



Dr. Watcharee Ketpichainarong

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CURRENT EMPLOYMENT: Assistant Professor

INSTITUTION: Institute for Innovative Learning, Mahidol University
999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom, 73170 Thailand

ACADEMIC QUALIFICATIONS:

2009 Ph.D. (Science and Technology Education), Mahidol University, Thailand
2004 Diploma (Teaching Profession) Mahidol University, Thailand
2003 B.Sc. (Biology), Mahidol University, Thailand

PROFESSIONAL MEMBERSHIPS:

The Thai Teacher Council

ACADEMIC APPOINTMENT AND TEACHING:

2013 - Present Assistant Professor, Science and Technology Education Program, Mahidol University
2009 - 2013 Instructor, Science and Technology Education Program, Mahidol University

RESEARCH EXPERIENCES:

2012 - 2019 **Pohpanpunya Project** (Investigator)
Granted by The Thailand Research Fund and Kasikornbank Public Company Limited

2013 - 2014 **Teacher Coaching Project** (Investigator)
Granted by The Thailand Research Fund and Office of the Basic Education Commission

2007 – 2008 Science education research at Centre for Science and Technology Education Research, University of Waikato, Hamilton, New Zealand.

SCHOLARSHIP and WARDS:

2015 Outstanding Poster Presentation Award from the 2nd International Conference on Innovation in Education

1999 - 2009 the Project for Promotion of Science and Mathematics Talented Teachers (PSMT) of the Institute for the Promotion of Teaching Science and Technology (IPST), Thailand

AREA OF INTEREST:

- 1) Instructional materials and approaches for interdisciplinary teaching
- 2) Multimedia for teaching and learning (biology/life science)
- 3) Science teacher professional development
- 4) Active learning (inquiry, problem-based learning, project-based learning, research-based learning, game-based learning etc.)
- 5) Model and analogy for teaching and learning
- 6) Technology enhanced learning

SELECTED PUBLICATIONS:

1. *International Papers*

- 1) Cyril, N., Coll, S.D., **Ketpichainarong, W.**, & Rajoo, M. (2022). Blended learning in acids and bases: an alternative to science teaching for lower secondary schools. *SN Social Sciences*, 2, 141. <https://doi.org/10.1007/s43545-022-00447-z>
- 2) Gitgeatpong, L., & **Ketpichainarong, W.*** (2022). Fostering Students' Understanding in Mangrove Ecosystem: A Case Study Using the Mangrove Survivor Board Game. *Simulation & Gaming*, 53(2), 194-213. DOI: 10.1177/10468781221075143. (Q1)
- 3) Meekaew, N, & **Ketpichainarong, W.** (2021). The effects of an Augmented Reality-facilitated mobile game-based learning on the diversity of life for promoting learning at the Natural History Museum. *International Journal of Mobile Learning and Organization*, 15(3), 282-305. (Q1)
- 4) Jansri, S., & **Ketpichainarong, W.** (2020). Investigating in-service science teachers conceptions of astronomy, and determine the obstacles in teaching astronomy in Thailand. *International Journal of Educational Methodology*, 6(4), 745-758. <https://doi.org/10.12973/ijem.6.4.745>
- 5) Choopan, W., Liewrian, **W.**, **Ketpichainarong, W.**, & Panijpan, B. (2016). A demonstration device to simulate the radial velocity method for exoplanet detection. *Physics Education*, 51(4), 044001 (7pp)
- 6) Noyudom, A., & **Ketpichainarong, W.*** (2015). Using game activities as assessment tools for evaluating nursing students' understanding on tracheostomy care. *The International Journal of Assessment and Evaluation*, 21(3-4), 9-23.
- 7) Sopita Jansri, S., Tippins, D.J., & **Ketpichainarong, W.** (2014). The development of a mini-celestial sphere model to enhance high school students conceptual understanding of astronomical phenomena. *Journal and Review of Astronomy Education and Outreach*, 1(2), A41- 65.
- 8) Jeenjenkit, U.*, Ruenwongsa, P., Jittam, P., **Ketpichainarong, W.**, & Panijpan, B. (2011). A Guided-inquiry learning unit on the Dushman reaction for determining iodate in salt. *Journal of Srinakharinwirot University*, 3(1), 327-331.
- 9) Pewnim, K., **Ketpichainarong, W.**, Panijpan, B & Ruenwongsa, P. (2011). Creating young scientists through community science projects. *Procedia Social and Behavioral Science*, 15, 2956–2962.
- 10) Choopan, W., **Ketpichainarong, W.**, Laosinchai, P. & **Panijpan, B.** (2011). A Demonstration Set-up to Simulate Detection of Planets Outside the Solar System. *Physics Education*, 46(5), 554-558.
- 11) Pewnim, K., **Ketpichainarong, W.**, Panijpan, B, & Ruenwongsa, P. (2011). Biocontrol of insect pests in the rice field: A learning unit about environmental problems for secondary school students. *The International Journal of Learning*, 18(2), 219-223.
- 12) Pewnim, K., **Ketpichainarong, W.**, Panijpan, B, & Ruenwongsa, P. (2011). Biocontrol of insect pests in the rice field: A learning unit about environmental problems for secondary school students. *The International Journal of Learning*, 18(2), 219-223
- 13) Nuangsaeng, B., **Ketpichainarong, W.**, Ruenwongsa, P., Panijpan, B, & Niemi, K.J. (2011). Promoting inquiry-based teaching practices through an aquatic toxicology laboratory. *The International Journal of Learning*, 17(12), 161-180.
- 14) Piyayodilokchai H., Ruenwongsa, P., **Ketpichainarong W.**, Laosinchai, P., Panjaburee, P*. (August, 2010). Promoting students' understanding of SQL in a database management course: A learning cycle approach. *The International Journal of Learning*, 17(11), 325-337
- 15) Wannawichitra, C., Ruenwongsa, P., **Ketpichainarong, W.**, & Jittam, P.* (2010). Development of an integrated learning unit for enhancing awareness and conceptual understanding of global warming in secondary students. *The International Journal of Learning*, 17(11), 399-415
- 16) To-im, J., Tianchai, C., Tianchai, N., **Ketpichainarong, W.**, Jittam, P., Sriwattanaothai, N., & Ruenwongsa, P. (2010). Using a Local Water Problem as Case-based Scenario to Encourage

Thai Grade 8 Students' Learning of Science. *The International Journal of Learning*, 17(6), 157-163.

- 17) Pewnim, K., **Ketpichainarong, W.***, & Ruenwongsa, P. (2010) Bringing science to community: A STS-based learning unit on biocontrol for secondary school students. *The International Journal of Learning*, 17(4), 29-44
- 18) **Ketpichainarong, W.**, Jittam, P*, Ruenwongsa, P., & Panijpan, B. (2010). Addressing widespread iodine deficiency disorders: A serious health problem in Thailand and beyond. *Journal of Chemical Education*, 87(7), 662-664.
- 19) **Ketpichainarong, W.**, Ruenwongsa, P., & Panijpan, B. (2009). Enhanced learning of biotechnology students by an inquiry based cellulase laboratory. *International Journal of Environmental and Science Education*, 5(2), 169-187.
- 20) **Ketpichainarong, W.**, Ruenwongsa, P.*, & Panijpan, B. (2009). Enhancing student conceptualization of enzyme activity using a cellulose digesting enzyme. *International Journal of Learning*, 16(2), 17-31.

2. *International Conference Proceedings*

- 1) Sukumanan, S., Sriwattanarothai, N., & **Ketpichainarong, W.** (2019, 1-3 April). The ant colony board game for promoting symbiotic relationship understanding. *Proceedings of 2019 International Symposium on Education and Psychology (ISEP 2019)*, Fukuoka, Japan.
- 2) Gitgetpong, L. & **Ketpichainarong, W.** (2017, November 24 -25). Exploring students' understanding on food chain, food web, animal diversity and natural impact on mangrove ecosystem and assessing students' attitude toward the developed board game activity. *Proceedings of the 3rd International Conference on Innovation in Education*, Nakhonprathom, Thailand, pp.104-110.
- 3) Drakpa, R., Sriwattanarothai, N., **Ketpichainarong, W.**, & Jittam, P. (2016, 27-29 January). Active learning unit to promote students' understanding of endocrine system and hormones: A case study in grade 10 Bhutanese students. *Proceedings of the 5th International Conference on Learning Innovation in Science and Technology (ICLIST 2016)*, Pattaya, Thailand, pp.10-19.
- 4) Yangki, T., Jittam, P., & **Ketpichainarong, W.*** (2015, March 2-4). Promoting students' understanding on human eye concepts through hands-on model based learning cycle unit. *Proceeding in the 9th International Technology, Education and Development Conference*, Madrid, Spain.
- 5) **Ketpichainarong, W.**, Sriwattanarothai, N., & Jittam, P. (2015, March 16-18). Teacher perceptions on adapting contemplative education concepts used in the classroom: A case study. In *Proceedings from the 2nd International Conference on Innovation in Education held at Learning Center, Mahidol University, Nakhon Pathom, Thailand*.
- 6) Jittam, P., Kaewkhong, K., Chenprakhon, P., Srisawasdi, N., **Ketpichainarong, W.**, Panijpan, B., & Ruenwongsa, P. (2006, November). A simple spectroscope for chemical and biochemical analysis. Paper presented at ICASE Asian Symposium, Singapore.
- 7) Panijpan, B., Ruenwongsa, P., Jittam, P., **Ketpichainarong, W.**, & Sachadecha, P. (2005, April). Community-based hands-on integrated science/technology projects. Paper presented at The ICASE International Workshop on Promoting Scientific and Technological Literacy Through Science Toys and Out-of-School Science Activities, Cholburi province, Thailand.

3. *International Workshop*

- 1) **Ketpichainarong, W.**, & Sriwattanarothai, N. (2015, 17 March). Improving Thinking Skills through Active Learning Strategies. *Workshop at the 2nd International Conference on Innovation in Education (ICIE 2015)*, Nakhon Pathom, Thailand.

