Harmonising Data and Creativity: The PEDAL Project's Interdisciplinary Approach to Learning

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Abstract: Our PEDAL project—Presenting Enviro-cultural Data for Interdisciplinary Learning—explores the nexus between intergenerational dialogues, enviro-cultural data, digital music, metaverse, and Generative AI (GenAI). Students from diverse majors work in groups to interview the elderly to collect multisensory memories and to use GenAI to creatively sonify Hong Kong's environmental data. The resulting exhibition takes place in a Metaverse environment (Decentraland).

Through courses such as Creative Expression with Music, PEDAL is integrated into the curriculum, connecting environmental and cultural sustainability themes. For instance, students have transformed temperature data into melodies, translating quantitative information into engaging audio experiences. They also experiment with environmental sounds and memories associated with our five senses morphing into an oral history map. This interdisciplinary methodology has enhanced students' creativity and technical skills and significantly boosted their confidence.

Preliminary results reveal PEDAL's impact on student engagement and learning outcomes, underscoring the project's potential for broader educational applications. By sharing our experiences, we aim to inspire educators and institutions to explore similar integrations of GenAI in education, enhancing creativity, technical skills, and interdisciplinary collaboration. As PEDAL evolves, we aim to deepen the exploration of data-driven creativity and public outreach, furthering our contribution towards the Sustainable Development Goals.

Keywords:

1. Enviro-cultural data
2. Data-driven creativity
3. Interdisciplinary learning
4. Intergenerational dialogues
5. Cultural sustainability