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Breaking Down Walls, Building Minds

Towards a Future of Science Education and Science Education Research through and Interdisciplinary Approach

Glimpse into the Future: Personalized Learning

- Personalized learning and tailored instruction to individual needs and styles.
- Adaptive platforms, software and virtual/physical labs catering to each student's unique journey.

Personalized Learning

- Design of Inquiry-based Laboratory Projects for an Active Learning of (Bio)Chemistry, Focused on Problem Solving in a Professional Setting: García-Ponce et al.. (2024)- University of Malaga, Spain.

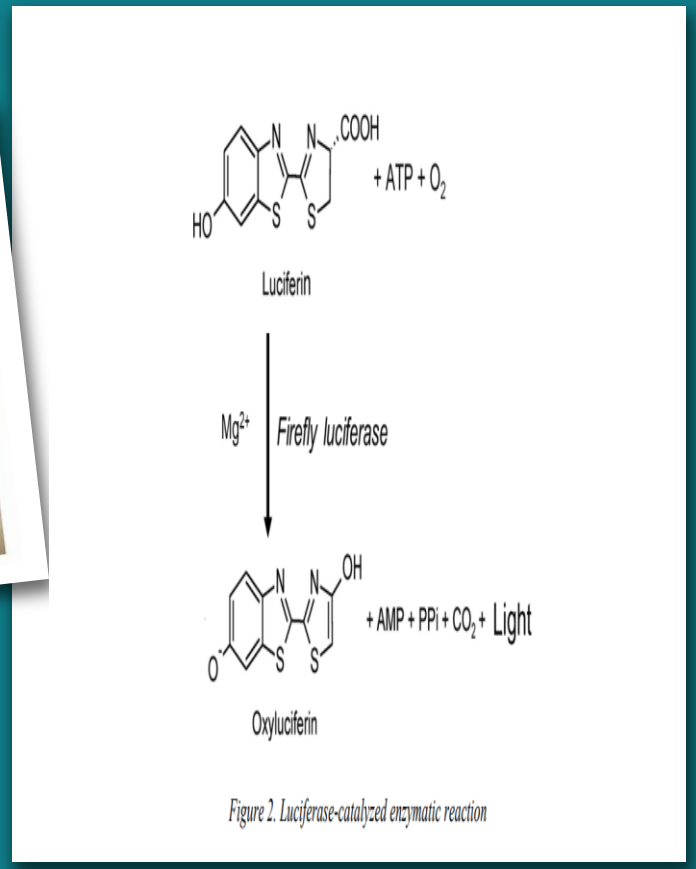

Figure 2. Luciferase-catalyzed enzymatic reaction

- Experimental Escape Games with Digital Enrichment - An Innovative Format in Science Education: Rubner et al. (2024)-University of Education Weingarten, Germany.

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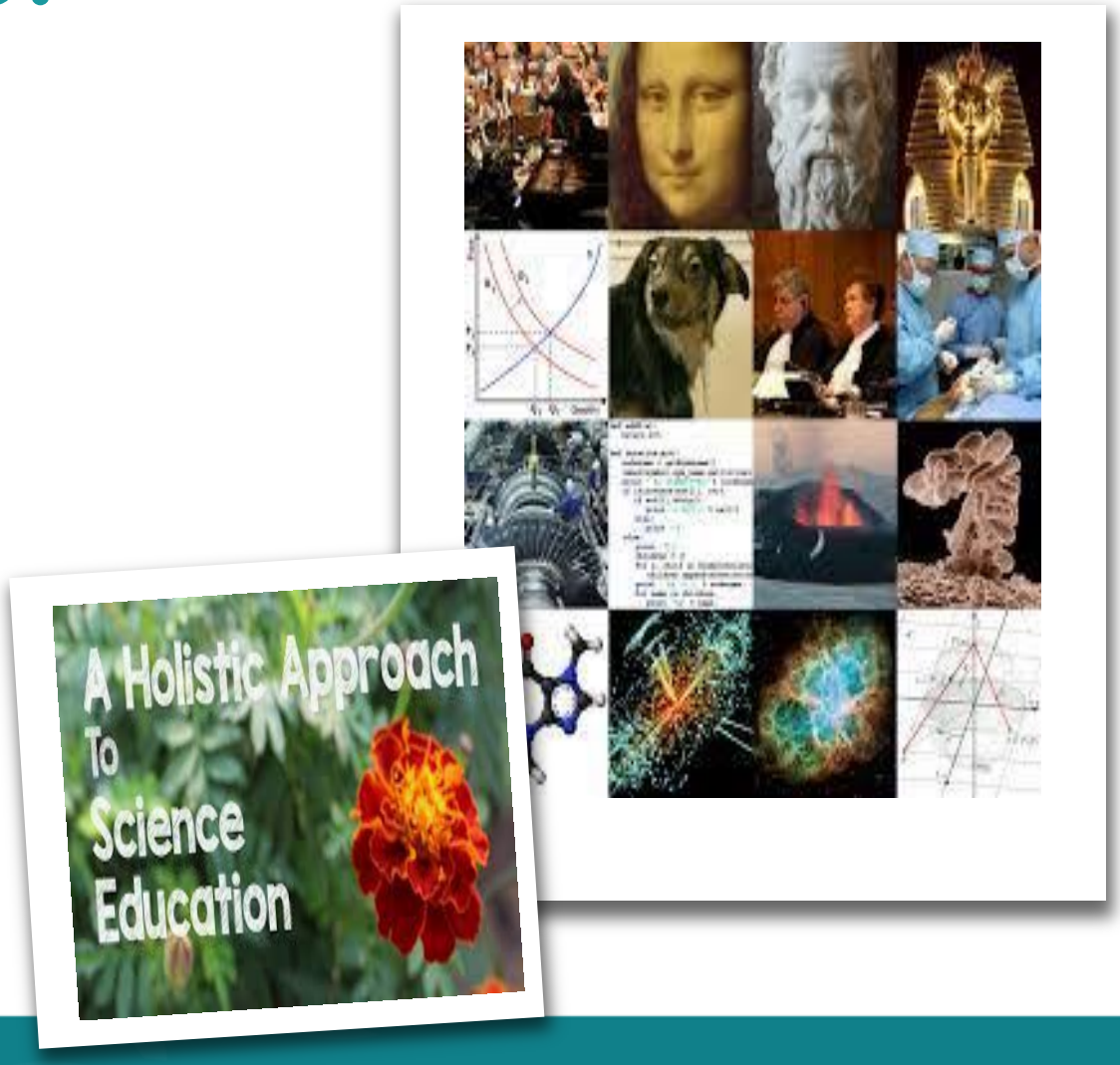
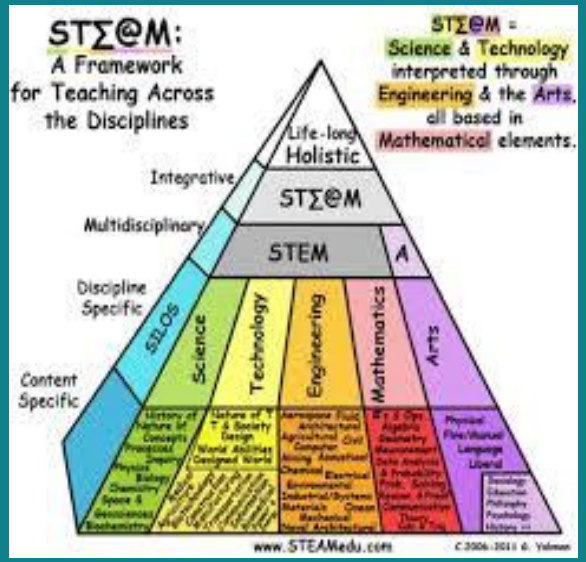
Breaking Down Walls: Interdisciplinary Exploration

- Blending science with other disciplines like art, history, and technology.
- Creating holistic learning experiences and sparking curiosity across boundaries.



Interdisciplinary Approach

- Artistic Research into German University of Applied Sciences Curricula: A New Paradigm in Science Education: Tobias and Sebastian (2024)-OWL Technical University of Applied Sciences and Arts, Germany.



- Building the Conceptual Profile of Chemical Analysis: The Sociocultural Domain: Mavridi et al. (2024)-Ionian University, National and Kapodistrian University of Athens, Greece.

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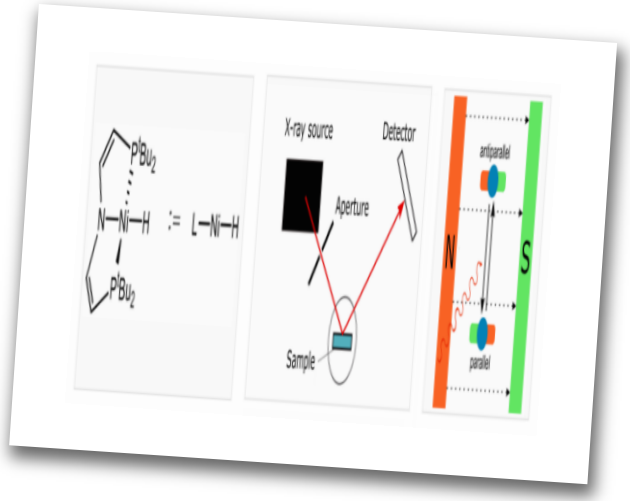
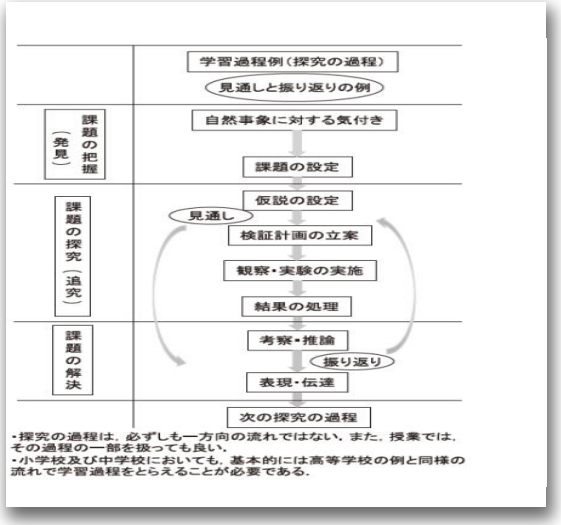
Integrating Real-World Science

- Connecting classroom learning to pressing global issues like climate change or pandemics.



Adapted Primary Literature about CO2 Reduction Reaction – Chemists' Research Approach to Protect the Climate: Lanfermann et al. (2024)-Department of Chemistry Education, Göttingen, Germany

Integrating Real-World Science



- Project-Based Learning: Engaging students in collaborative projects that address real-world challenges, developing critical thinking and teamwork skills.

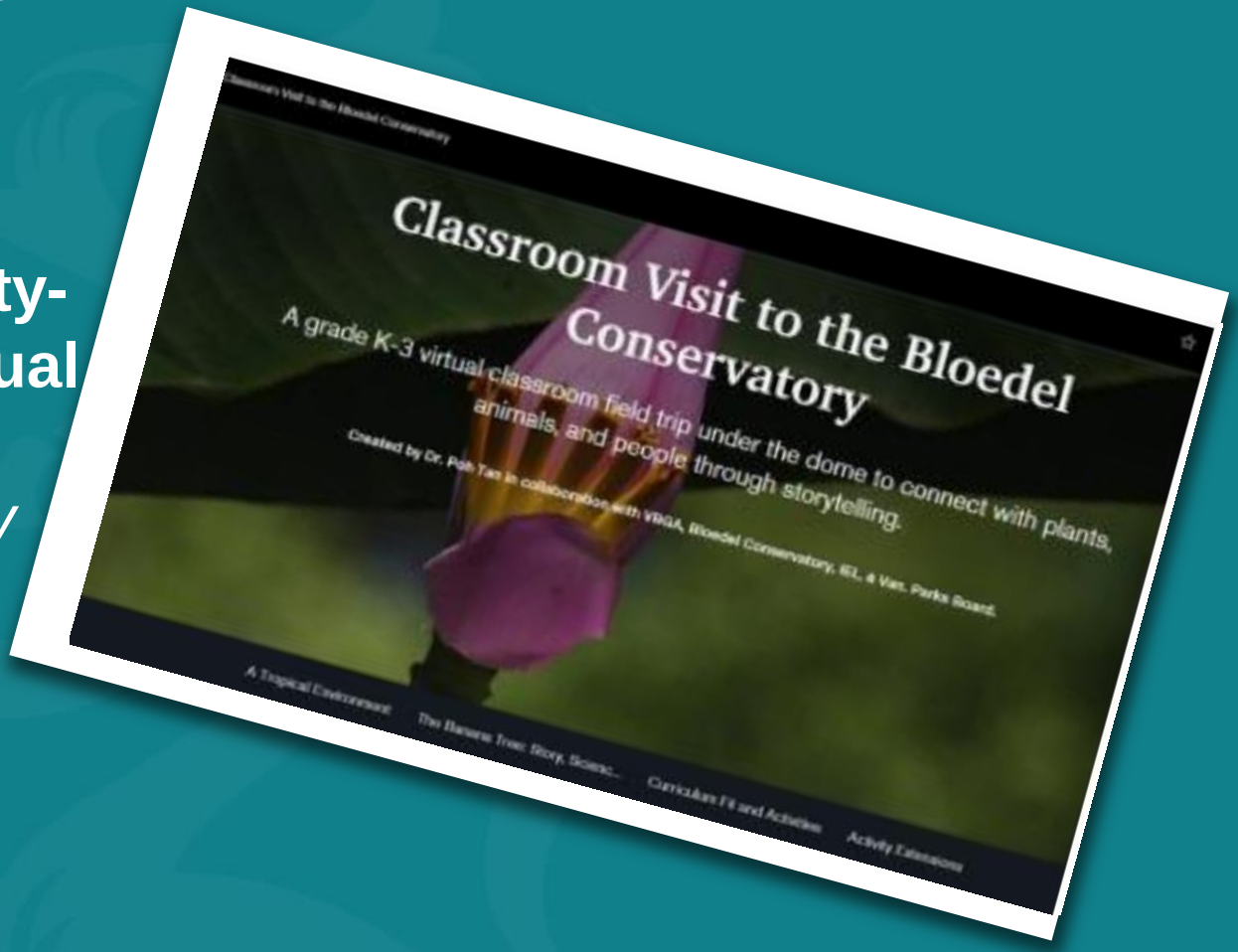
Conceptions of Inquiry-based Learning in High School Biology In Japan and China: He and Goto (2024), Tokyo University, Japan.

Integrating Real-World Science

- Place-Based Education: Connecting science curriculum to the local environment and community, fostering environmental stewardship and cultural awareness.

Place Based Learning

- **Accessible and Enriched Community-Engaged Learning: A Botanical Virtual Classroom Field Trip from Tan** and **David (2014)**, *Simon Fraser University Institute for Environmental Learning UNESCO Bio-cultural Diversity and Education, Canada.*



Integrating Real-World Science

- Fostering science literate and thus responsible citizens and future scientists equipped to tackle real-world challenges.

The Post-Pandemic Takeaways: Fotou and Constantinou (2024) -University of Lincoln.

Data-Driven Insights: Unlocking Potential

Possible

Actual Scientific Literacy

Realistic

Achievable and Realistic Science Education for all -

Nurturing Future Scientists

Nurture exceptional talent for future Scientists

Nurturing Future Well-Rounded Scientists

Nurturing Well-Rounded Scientists: Nurturing Beyond STEM

Data-Driven Insights: Unlocking Potential

Evidence Based

Data Rich – Data informed Science Education

Ensure Effective Learning

Cultivation of Scientific Knowledge, Critical Thinking and Problem-Solving Skills

Data Driven Decisions

Optimisation of STEM instruction and Tailoring it to the purposes of STEM and Student Needs -

Thanks for Listening

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Keep in Touch Wherever You Are

Dr Nikolaos Fotou
Senior Lecturer, MA in Education programme Lead

Nfotou@lincoln.ac.uk

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