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Curriculum Vitae

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《現職》

師大講座教授
國立臺灣師範大學，科學教育研究所

Visiting Professor
Department of Science and Technology Education, Faculty of Education
University of Johannesburg, South Africa

《學歷》

美國密西根大學安娜堡分校博士 Ph.D. (2002)
School of Education, Educational Studies—Science Education Program
博士論文題目: *Middle School Students' Development of Inscriptional Practices in Inquiry-Based Science Classrooms*
(本論文獲 2003 美國科學教學研究學會 NARST 年度最佳博士論文獎)
口試委員:
Drs. Joseph S. Krajcik (chair), Elizabeth A. Davis, Priti Shah, and Elliot Soloway

國立臺灣師範大學化學系碩士 M.S. (1997)
碩士論文題目: *Analysis of Chinese Herb Medicines by Capillary Electrophoresis and High-Performance Liquid Chromatography*
指導教授: 許順吉博士

國立臺灣師範大學化學系學士 B.S. (1995)

教師證: 高中化學教師

《研究興趣》

幼兒科學教育，電腦化評量，學習科技，探究學習，化學教育，科學表徵。

《獎勵和榮譽》

全球前 2% 頂尖科學家，終身科學影響力排行榜 (1960-2020)，2021

全球前 2% 頂尖科學家，2020 年度科學影響力排行榜，2021

國立臺灣師範大學師大講座教授，2017-迄今

國立臺灣師範大學研究講座教授，2010-2013，2014-2016

行政院科技部傑出研究獎，2014 (102 年度)，2017 (105 年度)

國立臺灣師範大學特聘教授，2013

行政院國家科學委員會大專校院獎勵特殊優秀人才，2011-2015 (100-103 年度)

國立臺灣師範大學 Moodle 數位學習平台典範課程，2011 (99 年度第二學期)

國立臺灣師範大學 Moodle 數位學習平台優質課程，2010 (99 年度第一學期)

行政院國家科學委員會傑出研究獎，2009 (97 年度)

美國科學教學研究學會 NARST 年輕學者獎，NARST Early Career Research Award,
National Association of Research in Science Teaching, USA, 2008

國立臺灣師範大學研究績優獎，2004，2005，2006，2009，2014，2017

行政院國家科學委員會吳大猷先生紀念獎，2004 (93 年度)

美國科學教學研究學會 NARST 年度最佳博士論文獎，NARST Outstanding Dissertation
Award, National Association of Research in Science Teaching, USA, 2003

Barbour Scholarship, University of Michigan, USA, 2001-2002

Rackham Travel Award, University of Michigan, USA, 2000, 2001

School of Education Travel Fund, University of Michigan, USA, 2000, 2001

Rackham International Travel Award, University of Michigan, USA, 2000

王愷吾獎學金, 1997, 1998, 1999, 2000, 2001

教育部優秀研究生獎學金, 1995-1997

《經歷》

2022-2027: 訪問教授 Visiting Professor, Faculty of Education, University of Johannesburg, South Africa

2020-2023: 所長，國立臺灣師範大學科學教育研究所

2017-2021: 特聘訪問教授 Distinguished Visiting Professor, Faculty of Education, University of Johannesburg, South Africa

2006-2010: 副教授，國立臺灣師範大學科學教育研究所

2008: 訪問學者 Honorary Fellow, Learning Sciences Program, Department of Educational Psychology, University of Wisconsin-Madison, USA

2003-2006: 助理教授，國立臺灣師範大學科學教育研究所

2002-2003: Postdoctoral Fellow, School of Education, University of Michigan, Ann Arbor, MI, USA.

2001-2002: Barbour Scholar, University of Michigan, Ann Arbor, MI, USA.

1997-2001: Graduate Research Assistant, School of Education, University of Michigan, Ann Arbor, MI, USA.

1995-1997: 兼任研究助理，國立臺灣師範大學化學系

1994-1995: 化學教師，國立蘭陽女中

《研究著作》

期刊論文 (* 為通訊作者)

<2023>

Chen, Y. C., Wu, H.-K.*, & Hsin, C.-T. (2023). A systematic review of assessments for young children's scientific and engineering practices. *Research in Science & Technological Education*. Advance online publication. <https://doi.org/10.1080/02635143.2022.2121693> (SSCI)

Yang, K. L., Wu, H.-K.*, Yeh, Y. F., Lin, K. Y., Wu, J. Y., & Hsu, Y. S. (2023). Implementers, designers, and disseminators of integrated stem activities: Self-efficacy and commitment. *Research in Science & Technological Education*. Advance online publication. <https://doi.org/10.1080/02635143.2021.2008343> (SSCI)

Lin, K. Y., Yeh, Y. F.,* Hsu, Y. S., Wu, J. Y., Yang, K. L., & Wu, H.-K. (2023). STEM education goals in the twenty-first century: Teachers' perceptions and experiences. *International Journal of Technology and Design Education*, 33, 479–496. <https://doi.org/10.1007/s10798-022-09737-2> (SSCI)

Hsin, C.-T., Wu, H.-K.*, Liang, J. C., & Luu, D. T. (2023). Factors predicting kindergarten teachers' integration of science into their teaching in indigenous areas. *Australasian Journal of Early Childhood*, 48(1), 50–65. <https://doi.org/10.1177/18369391221120956> (SSCI)

Hsin, C.-T.* & Wu, H.-K. (2023). Implementing a project-based learning module in urban and indigenous areas to promote young children's scientific practices. *Research in Science Education*, 53(1), 37–57. <https://doi.org/10.1007/s11165-022-10043-z> (SSCI)

<2022>

Chen, Y. C., Wu, H.-K.*, & Hsin, C.-T. (2022). Science teaching in kindergartens: Factors associated with teachers' self-efficacy and outcome expectations for integrating science into teaching. *International Journal of Science Education*, 44(7), 1044-1066. <https://doi.org/10.1080/09500693.2022.2062800> (SSCI)

張仁誠、洪菁穗、吳心楷* (2022)。中學科學教師評量素養量表發展之信效度與恆等性分析。《科學教育學刊》，30(4)，309-333。

[https://doi.org/10.6173/CJSE.202212_30\(4\).0002](https://doi.org/10.6173/CJSE.202212_30(4).0002) (TSSCI)

洪菁穗、吳心楷* (2022)。高中科學教師對「探究與實作」課程的概念：課程特徵、挑戰、教學目標、與教學活動。《科學教育學刊》，30(1)，1-26。

[https://doi.org/10.6173/CJSE.202203_30\(1\).0001](https://doi.org/10.6173/CJSE.202203_30(1).0001) (TSSCI)

<2021>

Ndumanya, E., Ramnarain, U.*, & Wu, H.-K. (2021). An analysis of selected South African grade 12 physical sciences textbooks for the inclusion of the NGSS science practices. *Canadian Journal of Science, Mathematics and Technology Education*, 21, 539-552.

<https://doi.org/10.1007/s42330-021-00169-z> (ESCI)

Lee, S. W.-Y.*, Wu, H.-K., & Chang, H.-Y. (2021). Examining secondary school students' views of model evaluation through an integrated framework of personal epistemology.

Instructional Science, 49, 223-248. <https://doi.org/10.1007/s11251-021-09534-9> (SSCI)

Lin, C.-Y., & Wu, H.-K.* (2021). Effects of different ways of using visualizations on high school students' electrochemistry conceptual understanding and motivation towards chemistry learning. *Chemistry Education Research and Practice*, 22, 786-801.

<https://doi.org/10.1039/d0rp00308e> (SSCI)

Ramnarain, U.*, Pieters, A. E., & Wu, H.-K. (2021). Assessing the technological pedagogical content knowledge of pre-service science teachers at a South African university,

International Journal of Information and Communication Technology Education, 17(3),

123-136. <https://doi.org/10.4018/IJICTE.20210701.oa8> (Scopus)

林小慧、郭哲宇、吳心楷* (2021)。學生學習投入、好奇心、教師集體層級變項與科學探究能力的關係：跨層級調節式中介效果之探討。《教育科學研究期刊》，66(2)，75-

110。 [https://doi.org/10.6209/JORIES.202106-66\(2\).0003](https://doi.org/10.6209/JORIES.202106-66(2).0003) (TSSCI)

<2020>

Chien, S. P. & Wu, H.-K.* (2020). Examining influences of science teachers' practices and beliefs about technology-based assessment on students' performances: A hierarchical linear modeling approach. *Computers & Education*, 157, 10396.

<https://doi.org/10.1016/j.compedu.2020.103986> (SSCI)

Wu, P. H. & Wu, H.-K.* (2020). Constructing a model of engagement in scientific inquiry:

Investigating relationships between inquiry-related curiosity, dimensions of engagement, and inquiry abilities. *Instructional Science*, 48, 79-113. <https://doi.org/10.1007/s11251-020-09503-8> (SSCI)

<2019>

Anam, R. S., Widodo, A., Sopandi, W. & Wu, H.-K. (2019). Developing a five-tier diagnostic test to identify students' misconceptions in science: an example of the heat transfer concepts. *Elementary Education Online*, 18(3), 1014-1029.

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林小慧、吳心楷* (2019)。科學探究能力評量之標準設定與其效度檢核。《教育心理學報》，50(3)，473-502。 [https://doi.org/10.6251/BEP.201903_50\(3\).0005](https://doi.org/10.6251/BEP.201903_50(3).0005) (TSSCI)

<2018>

- Hung, C.-S. & Wu, H.-K.* (2018). Tenth graders' problem-solving performance, self-efficacy, and perceptions of physics problems with different representational formats. *Physical Review Physics Education Research*, 14(2), 020114.
<https://doi.org/10.1103/PhysRevPhysEducRes.14.020114> (SSCI)
- Wu, P. H., Kuo, C. Y.*, Wu, H.-K., Jen, T. H., & Hsu, Y. S. (2018). Learning benefits of secondary school students' inquiry-related curiosity: A cross-grade comparison of the relationships among learning experiences, curiosity, engagement, and inquiry abilities. *Science Education*, 102(5), 917-950. <https://doi.org/10.1002/sce.21456> (SSCI)
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<https://doi.org/10.1080/09500693.2018.1480075> (SSCI)
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<2017>

- Wang, J.-Y., Wu, H.-K.*, & Hsu, Y. S. (2017). Using mobile applications for learning: Effects of simulation design, visual-motor integration, and spatial ability on high school students' conceptual understanding. *Computers in Human Behavior*, 66, 103-113.
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- Yeh, Y.-F., Hsu, Y. S.*, Wu, H.-K., & Chien, S. P. (2017). Exploring the structure of TPACK with video-embedded and discipline-focused assessments. *Computers & Education*, 140, 49-64. <https://doi.org/10.1016/j.compedu.2016.10.006> (SSCI)
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<2016>

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- Fang, S.-C., Hsu, Y. S.*, Chang, H.-Y., Chang, W. H., Wu, H.-K., & Chen, C. M. (2016). Investigating the effects of structured and guided inquiry on students' development of

conceptual knowledge and inquiry abilities: A case study in Taiwan. *International Journal of Science Education*, 38(12), 1945-1971.

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<2015>

- Wu, H.-K.*, Kuo, C. Y., Jen, T.-H., & Hsu, Y. S. (2015). What makes an item more difficult? Effects of modality and type of visual information in a computer-based assessment of scientific inquiry abilities. *Computers & Education*, 85, 35-48. <https://doi.org/10.1016/j.compedu.2015.01.007> (SSCI)
- Kuo, C. Y., Wu, H.-K.*, Jen, T. H., & Hsu, Y. S. (2015). Development and validation of a multimedia-based assessment of scientific inquiry abilities. *International Journal of Science Education*, 37(14), 2326-2357. <https://doi.org/10.1080/09500693.2015.1078521> (SSCI)
- Wu, P. H., Wu, H.-K.*, Kuo, C. Y. & Hsu, Y. S. (2015). Supporting scientific modeling practices in atmospheric sciences: Intended and actual affordances of a computer-based modeling tool. *Interactive Learning Environments*, 23(6), 748-765. <https://doi.org/10.1080/10494820.2013.807844> (SSCI)
- Wang, J.-Y., Wu, H.-K.*, Chien, S. P., Hwang, F. K., & Hsu, Y. S. (2015). Designing Apps for science learning: Facilitating high school students' conceptual understanding by using tablet PCs. *Journal of Educational Computing Research*, 51(4), 441-458. <https://doi.org/10.2190/EC.51.4.d> (SSCI)
- Chang, H.-Y., Wang, C. Y., Lee, M. H., Wu, H.-K., Liang, J. C., Lee, S. W.-Y., Chiou, G. L., Lo, H. C., Lin, J. W., Hsu, C. Y., Wu, Y. T., Chen, S., Hwang, F. K., & Tsai, C. C.* (2015). A review of features of technology-supported learning environments based on participants' perceptions. *Computers in Human Behavior*, 53, 223-237. <https://doi.org/10.1016/j.chb.2015.06.042> (SSCI)
- Yeh, Y.-F, Lin, T.-C., Hsu, Y. S.*, Wu, H.-K., & Hwang, F.-K. (2015). Science teachers' proficiency levels and patterns of TPACK in a practical context. *Journal of Science Education and Technology*, 24(1), 78-90. <https://doi.org/10.1007/s10956-014-9523-7> (SSCI)
- 吳百興*、吳心楷 (2015)。從族群科學的觀點論原住民科學教育的取徑。 *科學教育月刊*，381，17-36。

<2014>

- Wu, P. H., Wu, H.-K.*, & Hsu, Y. S. (2014). Establishing the criterion-related, construct, and content validities of a simulation-based assessment of inquiry abilities. *International Journal of Science Education*, 36(9-10), 1630-1650. <https://doi.org/10.1080/09500693.2013.871660> (SSCI)

- Chien, S. P., Wu, H.-K.*, & Hsu, Y. S. (2014). An investigation of teachers' beliefs and their use of technology-based assessments. *Computers in Human Behavior*, *31*, 198-210. <https://doi.org/10.1016/j.chb.2013.10.037> (SSCI)
- Yeh, Y.-F., Hsu, Y. S.*, Wu, H.-K., Hwang, F. K., & Lin, T. C. (2014). Developing and validating technological pedagogical content knowledge-practical (TPACK-Practical) through the Delphi Survey Technique. *British Journal of Educational Technology*, *45*(4), 707-722. <https://doi.org/10.1111/bjet.12078> (SSCI)
- Wang, C. Y.*, Wu, H.-K., Lee, S. W.-Y., Hwang, F. K., Chang, H.-Y., Wu, Y.-T., Chiou, G. L., Chen, S., Liang, J.-C., Lin J.-W., Lo, H.-C., & Tsai, C. C. (2014). A review of research on technology-assisted school science laboratories. *Educational Technology & Society*, *17*(2), 307-320. (SSCI)
- Eshach, H.*, Wu, H.-K., Hwang, F. K., & Hsu, Y. S. (2014). Whole class dialogic discussion meets Taiwan's physics teachers: Attitudes and culture. *Journal of Science Education and Technology*, *23*(1), 183-197. <https://doi.org/10.1007/s10956-013-9462-8> (SSCI)

<2013>

- Wu, H.-K.*, Wu, P. H., Zhang, W. X., & Hsu, Y. S. (2013). Investigating college and graduate students' multivariable reasoning in computational modeling. *Science Education*, *97*, 337-366. <https://doi.org/10.1002/sce.21056> (SSCI)
- Wu, H.-K.*, Lin, Y. F. & Hsu, Y. S. (2013). Effects of representation sequences and spatial ability on students' scientific understandings about the mechanism of breathing. *Instructional Science*, *41*(3), 555-573. <https://doi.org/10.1007/s11251-012-9244-3> (SSCI)
- Wu, H.-K.*, Lee, S. W.-Y., Chang, H.-Y., & Liang, J.-C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, *62*, 41-49. <https://doi.org/10.1016/j.compedu.2012.10.024> (SSCI)
- Kuo, C. Y. & Wu, H.-K.* (2013). Toward an integrated model for designing assessment systems: An analysis of the current status of computer-based assessments in science. *Computers & Education*, *68*, 388-403. <https://doi.org/10.1016/j.compedu.2013.06.002> (SSCI)
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<2012>

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<2011>

Hsin, C.-T. & Wu, H.-K.* (2011). Using scaffolding strategies to promote young children's scientific understandings of floating and sinking. *Journal of Science Education and Technology*, 20(5), 656-666. <https://doi.org/10.1007/s10956-011-9310-7> (SSCI)

Wu, H.-K.* & Wu, C. L. (2011). Exploring the development of fifth graders' practical epistemologies and explanation skills in inquiry-based learning classrooms. *Research in Science Education*, 41(3), 319-340. <https://doi.org/10.1007/s11165-010-9167-4> (SSCI)

<2006-2010>

Wu, H.-K.*, Hsu, Y. S., & Hwang, F. K. (2010). Designing a technology-enhanced learning environment to support scientific modeling. *Turkish Online Journal of Educational Technology*, 9(4), 58-65. (SSCI)

Wu, H.-K. (2010). Modeling a complex system: Using novice-expert analysis for developing an effective technology-enhanced learning environment. *International Journal of Science Education*, 32(2), 195-219. <https://doi.org/10.1080/09500690802478077> (SSCI)

吳心楷*、宋曜廷、簡馨瑩 (2010)。錄影分析在教育研究應用。 *教育科學研究期刊*，55(4)，1-37。(TSSCI)

吳百興*、吳心楷 (2010)。八年級原住民學生在設計導向活動的科學學習。 *科學教育學刊*，18(4)，277-304。(TSSCI)

吳百興*、張耀云、吳心楷 (2010)。科學探究過程中的科學推理。 *科學教育研究與發展季刊*，56，53-74。

簡頌沛*、吳心楷 (2010)。探討教學歷程中信念、知識、與實務的相互影響：一位高中實習教師的個案研究。 *科學教育研究與發展季刊*，56，75-104。

Hsu, Y. S.*, Wu, H.-K., & Hwang, F. K. (2008). Fostering high school students' conceptual understandings about seasons: The design of a technology-enhanced learning environment. *Research in Science Education*, 38(2), 127-147. <https://doi.org/10.1007/s11165-007-9041-1> (SSCI)

Wu, H.-K.*, Hsu, Y. S., & Hwang, F. K. (2008). Factors affecting teachers' adoption of technology in classrooms: Does school size matter? *International Journal of Science and Mathematics Education*, 6(1), 63-85. <https://doi.org/10.1007/s10763-006-9061-8>

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Wu, H.-K.* & Huang, Y.-L. (2007). Ninth grade student engagement in teacher-centered and student-centered technology-enhanced learning environments. *Science Education*, 91(5), 727-749. <https://doi.org/10.1002/sce.20216> (SSCI)

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國內會議論文發表

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《其他著作》

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《研究計畫》

國家科學委員會及科技部之補助計畫

計畫主持人：

MOST 111-2410-H-003-018-MY3（特約研究計畫）探討幼兒和國小教師對科學教學的

- 教師覺察 (111/08/01-114/07/31) , 計畫經費 NT\$ 4,376,000。
- MOST 111-2742-H-003-001-MY3 《科學與數學教育研究》國際期刊規畫案 (111/01/01-113/12/31) , 計畫經費 NT\$ 6,122,000。
- MOST 110-2811-H-003-524-MY2 高中科學教師對「探究與實作」課程的評量素養—博士後研究員延攬 (110/08/01-112/07/30) , 計畫經費 NT\$ 1,992,960。
- MOST 109-2511-H-003-015-MY3 高中科學教師對「探究與實作」課程的評量素養 (109/08/01-112/07/30) , 計畫經費 NT\$ 3,570,000。
- MOST 109-2811-H-003-522 幼兒科學教育課程：促進幼兒探究能力及提昇幼兒教師科學教學自我效能和教學內容知識—博士後研究員延攬 (109/08/01-110/07/30) , 計畫經費 NT\$ 821,500。
- MOST 109-2811-H-003-505 幼兒科學教育課程：促進幼兒探究能力及提昇幼兒教師科學教學自我效能和教學內容知識—博士後研究員延攬 (109/03/10-109/07/30) , 計畫經費 NT\$ 335,536。
- MOST 107-2811-H-003-520 幼兒科學教育課程：促進幼兒探究能力及提昇幼兒教師科學教學自我效能和教學內容知識—博士後研究員延攬 (107/12/01-108/11/30) , 計畫經費 NT\$ 857,100。
- MOST 107-2511-H-003-012-MY3 (特約研究計畫) 幼兒科學教育課程：促進幼兒探究能力及提昇幼兒教師科學教學自我效能和教學內容知識 (107/08/01-110/07/31) , 計畫經費 NT\$ 4,573,000。
- MOST 106-2511-S-003-046-MY3 迎向新課綱的挑戰：科學探究能力評量的標準設定與分析報表之研發 (106/08/01-109/07/31) , 計畫經費 NT\$ 3,970,000。
- MOST 103-2511-S-003-038-MY4 探討學生在電腦化評量系統中科學探究能力之表現及科學教師對電腦化評量的需求與實務 (103/08/01-107/07/31) , 計畫經費 NT\$ 6,439,000。
- MOST 103-2811-S-003-010 探討學生在電腦化評量系統中科學探究能力之表現及科學教師對電腦化評量的需求與實務—博士後研究員延攬 (103/08/01-104/07/31) , 計畫經費 NT\$ 965,443。
- NSC 103-2517-S-003-001 科學教育學門研究規畫推動計畫 (103/01/01-103/12/31) , 計畫經費 NT\$ 1,913,000。
- NSC 101-2517-S-003-005-MY2 科學教育學門研究規畫推動計畫 (101/01/01-102/12/31) , 計畫經費 NT\$ 3,908,028。
- NSC 100-2511-S-003-041-MY3 科學探究能力的數位評量：以模擬為導向的線上系統之研發—總計畫 (100/08/01-103/07/31) , 計畫經費 NT\$ 4,118,000。
- NSC 100-2511-S-003-042-MY3 科學探究能力的數位評量：以模擬為導向的線上系統之研發—多重表徵與數位評量：中學生在模擬導向的評量系統中之探究能力表現 (100/08/01-103/07/31) , 計畫經費 NT\$ 3,345,000。
- NSC 101-2811-S-003-005 科學探究能力的數位評量：以模擬為導向的線上系統之研發—博士後研究員延攬 (101/08/01-102/07/31) , 計畫經費 NT\$ 906,856。
- NSC 100-2811-S-003-009 科學探究能力的數位評量：以模擬為導向的線上系統之研發—博士後研究員延攬 (100/08/01-101/07/31) , 計畫經費 NT\$ 800,875。
- NSC 99-2811-S-003-004 延攬人才及兩岸交流 (延攬客座助理教授)：探討數位學習環

- 境中學生科學探究歷程和學習策略 (99/03/01-99/09/30) , 計畫經費 NT\$ 737,500。
- NSC 97-2511-S-003-024-MY3 探討數位學習環境中學生科學探究歷程和學習策略—探討中學生在數位科學學習環境中的多變數推理學習投入 (97/08/01-100/07/31) (總計畫主持人: 許瑛珺; 子計畫主持人: 黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 4,088,000。
- NSC 97-2918-I-003-01 第46屆補助科學與技術人員赴國外短期研究: 學習科技中表微式鷹架的設計與使用之研究 (97/01/23-97/09/20) , 計畫經費 NT\$ 513,000。
- NSC 96-2511-S-003-005 子計畫三: 表徵式鷹架對學生科學建模的影響之研究 (3/3) (96/08/01-97/07/31) (總計畫名稱: 鷹架式建模數位學習環境對學生科學學習影響之研究; 總計畫主持人: 許瑛珺; 子計畫主持人: 黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 1,385,000。
- NSC 95-2511-S-003-010 子計畫三: 表徵式鷹架對學生科學建模的影響之研究 (2/3) (95/08/01-96/07/31) (總計畫名稱: 鷹架式建模數位學習環境對學生科學學習影響之研究; 總計畫主持人: 許瑛珺; 子計畫主持人: 黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 1,421,000。
- NSC 94-2511-S-003-027 子計畫三: 表徵式鷹架對學生科學建模的影響之研究 (1/3) (94/08/01-95/07/31) (總計畫名稱: 鷹架式建模數位學習環境對學生科學學習影響之研究; 總計畫主持人: 許瑛珺; 子計畫主持人: 黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 1,419,000。
- NSC 93-2511-S-003-028 子計畫五: 學習科技融入化學教學的教師專業成長之研究 (2/2) (93/08/01-94/07/31) (總計畫名稱: 新科技時代數位科學教師學習之研究; 總計畫主持人: 左台益; 子計畫主持人: 楊壬孝、張永達、黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 951,400。
- NSC 92-2511-S-003-053 子計畫五: 學習科技融入化學教學的教師專業成長之研究 (1/2) (92/08/01-93/07/31) (總計畫名稱: 新科技時代數位科學教師學習之研究; 總計畫主持人: 左台益; 子計畫主持人: 楊壬孝、張永達、黃福坤、許瑛珺、吳心楷), 計畫經費 NT\$ 683,700。

共同主持人:

- MOST 108-2628-H-007-001-MY3 原住民族幼兒 STEM 方案: 教師教學策略、態度與信念、幼兒學習成效、認同發展之探討 (108/08/01-111/07/31) , 計畫主持人: 辛靜婷; 共同主持人: 吳心楷, 計畫經費 NT\$ 2,782,000。
- MOST 107-2511-H-003-035-MY3 科學多重文本閱讀理解評量之標準設定、報表系統暨認知模式之發展與研究 (107/08/01-110/07/31) , 計畫主持人: 林小慧; 共同主持人: 吳心楷, 計畫經費 NT\$ 886,000。
- MOST 104-2511-S-003 -054 -MY3 以提升科學素養為導向之科學學習-社會性科學議題線上教學模組的發展與實施 (104/09/01-107/12/31) , 計畫主持人: 許瑛珺; 共同主持人: 吳心楷, 計畫經費 NT\$ 12,000,000。
- MOST 103-2511-S-017-002-MY5 (吳大猷先生紀念獎計畫) 發展行動式擴增實境學習環境以促進社會-科學議題的學習 (103/08/01-108/07/31) , 計畫主持人: 張欣怡; 共同主持人: 吳心楷、許瑛珺, 計畫經費 NT\$ 3,469,000。

- NSC 102-2514-S-007-002 高中職「基礎科學領域探究式課程」研發計畫--總計畫(3/3) (102/9/1-103/10/31)，計畫主持人：賴詩萍，共同主持人：吳心楷
- NSC101-2511-S-003-055-MY3 探討內嵌多層次評量的科技導入探究式學習環境之影響面向 (101/12/1-104/7/31)，計畫主持人：許瑛珺；共同主持人：吳心楷、陳志銘、張文華、張欣怡，計畫經費 NT\$ 20,919,000。
- NSC100-2628-S-018-001 MY3 (優秀年輕學者研究計畫) 學生科學模型觀點之網路問卷建置以及科學觀點相關議題之研究 (100/08/01-103/07/31)，計畫主持人：李文瑜；共同主持人：吳心楷、張欣怡，計畫經費 NT\$ 3,469,000。
- 國科會第二期高瞻計畫，臺北市第一女子高級中學：星·雲·行動—總計畫，100-102 (主持人：賴詩萍，共同主持人：吳心楷)
- 97-2522-S-003-001 國際數學與科學教育成就趨勢調查 2007(4/4)乙，97/8/1- 99/7/31，計畫經費 NT\$ 600,000。
- 97-MOE-S-003-003 國際數學與科學教育成就趨勢調查 2007(4/4)甲，97/4/1- 99/03/31，計畫經費 NT\$ 2,755,000。
- 96-2524-S-003-001 大學創新數位教材研究-量身訂做的學習物件與因材施教的學習環境(3/3)，96/8/1- 97/12/31，計畫經費 NT\$ 21,754,000。
- 96-2522-S-003-003 國際數學與科學教育成就趨勢調查 2007(3/4)乙，96/8/1- 97/7/31，計畫經費 NT\$ 3,252,000。
- 96-MOE-S-003-002 國際數學與科學教育成就趨勢調查 2007(3/4)甲，96/4/1- 97/03/31，計畫經費 NT\$ 5,050,000。
- 95-2524-S-003-012 大學創新數位教材研究-量身訂做的學習物件與因材施教的學習環境(2/3)，95/8/1- 96/10/31，計畫經費 NT\$ 17,273,000。
- 95-2522-S-003-003 國際數學與科學教育成就趨勢調查 2007(2/4)乙，95/4/1- 96/05/31，計畫經費 NT\$ 2,070,000。
- 95-MOE-S-003-003 國際數學與科學教育成就趨勢調查 2007(2/4)甲，95/4/1- 96/05/31，計畫經費 NT\$ 3,800,000。
- 94-2524-S-003-014 大學創新數位教材研究-量身訂做的學習物件與因材施教的學習環境(1/3)，94/8/1-95/12/31，計畫經費 NT\$ 17,033,000。
- 94-2522-S-003-003 國際數學與科學教育成就趨勢調查 2007(1/4)，94/4/1- 95/03/31，計畫經費 NT\$ 2050,000。

教育部之補助計畫

- 國立臺灣師範大學「邁向頂尖大學計畫」：科學教育中心 iTeaching 計畫 (2011-2015) (計畫主持人：許瑛珺；共同主持人：黃福坤、吳心楷)
- 台師大與國中自然科教師攜手合作深耕九年一貫課程與教學實施計畫：國中自然科教師課程指標教學專業能力之培養 (92/08/01-93/07/30) (計畫主持人：楊文金；共同主持人：吳心楷、陳文典、姚珩、洪志明、黃芳裕、張文華、張俊彥、許瑛珺)
- 教育部為推動研究型大學整合計畫—數位內容產業核心技術發產計畫案：子計畫四—行動學習之數位內容建置及用技術研究 (92/12/01-93/11/30) (計畫主持人：張國恩、宋曜廷、方瓊瑤、陳浩然、黃福坤、許瑛珺、吳心楷、蕭顯勝)

《社群服務》

期刊編輯

- 2022 迄今: Editor in Chief, *International Journal of Science and Mathematics Education* (SSCI)
- 2020-2025: Associate Editor, *Journal of Research in Science Teaching* (SSCI)
- 2017-2021: Senior Editor, *International Journal of Science and Mathematics Education* (SSCI)
- 2005 迄今: Consulting Editor, *Educational Technology Research and Development* (SSCI)
- 2006-2022: Editorial Board Member, *Science Education* (SSCI)
- 2020: 特刊客座主編, 科學教育學刊 (TSSCI)
- 2016-2020: Editorial Board Member, *American Educational Research Journal* (SSCI)
- 2015-2020: Editorial Advisory Board Member, *Learning: Research and Practice*
- 2014-2017: Associate Editor, *International Journal of Science and Mathematics Education* (SSCI)
- 2012-2013: Editorial Board Member, *International Journal of Science and Mathematics Education* (SSCI)
- 2012-2015: Editorial Board Member, *Journal of Research in Science Teaching* (SSCI)
- 2009-2015: 副主編, 教育科學研究期刊 (原師大學報, TSSCI)
- 2008-2013: 編輯委員, 科學教育學刊 (TSSCI)
- 2008-2013: Editorial Board Member, *International Journal of Environmental and Science Education*
- 2007-2008: 編輯委員, 師大學報—科學教育類
- 2003-2006: International Contributing Editor, *Science Education* (SSCI)

期刊審查

國際期刊：

African Journal of Research in Mathematics, Science and Technology Education;
 American Educational Research Journal; Chemistry Education Research and Practice;
 Computers & Education; Educational Assessment; Educational Technology Research
 and Development; Educational Technology & Society; European Journal of Psychology
 of Education; Innovations in Education and Teaching International; Interactive Learning
 Environments; International Journal of Environmental and Science Education;
 International Journal of Science and Mathematics Education; International Journal of
 Science Education; Journal of Applied Psychology; Journal of the Learning Sciences;
 Journal of Research in Science Teaching; Journal of Science Education and Technology;

Research and Practice in Technology Enhanced Learning; Review of Educational Research; Science Education; Turkish Online Journal of Educational Technology.

國內期刊：

中等教育雙月刊、台中師院學報、台東大學教育學報、科學教育研究與發展季刊、科學教育學刊、師大學報、師資培育與教師專業發展期刊、高師大教育學刊、教育心理學報、教育研究資訊雙月刊、教育科學研究期刊、教育與心理研究。

會議論文審查

國際會議：

American Education Research Association (AERA); ASETA Annual International Conference; European Science Education Research Association (ESERA); IEEE International Conference on Advanced Learning Technologies (ICALT); International Conference on Chemical Education (ICCE); International Conference on Computers in Education (ICCE); International Conference of East-Asian Science Education (EASE); International Conference on the Learning Sciences (ICLS); National Association for Research in Science Teaching (NARST); International conference on Science, Mathematics and Technology Education (SMTE); Mobile and Ubiquitous Technologies Enhanced Learning Conference; International History, Philosophy and Science Teaching Asian Regional Conference (IHPST).

國內會議：

中華民國科學教育學術研討會

研討會及學會服務

- 2020-2023: Early Career Award Committee Co-chair, National Association for Research in Science Teaching (NARST)
- 2018: Evaluation Committee Member, Outstanding Paper Award of 2018 International Conference of East-Asian Association for Science Education
- 2016-2017: Program Committee Member, Track 8: Technology-Enhanced Science, Technology, Engineering and Math Education in the 16th and 17th IEEE International Conference on Advanced Learning Technologies (ICALT).
- 2015-2018: Member of the Ad Hoc Website Provider Committee, National Association for Research in Science Teaching (NARST)
- 2015-2018: Award Committee Member (Outstanding Dissertation Award), National Association for Research in Science Teaching (NARST)
- 2015: Program Committee Member, The 23rd International Conference on Computers in Education (ICCE 2015), Hangzhou, China.

- 2015: Program Committee Member, Track 11: Technology-Enhanced Learning of Thinking Skills (TELoTS) in the 15th IEEE International Conference on Advanced Learning Technologies (ICALT2015).
- 2014: Program Committee Member, The 22nd International Conference on Computers in Education (ICCE 2014), Nara, Japan.
- 2013: 工作坊之議程委員，全球華人計算機教育應用大會(GCCCE 2014)，5月26日至27日，中國上海華東師範大學。
- 2013: Program Committee Member, The 21st International Conference on Computers in Education (ICCE 2013), Singapore.
- 2012: Discussant, The 20th International Conference on Computers in Education (ICCE 2012) (November 26-30), "Workshop 8: Computer-supported Visualization, Modeling, and Simulation for Learning," Organizers: Silvia Wen-Yu Lee and Hsin-Yi Chang.
- 2012: Advisory Committee Member, Asia Pacific Society of Computers in Education.
- 2012: International Organizing Committee Member, International Conference on Science Education 2012.
- 2011: Discussant, Computer Supported Collaborative Learning conference (CSCL) 2011 (July 4-8), "Collaboration as Scaffolding: Learning Together with Dynamic, Interactive Scientific Visualizations and Computer Models," Chair: Marcia Linn, Organizers/editors: Ji Shen, Hsin-Yi Chang.
- 2010: Senior Program Committee Member, the 21st International Conference on Chemical Education (ICCE), Taipei, Taiwan.
- 2009: Conference Advisory Committee Member, International Conference of East-Asian Science Education (EASE), Taipei, Taiwan.
- 2009: The International Scientific Committee Member, European Science Education Research Association 2009 Conference (ESERA)
- 2008-2011: 中華民國科學教育學會第廿一屆理事
- 2008-2011: Award Committee Member (Early Career Award), the annual meeting of National Association for Research in Science Teaching (NARST)
- 2008: 第三屆行動與無所不在數位學習研討會 (The Third Mobile and Ubiquitous Technologies Enhanced Learning Conference) 議程委員
- 2008: Senior Program Committee Member, Session Chair, the 16th International Conference on Computers in Education (ICCE), Taipei, Taiwan.
- 2007-2009: Strand Coordinator (Strand 12: Educational Technology), the annual meeting of National Association for Research in Science Teaching (NARST)
- 2007: Advisory Committee and Session Chair, Second NICE Symposium, Network for Inter-Asian Chemistry Educators, Taipei, Taiwan.
- 2006: 第二十二屆科學教育研討會籌備委員、論文發表主持人

2005: Doctoral Consortium Panelist, Computer Supported Collaborative Learning conference (CSCL) 2005.

2003: 第十九屆科學教育研討會籌備委員、論文發表主持人、論文評論人、最佳論文審查委員

其他學術經歷

2021-2023: 科技部人文司，科學教育實作學門複審委員

2018-2020: 科技部科教發展及國際合作司，國際合作研究計畫之國合策略審查委員

2018: 科技部人文司，「促進性別研究規劃推動計畫」審查小組委員

2015-2017: 科技部科教發展及國際合作司，醫學教育學門複審委員（104-106 年度）

2013-2014: 科技部科教發展及國際合作司，多元族群學門召集人（102-103 年度）

2012-2014: 科技部科教發展及國際合作司/國家科學委員會科學教育處，科學教育學門召集人（101-103 年度）

2009-2011: 國家科學委員會科學教育處，科學教育學門複審委員（98-100 年度）

2004 迄今: 國家科學委員會科學教育處，計畫初審委員

2009 迄今: 國家科學委員會科學教育處，大專生創作獎審查委員

2009-2010: 98、99 年度中小學科學教育計畫專案審查委員

2006: 大考中心工作計畫化學科成員

2006: 普通高級中學物理科課程綱要專案小組委員

《主題演講與國際邀約》

2021 年 5 月 26 日，Invited Speaker (online), Department of Chemistry Education, Faculty of Mathematics and Natural Science, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

Invited Talk: Science Education Research Topics and How to Find Them

2020 年 11 月 24 日，Invited Speaker (online), Department of Biology Education, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Surakarta, Indonesia

Invited Talk: Research on an Assessment of Inquiry Abilities

2020 年 11 月 3 日，Invited Speaker (online), Department of Biology Education, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Surakarta, Indonesia

Invited Talk: Science Education Research Topics and How to Find Them

2020 年 8 月 22 日，Invited Speaker (online), Faculty of Science, Science Education Program, Srinakharinwirot University, Thailand

Invited Talk: Science Education Research Topics and How to Find Them

2019 年 11 月 5-7 日，Keynote Speaker, the International Conference on Elementary Education (ICEE), Universitas Pendidikan Indonesia (UPI), Bandung, Indonesia.

Keynote Speech: Developing Young Children's Inquiry abilities: Curriculum Design and Assessment

2019 年 10 月 24-26 日 , Keynote Speaker, the 5th International Seminar on Science Education (ISSE), Yogyakarta State University (UNY), Yogyakarta, Indonesia.

Keynote Speech: Science Inquiry and Industrial Revolution 4.0: Data Skills and Multivariable Reasoning

Invited Lecture: From a Research Project to Publishable Studies: Experiences and Lessons Learned

2018 年 5 月 17-18 日 , Invited Speaker, UST-NTNU Science Education Initiative 2018, University of Santo Tomas, Manila, Philippines.

Invited Talk: Inquiry-Based Learning and Learning Technology

2018 年 3 月 23 日 , Invited Speaker, Department of Science and Technology Education, Faculty of Education, University of Johannesburg, South Africa

Invited Talk: Conducting and Writing a Review Study

2017 年 9 月 13 日 , Keynote Speaker, the 2nd International Seminar on Chemical Education (ISCE), Department of Chemistry Education, Faculty of Mathematic and Natural Sciences Islamic University of Indonesia, Yogyakarta, Indonesia

Keynote Speech: Using Dynamic Representations for Science Learning: From computer to tablet

2017 年 8 月 5 日 , Keynote Speaker, Science Education Student Research Conference (SESRC), University of Johannesburg, South Africa

Keynote Speech: From a Research Project to Publishable Studies: Experiences and Lessons Learned

2017 年 6 月 20 日 , Invited Speaker, Gordon Research Conference: Chemistry Education Research & Practice, Bates College, Lewiston, Maines, USA

Invited Talk: High School Science Teachers' Conceptions of Teaching and Assessment for Inquiry: Messages from Taiwan

2017 年 6 月 7 日 , Keynote Speaker, The Fifth International Conference for Science Educators and Teachers (ISET 2017), Phuket Rajabhat University, Thailand

Keynote Seminar: Research on a Computer-based Assessment of Inquiry Abilities

2016 年 12 月 9 日 , Keynote Speaker, Postgraduate Research Conference, Faculty of Education, University of Hong Kong, Hong Kong

Keynote: Experiences, Reflections and Lessons Learned from Conducting Research on a Computer-based Assessment of Inquiry Abilities

2015 年 10 月 18 日 , Invited Speaker, Faculty of Mathematics and Science Education, Universitas Pendidikan Indonesia (UPI), Bandung, Indonesia

Preservice teacher session: Are Animations Always Better than Still Images? Principles of Designing and Using Visualizations

Coaching session: Doing Science Education Research

2015 年 10 月 17 日 , Keynote Speaker, Annual International Seminar of Mathematics, Science, and Computer Science Education, Bandung, Indonesia

Keynote: Research on a Computer-based Assessment of Inquiry Abilities

General session: Research Approaches to Multiple Representations in Science Education

2015年7月25日至8月2日, Invited Speaker, (1) University of Johannesburg, (2) University of Pretoria, (3) University of Cape Town, South Africa

Presentation 1: Do Students See What We See? Students' Learning of Scientific Representations

Presentation 2: Are Animations Always Better Than Still Images? Principles of Designing and Using Visualizations for Science Teaching and Learning

Symposium: Best Practices for Using Visual Representations in Science Education

2014年12月5日, Keynote Speaker, 第三十屆科學教育學術研討會

講題: The Nature and Development of Modeling Practices: Studies on Computer-Supported Modeling

2014年11月26日, Keynote Speaker, International Science Education Conference 2014 (ISEC 2014), Singapore.

Keynote Speech: Research Approaches to Using Multiple Representations in Science Education

2014年11月25日, Invited Workshop Speaker, International Science Education Conference 2014 (ISEC 2014), Singapore.

Invited Workshop: Inquiry Learning in Technology-Enhanced Learning Environments

2014年7月15日, Plenary Lecturer, the 23rd IUPAC International Conference on Chemistry Education (ICCE 2014), University of Toronto and the Metro Toronto Convention Centre, Toronto, Canada.

Plenary Lecture: Supporting Students' Learning of Representations in Chemistry

2014年2月13日, Invited Speaker, the International Conference of Korean Association of Science Education 2014, Daegu University, Korea.

Invited Talk: The Nature and Development of Modeling Practices: Studies on Computer-Supported Modeling

2013年3月29日, Keynote speaker, 第二屆數位合作學習與個人化學習研討會

講題: What Is Learned: Defining "Practice" in Science Education

2011年5月28日, Keynote speaker, 國立中山大學, 大眾科學素養寫作研習會

講題: 科學教育期刊投稿和審查經驗分享

2010年7月22日, Invited Speaker, East-Asian Association for Science Education, EASE Summer School

講題: Modeling a Complex System: Using Novice-Expert Analysis for Developing an Effective Technology-Enhanced Learning Environment

2009年12月19日, Invited Speaker, 第二十五屆科學教育學術研討會

講題: 表徵、探究、科技與科學教育

2009年10月31日, Invited Speaker, 第六屆物理與化學女性學者聯合研討會

講題: 個人生涯規劃與臺灣科教領域學者性別背景分佈情形

2009年6月22至26日，Invited Speaker，中國北京，首都師範大學

講題一：中學生在數位學習環境中的建模實務

講題二：科學教育研究、質性研究法與 Nvivo

講題三：Ninth Grader Student Engagement in Teacher-centered and Student-centered Technology-enhanced Learning Environments

《受邀演講與座談》

2018年3月25日，幼兒 STEAM 教育與認知科學國際論壇，國立清華大學幼兒教育系

講題：由幼兒園及十二年國教課綱思考幼兒的科學探究能力發展

2016年3月25日，科技部科學教育學門，寫作工作坊

講題：如何結構論文內容—論點與故事線的形成

2016年3月18日，科技部科學教育學門，薪火相傳工作坊

講題：學術辨識度

2016年3月15日，國立彰化師範大學科學教育研究所

講題：探究能力電腦化評量之系列研究

2015年6月12日，科技部科學教育學門，東區說明會

講題：計畫成果發表—英文論文寫作

2015年3月20日，科技部數學教育學門，寫作工作坊

講題：英文論文寫作技巧

2014年8月20日，科技部數學教育學門，數學教育研究推動會議

講題：有效提升論文發表品質與影響力的活動

2014年5月2日，國立中山大學教育研究所

講題：多重表徵的設計與研究

2014年4月11日，國立臺灣師範大學，數位學習：議題與方法進階工作坊（二）

講題：數位學習的混合研究（一）：錄影分析

2013年11月4日，國立臺灣師範大學，研究與發展處，提昇學術能量工作坊

講題：研究計畫申請與審查要點：以科教處為例

2012年10月24日，國立臺中教育大學，科學應用與推廣學系暨碩士班

講題：建模研究計畫的構思與實行

2012年5月10日，臺北市立第一女子高級中學

講題：專案導向科學

2012年4月12日，國立中央大學，網路學習科技研究所

講題：多重表徵與科學學習

2011年3月10日，國立臺中教育大學，環境教育及管理研究所

講題：數位學習研究中質性資料的管理與分析：以 NVivo 軟體的使用為例

- 2010年11月17日，國立中央大學，學習與教學研究所
講題：建模研究計畫的構思與實行
- 2010年5月28日，國家科學委員會，科學教育處「多元族群的科學教育學門」辦公室
講題：國科會計畫撰寫分享
講題：期刊投稿與審查經驗分享 VI
- 2010年3月22日，國立臺灣師範大學環境教育研究所
講題：博士班學業經驗分享
- 2010年1月2日，國立臺灣大學科學教育發展中心
座談會：【科學月刊台大論壇】Science in Cyberspace：科學與網路的相輔相成
- 2009年12月24日，國立高雄師範大學科學教育研究所
講題：期刊論文投稿經驗分享
- 2009年12月12日，中英文論文寫作工作坊，臺北市立教育大學
講題：期刊論文投稿經驗分享：工作流程與策略
- 2009年12月3日，期刊論文投稿經驗分享座談會，國立臺灣師範大學
講題：期刊論文投稿經驗分享
- 2009年4月14日，國科會「高瞻遠矚」課程研究，國際學術會議論文發表工作坊
講題：Guidelines and Examples on How to Prepare and Present an Oral Paper
- 2009年4月8日，國立中山大學教育研究所
講題：中學生在數位學習環境中的建模實務
- 2008年9月25日，國立臺灣師範大學研究發展處
講題：國科會計畫書撰寫實戰策略
- 2007年11月10日，國科會，科教處學門工作坊
講題：質性研究法
- 2006年9月27日，國立花蓮教育大學科學教育研究所
講題：Inscriptional Practices and Science Learning
- 2006年6月5日，國立臺北教育大學自然科學教育學系
講題：Inscriptional Practices and Science Learning
- 2005年10月6日，國立高雄師範大學科學教育研究所
講題：化學學習與視覺空間思考
- 2005年6月14日，臺北市地球科學教師輔導團
講題：行動科技學習之課程設計
- 2005年3月30日，國立臺北師範學院自然科學教育學系
講題：學習科技在化學教育上的應用
- 2004年11月25日，基隆市明德國中

自然與生活科技領域小組「全市種子教師實務工作坊」

講題：學習科技與化學—從微觀到真實世界

2004年5月4日，臺北市立師範學院科學教育研究所

講題：建模工具與軟體鷹架

2004年4月15日，第一屆「高中化學種子教師專業成長」教師研習營

講題：化學多媒體與化學學習：eChem教學範例

2003年11月29日，中國化學會92年年會

講題：Exploring Visuospatial Thinking in Chemistry Learning

2003年11月25日，2003年國際化學教育研究會

講題：Learning Chemistry with Technology

2003年10月30日，國立臺灣師範大學地球科學系

講題：An Investigation of Software Scaffolds Supporting Modeling Practices

2003年4月21日，國立臺灣師範大學化學系

講題：學習科技在化學教育上的應用

《國際合作與學術交流》

辦理國際工作坊

2019年3月26-28日，辦理幼兒科學教育之工作坊和三所幼兒園參訪，參與者共41位來自泰國教師及學者。泰國學者有 Drs. Chanyah Dahsah, Nason Phonphok, Chaninan Pruekpramool, Navara Seetee, Srinakharinwirot University, Thailand。

2018年12月，辦理電腦化科學探究能力評量之工作坊，參與者：泰國學者 Drs. Thanarat Taewattana, Kulthida Nugultham, Tussatrin Wannagatesirit, Nantarat Kruea-In, Kasetsart University, Kamphaeng Saen Campus, Thailand，以及 Drs. Chanyah Dahsah, Pinit Khumwong, Srinakharinwirot University, Thailand。

國際學者來訪

2019年4月，印尼學者 Dr. Wahyu Sopandi, the chairman of Primary education studies in School of Postgraduate Studies, Prof. Udin, a committee member of ICEE (International Conference on Elementary Education) 和 Dr. Chaerun Anwar 來訪，Faculty of Mathematics and Science Education, Universitas Pendidikan Indonesia (Indonesia University of Education), Bandung-Indonesia。

2019年1月，泰國學者 Dr. Nannapas Limsantitham 來進行教育研究，Science Education Center, Srinakharinwirot University, Thailand。

2018年10-12月，印尼學者 Dr. Murni Ramli 來進行教育研究，臺灣獎學金得主 Taiwan Fellowship, Department of Biology Teacher Education, Universitas Sebelas Maret Surakarta, Indonesia。

2017年10-12月，印尼博士生 Euis Nursaadah 和 Rif'at Shafwatul Anam 來進行論文寫作計畫，Sandwich-Like Program，Faculty of Mathematics and Science Education，Universitas Pendidikan Indonesia (Indonesia University of Education)，Bandung-Indonesia。

2016年9月，中國學者張四方博士，進行研究計畫，安徽師範大學，中國安徽省蕪湖市。

2015年9月，印尼學者 Drs. Ari Widodo、Fransisca Sudargo、Wawan Setiawan 來訪，Faculty of Mathematics and Science Education，Universitas Pendidikan Indonesia (Indonesia University of Education)，Bandung-Indonesia。

2015年7-8月，美國博士生 Courtney L. Stanford 來訪，科技部台美加暑期研究生研習計畫，Department of Chemistry，University of Iowa，USA。

2010年3-9月，以色列學者 Professor Haim Eshach 來訪，Ben-Gurion University of the Negev，Israel。

受邀前往他國參訪

2016年8月，學術參訪(邀請人：李玲教授)，重慶西南大學，中國。

2015年10月，學術參訪(邀請人：Professor Ari Widodo)，Faculty of Mathematics and Science Education, Indonesia University of Education, Bandung, Indonesia。

2015年7月，學術參訪，University of Johannesburg (邀請人：Professor Umesh Ramnarain)，University of Pretoria (邀請人：Professor Marietjie Potgieter)，University of Cape Town (邀請人：Professor Bette Davidowitz)，South Africa。

國內機構補助之國際參訪

2018年8月，學術參訪，Srinakharinwirot University，Thailand。

2016年12月，學術參訪，National Institute of Education，Singapore。

2013年7月，學術參訪，Hong Kong Institute of Education，Hong Kong。

2012年3月，學術參訪，London Knowledge Lab，Open University，Durham University，United Kingdom。

2008年1-8月，訪問學者，Learning Sciences Program，Department of Educational Psychology，University of Wisconsin-Madison，USA。

2007年4月，學術參訪，Northwestern University，Geographic Data in Education Initiative (GEODE)，USA。

2006年5月，學術參訪，University of Cambridge，King's College，London Knowledge Lab in UK，Universität zu Kiel in Germany，University of Twente in Netherlands。

2006年2月，學術參訪，University of California-Berkeley，Technology-Enhanced Learning in Science (TELS)，USA。

《校內服務》

校教師評鑑會議委員、校師培會議委員、理學院教師評鑑會議委員、理學院師培會議委員、理學院院務會議代表、理學院學術發展委員會代表、學生獎懲委員、圖書館會議代表、學生事務委員等。

《國際及校外審查服務》

2023: University of Rwanda, College of Education, External Reviewer

2017-2023: Research Grants Council (RGC) of Hong Kong, External Reviewer of Grant Proposals and Reports

2016, 2017, 2022: Reviewer of Grant Proposals, Israel Science Foundation (ISF)

2021: University of KwaZulu-Natal, School of Education, External Reviewer

2014-2020: National Institute of Education, Singapore, External Reviewer of Grant Proposals and Reports

2018: Nanyang Technological University of Singapore, National Institute of Education, External Reviewer

2017: University of Queensland, School of Chemistry & Molecular Biosciences, International examiner of MPhil thesis

2016-2017: University of Johannesburg, South Africa, External Assessor of PhD Research Project

2016: Education University of Hong Kong, Graduate School, External Examiner of PhD Thesis

2015: South Africa's National Research Foundation (NRF), Researcher Performance Reviewer (Peer-Review)

2013-2015: 教育部高教司，學術審議委員會審查委員

2014: 彰化師範大學理學院，獎勵特殊優秀人才審議委員

2014: Research Grants Council (RGC) of Hong Kong, External Reviewer of Grant Proposals

2013: 中央大學電資學院，學術研究獎勵審查委員

2013: University of Miami, School of Education and Human Development, External Reviewer

2012: University of Georgia, College of Education, External Reviewer

2011: 彰化師範大學理學院，特聘教授遴選委員

2010: 交通大學人文社會學院，彈性薪資暨獎勵補助審議委員

2010: 中央大學學習與教學所，博士班資格考口試委員

2006: 交通大學教育研究所，碩士班甄試口試委員

教師聘任或升等外部審查委員：中央大學文學院，中央大學資電學院，臺灣大學教學發展中心，中山大學師資培育中心，中山大學西灣學院，政治大學教育學院，交通大學人文社會學院，清華大學竹師教育學院，臺中教育大學，臺北教育大學，臺北科技大學，彰化師範大學，屏東大學，國立教育研究院。

《教學內容》

研究所課程

SEC0001 書報討論

SEC0012 科學教育學術論文寫作

SEC0038 質的研究

SEC0050 研究方法特論：學習科技之資料分析方法

SEC0051 教育科技在科學教育上的應用

SEC0052 社會建構論與科學教育

SEC0053 學習科技的理論與研究

SEC0054 科技融入科學課程之設計

SED0033 科學教育特論：英文論文寫作

SED0075 科學教育研究特論：個人科教研究專題發展

SED0092 專題討論：數位學習

SEM0018 個別研究

SEM0019 專題討論：科教問題

STD0003 科學-科技-工程-數學教育的趨勢與課題

教學碩士班：網路科技與科學教育

教育學分班：教學媒體

師資培育學程：資訊科技融入科學教學與評量

《國際學生交流》

黃怡 (September 2018-January 2019)，浙江工業大學現代教育技術專業研究生，中國。

Rifat Shafwatul Anam, (November 2017- January 2018), Doctoral student, Science Education, Universitas Pendidikan Indonesia (UPI), Bandung, Indonesia

Euis Nursaadah (November 2017- January 2018), Doctoral student, Science Education, Universitas Pendidikan Indonesia (UPI), Bandung, Indonesia

Courtney Stanford (June-August 2015), PhD student, Department of Chemistry, University of Iowa, USA

《博士後研究員和研究生》

博士後研究員

張仁誠 (2022/2-迄今)，國立彰化師範大學工業教育與技術學系博士

陳怡君 (2020/3-2021/12)，國立臺灣師範大學科學教育研究所博士
現職：國立海洋大學師資培育中心 專任助理教授

簡頌沛 (2019/1-2020/1)，國立臺灣師範大學科學教育研究所博士
現職：國立彰化師範大學科學教育研究所 專任助理教授

林小慧 (2016/9-2018/7)，國立臺灣師範大學教育心理與輔導學系博士
現職：國立臺灣師範大學教育心理與輔導學系 兼任助理教授

郭哲宇 (2011/8-2016/1)，美國印第安那大學教育心理學博士
現職：國立清華大學師資培育中心 專任助理教授

指導博士班學生

洪菁穗 (2022)，高中科學教師「探究與實作」課程的教學概念與評量素養的系列研究

簡頌沛 (2018)，探討教師科技導入評量的信念、評量的實務、與學生表現間關聯性的一系列研究。

吳百興 (2017)，建構高中學生探究能力之影響模式：從學習經驗、科學好奇心以及科學投入的因素進行探討。

指導碩士班學生

陳玟婷 (2023)，探討國小自然教師對科學教學與學習之覺察。

徐菟琪 (2020)，幼兒的科學探究能力發展情形：大班幼兒參與科學探究模組之研究。

林佳穎 (2019)，動畫的使用方式如何影響高二學生的化學學習—以電化學單元為例。

蘇毅中 (2016)，高中學生在不同層級及不同表徵的物理解題取向。

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