

ANDREA MAZZURCO

Lecturer of Engineering Education

The Engineering Practice Academy
Faculty of Science, Engineering, and Technology
Swinburne University of Technology
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Research Interests & Skills

- Global Engineering Education, including, humanitarian engineering, sustainable community development, and global/local service learning.
- Development of socio-technical thinking and moral reasoning of engineering students and professionals.
- Development of assessment instruments, both self-rating scales and scenario-based.
- Systematic literature review, scale and survey development, statistical data analysis using R, qualitative data collection and analysis using NVivo.

Education

Purdue University

Doctor of Philosophy, Engineering Education

Dissertation: “Methods to Facilitate Community Participation in Humanitarian Engineering Projects: Laying the Foundation for a Learning Platform.”

West Lafayette, IN

Aug 2016

Purdue University

Master of Science, Aeronautical and Astronautical Engineering

West Lafayette, IN

Dec 2011

Politecnico di Milano

Bachelor of Science, Aerospace Engineering

Milan, Italy

Jan 2011

Certifications and Training

Coursera

IBM Data Science Professional Certificate

Aug 2019 - present

The University of Queensland

Designing Assessment Workshop

Nov 2016

Research Funding Online Database Training

Oct 2016

Managing & Leading People in a Research Context Workshop

Oct 2016

Managing & Evaluating Teaching & Learning Projects

Sept 2016

Purdue University
Safe Zone Training
Effective College Teaching Workshop

West Lafayette, IN
Feb 2016
Feb 2014

Work Experience

The University of Queensland <i>Educational Researcher – Enhancing Students’ Experience</i>	St Lucia, QLD Aug 2016 – Aug 2017
Purdue University <i>Graduate Research Assistant</i>	West Lafayette, IN May 2015 – Jul 2016
Purdue University <i>Co-coordinator, Global Engineering Education Collaboratory (GEEC)</i>	West Lafayette, IN Jan 2015 – Sep 2016
Purdue University <i>Future Faculty Fellow, First Year Engineering</i>	West Lafayette, IN May 2014 – May 2015
Purdue University <i>Faculty Apprentice, School of Engineering Education</i>	West Lafayette, IN Jan - May 2015
Purdue University <i>Instructor, School of Languages and Cultures</i>	West Lafayette, IN Aug 2010 – May 2014
Purdue University <i>Co-Adviser, Global Design Team, Global Engineering Program</i>	West Lafayette, IN Jan - May 2013
Purdue University <i>Apprentice Adviser, EPICS</i>	West Lafayette, IN Aug - Dec 2013

Peer Reviewed Journal Papers

Daniel, S., & **Mazzurco, A.** (under review). Assessing co-design expertise in the context of humanitarian engineering. *European Journal of Engineering Education*.

Mazzurco, A., Crossin, E., Chandrasekaran, S., Daniel, S., & Sadewo, G. (under review). A systematic review of research on engineering practice. *Journal of Engineering Education*.

Mann, L., Chang, R., Chandrasekaran, S., Coddington, A., Daniel, S. A., Cook, E., **Mazzurco, A.** ... Smith, T. D. (in press). From problem-based learning to practice-based education: A framework for shaping future engineers. *European Journal of Engineering Education*.

Mazzurco, A., Jesiek, B. K., & Goodwin, A. (in press). Development of the Global Engineering Competency Scale (GECS): Exploratory and confirmatory factor analysis. *Journal of Professional Issues in Engineering Education and Practice*.

Mazzurco, A., & Daniel, S. A. (in press). Socio-technical thinking of students and practitioners in the context of humanitarian engineering. *Journal of Engineering Education*.

Murzi, H., **Mazzurco, A.**, Pikaar, I., & Gibbes, B. (2019) Measuring development of environmental awareness and moral reasoning: A case-study of a civil engineering course, *European Journal of Engineering Education*, DOI: 10.1080/03043797.2019.1566300

Jesiek B., **Mazzurco A.**, Thompson, J., & Trellinger, N. (2018). Boundary spanning and engineering: A qualitative systematic review. *Journal of Engineering Education*, 107(3), 380-413

Mazzurco, A., Leydens, J. A., & Jesiek, B. K., (2018). Passive, Consultative, and Co-Constructive Methods: A Framework to Facilitate Community Participation in Design for Development. *Journal of Mechanical Design*, 140(12).

Smith, J., **Mazzurco, A.**, & Compston, P., (2018). Student engagement with a humanitarian engineering pathway. *Australasian Journal of Engineering Education*.

Mazzurco, A., & Jesiek, B. (2017). Five guiding principles to enhance community participation in humanitarian engineering projects. *Journal of Humanitarian Engineering*, 5(2).

Mazzurco, A., Huff, J. L., & Jesiek, B. K. (2014). The Energy Conversion Playground (ECP) design task: Assessing how students think about technical and non-technical considerations in sustainable community development. *International Journal for Service Learning in Engineering*, 9(2), 64-84.

Jesiek, B., Zhu, Q., Woo, S., Thompson, J., & **Mazzurco, A.** (2014). Global engineering competency in context: Situations and behaviors. *Online Journal for Global Engineering Education*, 8(1).

Peer Reviewed Conference Papers

Jesiek, B.K., Buswell, N.T., **Mazzurco, A.**, & Zephirin, T. (2019). Toward a typology of the sociotechnical in engineering practice. *2019 Research in Engineering Education Symposium*.

Mazzurco, A., Daniel, S.A., & Smith, J. Development of socio-technical and co-design expertise in engineering students. *2019 Research in Engineering Education Symposium*.

Coddington, A., Mann, L., Chandrasekaran, S., Cook, E., Crossin, E., Daniel, S., **Mazzurco, A.**, Smith, T., & Turner, J. (2017). Grounded by values: An emergent engineering practice. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

Murzi, H., **Mazzurco, A.**, & Coulter, B. (2017). Integrating professional practice in the engineering curriculum: BE/ME chemical engineering students' experiences in industry placements. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

Mazzurco, A., Murzi, H., & Pikaar, I. (2017). Moral development of students entering the civil engineering bachelor. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

Mazzurco, A., & Murzi, H. (2017). Evaluating humanitarian engineering education initiatives: A scoping review of literature. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

Mazzurco, A. & Jesiek, B. (2017). Laying the Foundations of a Learning Platform for Humanitarian Engineering: Methodological Approach and Results. *2017 ASEE Conference and Exposition*.

Murzi, H., Fleming, M., **Mazzurco, A.,** & Pikaar, I. (2017). Work-In-Progress: Environmental Course Redesign: Learning Ethics from the Environmental Engineering Perspective. *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

Mazzurco, A., Murzi, H., Fleming, M. (2017). Development of the Environmental Engineering Issues Test (E2IT). *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

Fleming, M., **Mazzurco, A.,** Murzi, H. (2017). The Enhancing Students' Employability Project: Literature Synthesis of Assessment Instruments. *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

Jesiek, B. K., Trellinger, N. M., **Mazzurco, A.** (2016). Becoming boundary spanning engineers: Research methods and preliminary findings. *2015 ASEE Annual Conference and Exposition*

Jesiek, B. K., **Mazzurco, A.,** & Trellinger, N. M. (2015). Becoming boundary spanners in engineering: Identifying roles, activities, and competencies. *Proceedings of the 2015 IEEE Frontiers in Education Annual Conference*.

Mazzurco A., Zhu, Q., Wuji G., & Zhao, F. (2014). A comparative study of clay brick and fly ash brick in USA and China: Environmental and sociocultural perspectives. *Proceedings of 2014 International Symposium on Sustainable Systems & Technologies*.

Mazzurco A., & Jesiek, B. K. (2014). Learning from failure: developing a typology to enhance global service-learning engineering projects. *Proceedings of 2014 ASEE Conference and Exhibition*.

Mazzurco A., Huff J. L., & Jesiek, B. K. (2013). Raising student's cultural awareness through design scenario. *Proceedings of 2013 ASEE Conference and Exhibition*.

Mazzurco A., Jesiek B., & Ramane K. (2012). Are Engineering Students Culturally Intelligent? Preliminary Results of a Multi-Institutional Survey. *Proceedings of 2013 ASEE Conference and Exhibition*.

Presentations, Workshops, Invited Talks, and Posters

Philips, C. M. L., Joslyn, C. H., & **Mazzurco, A.** (2015). Social justice in the engineering curriculum: Course modules to challenge the dominant engineering culture. *2015 Engineering Social Justice and Peace Conference*.

Mazzurco, A. (2015). Methods to meaningfully engage community members in humanitarian engineering projects. *2015 Engineering Social Justice and Peace Conference*.

Mazzurco, A., & Jesiek, B. K. (2015). Classification of problem framing and solving methods for humanitarian engineering. *Poster at the 2015 Humanitarian Technology Conference, Boston, May 12-14*.

Jesiek, B. K., **Mazzurco, A.**, Lucena, J. C., Lehr, J., Thompson, J. (2014). Frontiers of humanitarian engineering: Learning from social justice, feminism, and failures. *Workshop at the 2014 IEEE Global Humanitarian Technology Conference, San José, CA*.

Mazzurco A. (2013). Engenharia dos oprimidos: A model of participatory engineering project for sustainable community development. *2013 Engineering, Social Justice, and Peace Conference*

Leadership and Service

Australia Representative

Governing board of the Research in Engineering Education Network Jan 2019 - present

Reviewer

Journal of Engineering Education Jan 2019 - present

European Journal of Engineering Education Aug 2018 - present

Journal of Humanitarian Engineering Jan 2015 – Present

ASEE Annual Conference & Exhibition Jan 2012 – Present

Research in Engineering Education Symposium Feb 2017 – Present

AAEE Annual Conference Jun 2017 – Present

Graduate Student Representative

Engineering Education Faculty Development Recognition Committee, School of Engineering Education, Purdue University. Fall 2015

Design Reviewer for EPICS

Aug 2012 – July 2016

Awards and Recognitions

Award Recipient

Swinburne FSET Small Education Research Grants, \$3000

Purdue Graduate Student Government Travel Grant, \$1000

Purdue Graduate Student Government Professional Grant, \$800

Conference Travel Fund, College of Engineering, Purdue University, \$500

Best Poster Award, 3RD Place

Innovation for International Development Expo, Global Engineering Program, Purdue University

Professional Memberships and Affiliations

American Society For Engineering Education (ASEE)

IEEE

Australasian Association For Engineering Education (AAEE)

Research In Engineering Education Network (REEN)

Engineers Australia (EA)