). Communicative competence generally refers to what a speaker needs to know in order to function not only accurately and fluently, but also appropriately in specific social contexts within a particular speech community (Bachman, 1990). Pragmatic competence, or “the acceptability of utterances within specific contexts of language use,” (Fulcher & Davidson, 2007, p. 44), is thus one of the integral components of communicative competence. Murray (2011) described pragmatic competence as an understanding of the relationship between form and context that enables people to appropriately express and interpret the intended meaning. Several researchers (e.g., Bardovi-Harlig & Dörnyei, 1998; Bardovi-Harlig & Hartford, 2005; Bardovi-Harlig & Vellenga, 2012; Eslami, 2005; Fernandez & Fontecha, 2008; Kasper, 1997; Kasper & Rose, 2002; Mirzaei & Esmaeili, 2013; Taguchi, 2011) in the field of ILP—the intersection of pragmatics and second language acquisition (SLA) (Kasper & Blum-Kulka, 1993)—examined the relative effects of instruction in different aspects of pragmatics on L2 learners’ ILP development. Interestingly, most of the findings are in favor of pragmatics instruction suggesting that pragmatics is not impervious to instruction. Although there is now a general consensus among SLA researchers that some degree of pragmatics instruction is necessary, it is not yet possible to draw certain conclusions about which types of instructions are possibly more effective (Jeon & Kaya, 2006).

Furthermore, one of the key aspects of pragmatics which is highly under-researched in ILP is implicatures as most of the research in L2 pragmatics relates to the use or production of speech acts. Implicatures refer to the pragmatic meanings the hearer infers from what the speaker literally says in a particular context. Correctly comprehension of conversational implicatures requires developed online hypothesis-testing and inference-making skills as well as heightened sensitivity towards the cultural and contextual clues of the talk. Few studies have explored

how L2 learners come to appropriately comprehend implicatures. Further, since Bouton's (1988, 1992, 1994) pioneer studies on this domain, there has been a dearth of research focusing on the effects of different types of instructions on L2 learners' comprehension of implicatures. Therefore, future L2 research needs to probe the applicability and usefulness of different instructional and methodological frameworks or facilities for different L2 learners in different teaching contexts. This line of research can further the current understanding of how implicatures work in talks and how they are effectively learned by language learners.

One of the available methodological frameworks potentially useful for the inclusion of pragmatics instruction into L2 teaching programs could be the use of various communication affordances and instructional possibilities that computers have nowadays provided. Learning of pragmatics and, as a consequence, comprehension of implicatures could thus be made easy by relying upon the once-unimagined interactional affordances which are now increasingly becoming ubiquitous due to major advances in computer technology. For instance, the emergence of Web 2.0 and computer-mediated communication (CMC) systems has made it possible to telecommunicate and telecollaborate via the computers linked to the Internet network. Similarly, social media networks (SMNs) and virtual spaces have provided users with easy-to-access modes of connecting and interacting with others, sharing ideas and opinions, and having feedback, no matter how far they are. These features could be invested upon as practical modules for designing more convenient and productive instructional settings compared to traditional pedagogical environments. Consequently, this supposition has driven several SLA researchers (e.g., Bardovi-Harlig & Dornyei, 1998; Braun, 2005; Cohen & Ishihara, 2005; Eslami, Mirzaei, & Dini, 2015; Liu, 2007; O'Dowd, 2006) into using such technologies to raise and boost the students' pragmatic awareness. Despite the fact that the findings are quite timely and promising, future research should constantly attempt to bring the use and effect of innovative technological affordances for ILP development while implicitly enhancing pragmatic comprehension of implicatures. Inspired by such an intention, this study

aimed to explore the effects of pragmatics instruction, delivered through synchronous and asynchronous CMC affordances, on Iranian EFL learners' comprehension of L2 implicatures and their subsequent development of pragmatic competence.

## **2. Review of the Related Literature**

### **2.1. Implicatures**

Pragmatics has variously been defined in language studies, referring to different aspects of the construct; however, in essence, the major concern of all pragmatic endeavors has almost always been rather the same, that is, the study of meaning constructed by the language users in the real-world context of communication (Schauer, 2009). Much earlier, Charles Morris (1938) categorized pragmatics as one area of semiotic investigation that studies "the relations of signs to their interpreters" (p. 5). Since then, that original spirit is maintained in defining the scope of pragmatics. For Crystal (2008), for instance, pragmatics is "the study of language from the point of view of users, especially of the choices they make, the constraints they encounter in using language in social interaction, and the effects their use of language has on the other participants in an act of communication" (p. 379). Furthermore, LoCastro (2003) takes into account the interactional and dynamic nature of pragmatics and broadly defines it as "the study of speaker and hearer meaning created in their joint actions that include both linguistic and non-linguistic signals in the context of socioculturally organized activities" (p. 15). As envisaged by Leech (1983), pragmatics is subdivided into pragmatolinguistic and sociopragmatic components. The former refers to resources needed for conveying communicative actions and interpersonal relations and includes pragmatic in/directness and a large repertoire of linguistic forms that intensify or soften communicative acts. The latter, however, refers to social criteria and presuppositions underlying pragmatic production and comprehension of communicative acts (Eslami & Mirzaei, 2012; Kasper, 1997;).

Different aspects of pragmatic theory (e.g., speech act theory, the cooperative principles, implicatures, politeness theory) can be expanded and theorized based on how the concept is approached by various scholars in their proposed definitions of pragmatics (Schauer, 2009). One vital component of pragmatic knowledge which is

highly emphasized in Grice's (1975) approach to pragmatics and is then intensively and extensively treated in pragmatics literature is implicatures. The notion is defined as a sort of competence that bridges the gap between "what is literally said and what is intentionally meant" (p. 263) and characterized as a highly context-dependent form of inference which widely varies across cultures (Keenan, 1976). In a similar vein, Leech (1983, as cited in Schauer, 2009) notes that the meaning of a single utterance is not always transparent without the appropriate contextual knowledge, and that, the essential part of the message content is not generally stated explicitly, which clearly points to the importance of implicatures.

As Grice (1975) points out, conversations are, in effect, 'cooperative efforts' between two or more interlocutors for a specific purpose, such as the exchange of information. Grice then classifies cooperative efforts into four distinct maxims: quantity, quality, relation, and manner. He further defines two different types of implicatures. The first type is called conversational implicatures and happens when the producer of a message fails to observe the maxims of cooperation, but the intended meaning can still be understood by the hearer of the message (Schauer, 2009); therefore, speakers' adherence to those maxims is maintained not at superficial level, but rather at a deeper level (Grice, 1981). The other type is referred to as conventional implicatures and has to do with the occurrence of words with conventional meanings in a discourse (Grice, 1981). Simply put, conventional implicatures mainly rely on conventional semantic meanings of the words chosen in the speech, regardless of the specific context in which they occur (Grice, 1989). For instance, "an utterance using the word 'therefore' implicates that some consequence  $x$  is effected by some cause  $y$ " (Grice, 1989, p. 25). Of these two types, the first one (conversational implicatures) will be the focus of the current study.

In terms of Leech's (1983) account of pragmalinguistics and sociopragmatics, as noted above, comprehension of implicatures intricately draws on indirectness (pragmalinguistic) resources available in any language, whereby communicative acts are in one way or another softened or intensified to address appropriacy

concerns. On the other hand, sociopragmatic resources come into play at any occurrence of implicatures or violations of maxims where interlocutors mainly rely on contextual clues as well as the commonly shared social perceptions which are implicated in the communicative action.

For obvious reasons, having pragmatic knowledge, particularly about implicatures, is necessary if one intends to communicate competently. It thus seems that lack of pragmatic knowledge, in certain cases, could be the main reason for L2 learners' communication breakdowns. Pragmatics research has shown that although many L2 learners are linguistically in advanced levels, they may still fail to convey and interpret meanings properly in their social encounters (Bardovi-Harlig, 1991, 2001; Eslami-Rasekh, 2005; Mirzaei & Esmaili, 2013). According to Bardovi-Harlig (1991), language learners with inadequate pragmatic knowledge might "run the risk of appearing uncooperative at the least, or more seriously, rude or insulting" (p. 4). This fact evidently shows the advantage of instruction in various aspects of ILP and makes it necessary to explore whether L2 learners' comprehension of conversational implicatures can be improved through instruction provided by modern CMC affordances and SMN platforms.

Although there have been a growing number of studies in ILP over the years, conversational implicatures have been relatively less investigated. Several researchers (e.g., Bouton, 1988, 1992, 1994, 1999; Broersma, 1994; Lee, 2002; McNamara & Roever, 2006; Taguchi, 2002, 2005, 2007) have examined learners' comprehension and production of conversational implicatures and identified some potential factors affecting L2 learners' understanding of implicatures, including cultural background, conventionality, the degree of formulae in implicatures, L2 learners' length of exposure to the target context, and L2 learners' general proficiency in the target language.

Bouton (1994) maintains that the comprehension of implicatures is mediated by the implicatures type; that is, implicatures which are more conventional and less formulaic are easier to comprehend. In contrast, less conventional and more formulaic implicatures require that L2 learners invest more processing effort and time to infer the intended meaning. This fact, as a result, makes them more difficult for language users to comprehend. However, Bouton (1992) points out that

implicature interpretation skill is highly responsive to explicit instruction, particularly for the types of implicatures being difficult for non-native speakers to acquire even after several years of exposure to the target culture. In a similar vein, Broersma (1994) argues that implicatures could explicitly be taught although some types are easier to teach than others.

The effect of L2 learners' general proficiency on the comprehension of implicatures is another controversial issue in this respect. Generally, there appears to be two opposing viewpoints toward the relationship between L2 learners' comprehension of conversational implicatures and their general L2 proficiency. While several researchers argue that learners' L2 proficiency is positively correlated with their implicatures comprehension (e.g., McNamara & Roever, 2006; Taguchi, 2005), other researchers (e.g., Bouton, 1999) claim that L2 learners' general proficiency has little to do with their performance on implicatures tests. Furthermore, Lee (2002) points out that high linguistic proficiency could allow non-native speakers to interpret implicatures as native speakers. Nevertheless, there are some differences in the strategies employed by each group to derive the meaning which stems from several cultural factors including personal biases, stereotypes, and transfer of knowledge from the native culture. In sum, further research should attempt to bring to light the individual, cultural, and methodological issues that might be implicated in one way or another in teaching L2 implicatures.

## **2.2. CMC and pragmatics instruction**

Recently, the term web-based instruction has increasingly appeared in educational settings, involving online computer-mediated technologies. This type of computer-mediated instruction attempts to make a connection between the features of various computer-related systems and their potential values in learning process (Day & Lloyd, 2007). From Anderson' (2004) viewpoint, "the greatest affordance of the web for educational use is the profound and multifaceted increase in communication and interaction capability" (p. 42). The features of this affordance have been clearly depicted in description of second-generation of the web that "is

about the architecture of participation” (Barsky & Purdon, 2006, p. 65). These features are known as Web 2.0 which is the gradual evolution of a set of linked information sources called Web 1.0 (Wikis, blogs, folksonomies, social media networks, and podcasts are instances of Web 2.0 services). Within the areas of applied linguistics and language teaching (i.e., discourse analysis, semiotics, and pragmatics), research on using of different interactive modes and interactional features of CMC have come into the focus of attention.

Generally speaking, there are three broad phases in the application of computer-mediated technology to L2 pragmatics studies. Firstly, computers can act as a bridge helping learners to increase their access to more genuine language sources (Web 1.0). Secondly, learners can be provided with more opportunities to participate in authentic interactions (Web 2.0 synchronous services). Lastly, computer technology can be used to construct corpora consisting of native speakers' and learners' productions which in turn can be used as pragmatics instructional materials. It also allows researchers (even learners themselves) to track the streams of their development in pragmatics with the passing of time (Web 2.0 asynchronous services) (Belz, 2007).

### **2.3. Empirical studies**

Several attempts were made in the ILP literature to implement pragmatics instruction through using computer-mediated technology. Bardovi-Harlig and Dornyei (1998), for instance, explored the extent to which English L2 learners are aware of their production in grammar and pragmatics and tried to implement technology in L2 pragmatic instruction using feature films and videos to exemplify native speakers' speech to enhance pragmatic input. Similarly, Braun (2005) provided language learners with web-based oral interviews that resembled genuine source of pragmatic knowledge. The results of these two studies suggest that computer-mediated applications could be regarded as effective media to provide L2 learners with pragmatics instructional materials and lead to the development of pragmatic knowledge.

Another attempt to implement computer-mediated technology in instruction of L2 pragmatics was made by Cohen and Ishihara (2005). Twenty-two native speakers of English at university level, majoring in Japanese language, were

assigned to several groups based on their level of proficiency (in Japanese). The participants in the groups were then provided with self-access and web-based materials intending to raise their pragmatic awareness on five speech acts of apologies, complaints, requests, refusals, and thanks. Although some technology-related problems occurred during the study, the results showed that the strategies-based approach toward the learning of speech acts on the web had been quite effective.

Additionally, O'Dowd (2006) attempted to engage 25 advanced EFL students from Germany to communicate through email and videoconferencing with American students on different social, cultural, and political issues. The qualitative analysis of the results revealed that synchronous and asynchronous CMC tools can contribute to different aspects of ethnographic interviewing and intercultural learning. In a similar vein, Liu (2007) investigated the effectiveness of explicit pragmatic instruction on the acquisition of requests by 118 college-level EFL learners as participants of the study. Qualitative and quantitative approaches were employed to determine whether the use of explicit pragmatic instruction in realization of requests had any effect on the learners' pragmatic competence. In addition, the relative effectiveness of presenting pragmatics through two delivery systems (face-to-face, in-class activities and CMC via email and WebCT) was compared. The participants of the study were divided into three groups of (1) control group (no explicit instruction), (2) the experimental teacher-instructed group (face-to-face explicit instruction), and (3) the experimental CMC group (explicit instruction through email and WebCT discussions). The results revealed that explicit pragmatics instruction had almost similar positive effects on EFL learners in both experimental groups, no matter how the instructional materials were delivered. However, the results showed that technology can be a rewarding tool for delivering pragmatics instruction.

Recently, in a study carried out by Eslami, Mirzaei, and Dini (2015), two types of form-focused instruction were used to examine the effectiveness of pragmatics instruction through CMC systems on the acquisition of requests by Iranian L2

learners. The participants of the study were divided into three different groups (control group, explicit CMC-based group, and implicit CMC-based group), and then the CMC students were paired with graduate students at a U.S. university (as telecollaborative tutors). The explicit group received the instructional materials in form of consciousness-raising and metapragmatic explanations mainly through the email platform, and the implicit group was provided with pragmatic materials in the form of enhanced input and implicit feedback. Besides emails as the main mode of CMC for both experimental groups, other CMC modules (e.g., Skype, Facebook, written/oral chats) were also allowed as supplementary for unplanned communications. The participants' diaries, discourse completion test (DCT), and email communications with graduate students in America were utilized to qualitatively and quantitatively analyze the effect of each instructional method on the learners' ILP development. The findings showed that both experimental groups achieved significant pragmatic growth, but the explicit group's performance was more considerable.

To sum up, although most recent research findings point to the applicability and usefulness of CMC services for delivering pragmatics instruction, further research is needed to specifically probe the use and effectiveness of rapidly advancing SMNs as instructional modules for L2 pragmatics to foster students' ILP development.

To further probe the interface between pragmatics instruction and CMC affordances, the current study, therefore, aimed to address the following research questions:

1. Do SCMC and APMC course-based instructional modules in implicatures delivered through SMNs have any significantly different effects on Iranian L2 learners' development of pragmatic comprehension of implicatures?
2. Which one of the SCMC and APMC instructional modules is more effective in developing L2 learners' pragmatic comprehension of implicatures?

### **3. Method**

#### **3.1. Participants**

A total number of 90 EFL (English as a Foreign Language) undergraduates (52 females and 38 males) majoring in English Translation from two universities in south and southwest of Iran participated in this study. They were in their early 20s and consented to take part in the current study providing that their anonymity was ensured. All the participants were native speakers of Persian, and they had studied EFL (mostly, reading and grammar) for approximately 6 years before coming to the university, but their exposure to English was quite limited outside the L2 classroom. Also, none of them had the experience of travelling to any English speaking countries. Based on the participants' performance on the TOEFL test, all the three groups were found to be homogenous in terms of their initial general language proficiency. Then, they were randomly separated into three equal groups, namely (1) control group (n=30), (2) SCMC group (n=30), and (3) ACMC group (n=30), each containing both males and females.

#### **3.2. Instruments**

The current study made use of a TOEFL test (as the general proficiency measure) as well as an open-ended implicature comprehension test as the instruments and two SMN platforms as the instructional modules:

##### **3.2.1. Proficiency test**

First, an ETS TOEFL test was administered at the beginning of the program in order to measure the participants' general L2 proficiency and ensure their homogeneity in terms of their prior L2 knowledge. The paper-based TOEFL test included three sections in the form of 90 multiple-choice items, namely, structure (15 items), written expressions (25 items), and reading comprehension (50 items). The test demonstrated a reasonable estimate of internal reliability (Cronbach Alpha = 0.86).

### **3.2.2. Implicatures test**

A paper-based, open-ended discourse completion test (DCT) was developed to examine the participants' pragmatic knowledge in comprehending different types of implicatures at both pretest and posttest times. The items of the implicatures test were adopted from Bouton (1999) and Murray (2011). Expert judgments were obtained to ensure that the scenarios chosen practically reflected the features of similar natural communicative settings in Iran. The test scenarios were piloted with two EFL instructors as well as five M.A. students majoring in TEFL (Teaching English as a Foreign language). Furthermore, open-ended implicature items were employed in order to reduce the guessing effects in answering the questions. As noted above, the implicatures (IM) test was administered as pre/posttests in the current study. It comprised 19 items, including a practice item, relevance-based items (12 items), and formulaic-based items (6 items). The practice item was used in order to help the participants get familiar with the testing procedure. Relevance-based items consisted of implicatures of four subordinate types, including relevance-general (responses violating the relation maxim), relevance-evaluation (responses given to evaluation), relevance-disclosure (responses to disclose oneself), and relevance-change (responses that totally change the topic); three items were used for each subordinate type of relevance-based implicatures. On the other hand, formulaic-based implicature items comprised of three subordinate types, including Pope Questions (responses to obvious questions), understated criticisms (non-observance of the maxim of quantity), and irony (non-observance of the maxim of quality). Two items were used for each subordinate type of formulaic-based implicatures which follow a more fixed pattern in terms of structure, semantics, and pragmatics (Bouton, 1994).

According to Bachman and Palmer (1996), one of the components of test validity is the degree of correspondence between test tasks and the target language use domain. Thus, whereas conversational implicatures are derived from conversations most of the times, each item of the IM test contained a brief description dialogue providing sufficient information (including the relationships between or among the interlocutors and the context of the dialogue) for the test takers. In order to provide the participants with some extra non-verbal information

about the context, spoken features such as discourse markers (e.g., well, you know), interjections (e.g., oh, wow), and hesitation markers (e.g., um) were also included in the dialogues. To assess the participants' performance on the test, the fixed responses provided by Bouton (1999) to each of the test items were regarded as benchmark responses in the scoring phase. Moreover, to ensure the rater reliability of the data obtained from the pre/posttest administrations, the students' responses were rescored a week later by the same rater (i.e., intra-rater reliability) and once more by a peer (inter-rater reliability) with the agreement rates of 0.92 and 0.89 for each scoring case, respectively. The participants' deviated interpretations which seemed pragmatically inappropriate for the given contexts were not taken into account as correct responses.

### 3.2.3. Social media networks

Facebook is one of the well-known social networks (founded in February 2004 by Mark Zuckerberg and his fellow computer science students) that helps people communicate and interact with one another. Facebook hosts a number of affordances that can basically facilitate the sharing of information through the digital mapping of people's real-world social connections (<http://www.facebook.com>). In the current study, several asynchronous features of Facebook were used to deliver the instructional materials to the participants of the ACMC group, including: (1) Publisher: it is the main feature to post information and messages which will appear on users' walls, their friends' walls, and the News Feed on the Home Page, (2) Photo and Video Uploads, this feature of Facebook makes it possible for users to add their photos and videos and, in addition, it allows users to identify themselves in a photo or video via Tagging, and (3) Groups, it allows users to join different networks and groups and share information and discuss different subjects.

Yahoo messenger (YM) is an advertisement-supported instant messaging client that was first activated under the name Yahoo Pager in 1998. People can download this Yahoo service for free and use it with a generic Yahoo ID. In this study,

synchronous communication features of yahoo were used to provide participants of the SCMC group with the instructional material, including: (1) Instant Messaging, for sending and receiving text messages in real-time to other users on Yahoo, (2) IM Conferencing, for sending IMs to many users at once in a conference room with voice capabilities, and (3) File Transfer, for sending files instantly to other users (<http://www.yahoo.com>).

### **3.3. Procedures**

The current study employed a pretest-posttest comparison-group design to collect the data. Initially, an ETS TOEFL was administered to three intact classes (at two state universities in south and southwest of Iran) to measure their general L2 proficiency, thereby ensuring their homogeneity in terms of prior L2 knowledge. The related results demonstrated no significant differences across the three classes. The classes were then randomly assigned to one control group (to receive mainstream face-to-face instruction) and two (SCMC and ACMC) experimental groups. The IM test was administered to all the participants in the control group and the treatment groups at the beginning of the fall semester 2014, as the pretest. After responding to background questionnaires, the participants were given a brief demonstration (in their native language) on how to perform on the tasks. Following the demonstration, they were given enough time to write down their responses to the test items. Afterwards, each group received the instruction for an 8-week period (two sessions a week). In these 8 weeks of instruction, the members of the control group received pragmatics instruction only through face-to-face teacher-fronted settings, while both experimental groups received the pragmatic instruction through the two different CMC platforms explained above.

The first platform, through which the participants of the SCMC group were exposed to the pragmatics instructional materials and engaged in interactions, was Yahoo Messenger. All members of the group were ensured to have Yahoo IDs. At first, the introduction session was held before the instruction, and all the members came to an agreement about the times at which they needed to be online simultaneously for the instruction. They consented to be online at two specific times a week, each time for half an hour (considering their limitations related to

Internet access and university courses). Then, they were added to the all-connected Yahoo IM conferencing room for further instruction. Figure 1 illustrates the invitation of different Yahoo contacts (SCMC group) to a conferencing room with text, voice, and video capabilities used for further synchronous pragmatics instruction.

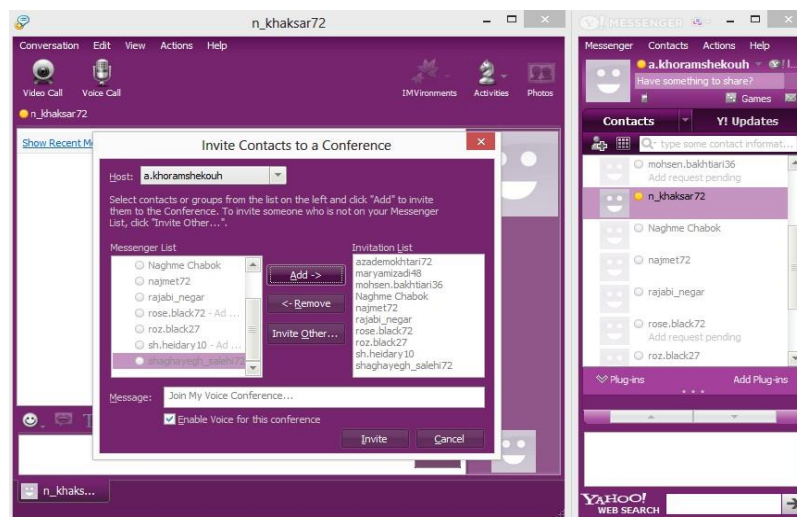


Figure 1

The SCMC group's virtual instructional environment

The pragmatic instruction delivered through this medium had three phases of exposure, consciousness-raising, and feedback. In the exposure phase, all the participants received a text describing a context, followed by a dialogue with one of the responses containing implicatures of different types. In the consciousness-raising phase, the participants shared their interpretations on the dialogues at Yahoo IM conferencing room and discussed with each other why they had such

interpretations. Finally, they received explicit information about how to interpret different types of implicatures appropriately according to the conversational settings and, then, were provided with necessary feedback in the third phase, for instance, using pragmatic activities, further examples on each type of implicatures, and meta-pragmatic information. In each session of the instruction, the participants became familiar with one particular type of implicatures, had enough practice of each, and learned how to interpret them correctly under certain conditions.

The second platform, through which the members of the APMC group were provided with pragmatics instructional materials, was Facebook. At first, although the majority of the learners had already registered on Facebook, there was a one-session workshop held for the participants of this group to help them create their own Facebook accounts and become familiar with its features and functions. Then, a Facebook group was made, and the participants were added to the mentioned Facebook group. Unlike the SPMC group members, the participants of this group received the instruction in pragmatics via Facebook. Each section of the instruction consisted of three phases. In the first phase (exposure phase), a text describing a particular context, followed by a dialogue with one of the responses containing implicatures of different types was posted on the Facebook group's wall. In the second phase (consciousness-raising phase), the participants shared their interpretations about the dialogues through their comments below each post within 48 hours since the text was posted. In the third phase, explicit information was posted about how to understand and interpret the specific types of implicatures according to the conversational settings. After posting the explicit information about implicatures on the group wall, the participants received feedback based on their preceding interpretations in the form of extra examples and meta-pragmatic information in comments section below each post within 48 hours since the information was posted. Each instructional module on this CMC platform sought to familiarize the learners with one particular type of implicatures. Figure 2 illustrates the Facebook group wall with a post and different group members' (APMC group) comments in asynchronous pragmatics instruction.



Figure 2  
The APMC group's virtual instructional environment

The participants of the control group, also, received the instructional materials two times a week (each time about half an hour) through traditional teacher-fronted classroom setting. In each session, they were provided with a dialogue containing implicatures in a specific context. Then, they were encouraged to interpret the dialogue and discuss it with their peers. Afterwards, they were given meta-pragmatic information about how to interpret each implicatures type.

When the 8 weeks of instruction ended, the IM test was administered to all the participants in each group as the posttest. Following the posttest at the end of the instructional period, the learners in the treatment groups were also required to keep a diary and write about their learning experience and reflect upon their own attitudes toward pragmatics learning facilitated by CMC affordances.

## 4. Results

### 4.1. Implicature test results

Quantitative analysis of the groups' IM pretest and posttest scores was conducted to probe the effects of synchronous and asynchronous CMC affordances, which were used to deliver pragmatics instruction, on Iranian L2 learners' development of ILP competence to comprehend English implicatures. Descriptive statistics were first calculated to ensure that there was no violation of preliminary normality assumptions. The results are summarized in Table 1 below.

Table 1

*Descriptive statistics for the groups' pre/posttest scores*

Group	Test	No.	Min	Max	Mean	SD	Skewness	Kurtosis
Control	Pretest	30	6	11	8.2	1.12	0.35	0.39
	Posttest	30	7	12	9.11	1.20	0.79	1.72
SCMC (1)	Pretest	30	7	12	8.44	1.23	0.96	1.42
	Posttest	30	8	15	10.76	2.03	0.49	-0.68
ACMC (2)	Pretest	30	6	13	8.36	1.65	0.87	1.38
	Posttest	30	7	15	12.80	2.08	-1.19	1.16

The results reveal that with regard to the control group, the mean score of the pretest was calculated as 8.2 and the mean score of the posttest was 9.11. Concerning the treatment groups, the SCMC groups' mean scores were 8.44 in the pretest and 10.76 in the posttest, while the ACMC group obtained 8.36 and 12.8 as their mean scores in the pretest and posttest, respectively. A closer look at the mean score values of each group indicates that, in the first place, the groups' means in

the pretest are roughly similar, and secondly, the existing differences between pre/posttest means of both experimental groups seem to be higher than the observed difference between the means obtained from the control group's pre/posttest. Furthermore, the skewness and kurtosis values were well within the range of  $\pm 1.5$ , which indicated acceptable normality distribution (in terms of peakedness and symmetry) (Kinear & Gray, 1999).

As to the inferential statistics, a mixed within-between subjects Analysis of Variance (or split-plot ANOVA) was conducted to find out if there was any statistically significant difference between the groups' mean scores on the pre/posttests to probe, firstly, the general influence of the pedagogical pragmatic interventions through SMNs as compared with that of non-SMN instruction (i.e., first research question) and, secondly, the effectiveness of each specific type of instruction (SCMC and APMC) on comprehension of different types of implicatures (i.e., second research question). In addition, it must be noted that ANOVA-specific preliminary assumptions, including random sampling, independence of observations, normality, and homogeneity of variances were initially checked. The results obtained from the split-plot ANOVA are presented in Table 2 as follows:

Table 2

*Multivariate tests<sup>a</sup> of the group differences*

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pillai's Trace	0.73	189.94 <sup>b</sup>	1.00	72.00	0.00	0.73
Wilks' Lambda	0.28	189.94 <sup>b</sup>	1.00	72.00	0.00	0.73
Hotelling's Trace	2.64	189.94 <sup>b</sup>	1.00	72.00	0.00	0.73
Roy's Largest Root	2.64	189.94 <sup>b</sup>	1.00	72.00	0.00	0.73

a: Design: Intercept + Instruction Within-Subjects Design: Pre/Posttest

b: Exact statistic

In this study, Wilks' Lambda value was 0.28 and its  $F(1, 72) = 189.94$ ,  $p < 0.05$ , that is, statistically significant at 0.005 with a large effect size (partial eta squared = 0.73). The results indicated that there were statistically significant mean differences across the three groups suggesting that the type of intervention was an influential factor affecting students' development of pragmatic ability to comprehend implicatures from the pretest to the posttest times. Therefore, presence or absence of CMC, or specifically SMSs, makes a meaningful difference in delivering pragmatics instruction on implicatures.

In order to further probe the mean differences and the effectiveness of different types of instructional modules used to teach pragmatics in the current study, post hoc pairwise comparisons (with Bonferroni adjustment for multiple comparisons) were conducted. The results are displayed in Table 3 below:

Table 3  
*Post Hoc Pairwise Comparison Different Groups*

Instructional Groups (i)	Instructional Groups (j)	Mean Difference (i-j)	Std. Er.	Sig. <sup>a</sup>	95% Confidence Interval for Difference <sup>a</sup>	
					Lower Bound	Upper Bound
Control	SCMC (1)	-1.18*	.39	.01	-2.154	-.206
	ACMC (2)	-2.16*	.39	.00	-3.134	-1.186
SCMC (1)	Control	1.18*	.39	.01	0.206	2.154
	ACMC (2)	-.98*	.39	.04	-1.954	-0.006
ACMC (2)	Control	2.16*	.39	.00	1.186	3.134
	SCMC (1)	0.98*	.39	.04	0.006	1.954

Based on estimated marginal means \*. The mean difference is significant at the 0.05 level. a. Adjustment for multiple comparisons: Bonferroni.

Concerning the statistical results illustrated in the table above, the mean differences between the control and the SCMC groups as well as between the control and the ACMC were statistically significant, indicating that both treatment groups (the SCMC group and the ACMC group) had significant gains through the use of SMNs over the gain made by the control group which received the pragmatics instruction not through SMN platforms but rather traditionally face-to-face with no use of technology. Furthermore, the mean differences between the SCMC group and the ACMC was statistically significant ( $p < 0.05$ ), revealing that the participants of the ACMC group, instructed through Facebook asynchronous affordances, performed better on comprehending English implicatures from the pretest to the posttest time.

To put the statistical information presented above in clear perspective, a summary of the results is graphically depicted in Figure 3 as follows:

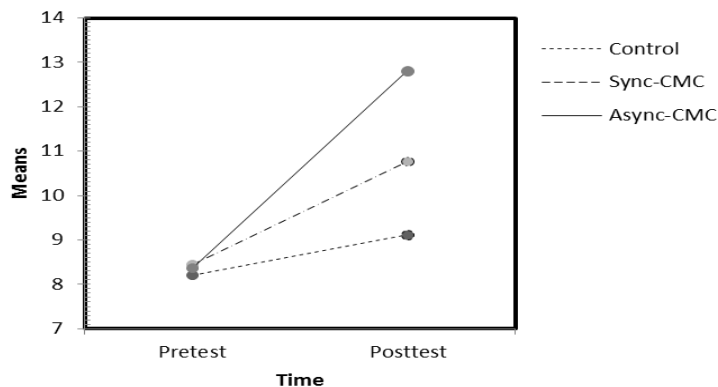


Figure 3

Interaction plot for the groups' over-time development

Figure 1 clearly illustrates the pragmatic development of the experimental groups as compared to that of the control group as well as the relative superiority of the ACMC group over the SCMC group, in terms of their pragmatic development over the course of instruction.

#### 4.2. L2 learners' SMN-oriented attitudes

As to the CMC participants' SMN-oriented attitudes, inspection of their diaries or notes showed that most of the L2 learners in the experimental groups (79 %) considered telecommunication and web-based instruction through SMNs as a new, interesting, and practical experience. The CMC students acknowledged that using both CMC services made them motivated, interested, and more convenient in the course of instruction. Nonetheless, several participants noted that they could have comprehended English implicatures much better if they had got more time to process the concepts. Furthermore, a few participants experienced problems accessing high speed Internet which made it difficult for them to be online at specific times for synchronous instruction. A few typical answers reflecting their attitudes and opinions toward (a)synchronous pragmatics instruction through SMNs are given (originally in English) below:

- (1) I feel very good when I'm studying Eng with Facebook, because whenever I'm tired of studying I can talk to my friends and have my energy back. This way I learn better. (*Sange Siah, male, 21, ACMC group*)
- (2) It is interesting and helpful to use computers in our studying, but sometimes I disconnected when I was talking to you (the researcher) because the network was very slow. (*Rose Sorth, female, 24, SCMC group*)
- (3) I'm always sleepy when the professor teaches in the classroom but in this method I pay attention to the lessons because it is more fun. (*Rose Sefid, female, 23, ACMC group*)

## 5. Discussion

The current study attempted to shed light on the under-explored pragmatics dimension of using SMNs to deliver instruction in comprehending implicatures to EFL learners in the context of Iran. The main objective of the study was twofold. Firstly, it probed the effect of exploiting today's technology, especially Web 2.0 applications and their related components, on teaching and learning of L2 implicatures. Secondly, it examined the differential effectiveness of the prevalent distinctive paths (synchronous and asynchronous) of computer-mediated technology through which the implicatures instruction could take place.

The results of the study showed that pragmatic comprehension of all three groups of the participants improved during the instructional period as a result of pragmatics instruction, albeit differentially, which corroborates the findings of previous research in L2 instructional pragmatics (e.g., Bouton, 1988, 1992, 1994, 1999; McNamara & Roever, 2006; Taguchi, 2002, 2005, 2007). Previous research demonstrated that L2 pragmatic competence is amenable to formal instruction (e.g., Bouton, 1994). In a similar vein, the findings of this study indicated that comprehension or realization of L2 implicatures, like other L2 pragmatic features, do not seem to be impervious to some form of metapragmatic awareness or instruction. More interestingly, the results offered further evidence on the effectiveness of using CMC applications (SMNs, in particular) in delivering pragmatics instruction and, as a consequence, the development of L2 pragmatic comprehension of L2 implicatures in the long run, which addresses the first research question. It was demonstrated that using SMNs to interactively engage and draw learners' attention to indirect meanings which are pragmalinguistically implicated into communicative action and, then, to raise their consciousness towards the contextual and social imports underlying the action can be an effective ILP instructional framework in the Information Technology (IT) era. This finding is in line with Roblyer et al.'s (2010) observation that university students are very open to the possibility of using SMNs to support and scaffold their learning. In a similar vein, Godwin-Jones (2008) notes that Web-based platforms, such as SMNs,

can potentially be harnessed for language learning (specifically for pragmatics learning) due to their role in enhancing communication and human interaction. Consequently, this study is added to the ILP literature and supports an interface between CMC interactional modules and pragmatics instruction (e.g., Bardovi-Harlig & Dornyei, 1998; Braun, 2005; Eslami, Mirzaei, & Dini, 2015; Liu, 2007; Martinez-Flor & Fukuya, 2005; Mirzaei & Esmaili, 2013). It can thus be argued that pragmatics instruction delivered through virtual communication environments can potentially have significant effects on development of L2 learners' pragmatic comprehension of implicatures.

As to usefulness of computers in teaching pragmatics, CMC affordances make it possible not only to individualize instruction, but also to create favorable conditions (e.g., input, interaction, simulation) to raise L2 pragmatic awareness (Eslami & Liu, 2013) and align interventions to learners' actual needs in the process of ILP development (Eslami, Mirzaei, & Dini, 2015). Further, unlike language classrooms, CMC (or SMNs in particular) can offer an authentic learning environment where learners are able to practice pragmatics in real-life interactions, provide a variety of discourse options and speech functions, and scaffold students' learning in that they can readily access L2 language samples online (i.e., in email communications or online discussions) (Bardovi-Harlig, 2001).

The second considerably important finding evidenced in the results was concerned with the differential effects of the different CMC designs and modules that can be potentially used to deliver the instructional materials, which was raised in the second research question. In other words, although both experimental groups' ILP competence in comprehending and interpreting different types of implicatures developed significantly as compared to that of the control group, the achievement represented by the ACMC group was more considerable. The reason for this differential effectiveness might be explicable in the light of the different participatory roles of learners in these platforms and the communicative, interactional opportunities or learning affordances these two CMC platforms can offer.

According to Baron (2000), synchronous CMC involves creating a process-oriented interactive discourse (between interlocutors) in which utterances may be

more fragmentary, multiple users can communicate spontaneously at the same time, and several turns may be needed to convey a single message. In essence, synchronous communication makes it possible to monitor the receiver's reaction to a message, making him or her feel more committed and motivated (Haythornthwaite & Kazmer, 2002). Therefore, synchronous e-learning increases arousal and motivation and makes it possible for L2 learners to discuss less complex issues.

Asynchronous CMC, however, involves generating product-oriented higher quality linguistic outputs in which messages are composed as wholes being well thought out before they are released to their readerships (Absalom & Rizzi, 2008; Baron, 2000). Therefore, when communicating asynchronously, the learner-receiver has more time to comprehend the message, because the sender of the message does not expect immediate responses (Blake, 2000). This opportunity helps the learner benefit specifically from more focused scaffolding from multiple sources of interaction (e.g., peers or instructors) and, in turn, practice or improve an L2 (Polat, Mancilla, & Mahalingappa, 2013). In brief, asynchronous e-learning modules can increase the ability to have more control over content, time, or participation, process information more deeply, reflect on more complex issues (Eisenclas, 2011), and, finally, reap more learner autonomy (Arnold, 2007).

To conclude, this fact clearly indicates that the effect of using SMN features (both synchronous and asynchronous) in instruction of implicatures is significant, but the use of asynchronous affordances could even have more beneficial effects. In other words, due to the fact that some types of implicatures require L2 learners to invest more processing time and effort to infer their intended meanings (Bouton, 1994), more use of asynchronous features of CMC applications in L2 pragmatics instruction is encouraged. However, there is still more room in the literature for further research to examine the relative effects of using (a)synchronous affordances of SMNs on pragmatics teaching.

## 6. Conclusion

In summary, according to the findings of the current study, it is concluded that L2 implicatures can explicitly be taught with relative success, but the rate of development highly depends on the pedagogical procedures and instructional designs. Based on the findings of the study, pragmatics instruction, particularly on implicatures, can be more efficiently delivered through the use of Web 2.0 applications and CMC equipment in comparison to the traditional instructional environments and face-to-face teacher-fronted settings which are still prevalent across the world, especially in Iran. Nonetheless, using asynchronous CMC modules for delivering this type of instruction seems to be even more effective when it comes to ILP development, which could be attributed to the nature of pragmatic materials and the way they are processed and stored in the minds of L2 learners.

In general, the findings of this study could be applicable in almost every L2 settings where the aim of teaching and learning a language is to communicate efficiently. In practice, employing CMC applications in pragmatics instruction offers special pedagogical opportunities to L2 teachers and practitioners. In simpler terms, instructors can benefit from different designs of synchronous and asynchronous web-based instruction through freely available SMNs and assist L2 learners in experiencing real life contexts by interacting effectively with native speakers or other L2 learners, regardless of their physical distance. Eventually, it results in the emergence of various strategies, practical cooperation and, consequently, heightening the rate of learners' ILP development in using L2 implicatures.

Moreover, using web-based instruction and online courses as a kind of pedagogic strategy or interventional instruction in pragmatics learning, in particular, is hoped to significantly influence the development of appropriate theoretical perspectives on teaching and learning pragmatics on a macro level. The findings can shed light on the way language experts, such as curriculum developers, course designers, material developers, and, on a micro level, language teachers, can practically go about implementing pragmatics instruction in and out of L2 classrooms. The findings demonstrated that working out an interface between

rapidly-developing technology and the development of pragmatic competence, for instance, through the incorporation of Web 2.0 technologies, can be a relevant useful solution. Specifically, the use of online communication platforms makes it possible for language teachers to be much more aware of L2 learners' pragmatic needs and affects how they plan to fulfill those needs. It could also help them provide L2 learners' with more productive instructional materials and more efficient educational settings.

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## Appendix

### The Open-ended Implicatures Test (IM Test)

Name: ..... Group: ..... Sex: Male  Female

Age: Under 20  20-26  Over 26

Have you ever been/lived to/in an English country? No  Yes ,

If yes, Which Country?..... How long have you been/lived there?.....

**Instruction:** Please, based on the situations given before each conversation, write down what you understand from the conversations and answer to the following questions:

1. Two students are talking before their class, while they are waiting for the class to begin.

**Student A:** Isn't Professor X annoying?

**Student B:** Uh, It really is a nice day out, isn't it?

What does student B mean by saying that?

By saying that, student B means the professor is approaching, and he is probably hearing them. Therefore, student B does not want to incriminate himself.

2. Frank wanted to know what time it was, but he did not have a watch.

**Frank:** What time is it, Helen?

**Helen:** Well, the postman has been here.

**Frank:** Okay. Thanks.

What message does Frank probably get from what Helen says?

3. Mr Brown is a dairy farmer and needs to borrow money to build a new barn. When he goes to the bank to apply for the loan, the banker tells him that he must have at least 50 cows on his farm in order to borrow enough money to build a barn. The following conversation then occurs:

**Banker:** Do you have 50 cows, Mr Brown?

**Mr Brown:** Yes, of course I do.

What does Mr Brown exactly mean?

4. Two teachers are talking about a student's paper:

**Mr X:** Have you finished with Mark's term paper yet?

**Mr M:** Yeah, I read it last night.

**Mr X:** What did you think of it?

**Mr M:** Well, I thought it was well typed!

How did Mr M like Mark's paper?

5. A group of students are talking over their coming vacation. They would like to leave a day or two early but one of their professors has said that they will have a test on the day before vacation begins. No one will be excused, he said. Everyone had to take it. After class, some of the students get together to talk about the situation, and their conversation goes as follows:

**Kate:** I wish we didn't have that test next Friday. I wanted to leave for Florida before that.

**Jake:** Ohhh, I don't think we'll really have that test. Do you?

**Mark:** Professor Schmidt said he wasn't going anywhere this vacation. What do you think, Kate? Will he really give us that test? Do you think we have to stay around here until Friday?

**Kate:** Does the sun come up in the east these days?

What is the point of Kate's last question?

6. Rachel and Wendy are jogging together.

**Wendy:** I can't keep up with you, Rachel. I'm out of breath. Can't you slow down?

**Rachel:** you know, I'm glad I don't smoke.

What does Rachel mean by this remark?

7. When Abe got home, he found that his wife had to use a walking stick in order to walk.

**Abe:** What happened to your leg?

**Wife:** well, I went jogging.

Another way Abe's wife could have said the same thing is...

8. Two roommates are talking about what they are going to do during the summer.

**Fran:** My mother wants me to stay home and entertain the relatives when they come to visit us at the beach.

**Joan:** Do you have a lot of relatives?

**Fran:** does a dog have fleas?

How can we best interpret Fran's comment?

9. Toby and Ally are trying the new buffet restaurant in town. Toby is eating something but Ally can't decide what to have next.

**Ally:** "How do you like what you're having?"

**Toby:** Well, let's just say it's colorful.

What does Toby probably mean?

10. After Jill has withdrawn money from an automated teller machine, her neighbor Mike approaches her.

**Mike:** Jill, I need some cash.

**Jill:** Um, your credit card also works on this machine.

What does Jill probably mean?

**11.** Martha and Paul usually play golf together on Saturday. This Saturday, however, Paul went alone. When he returns, Martha wants to find out how well he did.

**Martha:** hey, Paul. How did you do today at golf?

**Paul:** man, uuum. I'm so tired of this cold weather.

What does Paul mean?

**12.** Jack is talking with his friend, Sandy. Jack gave a party last week and Sandy attended. Jack wants to know what Sandy thought of the party.

**Jack:** Sandy, how did you enjoy yourself at my party?

**Sandy:** oh, umm. You know, it is hard to give a good party.

What does Sandy mean?

**13.** John and Ann are classmates. John has some problems reading his paper and he is asking Ann for help.

**John:** hi Ann. I was wondering if I could ask a small favour of you. Would you read my papers?

**Ann:** gosh, john, I wish I could, but I promised jack I'd go bowling with him tonight.

**John:** yeah, right. Thanks for the help.

What does John mean by his last remark?

14. Nick is taking a painting class this semester. One day his friend, Judy, is visiting him. Judy is looking at the paintings and Nick wants to know what she thinks of his paintings.

**Nick:** Judy, do you like my paintings?

**Judy:** well, painting with oil is very difficult.

What does Judy mean?

15. Evelyn ran into her old friend Dennis. She had not seen Dennis for a while and wanted to catch up what was going on. Evelyn had heard that Dennis was recently divorced and Evelyn asked Dennis if this was true.

**Evelyn:** did you just get divorced?

**Dennis:** you know, I think we married too young.

What does Dennis mean?

16. May is a high school student who is taking history class from Mr White. She recently turned in a term paper and she is curious to know how she did. When she sees Mr White, she asks about it.

**May:** oh Mr White, I'm really curious to find out who I did on my term paper. What did you think of it?

**Mr White:** well, that was a very difficult assignment.

What does he mean?

17. Two students who have the same tastes academically and often plan their schedules and study together are conversing about Speaker 2's favourite class.

**Student 1:** I'm thinking about taking Professor West's class next semester. I know that's your favourite and you're always recommending it to me, but I just want to check one last time... Should I take it?

**Student 2:** Ohhh, no way!!! It was absolutely the worst! You'll just hate it.

What do you think was the intended meaning of Speaker 2's reply?

**18.** Two students are at the library during the course registration period.

**Student 1:** Hey, I just registered! I can't wait to take the courses I got! What's your schedule for next semester?

**Student 2:** My schedule? Well, hmmm, let's see... For me to tell you my schedule for next semester, I'm going to have to finish this English essay, read two chapters of my psychology textbook, go to the geography computer lab so I can remake my map for class that got erased last night when the power went out, oh and I suppose I should find some time somewhere in there to eat some food, sleep a few hours at night, and actually go to class... then, yes, I should be able to sit down in front of Oasis to browse the course listings, ask people for recommendations, go meet with my advisor to get clearance, and then, finally, log back in to Oasis to register for next semester's classes... and immediately make sure that I find you so we can share schedules... Okay?

What do you think was the intended meaning of Speaker 2's reply?

**19.** Two teachers are talking during the lunch time.

**Teacher A:** Do you have any rude students this semester?

**Teacher B:** umm, all students are rude.

What does Teacher B probably mean?