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Second Language (L2) Pragmatics and Computer Assisted Language Learning (CALL)

Zohreh Rasekh Eslami[1], Sara Zohoor[2]

[1] Professor in Bilingual and English as a Second Language Education, Educational Psychology, A&M University, Texas, the United States of America. Email: zeslami@tamu.edu

[2] Department of Educational Psychology, Texas A&M University, Texas, the United States of America. Email: sara2020zoh@tamu.edu

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Abstract

In today's era of globalization with technological advancements, where communication transcends spatial and temporal boundaries, pragmatic competence plays a key role. Using language in socially, culturally, and contextually appropriate ways is essential as pragmatic failures can lead to miscommunications, cultural stereotyping, and unintended consequences in high-stakes situations. Consequently, research on the nature of pragmatic competence and its development and educational endeavours in teaching pragmatics in formal and informal instructional settings plays an important role in second language learning and teaching. The interactional limitations in traditional face-to-face classrooms have brought researchers and educators to recognize that technology can provide environments exposing language learners to a wider variety of contexts to test and develop their L2 pragmatic competence. Technology-informed approaches to L2 pragmatic development have prompted great interest from researchers and practitioners alike. The research on L2 pragmatic instruction and development using CALL demonstrates that technological innovation can facilitate research and teaching by providing more control in data collection and offering access to multiple forms of input and interaction while overcoming many barriers to L2 pragmatic instruction in traditional settings. In this review paper, we explore the intersectionality between L2 pragmatic development, instruction, and research (interlanguage pragmatics) and various technologies, innovations, and resources that have emerged and have the potential to facilitate learners' pragmatic development. We provide suggestions for future research where technology could aid the development of pragmatic competence.

***Corresponding Author:** Zohreh Rasekh Eslami
Professor in Bilingual and English as a Second Language Education, Educational Psychology, A&M University, Texas, USA.

Email: zeslami@tamu.edu

Introduction

Advancements in technology have made it possible for communication to transcend geographical and time boundaries. In such a globalized world where special and temporal boundaries are removed, more opportunities for intercultural communication are created, and thus, the mastery of second language (L2) pragmatics has become highly important. Pragmatics, the study of how language is used in context, encompasses the intricate web of conversational implicatures, speech acts, politeness strategies, and cultural nuances that enable effective communication. To be able to use language for communication, learners need to have knowledge of how to use different linguistic forms within the social norms of the society, as context and sociocultural norms play a decisive role in the pragmatic choices that language users make (Eslami, 2013).

Although research has shown that pragmatics is teachable and different methods of pragmatic instruction are empirically investigated (e.g., González-Lloret, 2019, 2021), classroom context for teaching and learning pragmatics are limited on the variety of contexts and interlocutors that they can offer. Due to the institutionalized roles of teachers and students, classroom discourse opportunities are pragmatically impoverished, and many speech acts and discourse practices are often absent from language classes (Eslami et al., 2015). Fortunately, with the increasing advancements in technology, easier access to the Internet, and the formation of online communities in social networking sites, learners are provided with a variety of contexts, interlocutors, and power dynamics that can reflect authentic practices in various interactional situations (Taguchi & Sykes, 2013; González-Lloret, 2019, 2021; Blyth& Sykes, 2020).

The fusion of technology and L2 pragmatics has yielded a paradigm shift in language education. CALL offers a dynamic platform that leverages the capabilities of digital tools to create immersive, interactive, and contextually rich language learning environments. This introductory paper explores the intersectionality between L2 pragmatic development, instruction, and research (interlanguage pragmatics) and various emerging technologies, innovations, and resources that can facilitate learners' pragmatic development. Following that, we provide some suggestions in less studied areas where technology could aid the development of pragmatic competence.

Pragmatic Competence and CALL

Pragmatic competence is vital in today’s globalized world, where communication across spatial and temporal boundaries is a daily experience. Therefore, empirical effort in studying the nature of pragmatic competence and its development, in addition to pedagogical focus in teaching pragmatic knowledge in different instructional settings and at different levels of language proficiency, is an important, timely agenda of second

language learning and teaching (González-Lloret, 2021; Taguchi, 2019; Plonsky & Zhuang, 2019).

Taguchi (2019) states that pragmatic competence is a multidimensional and multilayered construct involving three important knowledge and skill domains: a. linguistic and sociocultural knowledge of when to use what forms in what context; b. interactional competence to use the knowledge adaptively and flexibly in response to changing contexts; and c. agency to make an informed decision on whether to enact the knowledge in a given community.

Research in CALL and L2 Pragmatics includes various topics, research methodologies, platforms, and tools (González-Lloret, 2021). Researchers have examined the L2 pragmatic development of learners focusing on different speech acts, interactional features, identity-related issues, and politeness strategies using a range of technologies and digital environments (e.g., synchronous or asynchronous computer-mediated communication (SCMC and ACMC), games, social networking sites, and synthetic environments. These studies are conducted in different contexts and sometimes compared with the traditional methods of pragmatic development.

Likewise, the research methods and topics of CALL and L2 pragmatics studies are highly diverse. The number of descriptive studies is higher than empirical and developmental studies. Researchers have utilised both observational and interventional studies with cross-sectional and longitudinal designs. Furthermore, various data collection and analysis methodologies are used in these studies.

Studies have examined pragmatics' instructional, developmental, and interactional aspects in different settings. Some of the pragmatic features studied include the development of implicatures (Taguchi, 2013), backchanneling (Utashiro & Kawai, 2009), and identity construction (Eslami & Yang, 2018; Liaw & English, 2017), with several studies focused on the development of speech acts. Below, we provide an overview of descriptive and interventional studies conducted on different technology platforms using CMC or ACMC, different types of games, and synthetic environments.

Descriptive Research

Most L2 pragmatics and technology studies are descriptive, most of which compare CMC to face-to-face interactions, especially in asynchronous CMC (ACMC). Email communication, as one of the most frequently used ACMC means, has been studied by several researchers, mainly focusing on student-professor communications. Email communication concerning politeness, directness, mitigators, and supportive moves in different speech acts has been studied. The findings of these studies indicate that even advanced L2 learners have challenges in terms of facework and use of appropriate amount and type of mitigators in their emails in unequal power situations (Chalak et al., 2010; Eslami, 2013; Eslami et al., 2014; Yang et al., 2015; Eslami & Ko, 2015; Bloch, 2002; Félix-Brasdefer, 2012; Hendriks, 2010). Learners may also transfer features from their

first language (L1) to L2 (Economidou-Kogetsidis, 2016; Eslami, 2013). Eslami's (2013) study shows that NNES graduate students' e-mails were lengthy due to more opening and sequencing moves and longer text in each move. They emphasised the socialization first and business second discourse styles more than NES students. Even though it is important to validate students' cultural differences and their corresponding discourse styles, it is also important to inform NNES students about the target discourse forms and strategies to demonstrate sociocultural sensitivity in appropriate contexts and perform their desirable identities. As e-mail is used more and more frequently in today's society and by many NNES speakers, further research can expand the inquiry scope of L2 learners' e-mail practice involving other kinds of power relations and identity construction. Online cross-cultural contact does not guarantee success in online intercultural communication. Language learners need to know how to effectively use language online to negotiate their power positions, establish their communicative identities, and reflect appropriate sociocultural ideologies. Effective student-to-professor communication via e-mail requires awareness of the appropriateness of both medium and culture.

It is important to note that the use of technology is not neutral or external to the interaction. Technology shapes the conversation process, allowing us to form relationships faster than before. Research done by Eslami and Yang (2018) on Chinese English bilinguals' online compliment response patterns in American (Facebook) versus Chinese (Renren) social networking sites shows that bilingual and bicultural users can flexibly change their language use patterns in response to different cultural contexts (Canagarajah, 2013). Results showed that while Renren and Facebook are two technically similar platforms, Chinese-English bilingual users of both online cultures flexibly switched and adapted their compliment response patterns to the online community in which they were participating. The Chinese-English bilinguals' compliment response patterns were aligned with modesty principles more when they participated in the Renren community and less when they participated in the Facebook community. Conversely, their compliment response patterns on Facebook were more and less aligned with the agreement principle when they participated in the Renren community. Their findings support that the linkage between language and culture is immutable, even in a virtual context.

Studies have also shown that the mode of communication is another factor affecting L2 pragmatic production. For example, Tercedor Cabrero (2013) found that the organisation of interactional features in video CMC by beginner learners differed from other media. Similarly, Sykes (2005) found that learners, in refusing an invitation, used more elaborate and complex moves and a wider variety of strategies in text-based CMC compared to their performance in oral CMC. These studies, although limited, have provided great insights for educators and researchers. However, we need more research comparing the impact of different modes of CMC and the influence of cultural and social factors on L2 pragmatic performance.

Another study group examined L2 pragmatics in synchronous CMC (SCMC). These studies have examined different pragmatic features, such as different features of discourse and internal and external modifiers used to soften the force of the speech acts. Results of these studies indicate that SCMC communication is effective in promoting the use of different speech acts (Tsai & Kinginger, 2014), facilitating interaction through collaborative learning (Eslami & Kung, 2016; Chen & Eslami, 2013; Kitade, 2000), and offer learners interactional opportunities enabling them to accommodate and align themselves with their interlocutors and previous turns in the conversation (Jenks & Brandt, 2013; Uzum, 2010). Some other scholars (Tu Tudini, 2013; Chen & Eslami, 2013; Eslami & Kung, 2016) have examined the collaborative task-based performance of learners in online settings and examined negotiation episodes, repair sequences and how learners construct their identities in different platforms (Eslami & Yang, 2018; Liaw & English, 2017; Vandergriff, 2013).

Interactive Automated Dialogues

Another newly developed option for L2 pragmatic development is Spoken Dialogue Systems (SDS) (Timpe-Laughlin et al., 2017). SDS offers choices for the design of specific, practical features, promotes possibilities for interaction, offers authentic and relevant input for learners to use, and provides corrective feedback to the learners. Taguchi et al. (2017) investigated the potential of video scenarios to promote comprehension and production of Chinese formulaic expressions. Using pre-test and post-test design, their findings indicated a noticeable improvement in the learners' knowledge of formulaic expressions. Similarly, Sydorenko et al.'s (2018; 2020) studies of video-based simulations show that learners modified their request realisation strategies by eliminating inappropriate strategies not used by the models they observed. Similar results were found by Timpe-Laughlin and Dombi (2020) investigating request strategies of English learners from different L1 backgrounds as they engaged in an SDS. The findings showed that not only were learners provided with input and opportunities for oral practice, but also, the system provided systematic feedback aligned with the learner's types of pragmatic errors, thus providing learners with individualised feedback. Finally, in their study, Alemi and Haeri (2020) used a humanoid robot named NAO in a Persian preschool. Their findings indicated that children's requesting and thanking performance improved significantly after being exposed to and interacting with the robot.

Interventional and Developmental Research

Experimental studies examine whether intervention (instruction) impacts learners' L2 pragmatic development and what type of intervention is the most effective. Interventional

studies include explicit (metapragmatic explanations, corrective feedback, form-focused activities) or implicit (enhanced input, input flood, implicit feedback, incidental noticing). Interventional study findings, similar to findings of traditional instructional pragmatics research, indicate that intervention helps improve students' production in ACMC, such as email communication (Chen, 2015; Eslami, Mirzaei, & Dinni, 2015; Nguyen, 2018; González-Lloret, 2019, 2021; Plonsky & Zhuang, 2019). Some of these interventional studies have used email as a tool for interaction to examine learners' performance on different speech acts, such as requests (Chen, 2015; Eslami et al., 2015; Nguyen, 2018). These studies have mainly used traditional data collection methods in interlanguage pragmatic research, such as discourse completion tests (DCTs; Eslami et al., 2015), pre-post tests (Chen, 2015; Nguyen, 2018), and judgment tests (Pan, 2012).

These studies' findings indicate that combining instruction with technology effectively incorporates technology-mediated L2 pragmatics into the language classroom (Alcón-Soler, 2013). Supporting the effectiveness of instruction with the use of technology, Li, Taguchi, and Tang (2018) compared the effectiveness of text-based CMC with data-driven instruction on the development of four Chinese sentence-final particles and found that the combination of CMC and data-driven instruction was more effective in L2 pragmatic development of the learners.

Another group of studies explores the possibility of L2 pragmatic development after a time when mediated through technologies. These studies do not necessarily include a control group and focus only on one group of learners' L2 pragmatic development. These studies examine technology as a dynamic and fluid space generated by authentic communication and interactional norms and practices. Most of these studies have investigated using CMC to explore L2 pragmatic development over a certain period. Learners' development of different speech acts (Cunningham, 2016; Soares Palmer, 2010) openings (Abrams, 2013); leave-takings (Gonzalez, 2013); responses to troubles talk (González-Lloret, 2011) and invitation refusals (Takamiya & Ishihara, 2013) are example studies in this group. The findings of these developmental studies reveal the effectiveness of technology-mediated environments for L2 pragmatics when learners maintain interaction, are provided with relevant and appropriate feedback, and are willing to accept L2 sociopragmatic norms (González-Lloret, 2019).

Virtual environments and online games are used in several developmental studies and are considered highly effective environments for pragmatic development. Below, we cover some relevant studies.

Virtual Environments and Online Games

As it relates to games, Kaplan and Haenlein (2010) positioned virtual game worlds (e.g., World of Warcraft) and virtual social worlds (e.g**.,** Second Life**),** among other types of social media, at the highest level concerning "social presence" and "media richness." They defined social presence as "the acoustic, visual, and physical contact that can be

achieved … between two communication partners" and media richness as "the amount of information they allow to be transmitted in a given time interval" (p. 62). Pojanapunya and Jaroenkitboworn (2011) investigated how Thai students of English used closing sequences in Second Life as a virtual environment. The results indicated that although learners interacted through avatars and did not need to use face-saving strategies, they frequently used preclosing before closing the play by saying goodbye. Similarly, Peterson's (2012) study showed that EFL learners in Second Life employed interactional resources in face-to-face interaction, politeness strategies, and phatic communication to maintain interpersonal relationships. Sykes's (2009) study with immersive synthetic environments and games for promoting L2 pragmatic interaction is another example evidencing the facilitative role of using the virtual world for pragmatic development.

Holden and Sykes (2012) created and researched a mobile game for Spanish learners. Using this game, students collaboratively interacted with the Albuquerque neighbourhood of Los Griegos and the mobile game to solve a mystery. Students were required to be pragmatically appropriate to get information from the game characters. The study's findings show that learners engaged with sociopragmatic features of the language.

Virtual game worlds (e.g., World of Warcraft) were examined in a scoping literature review by Jabbari and Eslami (2018). They examined the second language acquisition (SLA) literature about the role of "massively multiplayer online games" (MMOGs) in second language (L2) learning. They surveyed the literature to find out which aspects of L2 learning were investigated, how they were studied, and what the findings suggest in relation to L2 learning opportunities and outcomes within and beyond MMOG contexts. Their review indicates that the empirical research in this area is mainly qualitative and that L2-related motivational and affective factors, L2 vocabulary, and learners' communicative competence are the most widely investigated topics. They concluded that MMOGs provide socially supportive and emotionally safe (i.e., low-language-anxiety) environments that afford multiple opportunities for L2 learning and socialization, which, in turn, help L2 learners to enrich their L2 vocabulary repertoire and enhance their communicative competence in the target language. Other scholars (e.g., Palmer, 2010; Rama et al., 2012; Rankin et al., 2009) acknowledged that participation in MMOG virtual communities provided opportunities for L2 socialization as a developmental process that involves "learning to use language in socially and pragmatically appropriate, locally meaningful ways, and as a means of engaging with others in the course of –indeed, in the constitution of – everyday interactions and activities" (Garrett, 2008, p. 190).

In an ethnographic case study, Palmer (2010) investigated the process of L2 socialization in the virtual community of World of Warcraft (WoW) by monitoring the participants' pragmatic development in Spanish. She observed that the participants improved their socialising abilities with Spanish gamers by performing appropriate pragmatic moves. Rama et al. (2012, p. 337) also concluded, "As sociocultural contexts

characterized by shared proclivities rather than language ability, MMOGs provide unique contexts for language learning and socialisation that are a marked contrast to the insulated communicative environments of many language classrooms." Thorne (2008) and Zheng et al. (2009) argued that MMOGs' bi- and sometimes multilingual communication settings provide opportunities for intercultural and transcultural communications among gamers in diverse geographic locations.

The scoping review study by Jabbari and Eslami (2018) suggests that meaning-oriented verbal interactions during MMOG play help L2 learners develop communicative competence through practising different discourse management strategies. Peterson (2012), for example, noted that L2 learners managed their in-game communications through the appropriate use of positive politeness strategies, informal language, small talk, humor, and lengthy leave-taking. The L2 learners in Palmer's (2010) study also developed abilities to socialise with and integrate into the Spanish virtual communities in WoW by enriching their repertoire of pragmatic knowledge and performing a range of appropriate pragmatic moves, including "a host of new greetings, goodbyes, and requests for help" (Palmer, 2010, p. 307). Similar to Palmer (2010), other studies (Peterson, 2012; Rama et al., 2012; Rankin et al., 2009) found that social interactions in the game environment helped ESL students improve their communicative performance. Similarly, Reinders and Wattana (2011) found that, although L2 interaction during the gameplay did not improve the accuracy and complexity of the students' discourse, it encouraged them to use various discourse functions (e.g., greetings and questions) and practice different discourse management strategies (e.g., clarification requests, confirmation checks, and self-corrections) to communicate effectively within the game.

Most studies on online games and pragmatic development focused on English learners. However, Tang and Taguchi (2020) designed a scenario-based game, *Questaurant*, to

teach Chinese formulaic expressions to Chinese L2 learners who play the role of a robot who works in a restaurant in a Chinese-speaking community and must complete several quests by interacting with other in-game characters. Tang and Taguchi used explicit and implicit feedback to maximise the student's learning in the game. However, the findings indicate that only attention was paid to the explicit metapragmatic feedback and did not attend to the less salient implicit feedback given through the facial expressions of the in-game characters. As stated by Tang and Taguchi (2020), it is highly important to test the game design to examine whether the pedagogic choices implemented to increase learning are effective. Although virtual environments can compensate for some of the shortcomings of pragmatic instruction in classroom settings (e.g., limited authentic input), using research-based instructional design and suitable game tasks are essential factors for effective learning L2 pragmatics (Sykes & Dubreil, 2019).

Although a small but growing number of research has identified multiuser virtual environments (MUVE) as a beneficial context for L2 pragmatic development, there are

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only a few review studies that have critically assessed this body of work (Sykes & Dubreil, 2019; Reinhardt & Thorne, 2020). A recent systematic review focusing on online games and pragmatic development was done by Ko and Eslami (2021). They presented a systematic literature review on multiuser virtual environments (MUVE) to develop pragmatic competence in L2 learners. Their review focused on studies examining the potential of L2 pragmatic development through synthetic immersive virtual environments (SIE) and massively multiplayer online role-playing games (MMORPGs). This review examined L2 pragmatic aspects examined in game-mediated contexts and types of research paradigms and research methods implemented in prior studies. The study findings indicated that previous research has identified the potential of MUVEs for promoting learners' pragmatic awareness and production as well as interactional skills.

The facilitative role of playing online games for the pragmatic development of two Finnish participants playing *Final Fantasy* was established by a sequence of studies done by Piirainen-Marsh and Tainio (2009 and 2010). These researchers (Piirainen-Marsh & Tainio, 2014) also indicated how the participants interactions and organization of their game played evolved over time. Additionally, Jabbari and Eslami (2023) investigated negotiations for meaning as conditions for second language (L2) learning in the context of WoW. Varonis and Gass's (1985) and Smith's (2003) models were used to identify negotiation episodes during on-task and off-task talks among the participants while playing WoW. The results revealed the participants' abundant L2 use to undertake authentically contextualized game-driven tasks, meticulous involvement in bi- and multi-lateral negotiations, and creative strategies to resolve incomprehension.

Concluding Remarks

As González-Lloret (2019) submitted, although technology provides opportunities for authentic interaction for the development of L2 pragmatics, the quality and amount of learners' engagement, learners' specific experiences during the interaction, and the moments in the interaction that bring awareness and reflection into their practice are essential. Technology platforms' social and interactional affordances facilitate learners' social interactions and engagement and play a vital role in successful L2 pragmatic learning outcomes.

Technology's social environment and interactional opportunities should allow learners to experiment with language in different ways and acquire pragmatic competence. It is important to note that although interaction with native speakers is an essential part of acquiring L2 pragmatic competence, achieving native-like competence is not necessarily the goal of instruction (Eslami et al., 2020; Ishihara & Tarone, 2009; Takamiya & Ishihara, 2013). We should consider that students, especially adult L2 learners, may resist adopting the pragmatic rules of a language because of their own beliefs, values, and subjectivities.

As suggested by Placencia and Eslami (2020), following online communities of practice over longer periods of time would enable researchers to document the dynamics and development of interpersonal practices as realized by relational speech actions such as complimenting, praising, and others. More importantly, multilingualism and the use of multiple languages by users of social networking sites have become the norm rather than the exception. The use of different languages and the mixing and meshing of linguistic resources by multilingual individuals in their online communication and how this may relate to their identity formation is a significant area of research. Translanguaging practices of bilingual and multilingual users as they engage in online interactions in multilingual environments would reveal the complexities and intricacies involved in using multimodal and multilingual resources to convey their intended messages.

Another area of L2 pragmatics research that needs further attention is the multimodal analysis of L2 data, as non-verbal aspects of communication constitute a large amount of what we communicate. Image-sharing sites (i.e., Snapchat and Instagram) are one of the most popular and current forms of social media, especially among young internet users (Smith & Anderson, 2018). Multimodal interaction analysis must be considered when analysing interpersonal interactions in multilingual and multimodal sites (Bou-Franch & Garcés-Conejos Blitvich, 2018). Relevant to this, the role of emojis, emoticons, and other linguistic repertoires and the creative use of these resources by users should be considered for future research (González-Lloret, 2016; Eslami & Yang, 2021). Examining multilingual populations' gendered and cultural identities in online interactions would also be insightful. Further work in these areas would contribute to the growing body of research on the "multilingual Internet" (Danet & Herring, 2007), revealing the fluidity and dynamism of multilingual users' online practices. The use of critical discourse analysis and the examination of the discursive construction of discourse in different social networking sites and different cultural contexts needs further research. Extending the research to other languages and other online cultures opens up the appealing prospect of researchers adopting a more extended cross-cultural approach to investigate the pragmatic aspects of L2 learners and their developmental journey related to globalization and glocalization processes.

The intersectionality of technology and L2 pragmatics also raises other questions and challenges that warrant further exploration. We need to gain more research-based knowledge on how to harness technology's potential to create meaningful and authentic pragmatic learning experiences, what ethical considerations should be considered for integrating technology in language classrooms, and how technology-mediated instruction can strike a balance between pedagogical expertise and the spontaneity of genuine communication.

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