Federico Corni – Curriculum Vitae

Personal Information

- **Name:** Federico Corni
- **Email:** federico.corni@unibz.it
- **ORCID:** 0000-0003-1226-1585
- **Current Affiliation:** Full Professor in Physics Education, Faculty of Education, Free University of Bozen-Bolzano.

Academic Positions

- 2019 – Present: Full Professor (Professore Ordinario) in Physics Education, Faculty of Education, Free University of Bozen-Bolzano.
- 2002 – 2019: Associate Professor in Physics Education, Department of Education and Human Sciences, University of Modena and Reggio Emilia.
- 1995 – 2002: Researcher (Ricercatore Universitario), Department of Physics, University of Modena and Reggio Emilia.
- 1988 – 1995: Technical Officer (Tecnico Laureato) of vacuum systems, University of Modena.

Education and Qualifications

- 1986: Master's Degree (Laurea) in Physics with Honors (110/110 cum laude), University of Modena. Thesis on EXAFS spectroscopy with synchrotron radiation.

Scientific Responsibilities and International Roles

- Since 2008: Scientific Consultant of the "Fisica in Moto" Didactic Laboratory, Ducati Foundation.
- 2012: Expert Consultant for the Italian Ministry of Education (MIUR) for the revision of the National Guidelines for Kindergarten and Primary School Curriculum.
- Since 2017: Leader of the GIREP Thematic Group on Physics Preparation of Teachers in Grades K-6.
- Since 2021: Director of MultiLab: EduSpace Research laboratory at the Free University of Bozen-Bolzano focusing on embodiment, imagination, and play in education.

Selected Research Projects

- FCHgo (2019-2021): Horizon 2020 "Fuel Cells HydroGen educational model for schools."
- VidNuT (2021-2023): Erasmus+ "Video vignettes in science, technology and textiles."
- e^4 (2022-2025): Erasmus+ "higher Educational tools for an Embodied & creative Education on Energy."
- SHINE (2023-ongoing): Erasmus+ "Mainstreaming Systems Thinking In Natural sciences and Environmental education."

Main Research Areas

- Interdisciplinary studies for innovation in science education (Kindergarten to Secondary school).
- The role of conceptual metaphors, narrative, and imagination in learning physics.
- Embodiment and imagination in science education
- Game-based learning in scientific contexts.

- Informal science communication and laboratory didactics.

Bibliometric Indicators (Scopus)

- Publications: Over 100 indexed items.
- Citations: > 1300.
- H-index: 18.

Selected Recent Publications

Books:

- Fuchs, H. U., & Corni, F. (2023). *Primary Physical Science Education - An Imaginative Approach to Encounters with Nature*. Springer. https://doi.org/10.1007/978-3-031-43953-7
- Landini, A., & Corni, F. (2023). Narrare le scienze - Percorsi e attività con le storie per l'educazione scientifica alla scuola primaria. Erickson.

Book Chapters:

- Fuchs, H. U., Dumont, E., & Corni, F. (2025). Narrative Minds in the Construction and Use of Theories of Forces of Nature - A Model of Experience at Different Scales. In Aura Heydenreich, Christine Lubkoll, & Klaus Mecke (Eds.), *Narrative and Cognition in Literature and Science* (pp. 217–246). Ge Gruyter. https://doi.org/10.1515/9783110782844-008
- Gelmi, A., Fuchs, H. U., & Corni, F. (2025). Creative Imagination in Primary Science Education: Imaginative Education, Conceptual PlayWorlds and Forces of Nature. In Louise Bøttcher, Ditte Winther-Lindqvist, Mariane Hedegaard, & Marilyn Fleer (Eds.), Sustainability, Care, Play and the Zone of Proximal Development (Vol. 15, pp. 331–356). Springer Nature. https://doi.org/10.1007/978-3-031-92131-5_16
- Corni, F. (2023). The Role of Metaphors in Teacher Education in Physics. In J. Borg Marks & P. Galea (Eds.), Physics Teacher Education. More About What Matters (pp. 3–24). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-44312-1_1
- Fuchs, H. U., Corni, F., & Dumont, E. (2021). Narrativity in Complex Systems. In A. Zeyer & R. Kyburz-Graber (Eds.), Science | Environment | Health. Towards a Science Pedagogy of Complex Living Systems (Chapter 10). Springer.

Journal Articles:

- D'Anna, M., Corridoni, T., Sposetti, S., & Corni, F. (2024). Doppler effect in the ripple tank: further experiments with a moving source. *European Journal of Physics*, *45*(015702). https://doi.org/10.1088/1361-6404/ad0aa2
- D'Anna, M., Corridoni, T., Sposetti, S., & Corni, F. (2024). Doppler effect in the ripple tank: further experiments with a moving source. European Journal of Physics, 45(015702). https://doi.org/10.1088/1361-6404/ad0aa2
- Fuchs, H. U., Dumont, E., & Corni, F. (2024). Carnot and the Archetype of Waterfalls. Entropy, 26(1066). https://doi.org/10.3390/e26121066
- Fuchs, H. U., D'Anna, M., & Corni, F. (2022). Entropy and the Experience of Heat. Entropy, 24, 646–689. https://doi.org/10.3390/e24050646
- Corni, F., & Fuchs, H. U. (2021). Primary Physical Science for Student Teachers at Kindergarten and Primary School Levels: Part II—Implementation and Evaluation of a Course. Interchange, 52(2), 203–236. https://doi.org/10.1007/s10780-021-09424-6
- D'Anna, M., Fuchs, H. U., & Corni, F. (2021). Spheres rolling on an inclined track. Physics Education, 56. https://doi.org/10.1088/1361-6552/ac015b

- Fuchs, H. U., Corni, F., & Pahl, A. (2021). Embodied Simulations of Forces of Nature and the Role of Energy in Physical Systems. Education Sciences, 11(12), 32. https://doi.org/10.3390/educsci11120759
- Corni, F., & Fuchs, H. U. (2020). Primary Physical Science for Student Teachers at Kindergarten and Primary School Levels: Part I - Foundations of an Imaginative Approach to Physical Science. Interchange, 51(3), 315–343. https://doi.org/10.1007/s10780-019-09382-0