A Comprehensive Community of Inquiry Framework for Exploring Technology Enhanced Language Learning

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Abstract

The use of technology for second language (L2) acquisition has become ubiquitous, but little thought has been given to the factors that impact the language learning experience. This study aims to use the Community of Inquiry (CoI) framework to propose and validate a more comprehensive model for investigating the influence of *presence* on learners' L2 learning experience using Technology Enhanced Language Learning (TELL). Data were collected from a sample of language learners (n = 129) studying in the State of Rajasthan, India using an e-questionnaire. To scrutinize the effect of various forms of *presence*, descriptive and inferential analyses were conducted. The findings suggest strong, positive, and statistically significant associations exist between the original CoI elements (teaching presence, cognitive presence and social presence), the newly added elements (learning presence, emotional presence, and technological presence), and learning experience. These results confirm the idea that *presence* can hinder and/or enhance L2 learning experiences. No association was found between technical barriers and learning experience. The findings have theoretical and practical implications. The results suggest the value of expanding the CoI framework, scrutinizing the learners' experience, analyzing the influence of *presence*, and enriching the application of the technology for language learning. Such results may ensure TELL courses are designed as vigorous learning environs which facilitate language acquisition.

Keywords: community of inquiry, learning experience, teaching, cognitive and social presence, learning, emotional and technological presence

The COVID-19 pandemic had a significant influence on the learning experiences of learners (Yu et al., 2022). During this turbulent time, *Technology Enhanced Language Learning* (*TELL*) became the only means of learning. TELL refers to a teaching methodology, which requires electronic resources (e-resources) for promoting teaching and learning of a second language (L2). TELL deals with the manner in which technology affects the instruction and acquisition of a L2. Technology has been useful in enhancing input quality, authenticating communication, and giving quick and pertinent feedback, for the development of all language abilities, including listening, writing, reading, speaking, grammar, and vocabulary. The adoption of technology for learning assists learners in acquiring new knowledge and skills (Wood & Shirazi, 2020); it also opens new vistas for research (Rasheed et al., 2020). Instead of the most frequent language learning approaches used in higher education (e.g., face-to-face, blended/hybrid, flipped), TELL has emerged as one of the most important means of language learning in India. This change has been accompanied with a shift from teacher-centered to learner-centered approaches to learning, as learners become involuntarily dependent on technology (Dhawan, 2020) as part of the new normal (Zhou et al., 2022). Previous research looked into how learners accepted diverse forms of technologies including social networking tools (Alvi, 2021a) such as WhatsApp (Kaur et al, 2021), learning management systems (Camilleri & Camilleri, 2021), artificial intelligence for integrated learning (Mageira et al., 2022), and feedback (Alvi, 2021b). Based on these studies, learners' perceptions and acceptances emerged as central factors in shaping their learning experience (LE), in a technology-supported learning environment (Huang & Liaw, 2018).

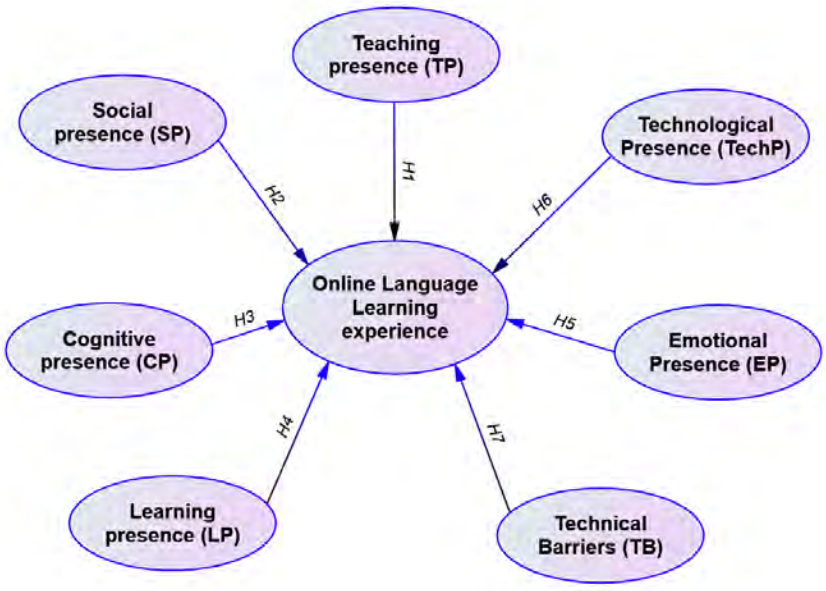
Peirce and Dewey introduced the concept of community of inquiry (CoI) and linked it to the inquiry stage of knowledge acquisition describing the essential elements of a successful learning experience (Garrison, 2017) in higher education. Several researchers have used the CoI model based on social constructivism theory to examine LE (Junus et al., 2022; Yu & Li, 2022). The CoI model is broadly defined as a learning procedure or setting where learners learn together in an environment where they can make enquiries to overcome complicated problems or learn new information. According to social constructivism, all knowledge is created through language use and social interaction, making it a shared rather than a private experience. Social constructivism explains how people learn and gain information. Moreover, the goal of an educational community is to create a setting where learners participate together to better grasp or experience the required skills.

The current study uses the CoI framework (Garrison et al., 2000) to investigate factors influencing learning English as a L2. CoI offers a conceptual model for e-learning experiences. The original model consists of three main constructs: *social presence* (SP), *teaching presence* (TP), and *cognitive presence* (CP) (Kozan & Caskurlu, 2018). Initially, utilized to investigate how e-forums produce intellectual and social community, the CoI framework has been successfully used for e-learning/blended learning (Kilis & Yıldırım, 2018). Despite its strengths, numerous studies suggest the CoI framework can be enhanced by adding new *presences* to account for important factors of effective e-learning (Cleveland-Innes & Campbell, 2012; Kozan & Caskurlu, 2018). The present study posits that the addition of new *presences,* namely *learning presence*, *emotional presence,* and *technological presence* to the CoI framework, may provide more insight into how students perceive their learning experiences in L2 classrooms. Because research on the CoI framework and its application remain relatively recent, there are no in-depth studies investigating them in the context of TELL, particularly in the Indian context. To address this gap in research, this study aims to investigate the influence of *presence* on learners' L2 learning experience using TELL. The

study addresses two research questions: 1) What factors impact the TELL learning experience in India? And 2) What level of *presence* influences the TELL experience?

The main objective of this research is to look into learners' LE with two main objectives. The main goal is to create a comprehensive and inclusive version of the CoI framework to better understand the factors impacting LE in the context of TELL in India. The second goal is to experimentally and analytically validate the proposed CoI based framework. As such, the present study extends and validates the modified model using raw data and empirical tests in the context of TELL. As illustrated in Figure 1, the study modifies and extends the CoI model for assessing the TELL of language learners in India. In short, the study's rationale is to scrutinize language learners' LE and to offer an all-inclusive framework for investigating and enhancing their experiences. The rest of the paper discusses of the CoI framework, in the context of L2, which provides a solid, descriptive theoretical foundation. Then, it proposes a modified model grounded on the existing CoI model, which investigates the critical elements for an effective e-learning experience based on social constructivism (Dewey, 1959). Finally, it validates the model using data collected from language learners.

Figure 1
Conceptual Model Based on an Extended CoI Framework



Literature Review and Hypotheses Development

Language learning is closely connected to language use. It develops through social interaction, and is a social process which requires sustained communication. TELL provides learners with the opportunity to engage in several ways using diverse online language learning tools. The CoI framework, which includes three elements called *presences*, has been successfully used for investigating the use and implementation of technology for L2 learning (Wang et al., 2022). The term *presence* refers to a social situation that arises from interactions between students and teachers (Picciano, 2017). This feeling of *presence* is needed for enhancing language learners' performance and language acquisition. Interactive environments enabled by modern technologies are beneficial for L2 learning. Within an epistemic engagement pedagogical approach, the CoI model may be regarded as an exemplary model to understand e-learning

(Shea & Bidjerano, 2010). This is particularly true for integrated, team-based e-learning (Parrish et al., 2021). The CoI model captures not only the most important aspects of learning (teaching, cognitive, and social), but also the dynamics of the e-learning environment (Garrison et al., 2010). As such, many academics have endorsed the CoI framework (Wang et al., 2022), while others have pointed out its limitations by criticizing it for lacking representation of diverse educational areas (Annand, 2019). Prior research has also called for more empirical research to test the efficacy, scalability, and feasibility of CoI in different contexts (Annand, 2019). As such, the current study aims to fill this research gap.

Cognitive Presence

Cognitive presence (CP) denotes the ability of learners to confirm/construct significance based on continued consideration and reflection (Garrison et al., 2001). Researchers have concentrated extensively on socio-cognitive assessments of e-learning for collaborative interaction (Park & Shea 2020). Much of this research has focused on CP, considering it a significant measure of the quality of learner experience as it entails genuine methodologies grounded on constructing understanding in an e-environment (Garrison et al., 2017). CP consists of four phases: *triggering events, resolution, exploration*, and *integration*. *Triggering events* refer to tasks, inquiries, or stimuli, which encourage a sense of mistrust, wonder, bewilderment, and uncertainty in learners. Such experiences enhance the need for inquiry because it motivates the learner to address their cognitive conflict. Triggering events encourage learners to use their inductive reasoning to overcome the lack of existing awareness and comprehend any new information, which leads to *resolution*. The third phase called *exploration* refers to learners' efforts to overcome their cognitive dissonance by reconstructing knowledge and by searching for new information. In these phases, learners discuss facts and information among themselves, share ideas and recommendations, and prior experiences, and investigate concepts. *Integration* is the final phase wherein learners connect the material gathered in the earlier stages to reach tentative solutions or reasons. This stage is crucial for learners to build higher-order thinking skills (Garrison & Arbaugh, 2007). Based on the extant literature on CP, it can be argued that it has a significant effect on the learners. Thus, the first hypothesis for this study (H1) stated that there is a statistically significant positive relationship between CP and LE among language learners.

Teaching Presence

Teaching presence (TP) refers to the design, expedition, and direction of social and cognitive process for realizing meaningful academic learning. Teaching presence begins with curriculum and course planning and design. It then continues throughout the delivery of the content of the course/program to promote active learning through the use of appropriate teaching tactics and assessments. Design and organization, nurturing conversation, and uninterrupted instruction influence the learner experience. Organization and design are related to course preparation and scheme, assimilating assessment, exercises, quizzes, and assignments, along with the administrative aspects of education. Facilitating discourse, the second category, tries to retain learner interest, motivation, and participation in an active learning environment. It takes control of connecting material to occasions wherein learners interact and socialize. Direct instruction is another aspect of TP. According to Anderson et al. (2001), direct instruction occurs when the teacher provides scholarly and academic leadership. Based on the above literature, the study's second hypothesis (H2) postulated that there is a statistically significant positive relationship between TP and LE among language learners.

Social Presence

Social presence (SP) is an important element in e-learning. It refers to the learners' ability to present their ideas publicly and to interact in their learning environment by building inter-personal relationships and expressing their personalities (Garrison & Arbaugh, 2007). SP is connected with the use of technology for learning purposes and it controls how social interactions unfold in online environments (Song & Yuan, 2015). It also affects learning outcomes. It is a crucial affective component as well as an important construct influencing the intensity of communication and efficacy of learning in e-learning (Mykota, 2017). It is identified as a system of personal relationships engrained in groups by roles and responsibilities, principles and expectations, and mind-sets and requirements (Annand, 2011). In workgroups, it is a system of personal relations and is linked to sociability and space. The study's third hypothesis (H3) stated that there is a statistically significant positive relationship between SP and LE among language learners.

Learning Presence

Learning presence (LP) is a cyclical process, wherein the learner plans for a language learning activity, monitors his performance, and reflects upon the consequences. The cycle recurs as the learner adjusts and prepares for the next activity. Recent studies propose the inclusion of LP as the fourth element in the CoI framework as a way to denote learner self-regulation (Wertz, 2022). Researchers maintain extant studies on self-regulation offer a solid ground for the inclusion of LP for enhanced appreciation of the LE (Huang et al., 2019). Hunag et al. (2019) proposed that factors such as behavioral, cognitive, and motivational concepts and self-efficacy encourage e-learner experience. In this context, self-efficacy is regarded as a subjective estimate of the ability to learn. It accentuates the boundaries between cognition and motivation, being a personal judgment of learners' competence level in performing tasks/acts (Shea & Bidjerano, 2010). Relatedly, self-regulation refers to perseverance and the aptitude for confronting setbacks in the completion of tasks about learning (Shea & Bidjerano, 2010). LP was utilized to evaluate learners' opinions of their efficacy and effort, giving e-learning a more "self-directed" impression; Self-efficacy and self-regulation were added as additional scales for this purpose (Wertz, 2022). Self-regulation denotes the extent to which learners feel they are motivationally, metacognitively, and psychologically dynamic contributors to the learning process (Zimmerman, 2008). To effectively complete language-related team projects, learners self-regulate their activities, divide duties, manage time, and set goals. As such, LP plays a significant part in enhancing the LE of learners using TELL. Thus, this study's fourth hypothesis (H4) stated that there is a statistically significant positive relationship between LP and LE among language learners.

Emotional Presence

Following an extensive review of the literature on the experiences of learners, *emotional presence* (EP) was added to the CoI framework's conceptual aspects. According to Cleveland-Innes and Campbell (2012), emotion is experienced by learners as a distinct *presence*. This *presence* refers to much more than just an affective response to social presence as it enhances the overall e-learning experience. EP denotes the external manifestation of feeling, affect, and sentiment in a CoI framework as learners communicate and interrelate with e-learning tools, content, peers, and teacher (Cleveland-Innes & Campbell, 2012). Emotion remains central to learning as it offers attention, interest, motivation, and social connection. When emotions are not properly regulated, learners may fail to express, assess, or modulate their approach, thus

impeding other cognitive experiences causing emotional hijacking (Cavanagh, 2016). Based on this information, the study's fifth hypothesis (H5) stated that there is a statistically significant positive relationship between EP and LE among the language learners.

Technological Presence

The present research adds one more *presence* to the CoI framework: *technological presence* (TechP). Technology is an essential influence in scientific and social progress. This concept implies that technology has both potentiality and actuality. In terms of potentiality, technology provides potential actions through which learners may realize specific actions and, more importantly, themselves. It is through TechP that learners may become familiar with their prospects to be in, and act in, the technology enhanced environment. As such, instead of focusing only on the actual use of technology, its influence must be explored through the notion of TechP. TechP "offers us opportunities, possibilities, and reveals to us potential actions, potential forms of life, and potential ways of relating to our social and physical surroundings" (Kiran, 2012, p. 93). TechP requires competence/self-efficacy, which is imperative for an effective learning environment based on technology. It is similar to Bigné et al.'s (2019) Digital Competence Framework.

In the present study, TechP denotes language learners' perceptions of their ability to use technology-related sites and tools to perform e-learning activities and tasks to attain desired learning outcomes. Researchers have found that technical knowledge has a strong beneficial impact on adoption and use of technology (Celik & Yesilyurt, 2013). TechP may be used as an indicator of an individual's intent to use technology (Kiran, 2012). Language learners need to be digitally competent for the completion of learning tasks and activities; as such, they also need to possess information and data literacy, digital content comprehension, and problem-solving. Learners with higher technological knowledge are more likely to be persistent, as they do not give up easily and try to attain their language learning objectives both inside the classroom and beyond (Lai, 2013). Language learners' TechP will be echoed in their technological skills while performing technology-based tasks (Mew & Honey, 2010), and it may significantly influence their intent to utilize e-learning facilities and applications. Thus, TechP may indicate learners' opinions of technology as beneficial and simple to use, and consequently their desire to utilize it for self-directed learning (Lai, 2013). Based on this literature, the study's sixth hypothesis (H6) stated that there is a statistically significant positive relationship between TechP and LE among language learners.

Technical Barriers

Researchers regard technical issues to be critical for e-learning (Kauffman, 2015). Technical issues and problems have been identified as *technical barriers* (TB). Internal barriers include things like attitudes and beliefs, while external barriers include time, technical and institutional support, and infrastructure. The lack of these elements as well as want of suitable communication strategies for their implementation has been identified as a reason for poor technology implementations (Alvi, 2022). Therefore, TB may refer to any existing belief that restrains usage intentions and promotes rejection of technology (Cenfetelli & Schwarz, 2011). Learners' perceived technological intricacy, which refers to the quality/state of being complex or being problematic/difficult to use, can also be highlighted as a barrier (Ali et al., 2018). Thus, while technology might help students learn more effectively, it can be a hindrance in some cases (Lane, 2019). Therefore, the study's seventh hypothesis (H7) stated that there is a statistically significant positive relationship between TB and LE among language learners.

Research Methodology

Instrument Design

To collect information from language learners, an e-questionnaire was drafted. This online questionnaire was separated into two sections. The first section collected student demographic information such as gender, age, and the standard /class in which the learners were enrolled. The second section of the e-questionnaire consisted of 59 items for assessing and quantifying forms of presence. The CoI measurement scale (TP, CP, and SP) was based on studies by Arbaugh (2008) and Swan et al. (2008). The existing scale was extended by adding five new constructs based on existing literature, namely LP (Wei et al. 2020), TechP (Tetri & Juujärvi, 2022), TB (Akhter et al., 2022), EP (Cavanagh, 2016), and LE (Woodcock et al., 2015). All of the items were adapted, adopted and modified for the current study. The items were based on a five-point Likert-scale where 1 indicated "strongly disagree" and 5 "strongly agree".

Participants and Research Design

The study's population included learners enrolled in language learning courses during the 2021–2022 academic year. The potential participants were all undergraduate students, studying in the first semester at an institute in Rajasthan, India. They had been using technology for language acquisition for at least six months. Data was collected from learners after seeking approval for the study from the ethics committee for the study of human subjects. As the study's research methodology is cross-sectional, a quantitative technique using an e-questionnaire was employed to obtain responses from language learners.

Statistical software (G*power 3.1.9) was used to calculate an adequate sample size (Faul et al., 2007) for correlation analysis. The following settings were utilized for a two-tailed test for medium effect size: α err prob = 0.05, power (1-β err prob) = 0.80 and correlation ρ H1 value = 0.3. As per the results, the minimal sample size for the investigation was 84 with an error probability of 0.05 and a confidence level of 80 percent. Based on these findings, the sample size of 129 was considered sufficient for the present study. The sample was chosen using a random sampling procedure, which ensured all learners in the population had an equal chance of being selected. The sample comprised of approximately 70% males and 30% females. The average age was 18 (*SD* = 1.87). The participants came from diverse backgrounds with nearly 60% from urban parts of Rajasthan and 40% from rural regions.

Analysis of Data

Data analysis used descriptive statistics to calculate frequency, distribution, percentage, mean, and standard deviation. Statistical analyses were carried out for verifying scale and instrument reliability. Validity of the instrument was checked by considering both the rationality and accuracy of each question's wording (how well and accurately it conveys the intended message) and the validity of the responses it elicits (how well it captures respondents' true ideas). The study used well-proven instruments. Moreover, a pilot study was conducted using 20 respondents to test the research instrument. The accuracy of the items was checked and a few minor changes were made to ensure the accuracy and validity of the instrument based on feedback received from the respondents. Finally, inferential statistics were used for hypotheses testing.

Results

The first step in the process was to use Cronbach's alpha (CA) to measure the instrument reliability. The total reliability of the instrument was above 0.90, which indicated the scale used had excellent overall reliability. The values of CA for TP, CP, SP, EP, LP, TechP, TB, and LE are presented in Table 1. The results affirm the constructs were reliable as all CA values' were above 0.83. Next, the study sought to scrutinize the level of TP, CP, SP, LP, EP, TechP, and TB among language learners in India. The mean score, called the average score, was obtained by totaling the sum of the data sets divided by the number of items for each construct. As shown in Table 1, the mean scores ranged from the lowest for TB (2.97) to the highest for TP (4.47). The standard deviation, Std.D, which refers to the average amount of variability in the dataset, was also calculated. Next, skewness, which denotes the degree of imbalance in the frequency distribution, and kurtosis, which denotes the degree of tailed-ness in the frequency distribution, were observed. The values for kurtosis and asymmetry ranged between -2/+2 which are taken as satisfactory (George & Mallery, 2010). As seen, these values ranged from fairly symmetrical for TB (between -0.5 and 0.5) to moderately skewed (0.5 and 1/-0.5 and -1) for most of the constructs, to highly skewed (greater than -1) for LP. Means, standard error, standard deviations, and Cas for the constructs are summarized in Table 1.

Table 1
Means, Standard Error, Standard Deviations, and Cronbach Alphas for the Constructs

	CA	Mean	Std. Error	SD	Skewness	Kurtosis
Teaching Presence	0.93	4.47	0.05	0.53	-0.84	0.01
Social Presence	0.89	4.10	0.06	0.68	-0.50	-0.47
Cognitive Presence	0.89	4.31	0.05	0.58	-0.59	-0.48
Learning Presence	0.84	4.44	0.06	0.64	-1.02	0.13
Emotional Presence	0.83	4.33	0.05	0.61	-0.67	0.20
Technological Presence	0.93	4.30	0.05	0.59	-0.61	-0.39
Technical Barriers	0.84	2.97	0.12	1.38	-0.01	-1.39
Learning Experience	0.88	4.38	0.05	0.57	-0.76	0.27

Table 2 reports the item-level means, errors, standard deviations, skewness, and kurtosis. The mean for items ranged from 2.81 for TB6 to 4.53 for TP10.

Table 2
Item-Level Means, Errors, Standard Deviations, Skewness, and Kurtosis

Construct	Item	Mean	Std. Error	SD	Skewness	Kurtosis
Teaching Presence (TP)	TP1	4.52	0.06	0.63	-1.14	1.17
	TP2	4.50	0.06	0.64	-0.90	-0.24
	TP3	4.49	0.06	0.64	-0.87	-0.28
	TP4	4.47	0.06	0.65	-0.82	-0.38
	TP5	4.42	0.06	0.68	-0.91	0.27
	TP6	4.44	0.07	0.74	-1.04	0.05
	TP7	4.49	0.06	0.70	-1.15	0.56
	TP8	4.40	0.06	0.69	-0.85	0.13
	TP9	4.39	0.07	0.78	-1.10	0.49
	TP10	4.53	0.06	0.69	-1.73	4.54

	TP11	4.50	0.06	0.68	-1.18	0.79
Social Presence (SP)	SP1	4.23	0.07	0.77	-0.52	-0.81
	SP2	4.31	0.06	0.73	-0.55	-0.93
	SP3	4.26	0.08	0.87	-1.18	1.22
	SP4	3.93	0.10	1.16	-1.05	0.41
	SP5	3.97	0.10	1.10	-1.07	0.58
	SP6	4.06	0.09	1.05	-0.95	0.02
	SP7	3.95	0.08	0.88	-0.53	-0.08
	SP8	4.12	0.07	0.79	-0.89	1.37
	SP9	4.07	0.08	0.91	-0.96	0.88
Cognitive Presence (CP)	CP1	4.26	0.07	0.79	-0.70	-0.42
	CP2	4.36	0.07	0.82	-1.53	3.17
	CP3	4.40	0.06	0.72	-0.89	-0.07
	CP4	4.26	0.07	0.82	-0.87	0.06
	CP5	4.37	0.07	0.75	-0.96	0.22
	CP6	4.31	0.07	0.76	-0.92	0.41
	CP7	4.37	0.06	0.73	-0.95	0.41
	CP8	4.23	0.07	0.78	-0.84	0.38
	CP9	4.33	0.07	0.76	-1.27	2.46
	CP10	4.24	0.06	0.73	-0.40	-1.02
	CP11	4.28	0.07	0.79	-0.83	-0.02
	CP12	4.32	0.06	0.68	-0.65	-0.06
Learning Presence (LP)	LP1	4.46	0.07	0.74	-1.09	0.13
	LP2	4.46	0.07	0.76	-1.53	2.85
	LP3	4.42	0.06	0.73	-0.96	0.01
Emotional Presence (EP)	EP1	4.41	0.06	0.65	-0.64	-0.57
	EP2	4.30	0.06	0.73	-0.66	-0.36
	EP3	4.28	0.06	0.73	-0.86	0.65
Technological Presence (TechP)	TP1	4.40	0.07	0.73	-1.28	2.40
	TP2	4.33	0.06	0.70	-0.55	-0.82
	TP3	4.32	0.06	0.68	-0.50	-0.79
	TP4	4.34	0.06	0.66	-0.49	-0.69
	TP5	4.40	0.06	0.67	-0.68	-0.60
	TP6	4.19	0.07	0.81	-0.55	-0.75
	TP7	4.16	0.07	0.84	-0.56	-0.71
	TP8	4.35	0.06	0.68	-0.57	-0.74
	TP9	4.30	0.07	0.81	-1.15	1.51
	TP10	4.21	0.07	0.83	-0.75	-0.22
Technical Barriers (TB)	TB1	3.09	0.13	1.47	-0.12	-1.41
	TB2	2.95	0.13	1.50	-0.03	-1.46
	TB3	2.88	0.13	1.42	-0.04	-1.34
	TB4	3.09	0.13	1.48	-0.12	-1.41
	TB5	3.03	0.13	1.48	-0.05	-1.42
	TB6	2.81	0.14	1.56	0.24	-1.50
Learning Experience (LE)	LE1	4.41	0.05	0.61	-0.50	-0.62
	LE2	4.44	0.06	0.67	-0.96	0.43
	LE3	4.40	0.06	0.70	-0.87	0.06
	LE4	4.42	0.06	0.68	-0.75	-0.57

	LE5	4.24	0.07	0.79	-0.75 -0.12

Next, the Shapiro-Wilk multivariate normality test was conducted to assess the data's normality assumption (Shapiro-Wilk value = 0.89). There was no normal distribution for any of the significant outcomes ($p < 0.001$), indicating that the normality assumption was violated. Finally, the Spearman's Rank Correlation test, which is a gauge of how well variables are related, was conducted. The strength of the link between the respondents' perceptions and their experience was measured utilizing Spearman's Rho (ρ). Positive correlations are signified by a positive value in Spearman's Rho analysis, with stronger correlations being closer to one. Negative correlations, on the other hand, are signified by a negative number, with stronger correlations being closer to a negative one. If the result is zero, there is no correlation between the variables. Statistical significance was also examined within each variable pairing. The 'α' was set to 0.05, meaning the confidence level was 0.95.

Table 3

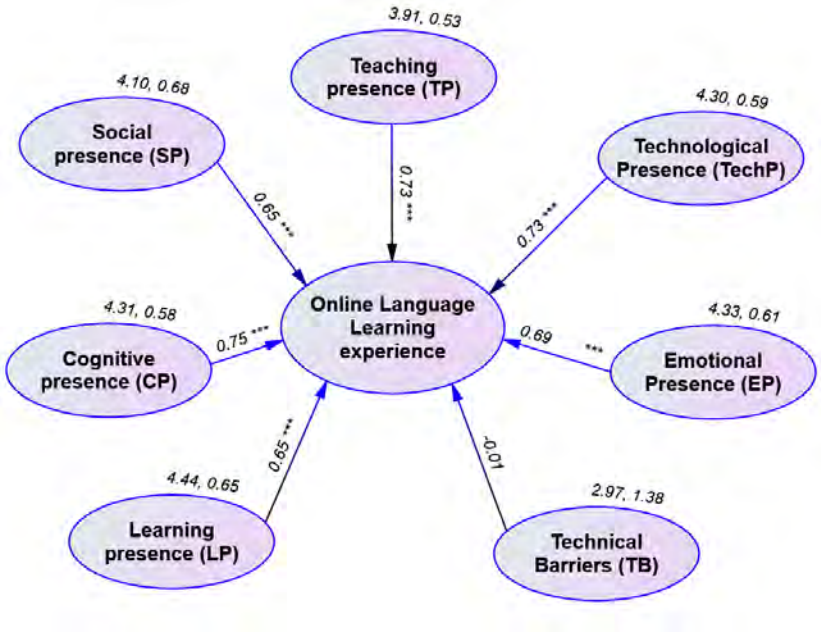
Hypotheses Testing Using Spearman's Rho

Hypotheses	Spearman's rho ρ	*p*
H1: Teaching Presence →LE	0.67**	< .001
H2: Social Presence →LE	0.65**	< .001
H3: Cognitive Presence →LE	0.75**	< .001
H4: Learning Presence →LE	0.65**	< .001
H5: Emotional Presence →LE	0.70**	< .001
H6: Technological Presence →LE	0.73**	< .001
H7: Technical Barriers →LE	-0.01	0.89

** $p < .001$

The results of the study's hypotheses are presented in Table 3. Of the study's seven hypotheses framed, postulating that there should be a statistically significant positive relationship between various presence and LE, six were validated. H1: TP and LE (ρ=0.67, p <0.001); H2: SP and LE (ρ=0.65, p <0.001); H3: CP and LE (ρ=0.75, p <0.001); H4: LP and LE (ρ=0.65, p <0.001); H5: EP and LE (ρ=0.70, p <0.001); H6: TechP and LE (ρ = 0.73, p <0.001). These hypotheses were accepted based on the outcome of the Spearman's correlation analysis. However, the findings revealed no significant relationship between TB and LE. Although the relationship between TB and LE was negative (as anticipated), it was not statistically significant (ρ = -0.01, p = 0.89). Based on these results, H7 was rejected. These results are summarized in Figure 2.

Figure 2
Research Model Showing Construct Means, Standard Deviations, and Associations with LE



Discussion

The current study sought to scrutinize the factors that impact LE in the context of TELL in India. More specifically, it examined the level of TP, CP, SP, LP, EP, TechP, and TB among Indian undergraduate language learners. Comprehending the level of these variables is important as they influence the LE and ensure language learning communities offer a secure, encouraging atmosphere without inhibitions for learners.

Based on descriptive statistics, the average mean obtained by totaling all items of each construct, confirmed that the level ranged from lowest for TB to highest for LP. Moreover, the levels were relatively high for all forms of presence. The findings revealed that language learners perceive LP as the most significant presence, followed by other forms, while TB was perceived as the least significant among the selected variables. The study also affirmed the associations between the three original factors in the CoI framework, thereby augmenting prior studies (Dempsey & Zhang, 2019).

Next, the study confirmed the comprehensive and inclusive proposed framework by extending the CoI framework. Additionally, it experimentally and analytically validated the proposed framework in the context of language acquisition. It was discovered that TP may contribute positively to LE, implying that TP is vital for improving language learners' learning experiences. TP denotes the significance of course content, activities, and mentorship (Caskurlu, 2018). The findings suggest that each aspect of TP, which includes course content, activities, and mentorship, is critical for ensuring L2 learning is made easy for learners. The results also suggest that TP contributes to the LE because language teachers play a key role in triggering learning through appropriate course conception, topic covering, and efficient feedback and communication mechanisms (Caskurlu, 2018).

SP was found to be considerably related to LE. As such, it may aid in the development of interaction among the learners which further enhances their interpersonal relationships (Zhou, 2016). This happens by increasing learners' engrossment and contribution in the learning

environment and collaborating with their peers for a mutual objective (Hilliard & Stewart, 2019). These findings imply language learners can express discrepancies, exchange opinions, study contrasts, and acknowledge support and encouragement from peers and teachers through their SP. In other words, language skills relevant to their cultures have to be acquired to enable them to debate and defend their viewpoints. These abilities can be honed through supportive dialogue and the creation of a positive learning environment by the teachers. For this objective, course design and facilitation are important since they ensure learners feel more engaged in learning and improve their critical thinking (Chang et al., 2015). In short, SP delivers prominence to communication and collaboration (Shea & Bidjerano, 2009).

In the context of Indian students, the study discovered that among the select constructs, CP had the strongest association with the language LE. This implies that students prefer to learn through cognition. Language teachers may ensure CP by utilizing interactive activities based on real or virtual scenarios in the language course. CP specifies an inquiry-learning process, comprising identifying the problem, coalescing ideas, and scrutinizing conceivable solutions. These findings contradict the results of some prior researchers who found a weak correlation between CP and learning (Martin et al., 2022). Since CP aids in the discovery and understanding of learners' identity depending on their needs, it is important for language learners. To improve performance, learners use their reflection on subjective experiences (subjectification) for producing action (pragmatic). This shows that students' inherent conscious intelligence to learn may outweigh the effect of external factors on their intellect. Thus, TP, SP, and CP in the CoI framework emphasize the e-learning progression and concentrate on LE. Group cohesion, collaboration, and communication play a significant role, as parts of SP (Garrison & Arbaugh, 2007; Kreijns, 2022). In this view, the learner needs to stay cognitively involved and endeavor to learn efficiently in the social space in which the teacher plays a substantial role. The cumulative influence of all of these elements provides the learners with an influential LE (Arbaugh et al., 2008). As such, the interrelationship between the original three variables was investigated and the results affirmed prior research, which was based on undergraduate and post-graduate data (Heilporn & Lakhal, 2020; Garrison, 2010; Dempsey & Zhang, 2019).

Further, the findings indicate strong, positive, and significant associations between the newly added constructs (LP, EP, and TechP), with the exception of TB. This suggests that students in online language learning courses are knowledgeable in e-learning technologies, have requisite technical abilities, and feel relaxed in e-learning environments. LP emerged as a key predictor of LE, demonstrating that it must be addressed by the teachers in the context of language learning. Further, the learning experience needs to be made interesting and entertaining to ensure learner involvement and engagement, which confirms previous studies (Wertz, 2022). The association between LP and LE was positive and significant; the findings affirm Ma et al.'s (2017) study. The findings also confirm Lin et al.'s (2015) study indicating that LP, which is tantamount with self-efficacy, plays an important part in CoI.

EP was found to be empirically linked with learning. It has also been found to be linked with cognition (Thomas et al., 2017). As a learning environment induces constructive or disparaging sentiments in learners, EP may influence the quality of LE. Negative feelings can confuse learners (Cleveland-Innes & Campbell, 2012), and adversely influence their LE. Therefore, teachers need to be wary of the presence of any negative feelings among language learners. In order to enhance EP, teachers may offer motivation, care, and understanding to learners (Green & Batool, 2017). Ideally, this will make them feel safe and appreciated, ensuring they also feel connected, which may boost their confidence.

TechP represents the learners' attitude towards the use of technology and is the learners' affective response to e-learning while demonstrating their experience related to its use. In this study, TechP represented learners' affective response to using technology for language acquisition. It was found to be positively associated with LE. However, it must be noted that TechP may differ according to field of study. Nevertheless, learners' abilities to speak and understand English may offer them more understanding and efficiency in e-learning environments.

To summarize, the present study empirically tested and validated the CoI framework concerning language learners in India. It confirmed that *presence* contributes to LE (Caskurlu, 2018). It emphasized the multi-dimensionality of the CoI elements, and established fundamental relations between them using a correlational model. This study extended the CoI framework by delivering an improved framework for studying and investigating language learners' experiences. This was done by including four more constructs (learning presence, emotional presence, technological presence, and technical barriers). The extended and modified framework, which depicts the many facets of the learning process that make up the LE, suggests that meaningful and substantial learning occurs when learners' expectations concerning all forms of *presence* are satisfied. Finally, the results of the study may ensure TELL courses are designed as vigorous learning environments and communities in which students, and teachers, exchange knowledge and views, besides ideas and experiences (Picciano, 2017).

Theoretical and Practical Recommendations

The findings of this study have a number of implications. Firstly, the study provides teachers, administrators, and policymakers guidance on how to recognize the elements that affect language learners' perceptions and experiences. This information can be used to enhance learner satisfaction and experience by applying the CoI framework to TELL. The proposed extended CoI model explains how learners experience *presence* and the associations between various constructs. This research has theoretical implications as it adds to the body of knowledge about e-learning courses and learner experience. To the best of the author's knowledge, it is the only investigation to incorporate four contextual elements (LP, EP, TechP, and TB) into the CoI framework. The research reveals how these factors influence LE for language learning purposes, thereby playing a critical role. It shows that CP, SP, and TP have an impact on LE, proving the validity of the CoI framework. The comprehensive CoI model is further extended and validated using raw data from language learners; thus, it contributes significantly to the extant literature on LE. This work has significant theoretical implications because the findings elucidate learners' perceptions of utilizing CoI. The modified comprehensive and inclusive model results in a more powerful illustrative model, thereby adding to the extant studies encompassing CoI by experimentally investigating LE. It fills the research gap and addresses a significant area of investigation about e-learning and language learning. However, the findings contrast with previous research, indicating that TB isn't an obstacle in the perception of language learners in India (Pillai, 2020). Further research is needed to address this discrepancy using larger and more varied samples, as well as more advanced statistical and inferential methodologies. As such, the results should not be overly generalized.

Finally, the present research has practical implications as it reveals the significance of CP, SP, TP, LP, EP, and TechP, for ensuring students' LE through e-learning, course gamification, interaction, and blended learning. All of these course formats combine virtual and real engagement for enhanced LE. Both SP and TP are vital, so instructors may ensure language

content is engaging enough for the learners and provide them with ample opportunities to engage in team activities, for promoting a more satisfying experience. Another major point raised in this study is the importance of LP and TechP. Learners must feel satisfied and content. They must feel joy, excitement, and playfulness and be technically competent. Instructors may guarantee learner satisfaction by introducing more communicative activities. In the context of a developing nation like India, instructors may pay more attention to the course design and its delivery to cater to the needs and demands of a diverse population of language learners. These results may also aid teachers, administrators, policymakers, and governments, as well as private organizations, in providing better facilities and resources for language learners in India. As such, academics, policymakers and researchers may find the CoI framework a useful tool for further study of L2 learning using technology, in various contexts.

Conclusion

The present investigation makes numerous contributions to the CoI literature. The study assessed the associations between CP, SP, LP, EP, TP, TechP, and TB. A comprehensive CoI model incorporating seven variables in the context of language learning was proposed and validated. In addition, it used a different methodology by using Spearman's rank correlation coefficient to validate seven hypotheses about the association between these constructs and LE. The proposed model may be useful for identifying the factors affecting learners' experiences and may provide valuable implications and recommendations for enhancing LE for language learners. However, the findings may be further tested using more advanced statistical and analytical techniques, including qualitative methods such as interviews or open-ended questions. Such methods would provide more in-depth coverage of learners' experiences, since language learning experiences may be more suitable for qualitative methods. The instrument also needs to be validated in other contexts using larger sample sizes and more advanced analytical methodologies. Moreover, the generalizability of the results can't be done without skepticism, as the results may differ based on context or culture. Another limitation of the study is that it is based on self-reported data which depends on the respondents' willingness to respond accurately. Learners may not be eager to respond accurately, which might bias the results. Lastly, the information was collected from learners only. Future studies may focus on other stakeholders like policymakers, government officials, and teachers. To conclude, the findings of the study have significant reference value for expanding the inquiry community's framework, comprehending the learners' experience, analyzing the influence of presence, and enriching the application of the CoI framework, thereby confirming that presence can reduce or enhance the learning experience. The results also may ensure TELL courses are designed as vigorous learning environs which facilitate language acquisition.

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