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Effects of Deliberate Practice on Blended Learning Sustainability: A Community of Inquiry Perspective

Rosa Huiju Chen

Department of Foreign Languages and Literature, National I-Lan University, Yilan City 260007, Taiwan; hjchen@niu.edu.tw

Abstract: Education for sustainable development has been regarded as a lifelong learning process and an integral part of quality education. To this end, this study aims to examine the implementation of online learning communities and deliberate practice in a blended learning context, to improve English as a foreign language (EFL) students' learning performance and engagement. Specifically, in addition to the traditional offline courses, the online film clip watching and writing tasks were adopted to ascertain the role of deliberate practice and the dimensions of the community of inquiry (COI) framework were adopted to examine the perceived effectiveness and improved performance. A quantitative study was carried out, involving 67 undergraduate freshman English course students from one university at northeastern Taiwan. The findings of this study indicate that there is statistically significant correlation between the three dimensions of community of inquiry, perceived learning and learning engagement. Moreover, teaching and cognitive presence are more predictive of students' perceived learning. Finally, this study also illustrates practical implications, to facilitate students' learning for sustainable development competency in blended learning contexts.

Keywords: blended learning sustainability; community of inquiry; deliberate practice



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1. Introduction

Blended learning, combining technology based online and traditional face to face instruction, has been widely adopted and accepted in various teaching contexts [1–3]. It is often believed that adopting a blended learning approach will lead to creating a more multimodal, engaging and learner centered learning environment, which is innovatively shaping the way instructors teach and students learn. Further, due to the outbreak of the COVID-19 pandemic, the necessary pedagogical adaptations of remote learning or a blended approach have been highlighted worldwide [4]. Nevertheless, in addition to the practical guidance and innovative solutions to ensuring the effectiveness of blended learning, most educators are more concerned about an engaging, self-regulated and learner centered learning environment. To this end, the integration of a technology enhanced education model, such as blended learning, has been given emphasis along with raising awareness of sustainable development goals (SDG) [5]. In fact, in order to meet the goal of blended learning contributing to sustainable development, educators need to, firstly, explore what the reality of blended teaching means for them; secondly, redefine the notion of engaged learning in the new, current environment and, finally, figure out the best approach to help learners produce outstanding learning experiences. All in all, the determinants of learners' academic performance have always been the major concern of educators [6].

Many studies have demonstrated the application of blended learning in various language learning contexts. Research by Khazaei and Dastjerdi [7] explored the application of SMS to the blended method of teaching L2 vocabulary and concluded that the students who received the learning materials through a blended learning approach performed better in tests than those who received the learning content in the traditional context. Likewise, Yu [8] investigated the effective use of a blended learning design in a content

based English as a foreign language (EFL) curriculum to improve learners' listening and speaking proficiencies. The results of this study indicated that the flexibility of the proposed blended model not only stimulated students' motivation and interest but constructed their independent learning strategies. However, like any other learning approach, a blended learning model comes with unique advantages as well as disadvantages. In addition to the benefits, educators are also suggested to consider some of the drawbacks before its adoption. Overall, these drawbacks range from technical challenges [9] to instructional challenges, for example, the updating of teaching resources and strategies [10].

Moreover, when it comes to the pedagogical and social perspectives of a blended learning design, more recent studies specifically put emphasis on the creation of a greater sense of community and the promotion of students' engagement and learning outcomes [11,12]. In this regard, blended learning does not simply integrate online and traditional learning but connects individual learners under a collaborative inquiry framework [6]. Accordingly, the community of inquiry (COI) framework, proposed by Garrison, Anderson, and Archer [13], has often been recognized as having considerable potential to support higher order and deep learning through the interaction of social, cognitive, and teaching presences. All of these offer a useful structure to examine students' learning experience from the perspectives of collaboration, critical thinking, and knowledge construction [1]. However, the framework of CoI has been reexamined from different angles. For instance, Xin [14] pointed out in a conceptual article that, like its face to face counterpart, online expression is multifunctional, wherein instruction, knowledge construction, and social interaction are combined in a single utterance. Due to the multifunctionality of communication, the three main aspects of CoI—cognitive presence, social presence and teaching presence—are intertwined. Therefore, the CoI framework responds to a significant fact: that communication must be continuously and intentionally produced.

This study attempts to utilize the sense of community in blended learning to supplement the face to face, college level freshman English course in an EFL context. To promote students' learning engagement and build up their learning confidence, the emphasis of blended learning is employing the use of deliberate practice on a social media learning platform. To be specific, the significance of this study was to propose a feasible and practical approach for students to be connected outside the classroom and to cultivate their cognitive engagement through the completion and sharing of an assigned online writing task. In this vein, this study draws attention to students' deliberate practice experience on an online learning platform for two reasons. Firstly, insufficient in class time has been a major challenge for EFL education. Thus, if learners were able to maintain contact on an online platform using the instructional design strategies after the traditional in-class hours, it would be a promising method with which to maintain their learning motivation and cultivate their self-efficacy. Secondly, it has been indicated that sustained deliberate practice, coined alongside the concept of instructed second language acquisition (ISLA), is needed for academic success. Bearing these in mind, the purpose of this study is to describe how a community based social learning platform was developed to supplement a college level EFL course. In addition, the impact of the CoI plus a deliberate practice paradigm on students' learning performance and their perceived effectiveness were explored.

2. Literature Review

2.1. Blended Learning and Sustainable Development

Due to the rapid expansion of information technology and the emerging need for contactless interaction during the pandemic period, the blended learning model, which combines face to face and online learning, is now the preferred course design model. Therefore, the issue of pedagogical design in blended learning courses is of special interest [15,16]. Previous studies related to the potential of blended learning in enhancing learning effectiveness have been quite evident. For example, based on interaction patterns, Szeto and Cheng [17] constructed a framework of interactions that occur in a blended synchronous learning environment, to conceptualize course development and instructional design. They

adopted a qualitative approach method to examine the instructor and students' pedagogic interactions in a blended synchronous learning environment and highlighted social presence experiences. Likewise, the results of a study by Lakhal et al. [15] showed that the main features of the pedagogical strategies used were to promote academic and social integration in blended learning, thereby considered to be important determinants of student persistence and success in higher education programs and courses. Specifically, their results also suggested that instructors will need to work more on the inclusion and assistance of online students. In addition, other factors may also affect learners' academic achievement in blended learning courses. Using a structural equation modeling approach, Lim [18] affirmed, in the findings of this study, that peer learning was a crucial element which enhanced students' self-regulation behavior.

Regarding the connection between blended learning and sustainable development, it has been argued that, through learning system design, blended learning has the potential to promote lifelong education [19]. To be specific, it is widely believed that sustainability in blended learning refers to the proper design and management of learning materials and practices, to meet not only the needs of present users but those of future users. Therefore, how to assure the affordable learning quality and long term educational impact of blended learning will remain a continuing challenge for educators. To conclude, in order to maintain a sense of community in blended learning courses, the creation of a climate to support students' open communication and further foster their sense of belonging to the learning group is needed. Although peer learning has a positive impact on students' performance, other factors which cannot be overlooked are instructors' organization in learning materials and activities and feedback providing. Therefore, it is suggested that instructors need to develop increasingly effective methods to equip students with stronger self-discipline ability to arrange their learning and it is widely believed that effective and well designed blended learning lies in the integration of technology and pedagogy selection.

2.2. Community of Inquiry and Blended Learning

Blended learning does not simply integrate online and offline instruction but also initiates learners into constructivist learning with collaborative inquiry. When it comes to knowledge construction, both individual reflections and sharing understanding among learners have been highlighted [20]. In this regard, the community of inquiry (CoI) has been widely regarded as a framework to examine the effectiveness of the blended learning process in terms of pedagogical design, peer collaboration and critical thinking [21,22]. First proposed by Garrison et al. [13], the community of inquiry framework described three key elements—social presence, teaching presence and cognitive presence. All of these offer a useful structure to define a deep and meaningful learning experience. Later revised by Shea and Bidjerano [23], learner presence, which consists of characteristics such as learning style, self-efficacy and self-regulation, was added. To be precise, as it differs in the fact that social presence facilitates students' social feelings and emotional connection to others, learner presence is shaped by students' personal level traits. Nevertheless, cognitive presence describes the extent to which students are able to construct knowledge based on communication and collaboration. In addition, obviously, teaching presence refers to the action of teachers' design and organization of the learning process, which is often believed to encourage social and cognitive presence. Accordingly, teaching presence is often regarded as an indisputable element in developing a CoI framework and is critical for the online or blended learning environment to be meaningful [24,25].

Much research has been conducted to explore the usefulness of CoI in relation to online and blended learning. Some of the studies examined whether there is a correlation between graduate students' perceived learning styles with regard to the CoI framework and reported that students adopted a more positive attitude towards the teaching presence. In fact, it is often believed that teachers design the educational process in a way help students develop and discover knowledge. Moreover, it was found that social and cognitive presence are associated with different domains based on learning styles, thereby promoting students'

ways of receiving, perceiving and processing the information presented to them during online learning [26,27]. In addition, looking at the CoI framework from a different angle, Shea and Bidjerano [28] found that a positive teaching presence can encourage students' level of self-efficacy, thus enhancing their motivation in learning processes. Rubio et al. [29] tried to compare teaching strategies and teaching presence between an online course and face to face instructional time in a Spanish blended course and concluded two major findings. More specifically, one important implication for course design is that there is a higher incidence of facilitative behaviors on the part of the teacher and the other predictable variable for course success is that, in the course, levels of online participation and grades are strongly correlated. However, researchers have also pointed out the problems of implementing the CoI framework in blended learning settings. For example, after examining the path of CoI and its application in the English as a second or foreign language (ESL/EFL) field, Miy and Diaz [30] published a literature review article and concluded that few of the existing studies focus on language teaching/learning outcomes. This coincides with the critical statement from Zehra et al. [31], that CoI is a process framework that informs instructional methods instead of learning outcomes. Therefore, there should be an opportunity to extend CoI related ESL/EFL research in the context of learning outcomes or language proficiency.

2.3. *Deliberate Practice and Language Learning*

Deliberate practice, proposed by Ericsson et al., consists of individualized self-regulated and challenging activities with a goal of improving the current level of performance. In fact, this theoretical framework describes a purposeful practice that "knows where it is going and how to get there" [32]. It is also known as a highly structured activity with an explicit goal. Later, in his follow up research, Ericsson [33] emphasized the crucial role of engagement in the acquisition of expert performance and the necessity of continued deliberate practice for the maintenance of professional performance. In order to improve some aspects of performance effectively, there are several conditions that have been identified. Firstly, deliberate practice includes well designed tasks, for example, teachers are required since beginners will not be able to break down the larger skills into individual pieces. Secondly, deliberate practice requires detailed and immediate feedback which brings out the motivation to improve performance. Finally, deliberate practice involves significant amounts of repetition over time, therefore, the model promotes a culture of continuous learning and improvement.

Previous studies of deliberate practice in the healthcare workforce and business fields have shown that a curriculum of online learning followed by deliberate practice improved American medical students' performance of oral case presentation skills [34]. In the domain of small business, the study conducted by Unger et al. [35] concluded that deliberate practice has a strong direct effect on owners' business knowledge. Moreover, business owners with higher cognitive ability and education engaged more in deliberate practice. From the perspective of academic performance and language learning, Sum's study [36] examined the effect of deliberate practice and previous knowledge on college level students' academic success in an elementary accounting course in Hong Kong and revealed that students' effort is more powerful in achieving their academic success, while previous academic knowledge merely plays a subordinate role. Accordingly, this study asserts the fact that it is commitment and continuous effort that determine academic success during the learning process. Correspondingly, the fact that sustained deliberate practice is needed for academic success has started to receive attention in the field of language learning and teaching, since this concept is recognized to be connected a great deal with second language learning [37]. For example, both from training and instructional aspects, Kellogg and Writford [38] explored the role of deliberate practice at the high school and college levels aiming at improving advanced writing skills. Their findings articulated that extensive practice under the guidance of instructors or tutors is arguably essential for writers to acquire expertise, since such practice helps writers reduce the individual memory

demand of the writing process, thereby gaining cognitive control over text production. This argument is associated with the framework of instructed second language acquisition (ISLA) which has received attention in the field of language teaching and learning. On a similar note, second language researchers devoted to the topic of optimizing second language (L2) practice pointed out that practice condition, linguistic difficulty, and individual differences need to be considered for creating optimal, deliberate, and systematic L2 practice [39,40]. Up to this point, it can be determined that, in the deliberate practice approach, the role of teacher is rather regarded as a facilitator or coach and the two most significant elements from student's side are definitely motivation and concentration.

3. Research Questions

Most previous studies exploring the application of CoI often place emphasis either, first, on building participants' sense of learning communities or, later, on examining the associations of all three elements of CoI with other factors, such as motivation and metacognition, in online settings [41,42]. However, when employing the benefits of an online learning community into a blended learning model, how to create a self-regulated learning support system and further advance learners' achievement is the most critical issue, especially in an EFL context. In light of the issues discussed above, the present study focuses on building an online, community based, learning platform to supplement a college level EFL face to face course. Specifically, the present study aims to investigate students' perceptions toward a community of inquiry in a blended learning model by examining the effect of a deliberate practice approach to students' learning achievement and self-confidence. This is based on exploring their connections with and contributions to students' levels of each presence in the CoI framework. To address these goals and purposes, this present study aims at answering the following research questions.

1. What are students' perceptions of the sense of a blended learning community that evolves in deliberate practice?
2. To what extent are the three dimensions of a community of inquiry related to learning achievement and self-confidence?
3. Which dimensions of community of inquiry predicted perceived learning and self-confidence more?

4. Methodology

4.1. Participants

The participants in the present study were 67 first year EFL undergraduate students majoring in Engineering, Food Science or Economics at a public university in northeastern Taiwan. All participants took the required Freshman English course taught by the researcher during the 2019 academic year. These students were from three classes, each class with 23, 21, and 23 students. Their face to face sessions were 2 h each week and 18 weeks per semester. After the course started, all of the participants were invited to join the online learning community together. They were between the ages of 18 and 20 and their average English proficiency level fell between CEFR (The Common European Framework of Reference for Languages) A2 and B2, with an average English learning history of 11.06 (SD = 2.77) years.

4.2. Teaching Context and Research Design

This study aims to explore the effectiveness of the community of inquiry framework in the blended learning model based on the deliberate practice approach within a foreign language course to enhance learners' learning outcomes. The model of this research is classroom action research, carried out with the four phases of planning, action, analysis and reflection. Classroom action research (CAR) is a method of employing a systematic inquiry approach, wherein instructors performed as researchers to collect and analyze the facts and information from their teaching context. In fact, it often involves a cyclical process, during which instructors start turning a "perceived problem" into a "researchable question", then

develop an action to try out and, finally, go through the analysis and interpretation [43,44]. It is often believed that, by deepening the understanding of conditions in the learning process, learning quality would be improved and instructors would be empowered to solve the learning problem.

Freshman English is a required course designed for all majored undergraduate students in Taiwan's higher education institutions. However, observations from the researcher showed that the traditional face to face learning was failing to engage students and the weekly course hours was insufficient. To implement the revised blended model, the course instructor developed an innovative instructional and learning paradigm based on the CoI framework and deliberate practice, as shown in Figure 1.

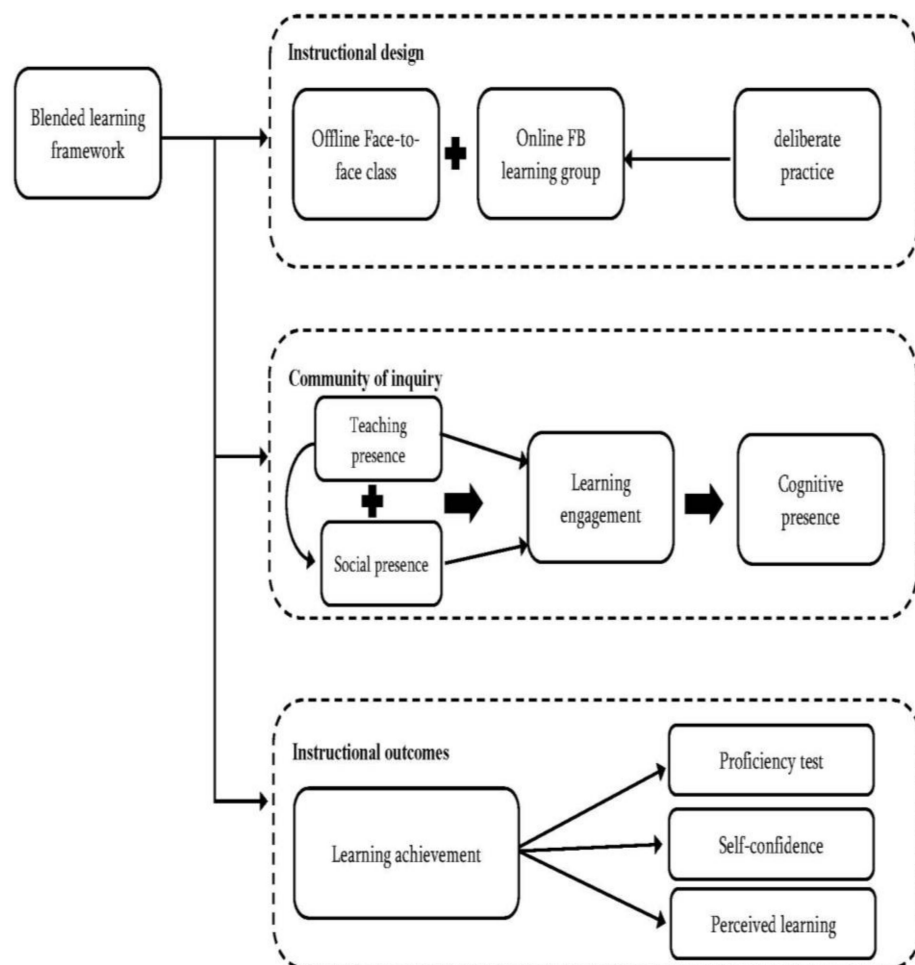


Figure 1. The overview of the blended learning design, community of inquiry and learning outcomes.

This two semester long course was employed during the Fall term of 2019 and the Spring term of 2020. The course met two hours per week for 18 weeks per semester and the study was conducted over two semesters. To meet the instructional goals of the blended learning module, the instructor, who is also the author of this study, chose the social networking site *Facebook* as the online learning platform to supplement the time insufficient regular face to face course. Originally designed for college students, *Facebook* was created in 2004 and has now become the world's most popular social network worldwide. The major reason for choosing *Facebook* as the online learning platform was because of its unique features to connect and share with other people.

Followed by the 4 steps (planning, action, analysis and reflection) of action research, the blended learning model in this study was carefully prepared and designed in terms of learning materials, teaching strategies and the organization of online activities. While the regular face to face course focuses on training the 4 English skills, including reading,

writing, listening, and speaking, the objective of the FB online course group is to establish an immersive learning environment where students are able to keep learning anywhere (e.g., outside the classroom), anytime, independently and using any device (e.g., mobile phone or laptop).

Since the online FB learning course group was designed and developed in light of the CoI framework, the instructor provided the “teaching presence” by moderating and facilitating online discussion as well as designing various kinds of affective and open communicative learning activities to promote the “social presence” between students. Specifically, a deliberate practice activity was adopted online as the major data sources used to gather information from the blended learning experience. The guiding principles, indicators and specific strategies used to support the instructional design of the CoI and deliberate practice task are presented in Table 1.

Table 1. CoI categories, indicators, and related learning activities.

Presence Categories	Indicators	Related Learning Activities and Intended Instructional Effects
Teaching Presence	<ul style="list-style-type: none"> • Design and organization • Direct instruction • Facilitating discourse 	<ul style="list-style-type: none"> • Creating online deliberate practice tasks and regularly monitoring students’ online engagement • Focusing the film clip on specific issue, providing writing feedback example • Acknowledging, encouraging, or reinforcing student contribution
Social Presence	<ul style="list-style-type: none"> • Affective expression • Open communication • Group cohesion 	<ul style="list-style-type: none"> • Instructor’s self-disclosure and use of humor • Student interacting, expressing agreement each other • Addressing collaborative activities
Cognitive Presence (steps)	<ul style="list-style-type: none"> • Triggering events • Exploration • Integration • Resolution 	<ul style="list-style-type: none"> • Writing task post and interest increased • Reflective feedback writing and sharing • Viewing others’ writing and idea exchange • Developing solution and applying knowledge

To provide a closed and comfortable online learning environment, the FB course group was designed as a private setting which was only revealed to the class students with the permission of the instructor or teaching assistants. In addition, the FB course group was introduced to the students on the first week of the course and all students were asked to conduct the required deliberate practice task starting from the fifth week of each semester. Every task interval was two weeks and the total was up to 6 tasks each semester. Figure 2 shows the entire deliberate practice process and the procedure of the study.

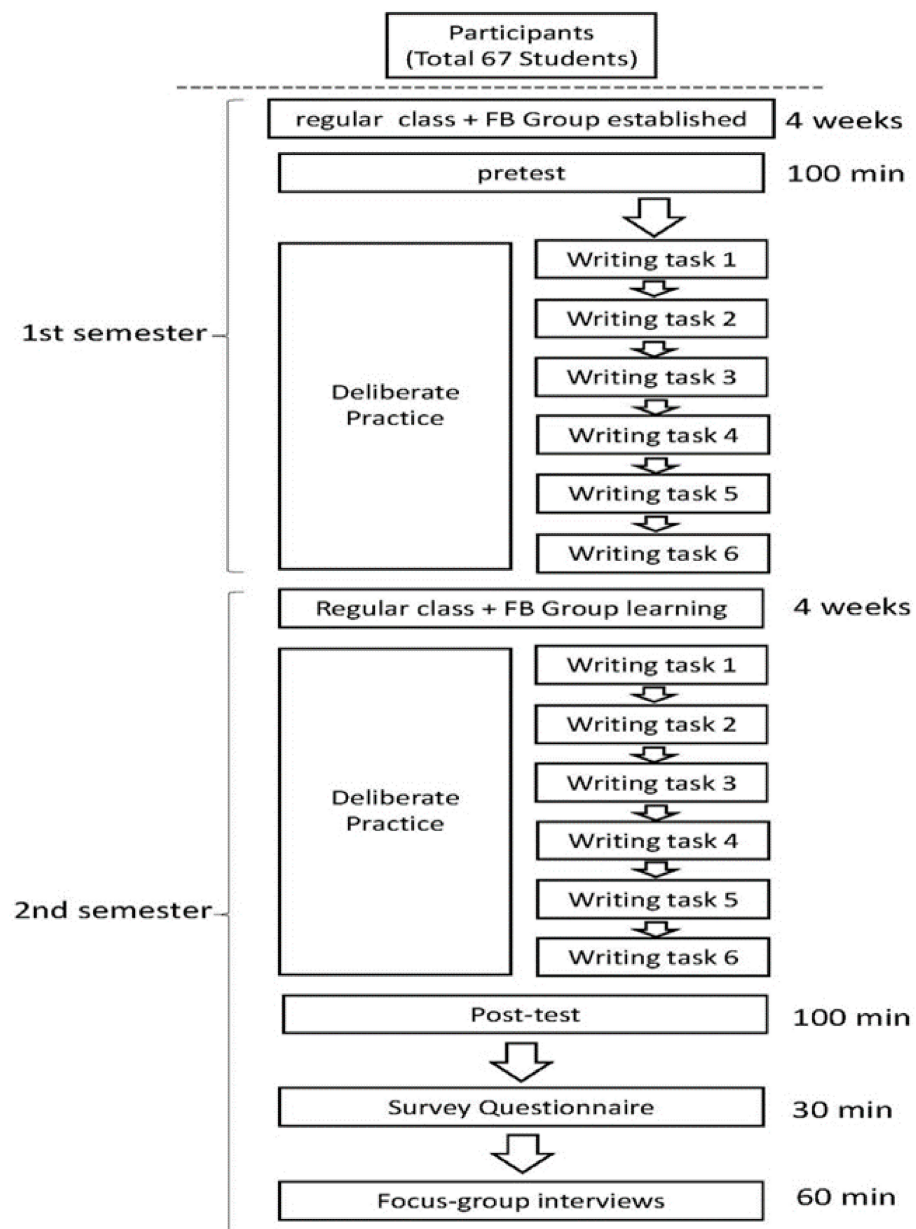


Figure 2. The procedure of the experiment.

For the purpose of providing a reflective, writing based, deliberate practice experience, a short (within 20 min) film clip, such as a Ted Talks speech, was chosen by the instructor from an English online learning platform, VoiceTube (<https://tw.voicetube.com>, accessed date 28 July 2020), was posted on the FB course group. The topics of the film clip consist of the issue of global citizenship, self-cultivation and life education, which were in line with the theme studied in regular offline courses. For example, the danger of a single story by Chimamanda Ngozi Adichie (<https://tw.voicetube.com/videos/1194>, accessed date 28 July 2020) and why 30 is not the new 20 by Meg Jay (<https://tw.voicetube.com/videos/16212>, accessed date 28 July 2020). Particularly, the reason for choosing a film clip from the VoiceTube platform was because it provided various video categories with Chinese and English subtitles to help students understand language usage, which was helpful for self-learning and much more friendly for lower proficiency students. After watching the film clip, to complete the task of each day, students were required to write a 200–300 short reflective passage and share their writing on the FB group. In addition, the instructor regularly checked the posted reflective texts, so that teaching presence could be facilitated.

To promote learning engagement, other kinds of extended learning activities and partnership strategies were explored in this study. For example, students joined a group from the offline course were required to post a problem-solving task online and each student from other groups was encouraged to respond to other students' problems, to facilitate communication and maintain mutual social presence. It is hoped that, by doing this, their cognitive presence and involvement could be observed. Figure 3 shows the example of posting work for deliberate practice.



Figure 3. Posting work for deliberate practice.

4.3. Data Collection and Analysis

Multiple sources of quantitative data were collected to understand the perceptions and engagement of participants about their blended learning experience, including (1) pre- and posttests of English proficiency, (2) one questionnaire, and (3) indicators of participation and continuity. The study was conducted over an academic year in one university. To understand participants' current level of English proficiency, a TOEIC simulation test was assessed as the pretest at the beginning of the first term. By the end of the second term, a posttest (same as the pretest) was administrated. To be specific, data relating to the first and second research questions were collected from student responses to a survey consisting of 40 Likert scale items (ranging from 1 = not at all to 5 = very much). To measure the three components of community of inquiry and the degree of participants' perceived learning of the blended learning experience, the survey items were adopted and modified from the conceptual framework of CoI by Garrison et al. [45], Shea and Bidjerano [46] and Rovai [47]. The reliability of the questionnaire was measured by Cronbach's Alpha. The reliability coefficients for each presence are: teaching presence 0.863, social presence 0.767, and cognitive presence 0.847. It is widely recognized that a coefficient between 0.7 and 0.9 is good which indicates that the internal consistency of the questionnaire is good. In addition, the survey was piloted to 50 students to validate if there were any item that should be remodified. The survey was conducted in a 30-minute session during the last meeting of the course and, later, the computer program SPSS 18 was used for statistical analysis. Specifically, several procedures were used to analyze the data. Firstly, to determine the level of students' perception of CoI, descriptive statistics were used. Next, correlation was used to determine to what extent the three dimensions of CoI related to learning achievement and self-confidence. Further, it was necessary to determine which of the items of CoI contribute to the prediction of the dependable variable such as participants' perceived learning and self-confidence. This facilitated the objective of this study and provided more detailed feedback on the pedagogical implications of the study.

5. Results

The results are derived from two modes (online and offline) of the blended learning course and are drawn from multiple sources of data: the comparison of the pre- and posttest for English proficiency, the questionnaires, and the observations. These findings are presented in the following section, organized in accordance with the research questions.

5.1. Perceived Learning Effectiveness and Dimensions of the CoI Framework

RQ1: What are students' perceptions of the sense of blended learning community that evolves in deliberate practice?

In order to examine the first research question of the study (participants' perceived learning effectiveness and three dimensions of CoI framework), an end-of-study survey was assessed using questions that focus on community of inquiry and learning engagement to give an overview of the effectiveness in terms of the instructional design of the blended learning model with deliberate practice. The descriptive statistics data are shown in Table 2. First, the mean score of response to teaching presence was 4.07 (SD = 0.63), which shows that students were sufficiently satisfied with the teachers' instruction and arrangement of learning activities. Regarding the cognitive presence, the mean was 3.93 (SD = 0.64), while the lowest score was observed social presence (M = 3.6, SD = 0.83). In addition, regarding the perceived learning and engagement, the mean scores of the responses were 3.83 (SD = 0.7) and 3.73 (SD = 0.79), respectively. Based on these results, therefore, the answer to research question one is that students perceived teaching presence more than cognitive and social presence. More specifically, it was found that students' perception of the CoI dimensions and learning engagement were above average. This indicates that the blended learning design met the instructional goal of the class and proved to be an alternative approach to the traditional face to face course.

Table 2. Descriptive statistics on students' TP, CP, SP, perceived learning and engagement.

Dimension	Mean	SD	N	Rank
Teaching Presence	4.07	0.637	67	1
Social Presence	3.6	0.83	67	5
Cognitive Presence	3.93	0.646	67	2
Perceived Learning	3.83	0.7	67	3
Learning Engagement	3.73	0.794	67	4

1 = strongly disagree, 5 = strongly agree.

5.2. Correlations between the CoI Framework Dimensions

RQ2: To what extent are three dimensions of community of inquiry related to learning achievement and self-confidence?

The relationship between the CoI dimensions, students' learning engagement and confidence were explored using the Pearson correlation coefficient. The correlational analysis, as shown in Table 3, revealed that there was a positive and statistically significant correlation between each variable. More specifically, it was found that statistically significant correlations exist between teaching presence and cognitive presence ($r = 0.741, p < 0.01$) as well as between teaching presence and engagement ($r = 0.668, p < 0.01$). Moreover, it was also found that a statistically significant correlation exists between social presence and engagement ($r = 0.796, p < 0.01$). This indicates, firstly, that a positive perception of teaching presence influences the level of students' engagement to the blended learning course. Secondly, this also indicates that the perception of a higher level of social presence is associated with learning engagement. In addition, there was a positive and statistically significant correlation between each variable and students' perceived confidence, and the stronger one is between teaching presence and confidence ($r = 0.604, p < 0.01$), which indicates that an increase in the perception of teaching presence is accompanied by an increase in learning confidence and engagement. Based on this discussion, hence, it can be concluded that the CoI dimensions seemed to have the most significant relationship with students' engagement, which impacts overall learning.

Table 3. Correlations of CoI measures, learning engagement and confidence.

Measures	1	2	3	4	5
1. Teaching Presence					
2. Social Presence	0.506 **				
3. Cognitive Presence	0.741 **	0.522 **			
4. Engagement	0.668 **	0.796 **	0.625 **		
5. Confidence	0.520 **	0.543 **	0.524 **	0.604 **	

** Correlation is significant at the 0.01 level (2-tailed).

5.3. Factors Predicting Perceived Learning and Self-Confidence

RQ3: Which dimensions of community of inquiry predicted perceived learning more?

In order to investigate the predictors of community of inquiry and perceived learning, multiple linear regression was applied to determine whether teaching, cognitive, and social presences significantly contribute to perceived learning. Table 4 presents the findings of the multiple linear regression analysis. The findings indicate that both teaching and cognitive presences are shown to have significant levels (teaching presence $\beta = 0.34$, $p < 0.01$, cognitive presence $\beta = 0.33$, $p < 0.01$). Therefore, these two predictive variables indicate a significant correlation with perceived learning. Additionally, the model explains 34% of total variance and significance, teaching presence was the best predictor of perceived learning. Overall, among the three predictors, teaching presence is the stronger, while cognitive presence is slightly weak, and social presence fails to significantly contribute to the prediction of perceived learning.

Table 4. Multiple linear regression analysis for variable predicting perceived learning.

	Perceived Learning		
	B	SE B	β
Teaching Presence	0.4	0.17	0.34 **
Social Presence	−0.01	0.11	−0.01
Cognitive Presence	0.51	0.23	0.33 **
R^2	0.39		
Adj R^2	0.36		
F	13.18 ***		
df	(3, 62)		

** $p < 0.01$, *** $p < 0.001$

6. Discussion and Pedagogical Implications

This study has examined the role of the CoI framework and learning engagement of students. The most notable findings of the study were that (1) among the three CoI presences, students were appreciative of teaching presence, (2) social presence correlated significantly to learning engagement, and (3) both teaching presence and cognitive presence are stronger predictors of perceived learning.

6.1. Dimensions of the Three CoI Presences

The results of the current study indicate that students consider the teaching and cognitive presences more positively, since they perceive it to be very important that the instructors design the blended learning process in a way that facilitates them to develop a self-regulated strategy of English language learning. It can be argued that the deliberate practice task, with their active engagement and the writing exchanged online by peers, help them build up the learning habit and improve their language proficiency. These findings support a previous study from Laforune and Lakhali [21], who confirmed that, compared to the other two presences, the teaching presence plays a more central role in reaching learning outcomes. In addition, these findings also add specificity to previous work conducted on the issue of the teaching presence's role in blended learning [48]. Indeed, findings in this

study also confirmed Szeto and Cheng's [17] assertion that teaching presence plays a central role in online and blended learning contexts, since they require the leadership from the instructors which, thereby, drives other presences. Additionally, one possible reason for the higher score of teaching presence could be the fact that students are joining the blended course. In a study of a blended English course, Huang [49] compared the teacher's roles in face to face learning and online learning and reported that, compared to online learning, teachers performed more noticeable roles in face to face learning. Therefore, it is possible that, in this current study, the teacher's role in face to face learning reinforces the teaching presence in online learning, particularly on account of the major deliberate practice task assigned by the same instructor, which belongs to the category of "direct instruction" scaffolding in blended learning [50].

Despite its potential benefits, social presence was perceived to have a lower score in this study. While previous research has indicated that social presence and cognitive presence do not contribute more to learning outcomes than teaching presence [51], it is obviously true that the extent to which social presence contributes to blended learning was situational and context specific. There are several possible reasons for this. One is that, in the CoI framework, social and cognitive presences are connected to learners' learning styles [26]. Hence, to students' ways of receiving and processing information both offline and online. The second is related to the rationale of "community development" [10], which combines technology and pedagogy to build an effective and well-designed blended learning context. Take this current study as an example: while some collaborative and peer sharing activities, such as a problem-solving task, were assigned online to promote social presence, it is undoubtedly challenging for students from two face to face class units to interact with others who they just first met online. Accordingly, compared to the unique features of teaching and cognitive presence, the perception of social presence deserves more explanations from different angles.

6.2. Correlations of CoI Framework and Learning Engagement

In addition, in relation to learning engagement, it was found that, while the positive perception of teaching presence influences the level of students' engagement with the blended learning course, a statistically significant correlation has also been observed between a higher level of social and cognitive presences and engagement. These results were in accordance with studies conducted by Lim [18], who found empirical evidence on the role of peer learning in the development of self-regulated learning. Moreover, it is also aligned with what Mouzouri [26] posited: that there is a significant relationship between the social/cognitive domains and learning style. Under this premise, it can be concluded that the increase in students' level of perceived learning is mainly based on their efforts and involvement in the class requirement. Therefore, it is also indicated that the integration of deliberate practice in the CoI framework highlight the pivotal role of the development of cognition presence, which consequently generates perceived learning and learning confidence. Obviously, these assertions highlight the importance of designing principles for the CoI framework, especially the social presence, since its goal is providing a supportive learning environment. In these circumstances, the function of the instructional scaffolding support [50], such as example provided in the deliberate practice task, should be emphasized.

6.3. Factors Predicating Perceived Learning and Self-Confidence

Concerning the predictors of perceived learning under the structure of community of inquiry, the findings of this current study reveal teaching and cognitive presences are important predictors of and contributors to students' perceived learning. This result was in accordance with previous studies [17,49]. Moreover, these findings supported what Unger et al. [35] posited: that deliberate practice and challenging tasks aim to enhance learners' engagement and performance level. Therefore, the instructional design and organization from the instructor and the triggering events, such as the deliberate task,

contributed to perceived learning more than affective factors. In the final analysis, the above findings support the importance of the role of the CoI framework and deliberate practice in blended learning context, which seems reasonable with respect to curriculum design and pedagogical implications.

6.4. Pedagogical Implications and Future Direction

The findings of this study provide a number of practical implications to instructors in an English as a foreign language (EFL) context. Firstly, this study offers an insight as to how blended learning could be able to supplement face to face, college level EFL courses and enhance students' learning engagement and confidence. When the benefits of blended learning are introduced to the regular college level curriculum as a strategy to provide sufficient learning hours, this approach may lead to students' active learning and sustained language development. Secondly, as teaching presence and cognitive presence predicted learning achievement in the blended learning context, instructors should adopt an effective pedagogical approach in regulating students' learning by encouraging active involvement, responsibility, and social interaction. Moreover, this could be performed in conjunction with the implementation of well designed scaffolding strategies to foster the CoI framework in a blended learning context. Finally, when the benefits of deliberate practice are implemented into curriculum, they have the potential to provide a self-regulated learning model where students are active and responsible for their learning. In this vain, this blended learning experience successfully supports sustainable development for students, to meet the needs of the present and future challenges. In addition, further additional research related to instructional design or curriculum development in constructing CoI framework with language learning success is necessary. For example, this could be improved by the design of social interactions among group members and an authentic task-based language approach in the continuing trend of the blended learning domain.

7. Conclusions

The purpose of this study was to investigate the connection between the community of inquiry dimensions and perceived learning in a blended learning context. Returning to the research questions posed earlier in this study, it was found that there is a statistically significant relationship between the three dimensions of CoI and learning engagement and confidence. In addition, the current study has shown that teaching and cognitive presences are more able to predict perceived learning. This is possibly attributable to the adequate instructional design as well as to the efforts from the instructors to create a feeling of community and belonging. Undoubtedly, students who were exposed to a long-lasting experience of a traditional EFL approach would benefit from the more engaged and self-directed learning experience. Furthermore, the results of this study support the importance of the role of extensive online deliberate practice in blended learning instruction, for improving the effectiveness of the learning process. It is clear, therefore, that formulating more engaged learning habits can support and increase students' efficiency and the effectiveness of learning process, especially in the context of blended learning. Particularly, this is in accordance with the potential to promote social sustainability through curriculum design to develop and maintain the availability of quality, lifelong education. The present study constitutes a first step in the investigation of the framework of CoI and deliberate practice, while it focuses on a limited number of EFL students sampling from a college level course. In order to increase the validity of results, more diverse samples from different schools and proficiency levels should be included in future studies. In conclusion, while it is evident that the integration of ICTs in blended learning offers more options for providing inclusive education, it is still learning engagement and responsibility that mainly contribute to the success of sustained learning, which is exemplified by innovative pedagogies from instructors and organizations. To this end, further empirical studies are required to identify the best ways to support the sustainable development goals in the blended learning contexts.

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