



Dr Jennifer Yeo
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Education Qualifications

2009	PhD, Nanyang Technological University
2003	MA (Instructional Design and Technology), Nanyang Technological University
1992	PGDipEd (Credit), Nanyang Technological University
1991	BSc, National University of Singapore

Academic and Professional Experience

2022	Associate Professor, Singapore University of Social Sciences
2020	Senior Lecturer, Singapore University of Social Sciences
2011 - 2020	Assistant Professor, National Institute of Education, Singapore
2007 - 2011	Lecturer, National Institute of Education, Singapore
2005 - 2007	Research Associate, National Institute of Education, Singapore
1999 - 2000	Subject Head, Victoria School, Ministry of Education, Singapore
1992 - 1998	Teacher, Victoria School, Ministry of Education, Singapore

Selected Publications

Journal Articles:

1. Chen, W., Zhang, S., Pi, Z., Tan, J. S. H., Wen, Y., Loo, C.-K., Yeo, J., & Liu, Q. (inpress). Students' Appropriation of Collaboration Script in a Networked Class: An Exploratory Study. *Technology, Pedagogy and Education*.
2. Tan, K. C. D., & Yeo, J. (2022). Advancing conceptual understanding of science. *International Journal of Science Education and Teaching*, 1(2), 56-64.
3. Yeo, J. & Gilbert, J. K. (2022). Producing Scientific Explanations in Physics—A Multimodal Account. *Research in Science Education*, 52(3), 819 – 852. <https://doi.org/10.1007/s11165-021-10039-1>

4. **Yeo, J.**, Lim, E., Tan, K. C. D., Ong, Y. S (2021). The Efficacy of an Image-to-Writing Approach to Learning Abstract Scientific Concepts: Temperature and Heat. *International Journal of Science and Mathematics Education*, DOI 10.1007/s10763-019-10026-z
5. **Yeo, J.**, Wong, W. L., Tan, K. C. D., Ong, Y. S., & Delserieys, A. P. (2020). Using visual representation in realising the concept of “Heat” in primary science. *Learning: Research & Practice*, 6(1), 34-50.
6. Tan, K. C. D., **Yeo, J.**, Tan, P. H., & Ong, A. (2019). Differentiating heat and temperature: An image-to-writing approach. *Primary Science*, 160, 21-24.
7. Yamashita, S., **Yeo, J.**, Nakanishi, K., Kojima, K., Igarashi, R., Terasawa, A., Chang, J., Toh, J., Pang, A., Ashardianto, S., & Nomura, J. (2019). Development and Evaluation of GPS Science Lesson Based on STEM Model in Singapore. *Science Education International*, 30(3), 194-199.
8. Tay, S. L., & **Yeo, J.** (2017). Analysis of a physics teacher's pedagogical ‘micro- actions’ that support 17-year-olds’ learning of free body diagrams via a modelling approach. *International Journal of Science Education*, 40(2), 109-138.
9. **Yeo, J.**, & Tan S. C. (2014). Redesigning problem-based learning in the knowledge creation paradigm for school science learning. *Instructional Science*, 42(5), 747 – 775.
10. **Yeo, J.**, & Gilbert, J. K. (2014). Constructing a Scientific Explanation—A Narrative Account. *International Journal of Science Education*, 36(11), 1902-1935.
11. **Yeo, J.** & Tan, S.C. (2010). Constructive use of authoritative sources in science meaning making. *International Journal of Science Education*, 32(13), 1739-1754.
12. Tan, S. C., **Yeo, J.**, & Lim, W. Y. (2005). Changing epistemology of science learning through inquiry with Computer-Supported Collaborative Learning. *Journal of Computers in Mathematics and Science Teaching*, 24(4), 367-386.

Books:

1. **Yeo, J.**, Teo, T. W., & Tang, K.-S. (Eds.). (2018). Science education research and practice in Asia-Pacific and beyond. Singapore: Springer.
2. Tan, S. C., So, H. J., & **Yeo, J.** (Eds.). (2014). Knowledge creation in education. Singapore: Springer.

Book Chapters:

1. **Yeo, J.**, & Tan, K. C. D. (2022). From image-to-writing: A teacher’s PCK in supporting primary school students in making sense of the specialised language of science. In Seah, L. H., Silver, R. E., & Baidon, M. C. (Eds.), The role of language in content pedagogy (pp. 115 – 136). Springer.
2. **Yeo, J.**, & Tan, K.C.D. (2021). Science education in Singapore. In O.-S Tan, E. L. Low, E. G. Tay & Y. K Yan. (Eds.), *Singapore math and science education innovation: Beyond PISA* (pp. 00-00). Singapore, Springer.

3. **Yeo, J.**, Chen, W.L., Lee, Y.J., & Tan, T. (2021). Innovative science and STEM pedagogies in Singapore. In O.-S Tan, E. L. Low, E. G. Tay & Y. K Yan. (Eds.), *Singapore math and science education innovation: Beyond PISA* (pp. 00-00). Singapore, Springer.
4. Tan., K.C.D, & **Yeo, J.** (2021). Moving Research into the Classroom: Synergy in Collaboration. In O.-S Tan, E. L. Low, E. G. Tay & Y. K Yan. (Eds.), *Singapore math and science education innovation: Beyond PISA* (pp. 00-00). Singapore, Springer.
5. **Yeo, J.** (2018). Showcasing Singapore Science Teachers' Research. In J. Yeo, T. W. Teo, & K. S. Tang (Eds.), *Science education research and practice in Asia-Pacific and beyond* (pp. 151-158). Singapore: Springer Nature.
6. **Yeo, J.**, & Gilbert, J. K. (2017). The role of representations in students' explanations of phenomena in physics. In D. F Treagust, R. Duit, & H. E. Fischer (Eds.), *Multiple representations in physics education* (pp. 255-287). Cham: Springer International Publishing.
7. **Yeo, J.** (2015). Building theory-practice nexus in pre-service physics teacher education through Problem-Based Learning. In A. Walker, H. Leary, C. E. Hmelo- Silver, & P. A. Ertmer (Eds.), *Essential reading in Problem-based Learning: Exploring and extending the legacy of Howard S. Barrows* (pp. 165- 178). Indiana: Purdue University Press.
8. Tan, S. C., **Yeo, J.**, So, H. J., Ow, E. G. J., Chai, C. S., & Teo, C. L. (2014). Knowledge creation in Singapore schools: Our journey and ways forward. In S. C. Tan, H. J. So, & J. Yeo (Eds.), *Knowledge creation in education* (pp. 283-302). Singapore: Springer.
9. **Yeo, J.** (2014). Knowledge building as a boundary object in formal/informal learning. In A. L. Tan, C. L. Poon, & S. L. S. Lim (Eds.), *Inquiry into the Singapore science classroom*. Singapore: Springer.
10. **Yeo, J.** (2014). From Problem-Based Learning to Knowledge Creation. In S. C. Tan, H. J. So & J. Yeo (Eds.), *Knowledge creation in education*. Singapore: Springer.
11. Tan, S. C, & **Yeo, J.** (2014). Implementing inquiry science with knowledge creation approaches. In A. L. Tan, C. L. Poon & S. L. S. Lim (Eds.), *Inquiry into the Singapore science classroom* (pp. 191-210). Singapore: Springer.
12. **Yeo, J.** (2014). Understanding students' conceptions of electromagnetic induction: A semiotic analysis. In C. Bruguière, A. Tiberghien & P. Clément (Eds.), *9th ESERA Conference Contributions: Topics and trends in current science education* (pp. 339-352). Dordrecht: Springer.
13. **Yeo, J.**, Lee, Y.-J. (2012). Knowledge advancement in environmental science through knowledge building. In K. C. D. Tan & M. Kim (Eds.), *Issues and challenges in science education research* (pp. 317 - 332). Dordrecht: Springer.
14. So, H. J., Lim, W. Y., & **Yeo, J.** (2010). Essential design features of online collaborative learning. In H. Song (Ed.), *Distance learning technologies, current instruction, and the future of education: Applications of today, practices of tomorrow* (pp. 230-244). Hershey: IGI Global.
15. Tan, S. C., Kim, B., & **Yeo, A. C. J.** (2010). Learning with technology: Learner voice and agency. In M. Orey, S. A. Jones, & R. M. Branch (Ed.), *Educational media and technology yearbook 2010* (pp. 117-134.). New York: Springer.
16. **Yeo, J.**, & Lee, Y. J. (2010). Situating science inquiry learning in knowledge creation metaphor of learning. In Lee, Y. J. (Ed.), *The world of science education: Handbook of research in Asia* (pp. 335-354). Rotterdam: Sense Publishers.

17. Tan, S. C., Seah L. H., **Yeo, J.**, & Hung, D. (2008). Online learning communities in K-12 settings. In J. Voogt, & G. Knezek (Eds.), *Springer international handbook of information technology in primary and secondary education* (pp. 249-266). Dordrecht: Springer.
18. **Yeo, J.**, Tan S. C., & Tang, K. S. (2008). Making sense of a, b, c's of science? A dialectics between everyday and scientific conception. In Y. J. Lee & A. L. Tan (Eds.), *Science education at the nexus of theory and practice* (pp. 25-44). Netherlands: Sense Publishing.
19. **Yeo, J.**, & Hung, D. (2007). Technology mediated problem-centered learning environments. In O. S. Tan (Ed.), *Problem-based Learning in E-learning Breakthroughs* (pp. 185-206). Singapore: Thomson Learning.

Journal Special Issue (Editor)

20. Nielsen, W., & **Yeo, J.** (2022). Introduction to the Special Issue: Multimodal Meaning-Making in Science. *Research in Science Education*, 52(3), 751 – 754. <https://doi.org/10.1007/s11165-022-10051-z>
21. **Yeo, J.**, & Nielsen, W. (2020) Multimodal science teaching and learning, *Learning: Research and Practice*, 6:1, 1-4, DOI: 10.1080/23735082.2020.1752043

Honours and Awards:

2016

- *Bronze award for Teaching Delivery* for introducing theory-practice nexus in pre-service physics teacher education through Problem-based Learning (The Wharton School – SEI Center at the University of Philadelphia and QS Quacquarelli Symonds at QS Stars Reimagine Education Awards 2016)
- Silver award under the *category of Natural Science* for innovatively synthesising insights from problem-based learning with open-source platforms like Google Site to improve instructor competency for pre-service physics teacher education. (The Wharton School – SEI Center at the University of Philadelphia, and QS Quacquarelli Symonds at the QS Stars Reimagine Education Awards 2016 held during the 2016 Reimagine Education Conference
- Excellence in Research Award, National Institute of Education, Singapore

2015

John Cheung Award for Social Media (Nanyang Technological University)

2012

Nanyang Award (Team) for contribution as member of International Biology Olympiad (IBO) Organising Committee

2010

2009

Dean's Commendation for Research, National Institute of Education, Singapore

1988 – 1991

Public Service Commission Teaching Merit Scholarship

Membership & Professional Activities

2020 – present:

Author, Primary Science Textbooks, Ministry of Education

2017 – 2020:

Member, MOE Science Curriculum Full Term Review – Syllabus and Resource Development Committee for Secondary Physics

2016 – present:

Editorial Board Member of International Journal of Science Education

2014 – present:

Associate Editor of Learning: Research and Practice journal

2012:

Consultant (TWINCLE project, Chiba University)

2011 – 2021:

Treasurer, East Spring Primary School Advisory Committee

2010 – 2012:

Member, MOE Physics Curriculum Review

Research Interests

- Constructivists' Learning Environment
- Practice-based learning
- Multimodality and Meaning-making
- Teacher Professional Learning and Pedagogical Content Knowledge

Awards Granted

Competitive Grants:

Role	Year	Project Title	Amount (S\$)	Source of Grant
Collaborator	2023 – 2026 (in-progress)	Adoption of Integrated Resources to Shape Integrated Learning Experiences: Insights	434,855	NIE ERFP Tier 3

		from Implementation of 2023 Primary Science Syllabus		
PI	2022 – 2024 (in-progress)	Examining the Implementation of Practice-based Work Approach for the Professional Learning of Associate Faculty S\$240,912	240,912	
PI	2019 - 2023	Realising Lower Secondary Thematic Science Curriculum in the Classroom: Developing Teachers' Competences in Thematic Science Teaching (OER 16/19 YACJ)	340,866	NIE ERFP Tier 2
Co-PI	2017 – 2020 (completed)	Assessment and visualisation of collaborative argumentation in science classroom (OER 07/17 CWL)	(249,976)	NIE ERFP Tier 2
PI	2016 – 2019 (completed)	From Images to Writing: A Formative Assessment Approach for Developing Understanding of Abstract Concepts in Primary Science (AFR 02/15 JY)	247,410	MOE Academies Fund Tier 2
PI	2014 – 2018 (completed)	Developing a framework for assessing students' construction of scientific explanations in physics (OER 13/13 JY)	248,722	NIE ERFP Tier 2
Co-PI	2013 – 2017 (completed)	Examining normal academic/technical students' science learning from a sociological and cultural lens (OER 51/12 TWT)	(249,980)	NIE ERFP Tier 2
PI	2012 – 2015 (completed)	Designing a physics curriculum for developing students' science competencies (OER 11/11 JY)	99,431	NIE ERFP Tier 1
PI	2009 – 2012 (completed)	Understanding the development of students'	98,538.71	NIE ERFP Tier 1

		abstract concepts in Electromagnetic Induction using visualization-based instruction (OER 13/08 JY)		
Co-PI	2008 – 2011 (completed)	Making meaning of environmental science through Computer-Supported Collaborative Learning (R8019.735.ES08)	(197,134)	NIE Learning Sciences Lab (LSL) Grant Tier 2

Start-up Grants:

Co-PI	2013 - 2014	Understanding pre-service teachers' physics disciplinary literacy and 21st century competencies through a science apprenticeship model (SUG 10/13 RSR)	(20,000)	OER Start-up Grant
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