

Curriculum Vitae



Dr Jennifer Yeo

Senior Lecturer
Teaching & Learning Centre

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Education Qualifications

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

Academic and Professional Experience

2020 - Present	Senior Lecturer, Singapore University of Social Sciences
2011 - 2020	Assistant Professor, National Institute of Education, Nanyang Technological University
2007 - 2011	Lecturer, National Institute of Education, Nanyang Technological University
2005 - 2007	Research Associate, National Institute of Education, Nanyang Technological University
2004 - 2005	Part-time Research Assistant, National Institute of Education, Nanyang Technological University
2001 - 2005	Part-time Tutor, National Institute of Education, Nanyang Technological University
2001	Adjunct Lecturer, Temasek Polytechnic
2000	Senior Editor, SNP Education Pte Ltd
1999 - 2000	Subject Head, Victoria School, Ministry of Education
1992 - 1998	Teacher, Victoria School, Ministry of Education

Memberships and Professional Activities

2017 - 2018	Member, NIE Educational Research Funding Programme and MOE Academies Fund Committee (OER Internal Review Team)
2016 - Present	Member, Editorial Board of International Journal of Science Education
2014 - Present	Associate Editor, Learning: Research and Practice
2014 - 2018	Member, Australasian Science Education Research Association, Australia

2013 - 2018	Member, European Science Education Research Association, Europe
2011 - Present	Treasurer, East Spring Primary School Advisory Committee
2006 - 2012	Member, International Society of Learning Sciences, USA

Consultation and Executive Experience

2020 - Present	Author, Primary Science Textbook, Ministry of Education, Singapore
2018	Consultant for E1 Cluster on “Developing Pedagogical Content Knowledge (PCK) for Formative Assessment”
2017	Keynote speaker, E3 Cluster Networked Learning Community Sharing Session, Ministry of Education, on 29 March 2017
2017 - 2020	Member, MOE Science Curriculum Full Term Review – Syllabus and Resource Development Committee for Secondary Physics
2017	Invited Speaker, AST ST-LT Sharing Session for Primary Science on 6 March 2017
2016	Invited Speaker, Science Inquiry in Action Networked Learning Community on 31 March 2016
2015	Consultant, Creation of Problem-based Learning supported by Knowledge Forum for Primary Science @Fuhua Primary School
2015	Consultant, West Zone Info-Communications Technology Community of Practice (WZ ICT COP) in Primary Science
2014	Consultant, GP-AP Programme for Gongshang Primary School
2012 - 2014	Member, Ministry of Education (Singapore)’s Physics Taskforce for Prototyping Curation of Online Resources
2012	Member, Organising Committee of International Biology Olympiad (IBO)
2011 - 2020	Member, Physics Subject Chapter, Ministry of Education
2010 - 2012	Member, MOE physics curriculum review

Research Interests

- Multimodality
- Meaning-making
- Constructivists’ Learning Environment
- Teacher Professional Learning and Pedagogical Content Knowledge
- Practice-based work

Selected Publications

Journal Papers:

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*, 19, 21–44. DOI 10.1007/s10763-019-10026-z

- Yeo, J., Wong, W. L., Tan, K. C. D., Ong, Y. S., & Delseerleys, A. P. (2020). Using visual representation in realising the concept of “Heat” in primary science. *Learning: Research & Practice*, 6(1), 34-50, DOI: 10.1080/23735082.2020.1750674
- 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.
- 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.
- 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.
- Yamashita, S., Yeo, J., Yuchi, R., Nakamura, Y., Yamada, M., Narimatsu, I., Hirano, Y., Lim, T. Y., Lim, C. H., Nomura, J., Oshima, R., Baba, S., & Hayashi, H., (2017). Improvement of a science lesson in Singapore based on research findings in science education: Through improvement of lesson plans, PowerPoint slides, teaching materials and worksheets. *Journal of Science Education in Japan*, 41(2), 96-106.
- Yamashita, S., & Yeo, J. (2016). How should fourth grade students express and explain their thoughts about how water is heated?. *Journal of Science Education in Japan*, 40(1), 12-20.
- 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.
- Yeo, J., & Gilbert, J. K. (2014). Constructing a scientific explanation—A narrative account. *International Journal of Science Education*, 36(11), 1902-1935.
- Yeo, J., Tan, S. C., & Lee, Y. J. (2012). A learning journey in problem-based learning in a physics classroom. *The Asia-Pacific Education Researcher*, 21(1), 39-50.
- Tang, K. S., Tan, S. C., & Yeo, J. (2011). Students’ multimodal construction of Work-Energy Concept. *International Journal of Science Education*, 33, 1775-1804.
- Yeo, J., & Tan, S. C. (2011). How a group learns: Implications for collaborative work in science. *The Asia-Pacific Education Researcher*, 20(2), 231-245.
- Yeo, J. & Tan, S.C. (2010). Constructive use of authoritative sources in science meaning making. *International Journal of Science Education*, 32(13), 1739-1754.
- 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:

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

Book Chapters:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.

Editorials and Commentaries:

- Yeo, J., & Nielsen, W. (2020) Multimodal science teaching and learning, *Learning: Research and Practice*, 6:1, 1-4, DOI: 10.1080/23735082.2020.1752043
- Yeo, J. (2019). Facing the Challenges of the Future of Education. *Learning: Research and Practice*, 5(1), 1-3.
- Koh, E., Yeo, J., & Hung, D. (2015). Pushing boundaries, taking risks. *Learning: Research and Practice*, 1(2), 95-99.
- Yeo, J. (2009). Finding science in students' talk. *Cultural Studies of Science Education*, 913-919. Netherlands: Springer.

Research Funding

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| 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 |
| 2017 - 2020 | Assessment and visualisation of collaborative argumentation in science classroom (OER 07/17 CWL)
\$249,976, NIE ERFP Tier 2 |
| 2016 - 2019 | 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 |
| 2014 - 2018 | Developing a framework for assessing students' construction of scientific explanations in physics (OER 13/13 JY)
\$248,722, NIE ERFP Tier 2 |
| 2013 - 2017 | Examining normal academic/technical students' science learning from a sociological and cultural lens (OER 51/12 TWT)
\$249,980, NIE ERFP Tier 2 |

2012 - 2015	Designing a physics curriculum for developing students' science competencies (OER 11/11 JY) \$99,431, NIE ERF Tier 1
2009 - 2012	Understanding the development of students' abstract concepts in Electromagnetic Induction using visualization-based instruction (OER 13/08 JY) \$98,538.71, NIE ERF Tier 1
2008 - 2011	Making meaning of environmental science through Computer-Supported Collaborative Learning (R8019.735.ES08) \$197,134, NIE Learning Sciences Lab (LSL) Grant Tier 2

Awards

2017, 2018	"Partner of Academy of Singapore Teachers' Award
2016	Excellence in Research Award, National Institute of Education
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)
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)
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
2009, 2010	Dean's Commendation for Research, National Institute of Education

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