

學術與教學計畫

(一) 科技部計畫

- 114 探討大學生與 ChatGPT 互動於科學專題實作之合作模式及其創造力表現(114/08/01 ~ 115/07/31; NSTC 114-2410-H-153-014 -)
- 113 專題研究計畫:太空科技整合 STEM 教育之虛擬實境教材與學習分析模組研發與推廣 (NSTC 113-2410-H-153 -002 -MY2)
- 112 專題研究計畫: 國小教師科學資本融入教學之理解與教學實踐研究(NSTC 112-2410-H-153 -007 -MY2) 計畫主持人
- 110 專題研究計畫(大眾科學教育計畫)科普活動: 永續屏東: 地方科學傳播素材創作 (主題五) (MOST 111-2515-S-153-001:2022/08/01~2023/07/31)
- 110 專題研究計畫(吳大猷先生紀念獎計畫) 紙卡 STEAM 教具、雙語教材與數位平台之開發、推廣與研究 (MOST111-2423-H-153-001-MY3: 2022/08/01~2025/07/31) 計畫共同主持人
- 110 專題研究計畫科普活動: 送 STEAM 到你家—偏鄉與原鄉線上跨領域探究與實作活動推廣(主題三) (MOST110-2515-S-153-001-) 計畫共同主持人 2021/08/01~2022/07/31)
- 109 專題研究計畫: 家長參與學生工程思維 STEM 活動對學生學習效益之初探 (MOST 109-2511-H-153-006-2) 計畫主持人
- 109 專題研究計畫: 教師參與 STEM 專業學習社群提升任教學生科學能力與工程創造力初探 (2/2) (MOST 109-2511-H-153-002) 計畫主持人
- 108 專題研究計畫: 科普活動: 以表演藝術增強科普成效的『生活物理演示 服務市民』及『高中物理動手學 校園實驗演示』實施計畫 (主題一) (MOST 108-2515-S-110-002-) 計畫共同主持人
- 108 專題研究計畫: 教師參與 STEM 專業學習社群提升任教學生科學能力與工程創造力初探 (1/2)(MOST 108-2511-H-153-002) 計畫主持人
- 106 補助國內專家學者出席國際學術會議: 2017 Annual International NARST (National Association for Research in Science Teaching) Conference (106-2914-I-110 -004 -A1) 計畫主持人
- 105 研究生出席國際會議: 美國國家科學教學研究協會(NARST)2016 年研討會(105-2922-I-110 -014 -) 計畫主持人
- 104 研究生出席國際會議: 歐洲科學教育協會研討會 104-2922-I-110-090 計畫主持人

(二) 教育部計畫

1. 教學實踐計畫

- (1) 111 年度教育部教學實踐研究計畫：自然科學課融入科探究與實作對職前教師科學素養之成效研究 (20220801~20230731) (計畫主持人)

教育部相關計畫

- (1) 2026 年移地教學計畫-馬來西亞 (計畫主持人)：「115 年度高教深耕計畫『境外移地教學計畫：STEAM 學養教育』2026 年
- (2) 2025 年移地教學計畫-馬來西亞 (計畫共同主持人)「114 年度高教深耕計畫『境外移地教學計畫：鄉村教育實踐課程』」
- (3) 學年度教育部補助精進師資素質及特色發展計畫-子計畫 1：國小職前教師 STEAM 課程研發與實施：運算思維取向 (計畫參與人員)
- (4) 109 年度教育部國民及學前教育署-原住民族課程發展協作南區中心 (計畫共同主持人)
- (5) 108 年度教育部國民及學前教育署-原住民族課程發展協作南區中心 (計畫共同主持人)
- (6) 108 教育部新南向學海築夢：跨領域 STEAM 創作實習計畫- 以澳洲 STEMnist 為實習基地 (計畫共同主持人~ 因 covid 19 而取消)

3. 屏東大學執行教育部高教深耕計畫

高教深耕

- 114 年素養導向高教學習創新計畫(探索者計畫)_生成式 AI 融入課程教學計畫
- 112 年度理學院師生研究社群：科學學習 VR 場景發展討論社群 (社群召集人：楊桂瓊老師)
- 112 年高教深耕計畫-融入 STEAM 導向跨領域課程：科學探究教學 【E1125001-1】
- 108 年高教深耕子計畫 1 教師專業學習社群~大家一起「聊」科學 計畫主持人
- 109 年度跨國研究補助計畫-邀請境外簽約學校學者短期訪問研究-臺灣和泰國小學生在 STEM 問題解決能力表現之現況 (Kasetsart University~Chatree Faikhamta) NPTU-109-007 (109/03/16~109/12/20) 計畫主持人~ 因 Covid-19 而取消
- 109 年教育部高等教育深耕計畫子計畫 1：「SPIRIT 課程研創」計畫：「教師專業社群」—精進教師跨領域教學研究國際論文撰寫社群

- 110 國立屏東大學教師研發能量鏈結 USR 學術研究計畫：USSR：科技為核心之 STEAM 教育提升偏鄉多元教育機會 計畫共同主持人
- 110 年度高教深耕課程研創-PBL 問題導向學習社群 「畢業展覽成果撰寫與出版」計畫主持人
- 110 國立屏東大學教師研發能量鏈結 USR 學術研究計畫：甲仙化石數位典藏計畫化石的前世今生」 計畫共同主持人

(三) 產學研究計畫

- 力新國際科技股份有限公司委辦「111 年度博物館資料加值暨教育推廣服務案」主持人：吳聲毅 計畫共同主持人 執行期間：111/08/01 ~ 111/12/31

學術研究表現

(一) 學術期刊論文(Referred Journal articles)

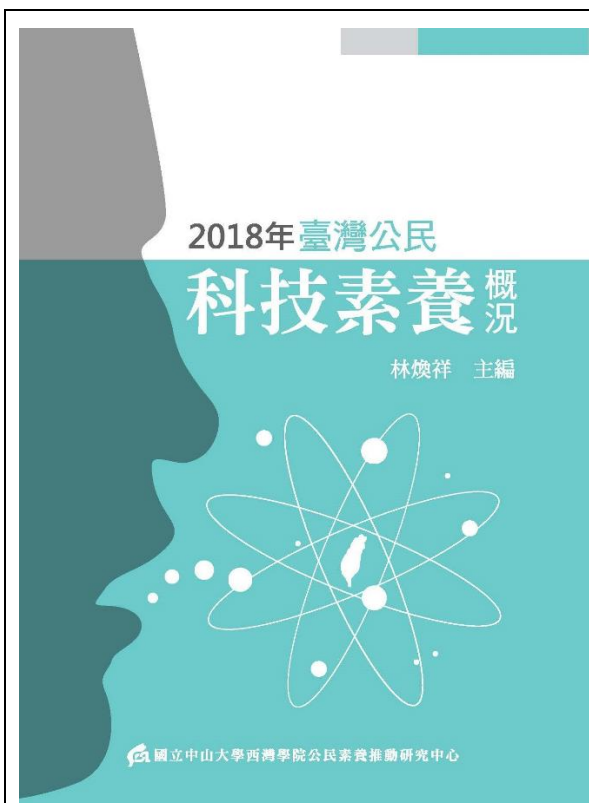
1. 楊桂瓊*、林煥祥、洪瑞兒(2012)。以論證活動探討國小學童論證能力和科學本質之表現。科學教育學刊，22(2)，1-26。(TSSCI) *corresponding author
2. Lin, H., Hong, Z., Lee, S., & Yang, K.K. (2013). The impact of collaborative reflections on teachers' inquiry teaching. *International Journal of Science Education*, 25(18), 3095-3116. DOI: 10.1080/09500693.2012.689023 (SSCI)
3. Hong, Z., Lin, H., Wang, H., Chen, H., & Yang, K.K (2013). Promoting and Scaffolding Elementary School Students' Attitudes toward Science and Argumentation through a Science and Society Intervention. *International Journal of Science Education*, 35(10), 1625-1648. DOI:10.1080/09500693.2012.734935 (SSCI)
4. 楊桂瓊、陳雅君、林煥祥、洪瑞兒(2015)。新興科技融入探究式教學的成效探討。科學教育學刊，23(2)，111-127。(TSSCI)
5. Yang, K.K., Hong, Z., Liu M.-C & Lin, H.(2015). Exploring the role of visitors' self-identity in marine museum learning. *International Journal of Science Education, Part B*, 5(4), 375-393. DOI: 10.1080/21548455.2015.1046152 (ESCI)
6. Yang, K.K, Hong, Z., Lin, S.-F & Lin, H.(2016). Exploring the assessment of and relationship between elementary students' scientific creativity and science inquiry. *Creativity Research Journal*, 28(1), 16-23. DOI: 10.1080/10400419.2016.1125270 (SSCI)
7. Yang, K.K, Lee, L., Hong, Z., & Lin, H.(2016). The investigation of effective strategies for developing creative science thinking. *International Journal of Science Education*, 38(13), 2133-2151. DOI: 10.1080/09500693.2016.1230685 (SSCI)
8. Jack, B.-M, Lee, L, Yang, K.K, & Lin, H.(2017). A science for citizenship model: Assessing the effects of benefits, risks, and trust for predicting students' interest in and understanding of science-related content. Research in Science Education'. *Research in Science Education*, 47(5), 965-988.(SSCI) DOI: 10.1007/s11165-016-9535-9 (SSCI)
9. Pan, Y.-T., Yang, K.-K., Hong, Z.-R., & Lin, H.-S. (2018). The Effect of Interest and Engagement in Learning Science on Adults' Scientific Competency and Environmental Action. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(12). doi:10.29333/ejmste/94225 (SSCI)
10. Yang, K.-K., Hong, Z.-R., Lee, L., & Lin, H.-S. (2019). Exploring the significant predictors of convergent and divergent scientific creativities. *Thinking Skills and Creativity*, 31, 252-261. doi:10.1016/j.tsc.2019.01.002 (SSCI) (impact factor 2018:1.655)

11. Pan, Y.T., Yang, K.-K., Kimberley, W., Hong, Z.-R. & Lin, H.S. (2020). The impact of museum interpretation tour on visitors' engagement and post-visit conservation intentions and behaviours. *International Journal of Tourism Research*, 22(5), 537-692. doi:10.1002/jtr.2358 (SSCI) [IF=3.791]
12. Yang, K.-K., Hong, Z.-R., Lee, L., & Lin, H.-s. (2020). Supportive conditions and mechanisms of teachers' professional development on inquiry-based science teaching through learning community. *Research in Science & Technological Education* <https://doi.org/10.1080/02635143.2020.1779051> (SSCI)
13. Wu, S. Y., & Yang, K. K. (2022). The Effectiveness of Teacher Support for Students' Learning of Artificial Intelligence Popular Science Activities. *Frontiers in Psychology*, 13, Article 868623. (SSCI) 2022 Jun
14. Wu, S. Y., & Yang*, K. K. (2024). Influence and behavioral pattern of university students' participation in decision-making on socio-scientific issues. *Research in Science & Technological Education*, 42(2), 431-449 (corresponding author) (SSCI) <https://doi.org/10.1080/02635143.2022.2093345>
15. Yang*, K. K. (2025). Exploring primary school students drawing solutions to problems in STEM activities. *Thinking Skills and Creativity*, 56, 101790. <https://doi.org/10.1016/j.tsc.2025.101790>
16. Yang, K.-K., Lin, H.-S., Smith, T. J., Lee, L., & Hong, Z.-R. (2026). Impacts of a computer-based contextual assessment portal on students' scientific competency. *Educational Technology & Society*, 29(1), 94-111. [https://doi.org/10.30191/ETS.202601_29\(1\).RP06](https://doi.org/10.30191/ETS.202601_29(1).RP06)
《Educational Technology & Society》 29 卷 1 期 (2026/01) Pp. 94-111
[https://doi.org/10.30191/ETS.202601_29\(1\).RP06](https://doi.org/10.30191/ETS.202601_29(1).RP06)
17. Samngamjan, N., Wu, S.-Y., & Yang, K.-K. (2026). Factors influencing teaching and learning in upper secondary STEM education in Thailand: Case studies of Nakhon Sawan and Uthai Thani Provinces, Thailand. *Pedagogical Research*, 11(1), em0252. <https://doi.org/10.29333/pr/17795>

(二) 書

1. 楊桂瓊、潘儀庭 (2020)。第八章、民眾對生物科技與科學研究的態度。載於林煥祥 (主編)，2018 臺灣公民科技素養概況。台北市：高教代理。ISBN:978-957-9014-85-4
2. 潘儀庭、楊桂瓊 (2020)。第十章、民眾與自然環境的關聯、科學倫理及永續發展的態度。載於林煥祥 (主編)，2018 臺灣公民科技素養概況。台北市：高教代理。ISBN:978-957-9014-85-4
3. 楊桂瓊 (2020)。廚房玩科學：甜點製作學探究與運算思維。屏東市：國立屏東大學。ISBN/ISSN：9789869972338 <https://sites.google.com/view/nptu-steam-ct-books/>
4. 楊桂瓊 (2022)。學習評量。載於周金城、何慧瑩 (主編)，國小自然科學教材教法之教案與教學。國立臺北教育大學自然科學教育學。ISBN/ 978-986-06986-1-9

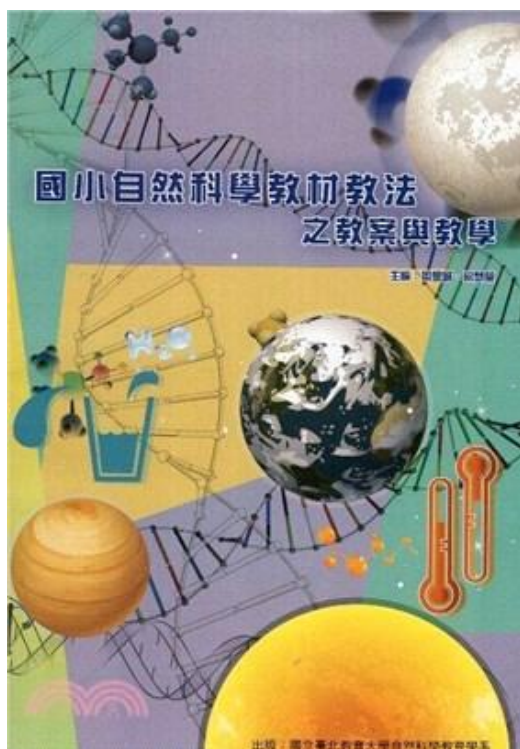
5. 吳聲毅、楊桂瓊、廖宜虹、盧欣怡、鄭曉佩(2023)。STEAM 教育雙語小學堂 四年級：交通主題探究與挑戰。台科大圖書。ISBN／ISSN：9789865238742
6. 吳聲毅、楊桂瓊、廖宜虹、盧欣怡、鄭曉佩(2024)。STEAM 教育雙語小學堂 五年級：STEAM 教育雙語小學堂：聲音主題探究與應用。台科大圖書。ISBN／ISSN：ISBN13 / 9786263913455



2018 臺灣公民科技素養概況



廚房玩科學：甜點製作學探究與運算思維



國小自然科學教材教法之教案與教學	STEAM 教育雙語小學堂 四年級：交通 主題探究與挑戰
	
STEAM 教育雙語小學堂五年級：STEAM 教育 雙語小學堂：聲音主題探究與應用	

(三) 學術研討會論文 (Conference paper)

1. Yang, K. K. (2019). *Promoting pre-service teachers' teaching knowledge and belief of STEM education through engineering design-based lesson*. Paper presented at the Second International Cognitive Cities Conference (IC3, 2019), Kyoto, Japan. (2019/09/03)
2. Lu, Y-Y., Chen, H-T., Wang, H-H., Yang, K-K., Lin, H-S., *Hong, Z. R. (2018). Promoting Children's Engagement in Learning Science and Science Self-efficacy through a SADI Intervention. Paper presented at the annual conference of the National Association for Research in Science Teaching, Atlanta, GA, March 10th-13th.
3. Pan, Y-T., Yang, K-K., Hong, Z. R., & Lin, H-S. (2018). The effect of interest and engagement in learning science on adults' environmental actions and scientific competency. Paper presented at the annual conference of the National Association for Research in Science Teaching, Atlanta, GA, March 10th-13th.
4. 楊桂瓊、李玲、洪瑞兒、林煥祥 (2017)。教師參與科學創造力教學課程共備成效之探討。台灣教育研會 2017 學術研討會。國立中山大學，11 月 25 日。
5. Yang, K.K., Lee, L., Hong, Z-R & Lin, S. (2017, April). Exploring the significant predictors of student creative science thinking performance. Paper presented at the NARST conference, San Antonio, US
6. Jack, B., Lee, L., Yang, K. & Lin*, H. (2016, April). *Science for Citizenship Model (SCM):*

Assessing the effects of benefits, risks, and trust for predicting students' interest in science-related content. Paper presented at the annual conference of the East-Asian Association for Science Education, Tokyo, August 26-28.

7. Wang, H., Chen H., [Yang, K.](#), Pan, Y., Lin*, H. & Hong, Z. (2016, April). *The Impact of a Short-Term Camp on Students' Awareness and Mental Models towards Marine Environment.* Paper presented at the annual conference of the East-Asian Association for Science Education, Tokyo, August 26-28.
8. [Yang, K.K.](#), Lee, L., Hong, Z-R & Lin., S.(2016, April). The investigation of effective strategies for developing creative science thinking. Paper presented at the NARST conference, Baltimore, US
9. [Yang, K.K.](#), Lin, H., & Hong, Z. (2015, Sept). *Developing free-choice online test items for the assessment of elementary students' science inquiry competency.* Paper presented at the ESERA Conference, Helsinki, Finland.
10. Brady, M-J, Lee, L., [Yang, K.K.](#), & Lin., S.(2015, April). *SCM: Measuring Students' Interest Within and Beyond the Formal Science Classroom.* Paper presented at the NARST conference, Chicago, US.
11. [Yang, K.K.](#), Lin, H., & Lin, S.(2011, Dec). *Supporting learning of variable control through reflection of TV advertisements.* Paper presented at the TERA International Conference on Education, Kaohsiung, Taiwan.
12. Hong, Z., Lin, H., Wang, H-H & Chen, H-T, [Yang, K.K.](#) (2011, Oct). *Effects of Cooperative Small Group Discussion on Elementary School Students' Argumentation and Attitudes toward Science in Taiwan.* Paper presented at the EASE Conference, Gwangju, Korea.
13. Hong, Z., Chen, Y., & [Yang, K.K.](#) (2011, Oct). *From situational interest to individual interest: The impact of a classroom intervention on college students' perception of learning science.* Paper presented at the EASE Conference, Gwangju, Korea.
14. Lin, H., Hong, Z., [Yang, K.K.](#), & Chen, Y. (2010, June). *Using collaborative reflections to support teachers' inquiry-based instruction.* Paper was presented at the annual conference of the Australian Science Education Research Association, New South Wales, Australia.
15. Hong, Z., Lin, H. S., Chen, H. T., Wang, H. H., & [Yang, K.K.](#) (2010, Dec). *The investigation of taiwanese elementary school students' self-efficacy and learning in science.* Paper was presented at Global Chinese Conference on Science Education 2010 (GCCSE), Hong Kong Institute of Education
16. [Yang, K-K.](#), Lin, H., & Chen, Y-C. (2010, Jan). *The exploration of teaching argumentation for elementary school students.* Paper was presented at the Hawaii International Conference on Education, Honolulu.
17. Hong, Z., Chen, H-T., Wang, H-H., & [Yang, K-K.](#) (2009, Jan). *The effects of promoting*

elementary school students' reading critical thinking and self-development through inquiry-based teaching. Paper was presented at the Hawaii International Conference on Education, Honolulu.

18. Deng, T. S., Yang, K. K., Liu, L. Y., & Lin, M. C. (2021, November). The Concept of STEAM in Science Communication: Review of Works on the Curriculum. In 2021 2nd SEA-STEM International Conference (SEA-STEM) (pp. 124-128). IEEE.
19. Enabling Steam Possibility & Empowering CLIL Practice: A Steam-Integrated & Clil-Oriented Curriculum Design For Primary Students CTE-STEM 2023
20. Shih-Ting Ciou, Li-Yu Lin, [Kuay-Keng Yang](#)* (2023, Dec). *Research on using POE-IP to cultivate critical thinking tendency and scientific ability of primary school pre-service teachers*. Paper was presented at the 2023 International Conference of Science Education in Taiwan, Taiwan. 7-9 December, 2023 用議程
21. [Kuay-Keng YANG](#), Sheng-Yi WU, Yi-Hung LIAO.(2024, July). *Contribution of creativity thinking on students STEAM project-based learning*. Paper presented at the International Conference on Intelligent Science and Sustainable Development (ISASD), Tokyo, Japan.
22. [Kuay-Keng Yang](#), Ming-Chao Lin and Sheau-Wen Lin.(2025, Jan). *Science capital role in elementary school students' aspiration for science career*. Paper presented at the International Conference on Global Chinese Academy for Science Education Research (GCASER), Hongkong, China.
23. [Kuay-Keng Yang](#), Ming-Chao Lin and Sheau-Wen Lin.(2025, Jan). Science capital role in elementary school students' aspiration for science career. Paper presented at the International Conference on Global Chinese Academy for Science Education Research (GCASER), Hongkong, China.
24. Chang, Y-C & [Yang, K-K](#). (2026, Jan). The effectiveness of the collaboration of preservice teachers and international buddies in STEAM teaching”. Paper was presented at the 2026 Hawaii International Conference on Education, Honolulu.
25. [Yang, K-K.](#), Lin, M-C1, Chang, Y-C. (2026, Jan). Developing ‘Connected Science in Daily Life’ Activities and Evaluating Teaching Effectiveness Paper was presented at the 2026 Hawaii International Conference on Education, Honolulu.

1. 榮獲國立中山大學 98、103 年度「優秀教學助理獎」。
2. 榮獲科教學會年輕學者獎第 34 屆年輕學者獎。