Pak. j. life soc. Sci. (2024), 22(2): 16810-16819 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.001220

RESEARCH ARTICLE

A Review on The Impact of Blended Learning, Learning Styles, and The Community of Inquiry Model on Student Interest in Learning in Higher Education

Ying Bao[1], Hashimah Mohd Yunus[2*]

[1,2] School of Education, Taylor's University, Kuala Lumpur 47500, Malaysia

ARTICLE INFO

Received: Aug 12, 2024

Accepted: Oct 30, 2024

Keywords

Blended Learning

Learning Styles

Community Of Inquiry Model

Higher Education

Educational Technology

***Corresponding Author:**

Hashimah.MohdYunus@taylors.edu.my

ABSTRACT

This study investigates the multifaceted interplay between blended learning, learning styles, and the "Community of Inquiry" (CoI) model in higher education contexts and their collective impact on student interest in learning. A flexible and dynamic educational method that accommodates a range of learning preferences is provided by blended learning, which is defined as the combination of traditional in-person instruction with online learning modalities. The theoretical framework of learning styles theory informs instructional design strategies aimed at accommodating visual, auditory, and kinesthetic learners within blended learning environments. Concurrently, the CoI model provides a framework for fostering meaningful interactions, collaborative inquiry, and a sense of community among students and instructors. By synthesizing existing literature, this study elucidates the theoretical underpinnings, empirical evidence, and practical implications of blended learning, learning styles considerations, and the CoI model in promoting student interest in learning. Insights gleaned from this study offer valuable guidance for educators and educational stakeholders seeking to optimize instructional practices and create engaging and inclusive learning environments in higher education.

The landscape of teaching and learning in modern higher education is always changing due to pedagogical advances, technology improvements, and the variety of student needs (Aithal et al., 2023). Blended learning has become a well-known pedagogical model among the many ways to instructional delivery, providing a dynamic synthesis of traditional face-to-face education with online learning modalities (Megahed & Hassan, 2022). This introduction sets the stage for exploring the multifaceted relationship between blended learning, learning styles, and the "Community of Inquiry" (CoI) model in higher education contexts and their collective impact on student interest in learning.

Blended learning represents a paradigm shift in educational delivery, reflecting the fusion of traditional and digital learning environments to create a holistic and engaging learning experience (Garrison & Vaughan, 2008). Rooted in the affordances of "Information and Communication technologies" (ICTs), blended learning encompasses a diverse array of instructional strategies, including online discussions, multimedia resources, virtual simulations, and face-to-face interactions (Graham, 2006; Rajaram, 2023). By integrating these modalities, blended learning seeks to leverage

the strengths of both traditional and online learning environments while mitigating their respective limitations.

The rationale behind blended learning lies in its potential to optimize learning outcomes by capitalizing on the complementary nature of face-to-face and online instruction (Hill et al., 2017). Traditional classroom settings offer opportunities for direct interaction, immediate feedback, and social presence among students and instructors (Picciano, 2009). On the other hand, students can interact with course materials at their own pace and convenience in online learning environments since they provide flexibility, accessibility, and asynchronous communication (Garrison & Vaughan, 2008).

Based on empirical research, mixed learning environments are associated with positive outcomes for students' academic achievement, satisfaction, and engagement. Means et al. (2013) did a meta-analysis to compare blended learning's efficacy to traditional face-to-face or online-only training in a variety of educational scenarios. The results showed that learners in mixed learning settings had greater learning retention, course completion rates, and general learning experience satisfaction.

Central to the effectiveness of blended learning is its alignment with diverse learning styles and preferences. Learning styles theory posits that individuals exhibit distinct preferences in how they perceive, process, and assimilate information (Felder & Silverman, 1988). While the validity of learning styles theory remains subject to debate, educators acknowledge the importance of accommodating diverse learning preferences in instructional design (Pashler et al., 2008). Blended learning offers a versatile platform for addressing the varied needs of learners by incorporating multimodal instructional materials and activities tailored to different learning styles (Bonk & Graham, 2006).

By incorporating learning styles into blended learning environments, teachers can improve student motivation, engagement, and learning outcomes. Teachers can help students comprehend, retain, and apply knowledge more deeply by giving them opportunities to interact with course material in visual, auditory, and kinesthetic modalities (Bonk & Graham, 2006). Moreover, aligning instructional strategies with students' preferred learning styles fosters a sense of efficacy and autonomy, thereby promoting a positive learning experience (Felder & Brent, 2005).

Effective blended learning settings support a feeling of community and collaboration between students and teachers in addition to catering to a variety of learning styles. A theoretical framework for comprehending the crucial components of a successful educational experience—cognitive presence, social presence, and teaching presence—is provided by the Community of Inquiry (CoI) model, which was put forth by Garrison, Anderson, and Archer (2000). The ability of students to create meaning through extended discussion and critical reflection is known as cognitive presence (Akyol & Garrison, 2011). A participant's level of interpersonal connection and interaction within the learning community is referred to as their social presence. The provision of design, facilitation, and guidance by the instructor to support and scaffold the learning process is referred to as teaching presence (Garrison et al., 2000).

Blended learning environments, when designed in accordance with the principles of the CoI model, create opportunities for meaningful interactions, collaborative knowledge construction, and shared inquiry among students and instructors (Cleveland-Innes, 2019; van Der Stap et al., 2024). By leveraging synchronous and asynchronous communication tools, such as discussion forums, video conferencing, and collaborative documents, educators can facilitate rich dialogue, peer feedback, and collective sensemaking (Garrison & Vaughan, 2008). Moreover, fostering a strong sense of community within blended learning environments promotes learner engagement (Shea et al., 2010).

Enhancing student interest in learning in higher education settings can be achieved through a promising strategy that integrates blended learning, learning styles considerations, and the

Community of Inquiry model. By harnessing the affordances of blended learning, accommodating diverse learning preferences, and fostering a collaborative community of inquiry, educators can create engaging and inclusive learning experiences that resonate with students' interests, motivations, and aspirations. This review article seeks to explore the theoretical underpinnings, empirical evidence, and practical implications of this multifaceted relationship, offering insights for educators, researchers, and educational stakeholders alike.

METHODOLOGY

The current literature on the interactions between blended learning, learning styles, and the "Community of Inquiry" (CoI) model in higher education environments and their effects on students' interest in learning has been systematically compiled in this review study. The methodology encompasses several key stages, including literature search and selection, data extraction, analysis, and synthesis.

LITERATURE SEARCH AND SELECTION

Comprehensive searches are conducted across multiple electronic databases, including but not limited to PubMed, ERIC, PsycINFO, Google Scholar, and Web of Science.

Keywords and search terms related to blended learning, learning styles, the “Community of Inquiry” model, student interest, and higher education are employed to retrieve relevant articles, book chapters, conference papers, and dissertations.

Inclusion criteria are established to guide the selection of studies, encompassing peer-reviewed research published in English language, focusing on blended learning interventions, learning styles assessment, CoI model implementation, and their impact on student interest in learning in higher education settings.

Exclusion criteria are applied to exclude studies that do not meet the predefined scope or fail to provide sufficient empirical evidence or theoretical insights.

The search process is documented to ensure transparency and reproducibility, including search terms used, databases searched, and the number of articles retrieved at each stage.

Data Extraction

Relevant studies meeting the inclusion criteria are systematically screened based on titles, abstracts, and full texts.

Key information from chosen studies, such as the author(s), publication year, study design, and sample characteristics, intervention or methodology employed, main findings, and implications for practice or research.

Two reviewers independently extract data in order to reduce bias and guarantee correctness and dependability.

Reviewers discuss and reach a consensus to address any differences or objections, and if needed, they confer with a third reviewer.

Analysis and Synthesis

Thematic analysis is used to synthesize extracted data to find recurrent themes, patterns, and connections in the chosen literature.

To clarify their relationships and implications for student interest in learning, important ideas, theoretical frameworks, and empirical data about blended learning, learning styles, and the CoI model are thoroughly examined.

Theoretical synthesis involves critically examining the conceptual underpinnings of blended learning, learning styles theory, and the CoI model, considering their applicability and relevance in higher education contexts.

Empirical synthesis entails synthesizing empirical evidence from selected studies to assess the effectiveness, strengths, and limitations of blended learning interventions, learning styles assessments, and CoI model implementations in fostering student interest in learning.

The synthesized findings are organized thematically and presented cohesively in the review article, drawing insights from both theoretical and empirical perspectives.

Quality Assessment

Selected papers are assessed for methodological rigor, validity, and reliability using quality evaluation criteria.

Evaluating the study design, sampling strategies, data gathering methods, analysis approaches, and reporting protocols are all part of the quality evaluation process.

Studies deemed to have methodological limitations or biases are critically appraised, and their implications for the overall synthesis are considered accordingly.

Reporting

Preferred reporting criteria for systematic reviews and meta-analyses (PRISMA) are adhered to when reporting the review study's findings in order to maintain transparency and rigor.

The review article provides a comprehensive overview of the synthesized literature, highlighting key themes, theoretical insights, empirical findings, and practical implications related to blended learning, learning styles, the CoI model, and their impact on student interest in learning in higher education.

By employing a systematic methodology encompassing rigorous literature search and selection, data extraction, analysis, and synthesis, this review study aims to provide valuable insights into the complex relationship between blended learning, learning styles, the CoI model, and student interest in learning, offering implications for future research, practice, and policy in higher education contexts.

RESULTS AND DISCUSSION

Integrated Education and Ecological Development

Owing to the swift advancement of technology and the increasing demand for distant communication, especially amidst the pandemic, blended learning—which integrates in-person and virtual learning components—has emerged as the preferred paradigm for course development. As a result, the pedagogical design component of blended learning courses is receiving more attention (Lakhal et al., 2020; Sinclair & Owston, 2020). Blended learning has been shown to have the ability to improve learning effectiveness in prior study. In order to highlight social presence experiences, Szeto and Cheng (2016), for example, created a framework of interactions that take place in blended synchronous learning environments by qualitatively examining the pedagogic interactions between instructors and students. In a similar vein, Lakhal et al. (2020) discovered that key factors influencing students' success and perseverance in higher education programs were instructional approaches that supported academic and social integration. Their findings also stressed the need for instructors to better support and include online students. Furthermore, factors such as peer learning have been identified as essential for enhancing students' self-regulation behavior in blended learning contexts, as affirmed by Lim et al. (2020) through structural equation modeling.

There is a claim that blended learning can promote lifelong learning through careful learning system design, which relates to the relationship between blended learning and sustainable development (Caird & Roy, 2019). This viewpoint, which focuses on the management and creation of instructional materials and practices to satisfy the requirements of both current and future users, highlights the significance of sustainability in blended learning. Thus, educators constantly face the difficulty of guaranteeing blended learning's affordability, quality, and long-term educational impact. Establishing a setting that encourages candid conversation among students and strengthens their feeling of community within the learning community are critical to fostering a sense of community in blended learning courses. Even though peer learning improves student performance, teachers' planning of lessons, assigning of assignments, and giving of comments are just as crucial. As a result, educators are urged to create more efficient strategies for helping pupils gain self-discipline. A well-designed blended learning program is defined as one that seamlessly combines technology and pedagogy.

Collaborative Inquiry and Integrated Education

In addition to integrating online and offline learning, blended learning exposes students to constructivist learning via group inquiry. It is commonly known that the community of inquiry (CoI) framework can be used to assess how well blended learning promotes critical thinking, peer collaboration, and pedagogical design. The CoI framework, which was first put forth by Garrison et al. (1999), outlines three essential components—social presence, instructional presence, and cognitive presence—that together form a meaningful learning experience. Later, Shea and Bidjerano (2012) included learner presence to the framework, which covered traits including self-efficacy, learning style, and self-regulation. Learner presence is impacted by personal characteristics, whereas social presence helps pupils feel emotionally connected to others. While teaching presence refers to how instructors plan and organize the learning process to support both social and cognitive presence, cognitive presence is about students' capacity to create knowledge via communication and teamwork. The relationship between students' attitudes toward teaching presence and their perceived learning styles within the CoI framework, as well as the relationship between social and cognitive presence and various learning domains based on learning styles, have all been studied in research. It's been discovered that having a positive teaching presence increases students' willingness to learn and sense of self-efficacy. In a blended learning course, Rubio et al. (2018) examined the presence and methods of instruction across online and in-person learning, noting higher levels of facilitative behaviors and a strong relationship between online participation and grades. The CoI paradigm can be difficult to apply in mixed learning environments, and there isn't much emphasis on language teaching objectives in the ESL/EFL domain. Miy and Diaz (2015) underlined the necessity of doing research on language proficiency and learning outcomes in CoI-related ESL/EFL contexts, in addition to instructional techniques.

Dimensions of the Three CoI Presences

The results of this study indicate that students have a more favorable opinion of the teaching and cognitive presences because they believe that it is important for teachers to design the blended learning process in a way that encourages students to learn English language independently. It is suggested that the intentional practice exercises, in conjunction with participation and peer writing discussions conducted online, support the development of learning habits and improve language skills. These findings support previous research by Laforune and Lakhal (2009), highlighting the crucial role that teaching presence plays in attaining learning objectives in contrast to other forms of presence. Furthermore, the results corroborate the claims made by Szeto and Cheng (2016) about the critical role that teaching presence plays in mixed and online learning environments, where other presences are influenced by instructor leadership. Additionally, students' participation in the blended course may be the reason for the greater evaluation of teacher presence. In a similar line,

Huang's study (2019) comparing the responsibilities of teachers in in-person and virtual learning settings suggests that the importance of teachers in in-person settings may support their presence as teachers in virtual learning environments, especially when it comes to direct instructional scaffolding.

In this study, social presence was rated lower even if it may have benefits. It is clear that the contribution of social presence to blended learning varies depending on the scenario and setting, despite previous studies suggesting that social presence and cognitive presence are not as impactful on learning outcomes as instructional presence (Szeto, 2015). This observation could be explained by several variables. First, according to Mouzouri (2016), the CoI paradigm integrates social and cognitive presences with each learner's unique learning style, affecting how students interpret and process information both online and off. Second, the notion of "community development" (Yu & Du, 2019) places emphasis on the pedagogical and technological integration needed to establish a successful blended learning environment. For example, in the current study, while some cooperative and peer-sharing tasks, such problem-solving assignments, were given online to encourage social presence, it is still difficult for students from various in-person class units to communicate with new peers online. As a result, in contrast to the unique qualities of instruction and cognitive presence, the sense of social presence deserves more investigation from several angles.

Correlations of CoI Framework and Learning Engagement

Furthermore, in terms of student engagement, it was found that higher levels of social and cognitive presences are statistically correlated with engagement, even though positive perceptions of teaching presence also have an impact on students' engagement levels in blended learning courses. These results are consistent with the research of Lim (2020), which offered empirical proof of the contribution of peer learning to the development of self-regulated learning. Moreover, this aligns with Mouzouri's (2016) claim that learning style and the social/cognitive domains have a substantial relationship. From this vantage point, it is implied that students' active engagement and dedication to completing course requirements are the main factors that improve their perceived learning. Deliberate practice's inclusion in the Community of Inquiry (CoI) paradigm emphasizes how crucial it is to promote cognitive presence since it improves perceived learning results and learning confidence. These findings undoubtedly highlight how important it is to incorporate social presence into the CoI framework's design principles in order to foster a positive learning environment. In light of these conditions, it is critical to stress the value of instructional scaffolding support (Fen et al., 2017), such as the examples offered in purposeful practice assignments.

Deliberate Practice and Language Learning

Ericsson et al. (1993) proposed the concept of deliberate practice, which involves engaging in individualized, self-regulated, and challenging activities aimed at enhancing current performance levels. This framework emphasizes purposeful practice characterized by a clear understanding of goals and strategies to achieve them. In subsequent research, Ericsson (2004) underscored the importance of engagement and sustained deliberate practice in achieving and maintaining expert performance. Effective deliberate practice entails well-designed tasks that beginners may require guidance to navigate, immediate and detailed feedback to motivate performance improvement, and significant repetition over time to foster continuous learning and enhancement.

Studies across various fields have highlighted the efficacy of deliberate practice in improving performance outcomes. According to Heiman et al. (2012), medical students' oral case presenting abilities were improved by a curriculum that combined intentional practice with online learning. Unger et al. (2009) showed that deliberate practice and owners' business expertise are directly correlated in the context of small enterprises, with higher levels of education and cognitive capacity being linked to higher levels of deliberate practice. In her investigation of the relationship between

intentional practice and prior knowledge and college students' academic success, Wong (2019) emphasized the importance of effort above prior knowledge in attaining success. Kulasegaram et al. (2013) highlighted the importance of deliberate and consistent practice in language learning, particularly when it comes to instances when the language is being acquired as a second language. According to Kellogg and Writeford (2009), students in high school and college need to practice writing a lot under the supervision of teachers or tutors in order to acquire advanced writing skills. They maintained that by lowering the cognitive demands of writing, this kind of practice gives writers more cognitive control over the creation of texts.

In language teaching and learning, deliberate practice has emerged as a key concept within the framework of instructed second language acquisition (ISLA). Second language scholars like Suzuki et al. (2019) and Rogers & Leow (2020), as well as Kellogg and Writeford (2009), have argued for the optimization of intentional and systematic second language practice, taking into account variables including practice settings, linguistic difficulty, and individual characteristics. Within the deliberate practice approach, teachers are viewed as facilitators or coaches, while motivation and concentration are identified as crucial elements on the part of the learner. Overall, the literature underscores the importance of deliberate practice in fostering expertise and achieving desired performance outcomes across diverse domains.

CONCLUSION

The examination of blended learning, learning styles, and the Community of Inquiry (CoI) model underscores their collective impact on student interest in learning within higher education settings. Blended learning offers a dynamic platform that accommodates diverse learning styles preferences, fostering personalized learning experiences and enhancing student engagement. The integration of the CoI model provides a theoretical framework for fostering collaborative inquiry and building a supportive learning community, further enriching the educational experience. Through the alignment of instructional strategies with learners' preferences and the cultivation of a sense of belonging, educators can enhance student interest, motivation, and ultimately, learning outcomes. In order to create inclusive and stimulating learning environments that enable students to succeed academically and personally, more research and innovation in blended learning pedagogy, learning styles assessment, and community-building techniques are crucial as we continue to navigate the changing landscape of higher education. Through the adoption of blended learning and the application of CoI framework insights, educators may foster a culture of lifelong learning and provide students with the required knowledge and skills to succeed in the twenty-first century.

REFERENCES

Aithal, P. S., & Maiya, A. K. (2023). Innovations in Higher Education Industry–Shaping the Future. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, *7*(4), 283-311.

Akyol, Z., & Garrison, D. R. (2011). Understanding cognitive presence in an online and blended community of inquiry: Assessing outcomes and processes for deep approaches to learning. *British Journal of Educational Technology*, *42*(2), 233-250.

Akyol, Z., Garrison, D. R., & Ozden, M. Y. (2009). Development of a community of inquiry in online and blended learning contexts. *Procedia-Social and Behavioral Sciences*, *1*(1), 1834-1838.

Bonk, C. J., & Graham, C. R. (2006). The handbook of blended learning: Global perspectives, local designs. John Wiley & Sons.

Caird, S., & Roy, R. (2019). Blended learning and sustainable development. *Encyclopedia of sustainability in higher education*, 107-116.

Cleveland-Innes, M. (2019). The community of inquiry theoretical framework: Designing collaborative online and blended learning. In *Rethinking pedagogy for a digital age* (pp. 85-102). Routledge.

Ericsson, K. A. (2004). Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Academic medicine*, *79*(10), S70-S81.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological review*, *100*(3), 363.

Felder, R. M., & Brent, R. (2005). Understanding student differences. *Journal of Engineering Education*, 94(1), 57-72.

Feng, X., Xie, J., & Liu, Y. (2017). Using the community of inquiry framework to scaffold online tutoring. *International Review of Research in Open and Distributed Learning*, *18*(2), 162-188.

Garrison, D. R. (2016). *E-learning in the 21st century: A community of inquiry framework for research and practice*. Routledge.

Garrison, D. R., & Vaughan, N. D. (2008). Blended learning in higher education: Framework, principles, and guidelines. John Wiley & Sons.

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The internet and higher education*, *2*(2-3), 87-105.

González Miy, D., & Herrera Díaz, L. E. (2015). Tracking the path of communities of inquiry in TEFL: A literature review. *How*, *22*(1), 80-94.

Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). John Wiley & Sons.

Heiman, H. L., Uchida, T., Adams, C., Butter, J., Cohen, E., Persell, S. D., ... & Martin, G. J. (2012). E-learning and deliberate practice for oral case presentation skills: a randomized trial. *Medical teacher*, *34*(12), e820-e826.

Hill, T., Chidambaram, L., & Summers, J. D. (2017). Playing 'catch up'with blended learning: performance impacts of augmenting classroom instruction with online learning. *Behaviour & Information Technology*, *36*(1), 54-62.

Hilliard, L. P., & Stewart, M. K. (2019). Time well spent: Creating a community of inquiry in blended first-year writing courses. *The Internet and Higher Education*, *41*, 11-24.

Huang, Q. (2019). Comparing teacher's roles of F2f learning and online learning in a blended English course. *Computer Assisted Language Learning*, *32*(3), 190-209.

Kellogg, R. T., & Whiteford, A. P. (2009). Training advanced writing skills: The case for deliberate practice. *Educational Psychologist*, *44*(4), 250-266.

Kulasegaram, K. M., Grierson, L. E., & Norman, G. R. (2013). The roles of deliberate practice and innate ability in developing expertise: evidence and implications. *Medical education*, *47*(10), 979-989.

Kurek, M., & Müller-Hartmann, A. (2019). The formative role of teaching presence in blended Virtual Exchange.

Lafortune, A. M., & Lakhal, S. (2019). Differences in students' perceptions of the community of inquiry in a blended synchronous delivery mode. *Canadian Journal of learning and Technology*, *45*(3).

Lafortune, A. M., & Lakhal, S. (2019). Differences in students' perceptions of the community of inquiry in a blended synchronous delivery mode. *Canadian Journal of learning and Technology*, *45*(3).

Lakhal, S., Mukamurera, J., Bédard, M. E., Heilporn, G., & Chauret, M. (2020). Features fostering academic and social integration in blended synchronous courses in graduate programs. *International Journal of Educational Technology in Higher Education*, *17*, 1-22.

Lim, C., Ab Jalil, H., Ma'rof, A., & Saad, W. (2020). Peer learning, self-regulated learning and academic achievement in blended learning courses: A structural equation modeling approach. *International Journal of Emerging Technologies in Learning (IJET)*, *15*(3), 110-125.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2013). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. US Department of Education.

Megahed, N., & Hassan, A. (2022). A blended learning strategy: reimagining the post-Covid-19 architectural education. *Archnet-IJAR: International Journal of Architectural Research*, *16*(1), 184-202.

Mouzouri, H. (2016). The relationships between students' perceived learning styles and the community of inquiry presences in a graduate online course. *International Journal of Emerging Technologies in Learning (Online)*, *11*(4), 40.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*, 9(3), 105-119.

Picciano, A. G. (2009). Blending with purpose: The multimodal model. *Journal of Asynchronous Learning Networks*, 13(1), 7-18.

Rajaram, K. (2023). Blended Learning. In *Learning Intelligence: Innovative and Digital Transformative Learning Strategies: Cultural and Social Engineering Perspectives* (pp. 177-215). Singapore: Springer Nature Singapore.

Rogers, J., & Leow, R. P. (2020). Toward greater empirical feasibility of the theoretical framework for systematic and deliberate L2 practice: Comments on Suzuki, Nakata, & DeKeyser (2019). *The Modern Language Journal*, *104*(1), 309-312.

Rubio, F., Thomas, J. M., & Li, Q. (2018). The role of teaching presence and student participation in Spanish blended courses. *Computer Assisted Language Learning*, *31*(3), 226-250.

Shea, P., & Bidjerano, T. (2012). Learning presence as a moderator in the community of inquiry model. *Computers & Education*, *59*(2), 316-326.

Shea, P., Pickett, A., & Pelz, W. (2010). Enhancing student satisfaction through blended learning: A case study. In C. J. Bonk & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 318-336). John Wiley & Sons.

Sidiropoulou, Z., & Mavroidis, I. (2019). The relation between the three dimensions of the community of inquiry and the learning styles of students in a distance education programme. *International Journal of Emerging Technologies in Learning (Online)*, *14*(23), 180.

Sinclair, M., & Owston, R. (2006). Teacher professional development in mathematics and science: A blended learning approach. *Canadian journal of university continuing education*, *32*(2).

Suzuki, Y., Nakata, T., & Dekeyser, R. (2019). The desirable difficulty framework as a theoretical foundation for optimizing and researching second language practice. *The Modern Language Journal*, *103*(3), 713-720.

Szeto, E. (2015). Community of Inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching?. *Computers & Education*, *81*, 191-201.

Szeto, E., & Cheng, A. Y. (2016). Towards a framework of interactions in a blended synchronous learning environment: What effects are there on students' social presence experience?. *Interactive Learning Environments*, *24*(3), 487-503.

Unger, J. M., Keith, N., Hilling, C., Gielnik, M. M., & Frese, M. (2009). Deliberate practice among South African small business owners: Relationships with education, cognitive ability, knowledge, and success. *Journal of Occupational and Organizational Psychology*, *82*(1), 21-44.

van Der Stap, N., van den Bogaart, T., Rahimi, E., & Versendaal, J. (2024). Fostering online interaction in blended learning through social presence and convergence: A systematic literature review. *Journal of Computer Assisted Learning*.

Wong, H., Sum, C., Chan, S., & Wong, R. (2019). Effect of deliberate practice and previous knowledge on academic performance. *International Journal of Business and Information*, *14*(1), 25-46.

Yu, W., & Du, X. (2019). Implementation of a blended learning model in content-based EFL curriculum. *International Journal of Emerging Technologies in Learning (Online)*, *14*(5), 188.