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Technology-Enhanced Application in L2 Pragmatic Instruction: A Systematic Literature Review

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Abstract: This systematic literature review focuses on the use of technology-enhanced applications in second language (L2) pragmatic instruction. This paper will systematically analyze papers from several electronic databases between the years 2012 and 2023 that investigate the use of technology in L2 pragmatic instruction, with a focus on the type of technology used, its effectiveness in enhancing pragmatic competence, and its impact on learners' motivation and engagement. The review also considers the pedagogical implication that underlie the design and implementation of technology-enhanced pragmatic instruction. The findings suggest that technology-enhanced applications can effectively enhance learners' pragmatic competence, motivation, and engagement. However, the effectiveness of such applications is highly dependent on the pedagogical principles that inform their design and implementation, including the incorporation of authentic materials, task-based instruction, and learner-centered approaches. The review concludes with recommendations for future research and pedagogical practice in this area.

Keywords: technology-enhanced applications; second language (L2) pragmatic instruction; pragmatic competence; technology in pragmatic competence; task-based pragmatic instruction

1. Introduction

The use of technology in teaching pragmatics, an aspect of second language learning, involves weaving together various digital tools and resources within the learning process. The aim is to streamline the process of learning practical skills in the new language. This strategy presents several advantages. As Kessler (2020) pointed out, digital platforms and online resources expose learners to a variety of cultural contexts, enabling them to interact with genuine materials and understand different cultural viewpoints and language uses. Hampel and Stickler (2015) underscored the potential of technology to boost learner engagement by offering captivating, interactive experiences that foster active involvement in pragmatic language use. Additionally, Kukulska-Hulme (2016) recognized the flexible nature of technology, which can be adjusted to suit learners' specific goals, learning styles, and levels of proficiency. This flexibility allows learners to interact with materials and activities that fit their unique needs, resulting in a customized learning experience. By harnessing the power of technology in teaching pragmatics, educators can boost learners' pragmatic abilities, foster engagement and active participation, and provide tailored learning opportunities. This greatly enhances the efficacy of teaching pragmatics in second language learning.

However, integrating technology into pragmatic teaching is not without its challenges. A major hurdle is the selection of suitable technological tools and resources. Educators need to carefully evaluate whether the chosen tools effectively promote pragmatic competence. Fadzil et al. (2019) stressed the necessity of aligning technological choices with teaching goals and learner needs, which could be a time-consuming and costly process. Another concern is cultural authenticity. As pragmatic norms are deeply entrenched in cultural contexts, technology should not propagate stereotypes or misconceptions. It is vital for educators to avoid technology that

might reinforce cultural biases and ensure the chosen materials accurately represent the targeted culture. Besides, it is crucial to maintain a balance between learner engagement and authenticity. While technology can create interactive and engaging learning experiences, learners should not become too dependent on simulated or artificial environments. Relying too much on technology-mediated interactions might impair learners' ability to handle real-world, face-to-face communication. Çiftçi and Aslan (2019) asserted that technology should complement rather than replace real communicative experiences, and teaching methods should strike a balance between technology-aided activities and in-person interactions to effectively cultivate pragmatic skills. Achieving this balance is key to nurturing pragmatic competence that can be successfully applied in natural communication settings.

The current study holds considerable implications for incorporating technology in second language pragmatics teaching, both theoretically and practically. Through the analysis of diverse data sources, the study aims to shed light on the most effective ways technology can be used to boost second language pragmatics teaching. The findings offer precious guidance to foreign language teachers who are looking for innovative teaching techniques to enhance students' performance. A thorough analysis and synthesis of the data form a solid base for the design and implementation of tech-enhanced teaching approaches that promote learners' pragmatic competence and facilitate the acquisition of pragmatic skills in a second language. Moreover, this study highlights how technology can back up the instruction of second language pragmatics. The study scrutinizes various theoretical frameworks that focus on enhancing second language pragmatic education through technology integration. This investigation deepens our understanding of the principles and guidelines for effectively incorporating technology in language teaching. By shedding light on the theoretical bases and conceptual frameworks related to tech-enhanced second language pragmatics teaching, the study offers invaluable insights into the potential benefits and challenges of using technology to boost pragmatic competence and enhance learners' pragmatic skills. These insights will guide educators and researchers in devising informed and effective teaching practices that leverage the power of technology in supporting second language pragmatics teaching and learning.

In the realm of second language pragmatics instruction, the infusion of technology has ignited a transformative wave, altering the landscape of how learners acquire and apply pragmatic skills in their target language. This evolving terrain has prompted a pressing need to critically examine the intricate interplay between technology and pragmatic pedagogy. As such, our research embarks on a comprehensive exploration, guided by a set of fundamental research questions. The following questions are strategically crafted to encompass the multifaceted dimensions of technology-enhanced L2 pragmatics instruction.

1. What are the prevailing trends in research related to the integration of technology in L2 pragmatic instruction, and how have these trends evolved over time?

2. What is the geographical distribution of research papers on technology-enhanced L2 pragmatic instruction, and do certain countries or regions show a higher concentration of research in this area?

3. How is the use of technology as an instructional tool in teaching pragmatics different from its use as a medium of communication in teaching pragmatics?

4. What specific technological tools and platforms have been employed in L2 pragmatic instruction, and what are their respective impacts on learners' pragmatic competence and communicative skills?

5. How do the pedagogical implications of technology-enhanced L2 pragmatic instruction vary across different educational contexts and learner populations?

2. Method

This study focused primarily on an investigation of the use of technology in teaching L2 pragmatics throughout the past decade, from 2012 to 2023. The review question is constructed using the PRISMA framework to develop eligibility criteria for systematic reviews. The elements of the question were transformed into key literature search phrases and inclusion and exclusion criteria for article selection. In order to respond to the question, the trends and patterns of research studies on the use of technology in teaching L2 pragmatics can be extracted from the data of this analysis.

This review was conducted to determine the present methodologies and practices of the use of technology in teaching L2 pragmatics. This systematic review was completed using the Preferred Reporting Items for Systematic Reviews (PRISMA) standards. PRISMA provides a standard, peer-reviewed approach that employs a checklist of guidelines, which was closely adhered to in this paper, to contribute to the quality assurance of the revision process and its reproducibility. The article selection criteria, search strategy, data extraction, and data analysis techniques were outlined in a protocol for review. This paper systematically nsearched three electronic databases: Scopus, ERIC (Education Resources Information Center), and EBSCO between the years 2012 and 2022. This study identified English-language studies with peer-reviewed journals. To uncover as many eligible papers as feasible, the author expanded search terms and techniques. The reference lists of the papers that were deemed eligible after an electronic search were also manually searched. Using the aforementioned criteria, titles and abstracts were evaluated separately to decide which papers were eligible for inclusion in the research. For final inclusion, the whole text of potentially relevant studies was evaluated.

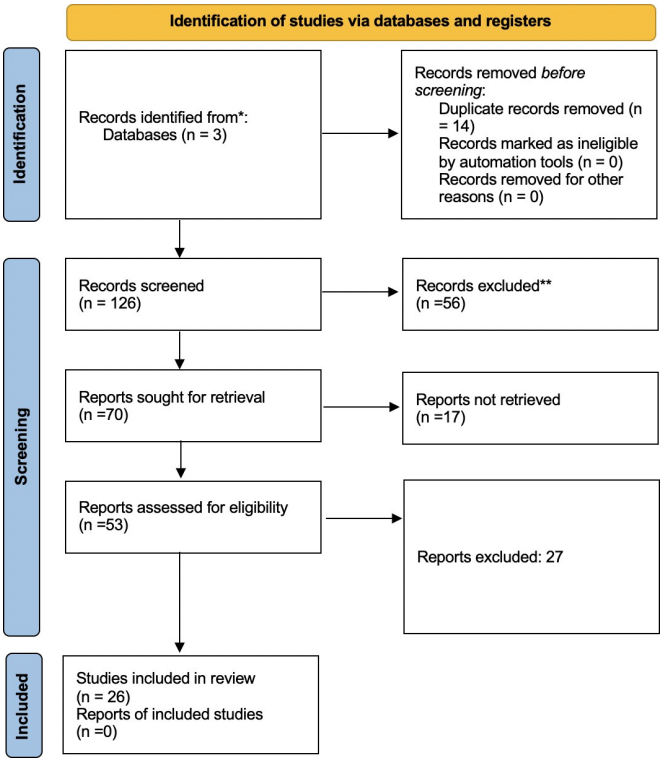

Figure 1. PRISMA Flow Diagram

3. Results and Discussion

The outcomes of a literature review that compiled publications on the prevalent technologies employed in pragmatic training are presented in Table 1. Despite the identification of several obstacles to the implementation of technology in pragmatic instruction, the aim of this study was to investigate the type of technology employed, its efficacy in augmenting pragmatic proficiency, and its influence on students' drive and involvement. The researcher conducted a thorough analysis of 25 studies to ascertain the type of technology employed, its effectiveness in enhancing pragmatic competence, and its impact on learners' motivation and engagement. Following a thorough literature review, we employed the 27 inclusion and exclusion criteria from the PRISMA framework to identify relevant papers that met our criteria for inclusion.

Based on the results, the distribution of papers published on the topic of technology-enhanced L2 pragmatic instruction over the last decade presents an interesting trend. The years 2013 and 2014 each saw two papers published, which was followed by a single publication in 2015 and two more in 2016. There was a slight decrease in 2017 with just one paper, but this was followed by a significant increase in 2018 with five papers. The following year, 2019, saw a slight decrease to four publications. The peak occurred in 2020 with six papers, but this was followed by a sharp decline in 2021 and 2022, with only two and one papers published respectively. The following figure 2 illustrates the trend of research about technology integration in L2 pragmatics over the last decade.

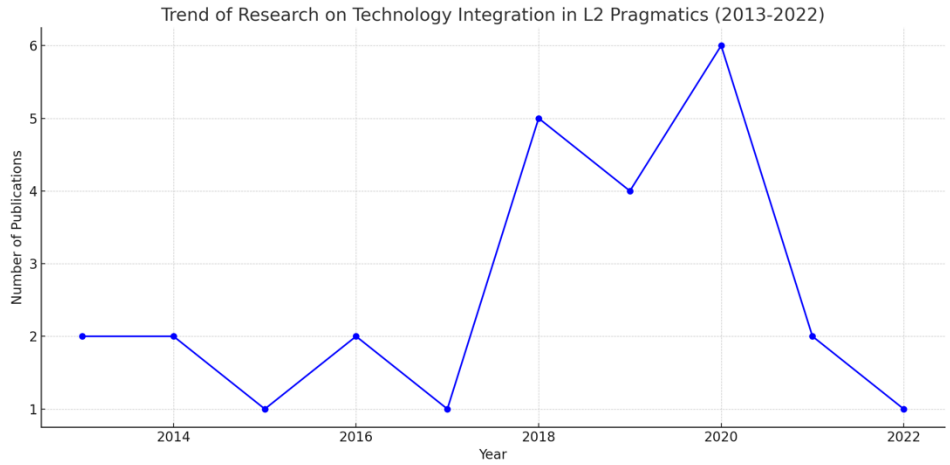

Figure 2. Trend of Research on Technology Integration in L2 Pragmatics (2013-2022)

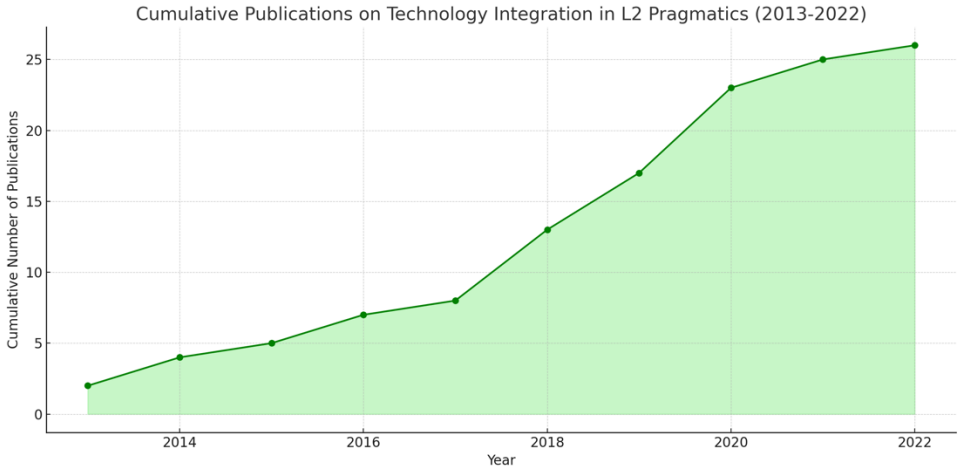

Figure 3. Cumulative Publication on Technology Integration in L2 Pragmatics (2013-2022)

The line graph showcases the cumulative growth of research publications on technology integration in L2 pragmatics over a decade, spanning from 2013 to 2022. The term "cumulative" means that for any given year on the graph, the value represents the total number of publications up to and including that year.

Starting in 2013, we observe a steady increase in the cumulative count. This initial growth can be attributed to the consistent number of publications in the early years, with 2 papers in 2013 and another 2 in 2014, leading to a cumulative total of 4 by the end of 2014. As we progress through the timeline, the slope of the line (indicative of the rate of cumulative growth) becomes steeper, especially around 2018. This steeper ascent signifies a notable increase in annual publications, with 2018 contributing a significant 5 papers. The peak rate of growth is evident around 2020, where the total number of publications reached its zenith.

The shaded region beneath the line graphically represents the accumulation of research over the years. It visually amplifies the total contribution of each year to the research domain, allowing viewers to gauge the overall expansion of the field. By 2022, despite the evident slow-down in the last couple of years, the cumulative count stands notably higher than where it started a decade ago, underscoring the sustained interest and research contributions in the domain of technology integration in L2 pragmatics.

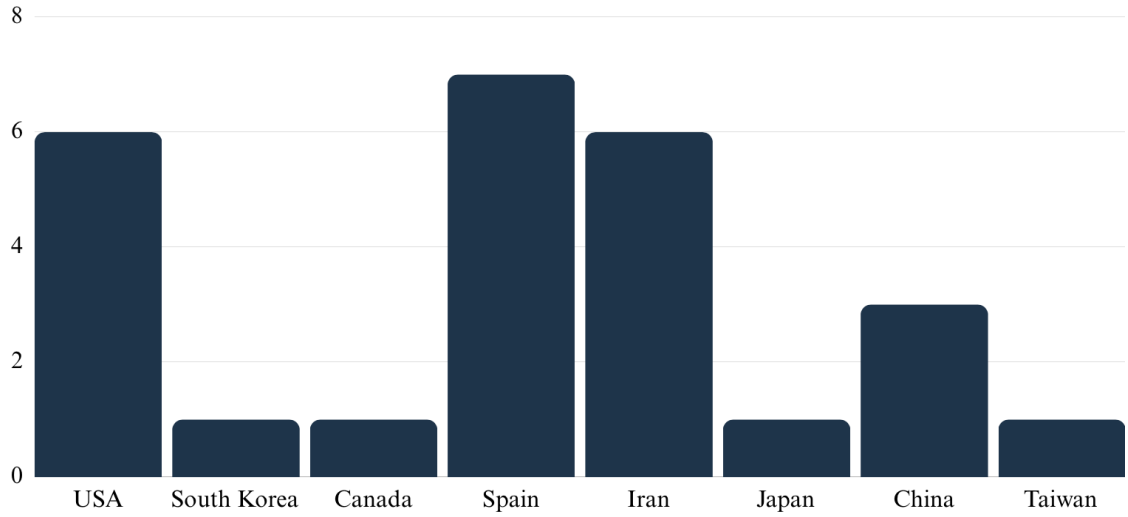

Figure 4. The Distribution of Countries of Paper Published

The research landscape for Technology-enhanced L2 Pragmatic Instruction is quite varied geographically. Spain, with 7 papers, the USA and Iran, each with 6 papers, are leading, showing a robust interest in this area. It is interesting to note that Spain and Iran, both English as a Foreign Language (EFL) countries, are at the forefront, with Spain having the highest number of publications, while the USA has traditionally been at the forefront of tech-enhanced learning. On the other hand, East Asian countries such as South Korea, Japan, China, and Taiwan, while not as prolific, still contributed a total of 6 papers, suggesting that there is room for growth in these regions. Similarly, with a single paper, Canada's involvement in this research area may be modest, but it is definitely present. These trends could possibly be a reflection of differences in educational priorities, resources, or the pace at which innovative teaching practices are adopted in these countries. The following figure 3 illustrates the research landscape for Technology-enhanced L2 Pragmatic Instruction geographically.

Spain emerges as the leader with 7 papers. Given that Spain is an English as a Foreign Language (EFL) country, it is intriguing to see it at the forefront of this research area. This could possibly signify an increased emphasis on technology-enhanced language learning methodologies within its academic and educational communities. Spain's lead might also indicate an alignment of its research priorities with global needs, especially as technological integration in language teaching becomes more prevalent.

USA and Iran both have 6 papers each. While the USA's prominence is somewhat expected, given its longstanding position at the forefront of tech-enhanced learning, Iran's contribution is

particularly noteworthy. Like Spain, Iran is also an EFL country. Its significant contribution might reflect an evolving academic landscape that's keen to integrate technological advancements in language instruction. This could be driven by a multitude of factors such as educational reforms, international collaborations, or a genuine interest in enhancing language pedagogy through technology.

The combined count for East Asian countries (South Korea, Japan, China, and Taiwan) stands at 6 papers. Individually, none of these countries might be leading, but collectively, their contribution is on par with the top players. This suggests a burgeoning interest in the region towards technology-enhanced L2 pragmatic instruction. Given the rapid technological advancements and the importance of English as a global language in these countries, there is a clear incentive to innovate in the domain of language instruction. However, the fact that their collective contribution matches individual contributions from countries like the USA and Iran indicates there is potential for growth and more intensive research activity in the future.

Canada has only 1 paper, suggesting a modest involvement. While this might seem insignificant in comparison to the other countries, it is essential not to overlook it. Canada's education system is renowned globally, and even a minor contribution can have significant implications. This single paper might represent the beginning of a more significant trend, or it might be indicative of Canada's broader research priorities.

The data paints a vibrant picture of global research trends in technology-enhanced L2 pragmatic instruction. The geographical diversity indicates a universal recognition of the importance of integrating technology into second language learning, especially in the domain of pragmatics. The trends could be a reflection of differences in educational priorities, resources, or the pace at which innovative teaching practices are adopted in these countries. Hence, while some countries and regions are currently more active in this research area, the landscape is dynamic. As technology continues to evolve and permeate educational practices, it is plausible to expect shifts in these trends, with more countries intensifying their research efforts in this domain.

The present systematic review encompasses 26 papers and presents an opportunity to briefly examine the technology employed, its effectiveness in augmenting pragmatic competence, and its influence on learners' motivation and engagement. The utilization of diverse technological tools and resources to facilitate the teaching and learning of pragmatic skills is commonly known as technology-based pragmatics instruction. Table 1 reveals that the majority of researchers in this field tend to adopt a qualitative research approach.

Table 1. Summary of the articles included

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
1.	Sykes, J.M (2018)	Scopus	Interlanguage Pragmatics, Curricular Innovation, and Digital Technologies	Computer Assisted Language Instruction Consortium (CALICO); Vol. 35 No. 2 (2018)	Conceptual	USA	There was significant progress made in Intelligent Language Processing (ILP) through the development of digital tools. It offers various benefits for teaching and learning ILP, such as improved delivery methods and interventions that enhance instructional effectiveness.
2.	Sykes, J.M & González-Lloret, M (2018)	Scopus	Exploring the Interface of Interlanguage (L2) Pragmatics and Digital Spaces	Computer Assisted Language Instruction Consortium (CALICO); Vol. 37 No. 1 (2020)	Conceptual	Spain	The integration of technological components to analyze nonverbal cues, including facial expressions, gestures, and body language, in request sequences among Spanish speakers facilitated a more comprehensive comprehension of pragmatic communication patterns by enabling real-time interactions with learners from various backgrounds.
3	González-Lloret, M (2018)	Scopus	Conversation analysis in Computer-assisted Language Learning	Computer Assisted Language Instruction Consortium (CALICO); Vol. 32 No. 2 (2015)	Conceptual	Spain	The study provides an overview of research in CALL that applies Conversation Analysis (CA) for data collection and analysis. The reviewed studies examine technology-mediated contexts, including text-based, audio, and video communication, email, forums, social networks, and games and focus on analyzing interaction organization, identifying linguistic resources, and exploring the

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
							advantages and challenges of different media for language learning.
4	González-Lloret, M (2019)	Scopus	Technology and L2 Pragmatics Learning	Annual Review of Applied Linguistics; Vol. 39 (2019)	Conceptual	Spain	The study highlights the importance of active engagement in pragmatic interactions and the use of interactive platforms for diverse texts, authentic input, valuable feedback, and multilingual resources.
5	Abrams, Z. (2013)	Scopus	Say what?! L2 Sociopragmatic competence in CMC: Skill transfer and development	Computer Assisted Language Instruction Consortium (CALICO); Vol. 30 No. 3 (2013)	Case study	USA	The study emphasizes the importance of sociopragmatic knowledge in communicative and intercultural competence. It proposes different approaches for various proficiency levels to develop sociopragmatic skills and emphasizes creating meaningful interactions for learners to enhance overall communicative competence using the L2 language.
6	Eslami, Z. R., Mirzaei, A., & Dini, S. (2015)	Scopus	The role of asynchronous computer mediated communication in the instruction and development of EFL learners' pragmatic competence	System; Vol. 48 (2015)	Mixed-method	Iran	All individuals belonging to the treatment groups exhibited superior performance as compared to those in the control group. In terms of the DCT and email communication metrics, the explicit group exhibited superior performance compared to the implicit group.
7	Abe M., Roever C. (2019)	Scopus	Interactional competence in L2 text-chat interactions: First-	Journal of Pragmatics; Vol. 144 (2019)	Case study	Japan	The study revealed the participants in text-based chat interactions prioritized generating initial ideas to solve task-

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
			idea proffering in task openings				based activities. Non-task-related conversations were less frequent compared to informal interactions. Those with higher interactional competence went beyond task-oriented discussions and had more options for presenting their ideas.
8.	Cunningham D.J. (2016)	Scopus	Request modification in synchronous computer-mediated communication: The role of focused instruction	The Modern Language Journal; Vol. 100 No. 2 (2016)	Quantitative	USA	The study indicated that learners' responses and requesting behavior were influenced by their interactions and targeted instruction. Notably, some learners showed significant improvements as they practice their requesting skills through telecollaborative exchanges.
9.	González-Lloret, M (2022)	Scopus	Technology-mediated tasks for the development of L2 pragmatics	Language Teaching Research; Vol. 26. No. 2 (2022)	Conceptual	Spain	It is necessary to integrate technology into the L2 curriculum and collaborate with researchers and technology-focused organizations. This balanced approach to teaching L2 pragmatics combines technology-based tasks with in-person interaction, allowing learners to actively engage, benefit from technology resources, and receive valuable feedback.
10.	Zhang, Y (2020)	EBSCO	The Effect of Combining Computer-Mediated Communication with Instruction on EFL	International Journal of TESOL Studies Vol. 2 No. 4 (2020)	Experimental	China	The treatment group employed CR correctly after the intervention ($p = 0.011$). Qualitative semi-structured interviews were employed to improve

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
			Learners' Pragmatic Competence				quantitative data analysis and discover L2 learner behavioral characteristics. Thematic analysis revealed three main themes: second language pragmatic knowledge, first language influence on second language acquisition, and English-learning experience.
11.	García-Gómez, A (2020)	SCOPUS	Learning through WhatsApp: students' beliefs, L2 pragmatic development and interpersonal relationships	Computer Assisted Language Learning; Vol. 35 (2020)	Quantitative	Spain	The study found that WhatsApp is not conducive for non-native language users to produce contextually relevant utterances when interacting with native English speakers. Participants' limited pragmatic competence hinders their effective communication, negatively impacting their relationships and perceptions of WhatsApp as a learning tool.
12	Eslami, Z. R. & Liu, C. N (2013)	Scopus	Learning Pragmatics through Computer-Mediated Communication in Taiwan	Iranian Journal of Society, Culture & Language; Vol. 1 No. 1 (2013)	Experimental	Taiwan	The findings of the study indicate that the provision of explicit pragmatic instruction was advantageous for the EFL students in both the Teacher Instruction and CMC groups. The results indicate that students who had undergone explicit pragmatic instruction achieved higher scores in the Discourse Completion Task post-test as compared to those who had not received such instruction. The findings of the study have also underscored the potential advantages of employing

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
							technology in the instruction of pragmatics education.
13.	Taguchi, N (2020)	Scopus	Digitally mediated remote learning of pragmatics	Foreign Language Annals; Vol. 53 (2020)	Conceptual	China	The study explored how remote learning enhances pragmatics education, highlighting effective formats such as self-access websites, teacher-designed digital games, and online participatory environments. It advised educators to embrace digitally mediated remote learning as a valuable tool for teaching pragmatics by adapting to the changing educational landscape in using technology to create engaging learning experiences.
14.	Ajabshir, Z. F. (2018)	Scopus	The effect of synchronous and asynchronous computer-mediated communication (CMC) on EFL learners' pragmatic competence	Computers in Human Behavior; Vol. 92 (2018)	Experimental	Iran	Through the implementation of an ANCOVA and multiple t-tests, it was determined that instruction focused on computer-mediated communication (CMC) is more efficacious than face-to-face (F-F) instruction. The study found no significant statistical distinction in the overall performance of the Sync and Async groups. However, variations were observed in their performance on assessments measuring their pragmalinguistic and sociopragmatic skills.

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
15	Bardovi-Harlig, K., Mossman, S., & Su, Y. (2017)	Scopus	The effect of corpus-based instruction on pragmatic routines	Language Learning and Technology; Vol. 21 (2017)	Experimental	Iran	The study emphasized the use of a tailored corpus to focus on pragmatic routines and independently search for relevant information and teacher-created materials enhance illocutionary clarity in conversations. The key pedagogical implication is to balance teacher-developed corpus-based materials and learners' corpus searches to improve speech act clarity and identify pragmatic routines.
16	García-Gómez, A. (2020).	ERIC	Learning through WhatsApp: students' beliefs, L2 pragmatic development and interpersonal relationships.	Computer Assisted Language Learning; Vol. 35 (2020)	Qualitative	Spain	Using WhatsApp to communicate with native English speakers does not appear to provide a natural setting in which non-native speakers can practice contextualizing their speech. Furthermore, the outcomes demonstrate that the participants' lack of pragmatic competence hinders their ability to communicate successfully.
17.	Blyth, C. S., & Sykes, J. M. (2020)	Scopus	Technology-enhanced L2 instructional pragmatics	Language Learning & Technology; Vol. 4 No. 2 (2020)	Conceptual	USA	The authors emphasized the exploration of innovative approaches to language teaching and learning in L2 instruction. Specifically, they propose investigating L2 pragmatics in digitally-mediated interactions, digital discourse, human-machine interaction, and the pragmatics of artificial intelligence and robotics to have a

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
							more advanced field of L2 instructional pragmatics.
18.	Minoo, A., & Nafiseh, H. (2020)	Scopus	Robot-assisted instruction of L2 pragmatics: Effects on young EFL learners' speech act performance	Language Learning & Technology; Vol. 4 No. 2 (2020)	Case study	Iran	The study highlighted that robots improved children's learning experience by capturing their attention and motivation. It was found that robot-assisted instruction positively impacted children's L2 ILP skills, specifically in speech acts as they had the opportunity to practice and enhance their understanding and use of L2 pragmatic skills through interactions with the robot.
19.	Rafieyan, V., Sharafi-Nejad, M., Khavari, Z., Siew Eng, L., & Rashid Mohamed, A. (2014)	ERIC	Pragmatic comprehension development through telecollaboration	English Language Teaching, Vol. 7 No. 2 (2014)	Conceptual	Iran	The study found that telecollaborative partnerships with target language speakers significantly improved pragmatic comprehension in EFL contexts. Iranian students who interacted with native English speakers through social networks performed better on the pragmatic comprehension test, emphasizing the importance of direct contact with target language speakers over using pragmatic materials alone in classroom instruction.
20.	Yousefi, M., & Nassaji, H. (2019)	Scopus	A meta-analysis of the effects of instruction and corrective	ITL-International Journal of Applied	Quantitative	Canada	The study found that instruction positively affects pragmatic learning, with variations depending on the type

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
			feedback on L2 pragmatics and the role of moderator variables	Linguistics; Vol. 170 No. 2 (2019)			of instruction and the mode of instruction (computer-mediated or face-to-face). Thus, it was found that Computer-mediated instruction had greater effects on pragmatic learning compared to face-to-face instruction.
21	González-Lloret, M. (2021).	ERIC	L2 pragmatics and CALL	Language Learning & Technology; Vol. 25 No 2 (2021)	Conceptual	USA	In order to improve the assessment and development of second language pragmatic proficiency, technological tools can offer immersive settings that expose learners to a diverse array of sociopragmatic situations. The present article offers a historical outlook on the techniques and platforms that have undergone experimentation in both educational and research settings for the investigation of second language pragmatics.
22	Kim, E. Y., & Brown, L. (2014).	ERIC	Negotiating pragmatic competence in computer mediated communication: The case of Korean address terms	Computer Assisted Language Instruction Consortium (CALICO); Vol. 31 No. 3 (2014)	Case study	Korea	The data indicates that the interpretation of "appropriate" usage of address terms in computer-mediated communication (CMC) among second language (L2) Korean learners is dynamic and subject to debate.
23	Mirzaei, A., Hashemian, M., & Khoramshekouh, A. (2016).	DOAJ	L2 Learners' Enhanced Pragmatic Comprehension of Implicatures via	Iranian Journal of Applied Linguistics; Vol. 19 No. 1 (2016)	Experimental	Iran	Following the instructional intervention, both experimental cohorts exhibited noteworthy enhancements in their ILP capacity to

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
			Computer-Mediated Communication and Social Media Networks				comprehend and construe L2 implicatures. Nevertheless, the ACMC cohort demonstrated considerably more substantial progress.
24	Sánchez-Hernández, A., & Barón, J. (2021).	Scopus	Teaching second language pragmatics in the current era of globalization: An introduction	Language Teaching Research; Vol. 26 No. 2 (2021)	Conceptual	Spain	Task-based language teaching gives pupils hands-on experience. Computer-mediated communication and simulated immersive environments have boosted language use outside of class. L2 pragmatic education must address English as a global language (EIL) and help students bridge linguistic and cultural barriers. Several studies suggest developing learners' metapragmatic consciousness and skills to manage English's heterogeneous nature and connected communities.
25	Tang, X. (2019).	ERIC	Use of Technology for Learning Second Language Pragmatics	Applied Language Learning; Vol. 29 (2019)	SLR	China	Technology had three primary applications, namely in educational settings, for facilitating communication, and in instances where both were required. The findings of the study indicate the efficacy of incorporating technological tools in pedagogical approaches that prioritize the teaching of pragmatics.

No	Authors (year)	Database	Title	Journal (Volume, Issue)	Research type	Country	Findings
26	Tsai, M.-H., & Kinginger, C. (2015).	ERIC	Giving and receiving advice in computer-mediated peer response activities	Computer Assisted Language Instruction Consortium (CALICO); Vol. 32 No. 1 (2015)	Experimental	USA	The present study demonstrates the potential for ambiguity to arise in dialogues where novice advisors endeavor to maintain a delicate equilibrium between offering constructive feedback and preserving amicable relations with advisees by dispensing praise in lieu of explicit directives.

3.1. Using Technology as An Instructional Tool in Teaching Pragmatic

The integration of technology in pragmatics instruction is aimed at addressing the limitations of traditional classroom teaching methods. With the rise of digital technology, the field of language teaching and learning is undergoing significant changes, requiring instructional practices to adapt and effectively incorporate technology. Sykes and Gonzales-Lloret (2019) emphasize language learners have the skills to engage in remote communication, understand authentic electronic discourses, and actively participate in digital communities. By harnessing various technologies as instructional tools, language teachers can offer learners a more engaging and interactive learning experience, thereby enhancing their motivation and interest in acquiring pragmatic skills. Consequently, technology can be applied in pragmatics instruction to enhance the input and metapragmatic information provided to learners, thus enriching their understanding of pragmatics (Isihara, 2021). This integration of technology provides learners with opportunities to engage with authentic materials, interact with real-life communicative contexts, and actively practice using pragmatic language, ultimately developing their pragmatic competence and preparing them for effective communication in technologically advanced environments.

Integrating technology into instruction offers learners numerous benefits, including exposure to authentic input, practice opportunities, immediate feedback, and personalized and flexible learning experiences. Traditional classroom instruction often falls short in providing authentic input and meaningful practice, relying instead on textbooks and contrived exercises that do not mirror real-life communication situations. On the other hand, the incorporation of digital resources allows for the widespread dissemination of authentic materials in various learning contexts (Sykes, 2018), and enables learners to access genuine input and engage in relevant practice. By leveraging technology, learners can engage with authentic language use, interact with native speakers, receive immediate feedback on their pragmatic performance, and customize their learning experiences based on their individual needs and preferences. This integration of technology facilitates a more dynamic and effective learning process, empowering learners to enhance their pragmatic competence and proficiency in real-world communicative contexts.

Numerous studies have emphasized the urgency to incorporate technology into pragmatics instruction in order to enhance learners' pragmatic competence. Among the technologies used, computer-assisted language learning (CALL) and computer-mediated communication (CMC) have been widely employed. CALL offers learners a wide range of digital resources, including web-based materials, computer applications, digital learning materials, games, spoken dialogue systems (SDSs), and visual support, all of which can effectively support pragmatic teaching. Likewise, CMC provides valuable opportunities for learners to engage in real-time communication with peers or native speakers, thereby enhancing their sociolinguistic competence. Platforms such as chat rooms, discussion forums, and online platforms facilitate interaction and collaboration, allowing learners to actively participate in authentic communicative exchanges and gain insights into the sociocultural aspects of language use.

Sykes (2018) conducted a study on the relationship between Interlanguage Pragmatics (ILP), Curricular Innovation, and Digital Technologies, emphasizing the significant role of technology in ILP development. The study recognizes that emerging digital tools have brought notable advancements to ILP and that the needs of ILP researchers and practitioners have

driven technological innovation. It offers numerous advantages for teaching and learning ILP, including new delivery methods and interventions that can enhance instruction's effectiveness. Additionally, digital tools and contexts for language analysis enable the exploration of the dynamic nature of human interaction, which is crucial for developing pragmatic competence. Moreover, it is in line with a study conducted by Sykes and González-Lloret (2018) which explored the incorporation of audio and visual elements to analyze nonverbal cues, such as facial expressions, gestures, and body language, in request sequences among Spanish speakers. It allowed for a deeper understanding of pragmatic communication patterns as it enabled real-time connections with learners from diverse contexts and enhanced the study of interlanguage pragmatics. In general, the study highlights the transformative potential of technology in ILP development and underscores the ongoing need for technological innovation to meet the evolving needs of ILP researchers and practitioners. Additionally, González-Lloret (2022) emphasizes understanding socio-pragmatic norms in technology-mediated communication for L2 learners. Educators should integrate technology into the L2 curriculum and collaborate with researchers and technology-focused entities. Therefore, a balanced approach to teaching L2 pragmatics is recommended, combining technology-mediated tasks with face-to-face interaction. This integration allows learners to engage authentically, benefit from technology's resources, and receive valuable feedback.

In alignment with the previous paragraph, Minoo and Nafiseh (2020) conducted a study to assess the effectiveness of using a humanoid robot as a facilitative technique for teaching interlanguage pragmatics (ILP) in a second language (L2) to pre-schoolers. The researchers found that the robot was a valuable tool that enhanced children's learning experience by capturing their attention and motivation. Teachers were able to program the robot with various movements, games, and activities that were both entertaining and educational. This combination of fun and instruction created an engaging learning environment for the children. The study's findings indicated that robot-assisted instruction had a positive impact on children's ability to learn and acquire L2 ILP skills. The interactive nature of the robot facilitated the development of speech acts, which are essential aspects of ILP. Through interactions and activities with the robot, children had the opportunity to practice and improve their understanding and use of L2 pragmatic skills. On the other hand, Bardovi-Harlig et al. (2017) emphasize the advantages of integrating corpus-based instruction into pragmatics teaching. By using a corpus that matches the targets' needs, learners' attention is directed toward pragmatic routines and encourages them to independently search for relevant information. Teacher-created materials assist learners in enhancing the clarity of their illocutionary force during conversations. Thus, the key pedagogical implication is that a balanced combination of teacher-developed corpus-based materials to improve speech act clarity and supported corpus searches by learners to identify pragmatic routines would be ideal.

While face-to-face interaction is important in certain situations, other studies illustrate how technology can effectively bridge the gap and provide valuable learning opportunities in different educational contexts. Cunningham (2016) conducted a study on American learners of German, focusing on their speech act production during telecollaborative exchanges with German-speaking professionals. The findings revealed that the learners' responses and changes in their requesting behavior varied based on their interactions and targeted instruction. Some learners experienced noticeable improvements as they practiced and refined their requesting skills through telecollaborative exchanges. Similarly, Taguchi (2020) explored the implementation of remote learning to enhance pragmatics education. The study highlighted the

effectiveness of structured, semi-structured, and unstructured formats, including self-access websites, teacher-designed digital games, and online participatory environments. It advocated for educators to embrace digitally mediated remote learning as a valuable tool for teaching pragmatics, emphasizing the need to adapt to the changing educational landscape and effectively utilize technology for engaging learning experiences, even in remote settings.

To conclude, the previous studies have provided valuable insights into the numerous benefits associated with the incorporation of technology as an instructional tool in the field of pragmatics education. Through the utilization of diverse technological resources, educators can create meaningful opportunities for the refinement and mastery of pragmatic skills. The incorporation of technology plays a crucial role in fostering pragmatic competence, empowering learners to adeptly navigate intercultural exchanges and advance in professional environments. Furthermore, the integration of technology enables learners to have exposure to authentic language usage as well as giving educators the ability to provide tailored teaching and create engaging learning environments that promote the growth and improvement of pragmatic skills.

3.2. Using Technology as a Medium of Communication in Teaching Pragmatics

Many people in today's highly technological society support the use of technological resources in the classroom. One area where technology has shown to be particularly useful is in the teaching of pragmatics, or the study of language in context and the appropriate use of language in social interactions. With an increasing number of digital communication technologies like video conferencing, instant messaging, and social media platforms, educators now have a wide range of resources at their disposal for incorporating technology into the classroom.

The field of second language pragmatics in technology has undergone significant evolution due to rapid advancements in this area. Recent research has investigated the effectiveness of various computer-assisted language learning (CALL) tools in enhancing the pragmatic competence of language learners (González-Lloret, 2021). Tools such as online communities, chatbots, and video conferencing applications are illustrative instances. Digital communication tools such as email, chat rooms, and instant messaging can be utilized by students to enhance their pragmalinguistic and sociopragmatic abilities as a component of technology-mediated activities. The feasibility of these activities is attributed to technology, as a majority of contemporary interactions occur in virtual spaces (Sánchez-Hernández & Barón, 2021). Previous studies on second language pragmatics in computer-assisted language learning (CALL) were primarily exploratory, with a focus on comparing computer-mediated communication (CMC) and face-to-face interactions. These investigations were conducted by Ajabshir (2019), Eslami and Liu (2013), Eslami et al. (2014), Kim and Brown (2014), Mirzaei et al. (2016), Tang (2019), Tsai and Kinginger (2014), and Zhang (2020).

In his study, Ajabshir (2019) compared the effectiveness of F-F training to synchronous and asynchronous CMC modalities in developing pragmatic skills. In contrast to traditional face-to-face (F-F) training, the research study revealed that computer-mediated communication (CMC)-based education was more conducive for English as a foreign language (EFL) students to acquire request acts with greater efficacy. However, no significant variance was observed between the two CMC instructional modalities, namely asynchronous and synchronous. In contradistinction to the preceding statement, investigations pertaining to synchronous cross-cultural communication (SCMC) with a particular emphasis on second language pragmatics have

undergone substantial expansion and diversification over the years. Recent research has focused on a variety of topics, including speech acts, indications, buffers, and the temporal organization of interactions. Tsai and Kinginger (2014) both conducted research on the same topic. Recent research has indicated that the employment of SCMC (Synchronous Computer-Mediated Communication) is a proficient approach in producing diverse speech behaviors, such as dispensing advice to others. The SCMC offers an environment that facilitates the participation of students in conversational activities that are essential for the enhancement of their second language pragmatic proficiency.

Web-based communication tools represent one of the components of computer-mediated communication (CMC). Synchronous and asynchronous computer-mediated communications (SCMC and ACMC) are two distinct forms of CMC that can be facilitated through a web browser, among various other types of CMC. The current research confirms the conclusions drawn by Eslami and Liu (2013) regarding the efficacy of computer-mediated communication (CMC) in facilitating the acquisition of language skills. Specifically, their study demonstrated that web-based CMC has the capacity to aid language learners in the identification of appropriate grammatical structures and the comprehension of pragmatic elements in the target language. The students who received instruction from CMC demonstrated superior performance on the final examination compared to their peers in the control group, with a significant margin of difference. Mirzaei et al. (2016) contend that the utilization of Web 2.0 tools and CMC equipment is more advantageous than conventional instructional settings and teacher-fronted settings, which are still common, particularly in Iran, for imparting pragmatics instruction, specifically on implicatures. The efficacy of asynchronous computer-mediated communication (CMC) modules in fostering the development of interlanguage pragmatics (ILP) exceeds that of synchronous modules, possibly attributable to the characteristics of pragmatic materials and their cognitive processing and retention by second language (L2) learners.

One strategy to promote pragmatic competence through technology is to incorporate specific instructions and tasks into online activities that allow learners to reflect on their language use and practice employing pragmatic characteristics in context. This approach has been suggested by Eslami et al. (2014) and Zhang (2020). According to a study conducted by Eslami et al. in 2014, it was discovered that the utilization of computer-mediated communication (CMC) in telecollaborative tutoring sessions, led by highly proficient non-native or native English speakers, can enhance the pragmatic competence of EFL students. This is achieved through the implementation of specific teaching tasks and exercises that aim to improve the students' awareness and observation skills. In accordance with the findings, the research conducted by Zhang (2020) indicates that the incorporation of computer-mediated communication (CMC) and instructional methods can enhance the pragmatic proficiency of English as a foreign language (EFL) learners. The previous phenomenon is evidenced by the subjects' enhanced ability to generate suitable reactions to expressions of admiration, as well as their utilization of a more diverse array of strategies for responding to compliments. The results suggest that incorporating explicit metapragmatic explanations and awareness-raising activities can facilitate the acquisition of L2 pragmatics, reduce the potential impact of L1 on L2, and enhance exposure to authentic L2 input. In conclusion, the integration of this approach holds promise for enhancing the proficiency of second language learners in pragmatic contexts.

The effectiveness of technology-based interventions in promoting learners' pragmatic development has produced inconsistent findings in some studies, despite the apparent benefits

of utilizing technology to augment pragmatic skills. The authors of the mentioned work are Garca-Gómez (2020). The findings indicate that the utilization of WhatsApp necessitates the acquisition of novel grammatical and social conventions by its users. The lack of familiarity among students with these norms could have played a role in the growing number of misinterpretations and hostility that ensued from their utilization of WhatsApp. The utilization of WhatsApp by students was found to have a negative effect on their acquisition of pragmatic competence, as a result of the persistent negative feedback they received from the group's proficient English speaker.

Recent studies have demonstrated that the integration of pragmatic techniques into online language learning activities provides learners with an opportunity to engage in reflective and practical use of the target language within authentic situations. The importance of an intentional pragmatic perspective in the classroom, particularly in relation to interaction methods, is emphasized by Sykes (2017). By acquiring knowledge of the pragmatic principles that govern communication in diverse settings, whether in virtual or physical environments, students can effectively apply this understanding to make appropriate linguistic and behavioral decisions. The study conducted by Kim and Brown (2014) investigated the evolution of Korean address phrases in diverse online contexts, including Facebook, email, Skype, a blog, Twitter, and KakaoTalk, over a duration of three months, thereby substantiating this perspective. The researchers discovered that the utilization of computer-mediated communication (CMC) provided students with greater flexibility in selecting address terms, thereby liberating them from the linguistic limitations imposed by formal educational environments. The previous results emphasize the necessity of providing systematic instruction in pragmatic competencies to individuals acquiring a new language.

To sum up, In studies where technology was used as a medium for communication, learners engaged in authentic communication with other speakers (Tang, 2019). Thus, learners used L2s in meaningful ways and gradually gained an understanding of the social rules of language use.

3.3. Pedagogical Implication and Its Future Trajectories

The field of Intercultural Language Pragmatics (ILP) has undergone a profound transformation due to the emergence of digital technologies. These technologies have revolutionized the way ILP is taught and learned by introducing innovative methods of delivering content, intervening in the classroom, and providing language analysis tools (Sykes 2017, 2018; Sykes & González-Lloret, 2020). In today's rapidly evolving technological landscape, it has become essential for second language (L2) learners and teachers to adapt to new forms of communication and utilize them to enhance their understanding of pragmatic development. Collaborations with technology-focused companies and agencies are crucial in fully harnessing the potential of these tools for L2 pragmatic learning (Abe & Roever, 2019; Ajabshir, 2019; Eslami, Mirzaei, & Dini, 2015; González-Lloret, 2021). As a result, teachers and material developers must acquire knowledge in these areas to maximize the benefits of technological innovations in language learning.

Although digital technologies in pragmatic teaching are still in their early stages, research has already illuminated their potential to capture the intricacies of pragmatic teaching development and facilitate effective integration in the classroom. As digitally-mediated communication expands, pragmatic skills are increasingly vital, requiring educators to play a

pivotal role in fostering the development of essential L2 pragmatic skills for success in a digital world. The integration of pragmatics in L2 language classrooms is critical in helping learners comprehend the significance of pragmatic components in language use, and digital spaces can further facilitate the incorporation of L2 pragmatics into the classroom setting (Alemi & Haeri, 2020; Blyth & Sykes, 2020; Cunningham, 2016; González-Lloret, 2022).

To advance the field of L2 pragmatics, it is imperative to move beyond simply teaching pragmalinguistic formulae and instead focus on the dynamic nature of language in a changing world. Digital technologies can play a transformative role in this regard by offering opportunities for authentic and contextually-rich language use, thereby enhancing learners' pragmatic competence. By carefully employing information technology (IT) and computers, communication across cultural boundaries can be promoted, and instruction oriented towards form-function and pragmatic awareness can be nurtured (González-Lloret, 2021, 2022). The integration of digital technologies in pragmatic instruction opens up new and exciting avenues for content delivery. With the advent of online platforms, educators can deliver pragmatic teaching content through interactive and multimedia-rich resources, enabling learners to engage with authentic language use in diverse cultural contexts (Sykes & González-Lloret, 2020). For example, video conferences and virtual classrooms allow learners to interact with native speakers in real-time, fostering intercultural communication and deepening their understanding of pragmatic norms and cultural nuances.

Furthermore, digital technologies facilitate effective classroom interventions by providing teachers with various tools and resources to address the specific needs of learners. Technology-assisted activities, such as online forums and discussion boards, promote collaborative learning and offer opportunities for learners to practice and develop their pragmatic skills in a supportive environment (Çiftçi & Aslan, 2019; Rafieyan et al., 2014; Tang, 2019;). Additionally, language analysis tools, such as corpus software and speech recognition programs, empower both teachers and learners to explore authentic language data, analyze pragmatic patterns, and develop a more nuanced understanding of pragmatic teaching. Moreover, digital technologies offer avenues for assessing learners' pragmatic competence. Online platforms and digital assessment tools provide opportunities for teachers to evaluate learners' pragmatic performance through interactive tasks, simulations, and real-life scenarios (Abe & Roever, 2019; González-Lloret, 2015; Kim & Brown, 2014;). By employing automated feedback and analysis tools, teachers can provide timely and targeted feedback, guiding learners in developing appropriate pragmatic strategies and fostering self-reflection.

The integration of digital technologies into pragmatic instruction holds great promise, but it is essential to approach it with caution and a critical mindset. While these technologies offer significant benefits, they also bring forth challenges and limitations (Alemi & Haeri, 2020; Blyth & Sykes, 2020). One challenge is the digital divide, which can hinder equitable access to these technologies and potentially worsen educational inequalities. Additionally, relying too heavily on digital tools may risk overlooking the human aspects of language learning and the importance of face-to-face interaction.

Future research in pragmatic teaching should further investigate the influence of digital technologies on students' pragmatic competence and intercultural communication skills. While existing studies have shown positive results, the efficacy of specific digital tools and technology-assisted activities, like online forums, video conferences, or virtual classrooms, need to be

analyzed in depth. This will help identify the most effective tools for pragmatic instruction and understand how these tools enhance learners' understanding of pragmatic norms and cultural nuances. Additionally, the role of digital technologies in developing learners' pragmatic awareness and sensitivity, crucial in navigating cultural language differences, should be investigated. This could involve the design and implementation of virtual scenarios exposing learners to various intercultural communication contexts, providing insights into the potential of digital technologies in enhancing pragmatic learning. Additionally, future studies can investigate strategies to bridge the digital divide and ensure equitable access to technology-enhanced pragmatic instruction. Researchers can explore ways to provide support and training for teachers and learners from underprivileged backgrounds or regions with limited technological resources.

4. Conclusion

In the emerging field of digital technology integration in pragmatic teaching, this systematic literature review has illustrated considerable promise for incorporating technology in L2 pragmatic instruction. As digital communication continues to grow, educators play a vital role in fostering essential L2 pragmatic abilities necessary for navigating the digital environment.The significance of pragmatics in L2 language classrooms cannot be overstated; it assists learners in comprehending the importance of pragmatic aspects in language use. Digital platforms further facilitate the integration of L2 pragmatics within classroom environments. In this context, digital technologies can serve a transformative function, offering opportunities for authentic and contextually-rich language use, thereby enhancing learners' pragmatic competence.The incorporation of digital technologies in pragmatic instruction is creating new avenues for content delivery. Online platforms and technology-assisted activities such as video conferences, virtual classrooms, and online forums enable learners to engage with real-time language use across diverse cultural contexts. Furthermore, these tools provide a supportive environment for learners to collaboratively practice pragmatic skills, thereby deepening their understanding of pragmatic norms and cultural nuances.

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