



An Empirical Study on Online Teaching Presence of Kindergarten Teachers

Lijuan Shen¹ (✉), Loy Chee Luen², and Zhanfeng Wang³

¹ National Child Development and Research Center, Sultan Idris Education University, 35900 Perak, Malaysia

P20191000810@siswa.upsi.edu.my

² Faculty of Human Development, Sultan Idris Education University, 35900 Perak, Malaysia
loy.cl@fpm.upsi.edu.my

³ Faculty of Humanities and Teacher Education, Wuyi University, Wuyishan 354300, China

Abstract. This study aims to enhance the online presence of kindergarten teachers and meet the actual needs of different types of learners, educators, and course teaching. This study mainly starts from the perspective of “presence” to analyse the structural characteristics of online presence in online teaching spaces and to conduct an all-round investigation into the problem of presence in the online teaching process under the framework of exploring the community theory of CoI (community of inquiry). The data obtained by using SPSS data analysis software confirms that an online teaching presence helps improve the learning effect. The results show that: (1) Through the analysis of the current online teaching mode of kindergarten teachers, strengthening the presence of online teaching is conducive to improving the online teaching effect. (2) The theory of online presence can improve the effect of online teaching.

Keywords: Education · Informatization · Online Teaching Presence · Kindergarten Teachers

1 Introduction

In recent years, internet+, big data, and other network information technologies are accelerating the in-depth integration of education and teaching, and the development of online education is steadily moving forward and innovating [1]. The introduction of information technology has changed the general mode of teaching activities, and profound changes have been made in teaching methods, tools, content, and other elements. These have reshaped traditional education and also promoted the overall innovation of educational models and learning environments [2]. The focus of teachers’ online teaching has gradually shifted to rich professional knowledge and professional ability. Although online teaching can break away from time and space constraints and share learning resources conveniently, it also has problems such as insufficient personalization and insufficient collaboration in the teaching process. The temporal and spatial separation of teachers and students will lead to a sense of loneliness and helplessness in learners, resulting in learning slack and affecting the teaching quality of online classrooms [3].

© The Author(s) 2024

P. Qi and Z. Chen (Eds.): ICBDIE 2023, AISR 178, pp. 744–751, 2024.

https://doi.org/10.2991/978-94-6463-238-5_97

The loneliness of learners comes from the quasi-separated state between themselves, educators, and peers. The lack of interaction between students in the online teaching environment is to blame for this situation. Therefore, online teaching should pay attention to learners, peers, and coexistence among teachers, i.e., enhancing online teaching presence [4]. On the one hand, learners have a sense of online presence, which can promote interaction between them and peers in emotion, environment, behaviour, action, and cognition. On the other hand, it can enhance social learning among learners, free teachers from daily teaching chores, and focus more energy on the design of the learning environment. A deep and meaningful learning environment can promote the effect of presence among learners and ultimately help learners complete advanced learning [5].

Early childhood education is an important stage for children to receive enlightenment education. Therefore, the application of informatization in kindergarten teachers can not only promote the development of preschool teachers' informatization and enrich the form and content of teaching activities but also improve the quality of teaching and promote children's cognitive learning and development [6]. Based on the above problems, this study mainly discusses the current situation of kindergarten teachers' online teaching and children's perceptions, proposes solutions to the existing problems, and gives examples of each. Additionally, it studies the theoretical framework of online presence, analyses the basis and principles for the construction of the framework, and determines the dimensions of online teaching presence from teaching, society, emotion, learning, and cognition. Finally, combined with the model statistical analysis of the factors affecting teachers' online sense of presence in the teaching process, the teaching effect of the online sense of presence theory is summarized. The study contributes to improve kindergarten teachers' online presence, reduce anxiety and loneliness in online teaching, promote learners' social learning, standardize teachers' strategies to create a presence in online teaching, and meet the actual needs of learners, educators, and curriculum teaching.

2 Literature Review

The research on the theoretical framework of online presence started with a review of relevant literature as a representative of the third generation of international distance education. Their research results play a key role in promoting the formation and development of the online presence theory [7]. In 2000, Canadian scholars Garrison, Anderson, et al. first proposed the CoI framework [8]. And also Berge is one of the earliest scholars who studied teachers' online roles. He believed that teachers mainly played teaching, management, and social roles in the process of online teaching [9]. Among them, the teaching role refers to encouraging students to share and construct knowledge through interactive discussions, designing distinctive teaching activities, and providing students with classroom information, learning feedback, and guidance [10]. As online teaching presence theory keeps getting better, increasing researchers are looking at how the community theoretical framework works in real life. An empirical study was conducted on the sense of online teaching by Joshi et al. [11] A case study of cognitive presence was made by Sepulveda-Escobar et al. [12]. Fiock believed that distance teachers needed to have rich teaching experience and be able to choose the media, develop learning

materials, and organize classroom distance discussion, including the selection of appropriate communication media technologies based on specific conditions, the selection and design of discussion issues, and organizational skills for discussion [13]. Scholars in this field have looked into the theory of online presence in great detail.

In summary, researchers have paid increasingly attention to the learning behaviour, learning process, and learning psychology of students in the online teaching process. Based on the existing theoretical results, this study explores the current situation of kindergarten teachers' online teaching presence and verifies that improving online presence helps to improve the quality of online classroom teaching.

3 Methods

3.1 CoI Community Theory

Exploring community theory (CoI) and analysing the relationship between teaching, cognition, and social presence The CoI framework, based on educational experience, divides online presence into teaching presence, social presence, and cognitive presence [14]. The interaction between them is shown in Fig. 1.

Teaching presence is the design, utilization, and management of learning cognition and social processes when achieving learning outcomes with personal significance and educational value. Social presence refers to learners' ability to socialize and emotionally connect in a friendly, supportive environment. Cognitive presence is the degree to which learners acquire meaning construction and understanding through collaboration and reflection. The interaction between them emphasizes that educators should make full use of teaching presence and social presence to promote learners' cognitive presence [15]. The CoI framework gives researchers a way to look at text records, which can be used to measure each type of presence, such as direct teaching, teaching management, and building knowledge [16]. Social presence indicators are team cohesion, open communication, and emotional expression. High-level cognitive presence includes the stages of stimulating events, collaborative exploration, information integration, and problem-solving. It guides teachers to promote educational communication in the form of optimal computer discussion [17]. The CoI framework aims to promote learners' higher-order thinking and deep learning, emphasising the importance of critical thinking and deep learning, as shown in Fig. 2.



Fig. 1. CoI community theory framework

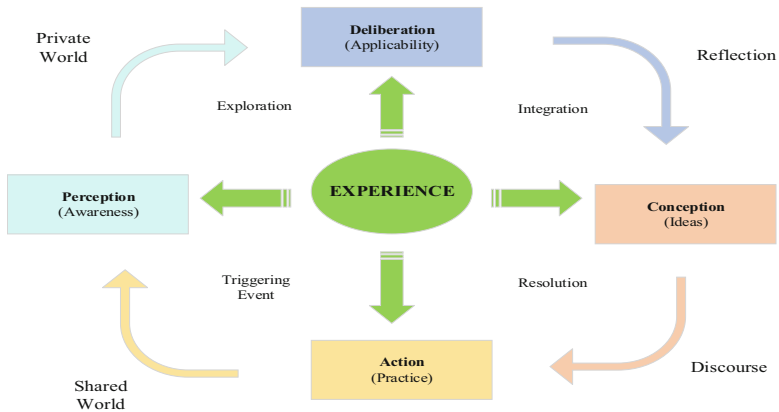


Fig. 2. Exploration model of online sense of clinical practice

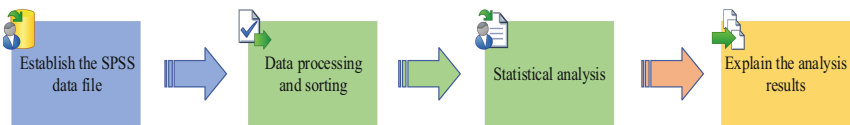


Fig. 3. SPSS Data Analysis Process

3.2 SPSS Data Analysis

SPSS is used to look at the linear relationship between two variables in a correlation analysis of the data [18]. If the p value is less than 0.05, the two variables have a linear correlation. As for the degree of correlation, the larger the R value, the more relevant it is. The detailed steps are shown in Fig. 3.

3.3 Experimental Environment

The sample for this study is students and kindergarten teachers who participate in online courses in the kindergartens of a city. The questionnaire includes two dimensions: teaching presence and learning effect. The framework of the questionnaire is described in Table 1.

3.4 Questionnaire Reliability Test

This study completes the coding and testing of data through variable assignment, outlier testing, reliability testing, and so on, which lays a good foundation for subsequent data analysis. The data on teaching presence and online teaching effect obtained through the questionnaire are mainly the Likert options, and 1 (strongly disagree)–5 (strongly agree) are used to represent the feedback of students on the items. The results show that the reliability of the three sub-questionnaires is within a reasonable range, and this questionnaire and its data can be used for further research. The specific statistical data are presented in Table 2.

Table 1. Questionnaire content

Questionnaire dimension	Content	Measure index	Item
Basic information	Gender, age	Identity understanding	Questions 1–2
	Education background	Environment	Questions 3–4
	Learning experience	Personal interest	Question 5
Teaching presence	Teaching engagement	School equipment environment	Questions 1–3
	Teaching satisfaction	Classroom interest	Question 4
	Influencing factor	Adverse description	Question 5
Experience of course learning	Online video viewing	Online time	Questions 1–8
	Cumulative visits to teaching week courses	Frequency of watching	Question 9
	Topic participation	Free speech	Questions 10–15
Curriculum learning performance	Job completion	Time and accuracy	Questions 1–8
	Questions and answers after class	Information interchange	Question 9
	Expanding participation after class	Thinking connection	Question 10

Table 2. Reliability statistics of questionnaire scale

Structure dimensions of scale	Number of items	Cronbach's α value
Teaching presence	5	0.87
Experience of course learning	15	0.68
Curriculum learning performance	10	0.91

4 Results and Discussion

After sorting out the questionnaire data, it was concluded that in the online classroom, students' participation and recognition in each link are shown in Fig. 4.

In order to explore the influence of online teaching presence on students and teachers' online classroom teaching quality, this study uses SPSS data analysis software to make regression analyses among teaching presence, social presence, cognitive presence, and teaching quality. The statistical results are shown in Table 3.

Through the results, it is found that the predictive value of teaching presence on teaching quality is $P = 0.002$ ($P < 0.05$), indicating that teaching presence can play an important role in predicting students' online learning quality. The square of the complex correlation coefficient is 0.348, indicating that teacher presence can explain 34.8% of

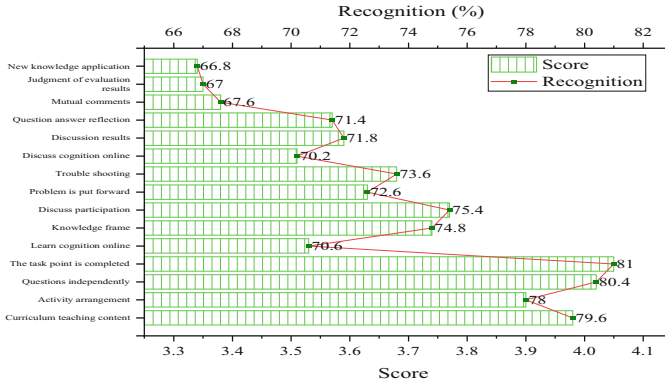


Fig. 4. Trend chart of learners' online teaching sessions

Table 3. Regression analysis results

Model	Predicted value P	Correlation coefficient R ²
Teaching Presence	0.002	0.348
Social presence	0.015	0.260
Cognitive presence	0.003	0.450

the learning state. The P value between social presence and classroom quality is 0.015 (P 0.05), and the coefficient of determination $R^2 = 0.26$, indicating that social presence can predict students' classroom status and can explain 26% of learning quality. Through the regression analysis between cognitive presence and students' classroom state, the predicted value, $P = 0.003$ (P 0.05), and $R^2 = 0.450$ indicate that cognitive presence can predict the quality of teaching in the classroom, and the explanatory power of the results reaches 45%, at a relatively significant level.

Wu and Xu's applied research on the theory of online presence found that with the continuous advancement of teaching activities, the number of teaching task points began to increase, and the teaching difficulty gradually increased [19]. In the study of online presence based on a community framework, Burgess and Slate finds that learners have obtained higher experience levels of teaching presence, social presence, and cognitive presence in the learning of this online course, indicating that online teaching presence can predict the quality of the teaching classroom [20]. The results of this study also confirm that the predictive value of the presence can reflect the students' classroom state, and the explanatory power of the results reaches 45%, which is a relatively prominent level. The study believes that it is necessary to introduce the framework theory of online teaching presence to improve the levels of online teaching presence.

5 Conclusion

This study verifies the effectiveness of the theoretical framework of online presence. However, due to the constraints of various factors, there are still some shortcomings in the study. Specifically, in order to ensure the unity of the empirical effects of the three cases, these courses are mainly limited to knowledge and skills courses. However, due to the limitations of the course content and the number of student samples, there is a certain one-sidedness in the research results, which need to be further carried out between different types of courses, different styles of teachers, and multi-level students.

References

1. M. Corry and J. Stella: Teacher self-efficacy in online education: a review of the literature. *Research in Learning Technology*, vol. 26, pp. 2047–2048, (2018).
2. P. Paudel: Online education: Benefits, challenges and strategies during and after COVID-19 in higher education. *International Journal on Studies in Education*, vol. 3, no. 2, pp. 70–85, (2021).
3. P. Chakraborty, P. Mittal, M. S. Gupta, et al.: Opinion of students on online education during the COVID-19 pandemic. *Human Behavior and Emerging Technologies*, vol. 3, no. 3, pp. 357–365, (2021).
4. T. Jakonen and H. Jauni: Mediated learning materials: visibility checks in telepresence robot mediated classroom interaction. *Classroom Discourse*, vol. 12, no. 1-2, pp. 121–145, (2021).
5. M. Osawa and M. Imai: A robot for test bed aimed at improving telepresence system and evasion from discomfort stimuli by online teaching. *International Journal of Social Robotics*, vol. 12, no. 1, pp. 187–199, (2020).
6. N.A.A. Ahmad and A.M. Zabadi: Transition to online education in Palestinian kindergartens during the Coronavirus (COVID-19) pandemic: Al-Ameen Kindergarten as a case study. *American Journal of Educational Research*, vol. 8, no. 8, pp. 600–608, (2020).
7. M.A.M. Don, M.R. Rosli, M.S. M. Senin, et al.: Exploring Social Presence Theory in The Online Classroom: The Case for Online Presence. *International Journal of Academic Research in Business and Social Sciences*, vol. 12, no. 1, pp. 26–40, (2022).
8. N.H. Nguyen, T.L.N. Tran, L.T. Nguyen, et al.: The interaction patterns of pandemic-initiated online teaching: How teachers adapted. *System*, vol. 105, pp. 102755–102755, (2022).
9. M.M. Hassan, T. Mirza, M.W. Hussain: A critical review by teachers on the online teaching-learning during the COVID-19. *International Journal of Education and Management Engineering*, vol. 10, no. 8, pp. 17–27, (2020).
10. T.L. Nguyen, T. Le Nguyen, T.Q.N. Ho, et al.: Effectiveness of Online Teaching from Teachers' Perspectives. *Journal of Technical Education Science*, vol. 70A, pp. 39–47, (2022).
11. A. Joshi, M. Vinay, P. Bhaskar: Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education*, vol. 18, no. 2, pp. 205–226, (2021).
12. P. Sepulveda-Escobar and A. Morrison: Online teaching placement during the COVID-19 pandemic in Chile: challenges and opportunities. *European Journal of Teacher Education*, vol. 43, no. 4, pp. 587–607, (2020).
13. H. Fiock: Designing a community of inquiry in online courses. *The International Review of Research in Open and Distributed Learning*, vol. 21, no. 1, pp. 135–153, (2020).
14. T. W. McClannon, A. W. Cheney, L. L. Bolt, et al.: Predicting sense of presence and sense of community in immersive online teaching environments. *Online teaching*, vol. 22, no. 4, pp. 141–159, (2018).

15. O. Smadi, S. Parker, D. Gillham, et al.: The applicability of community of inquiry framework to online nursing education: A cross-sectional study. *Nurse education in practice*, vol. 34, no. 1, pp. 17–24, (2019).
16. V. Patwardhan, S. Rao, N. Prabhu: Community of Inquiry (CoI) framework and course design as predictors of satisfaction in emergency remote teaching: Perspectives of hospitality management students. *Journal of e-Learning and Knowledge Society*, vol. 16, no. 4, pp. 94–103, (2019).
17. I. Kazanidis, N. Pellas, P. Fotaris, et al.: Facebook and Moodle integration into instructional media design courses: A comparative analysis of students' learning experiences using the Community of Inquiry (CoI) model. *International Journal of Human-Computer Interaction*, vol. 34, no. 10, pp. 932–942, (2018).
18. Purwanto, M. Asbari, T.I. Santoso: Education Management Research Data Analysis: Comparison of Results between Lisrel, Tetrad, GSCA, Amos, SmartPLS, WarpPLS, and SPSS For Small Samples. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, vol. 6, no. 2, pp. 382–299, (2021).
19. T. Wut, J. Xu: Person-to-person interactions in online classroom settings under the impact of COVID-19: a social presence theory perspective. *Asia Pacific Education Review*, vol. 22, no. 3, pp. 371–383, (2021).
20. M.L. Burgess, J.R. Slate, A. Rojas-LeBouef, et al.: Teaching and learning in Second Life: Using the Community of Inquiry (CoI) model to support online instruction with graduate students in instructional technology. *The Internet and Higher Education*, vol. 13, no. 1-2, pp. 84–88, (2010).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

