Metaverses, Transdisciplinary Pedagogy and Nanoscience in Education

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Abstract:

The purpose of this paper is to explore contexts and applications of metaverses, their potential, and possible best practices teaching nanoscience and nanotechnology. The keynote will focus on curriculum design, transdisciplinary pedagogy, and experiential learning as processes of purposeful transdisciplinary, experiential science education. Metaverses differ from augmented reality (AR) and virtual reality (VR). Metaverses are virtual worlds with access to 3D virtual spaces, solutions, and environments whereas VR can be thought of as a technology and one of the components for interacting with metaverses. To create a flow of future researchers and developers in these fields; countries, corporations, and educational institutions need to reach beyond classic declarative learner knowledge. Transdisciplinary pedagogy and metaverses can nurture the complex and creative processes of learners discovering and actively interacting with aspects of nanoscience and nanotechnology. Augmented Reality Digital Technologies (ARDT's) such as Metaverses digital capabilities encompass personalized education, simulations, interactive instructor-facilitated learning, AI-driven tutors, and hyper-realistic immersive experiences. The keynote will close with recommendations on transdisciplinary pedagogical frameworks in metaverses and free educational resources for transdisciplinary learning and teaching of Nanoscience and Nanotechnology.

Keywords:
Nanoscience and Nanotechnology, transdisciplinary pedagogy, pedagogical frameworks, metaverses, experiential science education

Biography

Dr. Cowin is a Fulbright Scholar; Assistant Professor and TESOL Practicum Coordinator at Touro College; project coordinator for access and equity in digital literacy for Computers for Schools Burundi; current co-Chair of the of the Technology Enhanced Language Learning SIG 2022 conference, past conference chair of the 51st NYS TESOL conference 2021. Recent presentations focused on: The Metaverse: Layers, Applications, and Terminology, Leading Forward: Distributed Ledger Technologies for Education and Government Institutions, The Power of Trustless Immutability and The Future of Higher Education and Extended Reality: The Next Normal: Metaverse, Virtual Beings, AI cloning for the World Higher Education Ranking Summit (WHERS), Dubai, UAE.