



Faculty of Arts and Social Sciences
Environmental Science

Course Reading

Pedagogic methods for teaching about risk and environmental issues

Valid from 01/19/2026

Course Code: MVG403

Course Title: Pedagogic methods for teaching about risk and environmental issues

Credits: 7.5

Degree Level: Undergraduate level

Books

Jesse Schell (2020). *The art of game design: A book of lenses* (3rd). Boca Raton, FL: CRC Press

Patrick Prax, Clayton Whittle, Trevin York (2025). *The Game Needs to Change: Towards Sustainable Game Design* (1 ed.). Boca Raton: CRC Press

<https://www.taylorfrancis.com/books/edit/10.1201/9781003512400/game-needs-change-patrick-prax-clayton-whittle-trevin-york>

Wik, M. (2024). *Prototyping with purpose: Increasing participatory design with malleable interactive prototypes: [Doctoral thesis, Karlstad University]*. Karlstad: Karlstad University <https://doi.org/10.59217/xwlv2713>

Book Chapter

Biggs, J. & Tang, C. (2011). Constructively aligned teaching and assessment. In Biggs, J. & Tang, C. (Editor). *Teaching for Quality Learning at University* (5th) New York: Open University Press Digitally available at KAU library

Rick Millican (2020). A rounder sense of purpose: Competences for Educators in Search of Transformation. In Vare, P., Lausset, N & Rieckmann, M. (eds.) (Editor). *Competences in Education for Sustainable Development: Critical perspectives* (p. 35-43) Switzerland: Springer

Articles

Bjørner, Thomas; Hansen, Charina Benedikte Søgaard (2010). Designing an Educational Game: Design Principles from a Holistic Perspective. *International Journal of Learning*, 17 (10), p. 279-290. <https://vbn.aau.dk/en/publications/designing-an-educational-game-design-principles-from-a-holistic-p>

Caserman, P., Hoffmann, K., Müller, P., Schaub, M., Straßburg, K., Wiemeyer, J., ... & Göbel, S. (2020). Quality Criteria for Serious Games: Serious Part, Game Part, and Balance. *JMIR serious games*, 8 (3), e19037. <https://games.jmir.org/2020/3/e19037/1000>

Gurbuz, S. & Celik, M. (2022). Serious games in future skills development: A systematic review of the design approaches. *Comput Appl Eng Educ*, 30 (5), p. 1591-1612. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/cae.22557>

Ines Di Loreto, Simone Mora, Monica Divitini (2012). Collaborative serious games for crisis management: an overview. *IEEE 21st International WETICE*, p. 352-257. <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&number=6269757>

Jääskä, E., Aaltonen, K., & Kujala, J. (2021). Game-based learning in project sustainability management education. *Sustainability*, 13 (15), p. 8204. <https://www.mdpi.com/2071-1050/13/15/8204>

Krath, J., Schürmann, L., & Von Korfflesch, H. F. (2021). Revealing the theoretical basis of gamification: A systematic review and analysis of theory in research on gamification, serious games and game-based learning.

Computers in Human Behavior, 125, p. 106963.

<https://www.sciencedirect.com/science/article/pii/S0747563221002867>

Sass, W., Boeve-de Pauw, J., Olsson, D., Gericke, N., De Maeyer, S., & Van Petegem, P. (2020). Redefining Action Competence: The Case of Sustainable Development. *Journal of Environmental Education*, 51 (4), p. 292-305. <https://doi.org/10.1080/00958964.2020.1765132>

Sheila G. Oyao, Jack Holbrook, Miia Rannikmäe & Marmon M. Pagunsan (2015). Competence-Based Science Learning Framework Illustrated Through the Study of Natural Hazards and Disaster Risk Reduction. *International Journal of Science Education*, 37 (14), p. 2263

Sinakou, E., Donche, V., Boeve-de Pauw, J. & Van Petegem, P. (2019). Designing Powerful Learning Environments in Education for Sustainable Development: A Conceptual Framework. *Sustainability*, 11, p. 5994. <https://www.mdpi.com/2071-1050/11/21/5994>

Teemu H. Laine and Renny S. N. Lindberg (2020). Designing Engaging Games for Education: A Systematic Literature Review on Game Motivators and Design Principles. *IEEE TRANSACTIONS ON LEARNING TECHNOLOGIES*, 3 (14), p. 804-821. <https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9173738>

Werner Siegfried Ravyse, A. Seugnet Bignaut, Verona Leendertz, Alex Woolner (2017). Success factors for serious games to enhance learning: a systematic review. *Virtual Reality*, 21, p. 31-58

Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability science*, 6 (2), p. 203-218. <https://doi.org/https://doi.org/10.1007/s11625-011-0132-6>

Misc.

Olof Oscarsson (2023), Resiliens och "serious games" - en kunskapsöversikt, <https://www.diva-portal.org/smash/get/diva2:1795426/FULLTEXT01.pdf>

Approved by the Faculty Board of Arts and Social Sciences 02/16/2026