專任教師	Ching-Huei Chen, Ph.D.

職稱: **教授**

學歷: Ph.D., Department of Educational Psychology, University of Oklahoma

MAIL: chhchen@mail.nsysu.edu.tw

分機: 5843

研究領域

學術及教育專業專長RESEARCH INTERESTS:

1. Digital games and AI technologies for STEM education and computational thinking
2. Motivation and self-regulation in problem solving, collaborative learning, and online learning
3. Learning analytics and modeling
4. Preparing teachers and pre-service teachers for teaching and technology integration

開課名稱:

人工智慧教育(全英)、新興科技與教學創新(全英)、教育概論(雙語)、資訊教育、教學媒體與運用

研究成果

(A)期刊論文

外文文章

1. Huang, K, & Chen, C.-H.* (2025). Instructional video and GenAI-supported chatbot in digital game-based learning: Influences on science learning, cognitive load, and game behaviors. Journal of Computer Assisted Learning. (SSCI, Education Q1)
2. Chen, C.-H., & Yeh, H.-C. (2025). Advancing English for Specific Purposes (ESP) EFL pedagogy in engineering education: Infusing generative learning strategies into AR game design for enhanced vocabulary acquisition and critical thinking. Computer Assisted Language Learning. (SSCI, Linguistic Q1)
3. Chen, C.-H., Huang, K., Hu, P-H., & Krautinger, H. (2025). Impact of rewards in a digital game on computational thinking: Mediation by tension and moderation by competition. Education and Information Technologies. (SSCI, Education Q1)
4. Chen, C.-H., & Law, V. (2025). The role of help-seeking from ChatGPT in digital game-based learning. Education Technology Research & Development, 73, 1703-1721. (SSCI, Education Q1)
5. Chen, C.-H., & Yeh, H.-C. (2025). Scripted synergy: Elevating EFL writing and creativity through collaborative digital storytelling. Technology Pedagogy and Education, 34(1), 91-104. (SSCI, Education Q1)
6. Hsiao, W. Y., Chen, C.-H.*, Chen, P.-C., & Hou, W.-H. (2025). Investigating the effects of different game-based learning on the health care knowledge and emotions for middle-aged and older adults. Interactive Learning Environments, 33(3), 2313-2331. (SSCI, Education Q1)
7. Chen, C.-H., & Huang, K. (2024). The interplay of rewards and competition in digital game-based learning: Effects on intrinsic motivation, game performance and behaviors, and computational thinking. Learning and Instruction, 94, 101995. (SSCI, Psychology Q1)

8. Chen, C.-H., & Chang, C.-L. (2024). Effectiveness of AI-assisted game-based learning in science learning outcomes, intrinsic motivation, cognitive load, and learning behavioral. Education and Information Technologies, 29(14), 18621-18642. (SSCI, Education Q1)
9. Jao, C.-Y., Chen, C.-H., & Yeh, H.-C. (2024). Exploring the effects of cross-cultural collaborating on bilingual digital storytelling on students' intercultural learning. Interactive Learning Environments, 32(10), 6815-6832. (SSCI, Education Q1)
10. Chen, C.-H., Law, V., & Huang, K. (2023). Adaptive scaffolding and engagement in digital game-based learning. Educational Technology Research and Development, 71, 1785–1798 (SSCI, Education Q1)
11. Lo, I.-F., & Chen, C.-H.* (2024). Timing of instructional materials and types of gameplay for interdisciplinary learning: A comparative experimental study. Research in Science & Technological Education, 42(4), 912-929. (SSCI, Education Q2)
12. Chang, S.-H., Chang, L.-Z., Chen, C.-H.*, Shih, C.-C., Yu, S., & Chen, Y.-T. (2024). STEM education in academic achievement: A meta-analysis of its moderating effects. Interactive Learning Environments, 32(6), 2401-2423. (SSCI, Education Q1)
13. Chen, C.-H., & Chan, W.-P., Huang, K., & Liao, C.-W. (2023). Supporting informal science learning with metacognitive scaffolding and augmented reality: Effects on science knowledge, intrinsic motivation, and cognitive load. Research in Science & Technological Education, 41(4), 1480-1495. (SSCI, Education Q2)
14. Chen, C.-H., Liu, T.-K., & Huang, K. (2023). Scaffolding vocational high school students' computational thinking with cognitive and metacognitive prompts in learning about programmable logic controllers. Journal of Research on Technology in Education, 55(3), 527-544. (SSCI, Education Q1)
15. Chen, C.-H., Hung, S.-T, & Yeh, H.-C. (2021, June). Virtual reality in problem-based learning contexts: Effects on the problem-solving performance, vocabulary acquisition, and motivation of English language learners. Journal of Computer Assisted Learning, 37(3), 851-860. (SSCI, Education Q1)
16. Shyr, W.-J., Hsieh, Y.-M., & Chen, C.-H. (2021). The effects of peer-based instant response systems promote learning performance, intrinsic motivation and self-efficacy. Sustainability, 13, 4320. (SSCI, Green & Sustainable Science & Technology Q3)
17. Chen, C.-H., Yang, J.-Q., Huang, K., & Yao, K-C. (2020, December). Augmented reality and competition in robotics education: Effects on 21st century competencies, group collaboration, and learning motivation. Journal of Computer Assisted Learning, 36(6), 1052-1062. (SSCI, Education Q1)
18. Chen, C.-H., Shih, C.-C., & Law, V. (2020, June). The effects of competition in digital game-based learning (DGBL): A meta-analysis. Educational Technology Research & Development, 68(4),1855–1873. (SSCI, Education Q1)
19. Chen, C.-H., Huang, K., & Liu, J.-H. (2020, August). Inquiry-enhanced digital game-based learning: Effects on secondary students' conceptual understanding in science, game performance, and behavioral patterns. Asia-Pacific Education Researcher, 29(4), 319-330. (SSCI, Education Q1)
20. Chen, C.-H., & Yeh, H.-C. (2019, August). Effects of integrating a questioning strategy with game-based learning on students' language learning performances in flipped classrooms. Technology Pedagogy and Education, 28(3), 347-361. (SSCI, Education Q1)
21. Chen, C.-H., Law, V., & Huang, K. (2019, August). The roles of engagement and competition on learner's performance and motivation in game-based science learning. Educational Technology Research & Development, 67(4), 1003-1024. (SSCI, Education Q1)
22. Liao, C.-W., Chen, C.-H.*, & Shih, S.-J. (2019, May). The interactivity of video and collaboration for learning achievement, intrinsic motivation, cognitive load, and behavior patterns in a digital game-based learning environment. Computers & Education, 133, 43-55. (SSCI, Education Q1)

23. Chen, C.-H. (2019, February). The impacts of peer competition-based science gameplay on conceptual knowledge, intrinsic motivation, and learning behavioral patterns. Educational Technology Research & Development, 67(1), 179-198. (SSCI, Education Q1)
24. Chen, C.-H.*, Liu, J.-H., & Shou, W.-C. (2018, April). How competition in a game-based science learning environment influences students' learning achievement, flow experience, and learning behavioral patterns. Educational Technology & Society, 21(2), 164-176. (SSCI, Education Q1)
25. Chen, C.-H.*, Law, V., & Chen, W.Y. (2018, Mar). The effects of peer competition-based science learning game on secondary students' performance, achievement goals, and perceived ability. Interactive Learning Environments, 26(2), 235-244. (SSCI, Education Q1)
26. Chuang, H.-H., Weng, C.-Y. & Chen, C.-H.* (2018, Jan). Which students benefit most from a flipped classroom approach to language learning?. British Journal of Educational Technology, 49(1), 56-68. (SSCI, Education Q1)
27. Shyr, W.-J., & Chen, C.-H.* (2018, Jan). Designing a technology-enhanced flipped learning system to facilitate students' self-regulation and performance. Journal of Computer-assisted Learning, 34(1), 53-62. (SSCI, Education Q1)
28. Chen, C.-H. (2017, July). Measuring the differences between traditional learning and game-based learning using electroencephalography (EEG) physiologically based methodology. Journal of Interactive Learning Research, 28(3), 221-233
29. Chen, C.-H. (2017, Feb). Exploring scaffolding modes in PjBL: A professional development course to promote in-service teachers' technology integration. Journal of Educational Multimedia and Hypermedia, 26(2), 105-129.
30. Law, V. & Chen, C.-H.* (2016, Dec). Promoting science learning in game-based learning with question prompts and feedback. Computers & Education, 103, 134-143. (SSCI)
31. Chen, C.-H., & Law, V. (2016, Feb). Scaffolding individual and collaborative game-based learning in learning performance and intrinsic motivation. Computers in Human Behavior , 55, 1201-1212. (SSCI)
32. Chen, C.-H.*, & Chou, M.H. (2015, Oct). Enhancing middle school students' scientific learning and motivation through agent-based learning. Journal of Computer Assisted Learning, 31(5), 481-492. (SSCI).
33. Huang, K., Chen, C.-H.*, Wu, W.-S., & Chen, W-Y. (2015, Oct). Interactivity of question prompts and feedback on secondary students' science knowledge acquisition and cognitive load. Educational Technology and Society, 18(4), 159-171. (SSCI)
34. Chen, C.-H.*, Wang, K.C., & Lin, Y.S. (2015, Apr). The comparison of solitary and collaborative modes of game-based learning on students' science learning and motivation. Educational Technology and Society, 18(2), 237-248. (SSCI).
35. Wu, W.C., Petit, E., & Chen, C.-H. (2015, Jan). EFL writing revision with blind expert and peer review using a CMC open forum. Computer Assisted Language Learning, 28(1), 58-80. (SSCI).
36. Chen, C.-H. (2014, Jul). Nurturing students' problem-solving skills and engagement in computer-mediated communications (CMC). Journal of Interactive Learning Research, 25(3), 309-325.
37. Chen, C.-H. (2014, Jun). An adaptive scaffolding e-learning system for middle school students' physics learning. Australasian Journal of Educational Technology, 30(3), 342-355. (SSCI)
38. Chen, C.-H.*, & Huang, K. (2014, Apr). The effects of response modes and cues on language learning, cognitive load and self-efficacy beliefs in web-based learning. Journal of Educational Multimedia and Hypermedia, 23(2), 117-134.
39. Chen, C.-H.*, Chung, M.Y. & Wu, W.C. (2013, Oct). The effects of faded prompts and feedback on college students' reflective writing skills. Asia-Pacific Education Researcher, 22(4), 571-583. (SSCI).
40. Chen, C.-H.*, Wu, I.C., & Lan, F.L. (2013, Apr). Designing online scaffolds for interactive

computer simulation. Interactive Learning Environments, 21(3), 229-243. (SSCI).

41. Chen, C.-H.*, & Wu, I.C. (2012, Jan). The interplay between cognitive and motivational variables in a supportive online learning system for secondary physical education. Computers and Education, 58, 542-550. (SSCI).
42. Chen, C.-H., & Chen, C.Y. (2012, Jan). Instructional approaches on science performance, attitude and inquiry ability in a computer-supported collaborative learning environment. The Turkish Online Journal of Educational Technology, 11(1), 113-122. (SSCI).
43. Chen, C.-H., & Chan, L. H. (2011, Nov). Effectiveness and impact of technology-enabled project-based learning with the use of process prompts in teacher education. Journal of Technology and Teacher Education, 19(2), 141-167.
44. Chen, C.-H. (2011, Aug). Transforming online professional development: The design and implementation of project-based learning management system for in-service teachers. British Journal of Educational Technology, 42(1), 5-8. (SSCI).
45. Chen, C.-H. (2010, Jan). Promoting college students' knowledge acquisition and ill-structured problem solving: Web-based integration and procedure prompts. Computers and Education, 55(1), 292-303. (SSCI).
46. Chen, C.-H., & Howard, B. (2010, Jan). Effect of live simulation on middle school students' attitudes and learning toward science. Educational Technology & Society, 13(1), 133-139. (SSCI).
47. Kauffman, D., Ge, X., Xie, K., & Chen, C.-H. (2008). Prompting in web-based environments: Supporting self-monitoring and problem solving skills in college students. Journal of Educational Computing Research, 38(2) 115-137. (SSCI).
48. Chen, C.-H., & Bradshaw, A. C. (2007). The effect of web-based question prompts on scaffolding knowledge integration and ill-structured problem solving. Journal of Research on Technology in Education, 35(4), 359-375. (Scopus).
49. Hardre´ P., Chen, C.-H., Huang, S-H., Chiang, C-T., Jen, F-L. & Warden, L. (2006, Nov). Factors affecting high school students' academic motivation in Taiwan. Asia Pacific Journal of Education, 26(2), 189-207. (SSCI).
50. Hardre´ P., Huang, S-H., Chen, C.-H., Chiang, C-T., Jen, F-L. & Warden, L. (2006, Jul). High school teachers' motivational perceptions and strategies in an East Asian Nation. Asia-Pacific Journal of Teacher Education, 34(2), 199-221. (SSCI).
51. Chen, C.-H. & Ge, X. (2006). The design of a web-based cognitive modeling system to support ill-structured problem solving. British Journal of Educational Technology, 37(2), 299–302. (SSCI).
52. Ge, X., Chen, C.-H., & Davis, K. (2005). Scaffolding novice instructional designers' problem-solving processes using question prompts in a web-based learning environment. Journal of Educational Computing Research, 33(2) 219-248. (SSCI).
53. Hardré, P., & Chen, C.-H. (2005). A case study analysis of the role of instructional design in the development of teaching expertise. Performance Improvement Quarterly, 18(1) pp. 34-58. (ABI).

(B)研討會論文

National & International Presentations

1. Chen, C.-H. (2024). Exploring the interplay of competition and rewards in enhancing computational thinking through digital game-based learning. Paper presented at the International Conference on Education and Distance Learning. Paris, France.
2. Chen, C.-H. (2023). The design and development of AI-assisted game-based learning environment. Paper presented at International Conference on Teaching, Education, and Learning. New York, NY.
3. Chen, C.-H. (2023). Leveling up: Using game-based learning to enhance computational thinking for business students. Paper presented at International Conference on Computer Science and Information Technology. New York, NY.

4. Lo, I.-F., & Chen, C.-H. (2023). The interplay of learning and gaming scaffolds to promote interdisciplinary learning and academic emotion. Paper presented at AERA Annual Meeting, Chicago, IL.
5. Chen, C.-H. (2023). Digital gaming in STEM learning. Paper presented at the 31st International RAIS Conference on Social Sciences and Humanities, Washington DC.
6. Shih, C.C., & Chen, C.-H. (2022). A meta-analysis on the effects of digital game-based learning on STEAM learning outcomes. Paper presented at GCCCE.
7. Chen, C.-H., & Huang, K. (2022, April). Scaffolding vocational high school students' computational thinking in learning programmable logic controllers. Paper presented at AERA Annual Meeting, San Diego, CA.
8. Chen, C.-H., & Law, V. (2021). Adaptive scaffold and engagement in game-based learning. Paper presented at AECT Annual Meeting, Chicago, Illinois.
9. Chen, C.-H., Law, V. & Shih, C. (2020) A Meta-Analysis of the Effects of Competition in Digital Game-Based Learning [Poster Session]. AERA Annual Meeting San Francisco, CA http://tinyurl.com/u7owgre (Conference Canceled)
10. Chen, C.-H. & Huang, K. (2020, Apr 17 - 21) Inquiry-Enhanced Science Games: Effects on Secondary Students' Conceptual Understanding, Game Performance, and Behavioral Patterns [Poster Session]. AERA Annual Meeting San Francisco, CA http://tinyurl.com/tbnpj47 (Conference Canceled)
11. Chen, C.-H., Hsieh, Y. & Shih, C. (2020, Apr 17 - 21) The Effects of Peer-Based Instant Response System to Promote Learning Performance and Intrinsic Motivation [Paper Session]. AERA Annual Meeting San Francisco, CA http://tinyurl.com/rsuzgg7 (Conference Canceled)
12. Ge, X., Chen, C.-H., Law, V., Hu, L. Chen, Y. (June, 2019). The role of prior knowledge and prior experience on collaborative versus individual problem solving. Paper presented at World Conference on Educational Media & Technology, Amsterdam.
13. Chen, C.-H. (November, 2018). Processes and prerequisites of self-regulated and shared-regulated learning in the problem-based learning environment. Presented as a panel named Designing an innovative PBL pedagogy to empower language learners at the International Conference on Computers in Education, Philippines.
14. Chen, C.-H. (June, 2018). Engagement in game-based science learning: The roles of competition, in-game performance, and flow experience. Paper presented at the 19th Conference of Promoting Quality Management for Technological and Vocational Schools, Changhua, Taiwan.
15. Chen, C.-H. (September, 2017). Peer competition in game-based science learning: Impacts on learning outcomes and game behaviors. Paper presented at the 6th International Conference on Knowledge, Culture and Society (ICKCS), Hong Kong.
16. Hung, H-T., Chen, C.-H., & Chao, Y-C. (July, 2017). Lessons learned from flipping an English classroom for vocabulary and grammar learning with video lectures. Paper presented at the International CALL Research Conference, Berkeley, CA, USA.
17. Ge, X., Chen, C.-H., & Law, V. (April, 2017). Problem difficulty: Prior knowledge, experience, and perceived need for scaffolding in PBL. Paper presented at the annual meeting of American Educational Research Association, San Antonio, TX.
18. Chen, C.-H. (2016, Jul). Comparing college student vocabulary acquisition performance in a flipped and non-flipped classroom. Paper presented at International Conference on Education, Psychology and Society, Tokyo, Japan.
19. Chen, C.-H., & Chuang, H.H. (2016, Apr). The design of a flipped language learning environment (Flip2Learn) to enhance college students' L2 vocabulary acquisition. American Educational Research Association. MOST 104-2511-S- 018-008.
20. Chen, C.-H., & Law, V. (2016, Apr). Social influences and technology acceptance on college students' smartphone apps use intention. American Educational Research Association.
21. Law, V., & Chen, C.-H. (2015, Oct). Prompting science students for cognitive engagement

in game-based learning: Types of question prompts and feedback. Association for Educational Communications and Technology.

22. Chen, C.-H. (2015, Jul). Differential scaffoldings for individual and collaborative game-based learning. International Conference on Education, Psychology and Society.
23. Chen, C.-H., & Ge, X. (April, 2014). Assess knowledge acquisition using concept mapping method in a problem-based learning environment. Symposium presentation at the annual meeting of American Educational Research Association, Philadelphia, PA.
24. Chen, C.-H., & Chou, M. H. (2012, Nov). Multimedia motivational agent: The impact on the middle school students' science learning and motivation. International Conference on Computers in Education, Singapore.
25. Wu, W.C., Chen, C.-H., & Chao, Y.C. (2012, Nov). Using peer review to enhance EFL writing via a web-based system under cross-institutional setting. International Conference on Computers in Education, Singapore.
26. Ge, X., Du, J., Chen, C.-H., & Huang, K. (2005). The effects of question prompts in scaffolding ill-structured problem solving in a Web-based learning environment. Paper presented at the annual meeting of Association of Educational Communications and Technology, Orlando, FL.
27. Ge, X., Xie, K., Chen, C.-H., & Kauffman, D. (2005). Prompting in web-based environments: Scaffolding ill-structured problem solving processes in college students. Poster presented at the annual meeting of Association of Educational Communications and Technology, Orlando, FL.
28. Kauffman, D., Ge, X., Chen, C.-H., & Xie, K. (2005). Prompting in web-based environments: Scaffolding self-monitoring skills in college age students. Paper presented at Division C, the annual meeting of American Educational Research Association, Montreal, Canada.
29. Ge, X., & Chen, C.-H. (2004). Scaffolding novices solving instructional design problems using question prompts. Paper presented at the annual meeting of American Educational Research Association, San Diego, CA.
30. Ge, X., & Chen, C.-H. (2004). A web-based cognitive modeling system for novice instructional designers. Paper presented at the annual meeting of the Association of Educational