How do undergraduate exercise physiology students respond to a co-designed assessment activity on planetary health?

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BACKGROUND

The triple planetary crisis of climate change, pollution and biodiversity loss is threatening the health of current and future generations (United Nations, 2024). Our future health workforce is well placed to promote planetary health, however they are currently underprepared to address the complex, contemporary challenges our global population is facing. In response to limited planetary health education being offered in tertiary degrees, Monash University's Faculty of Medicine, Nursing and Health Sciences invested in an education fellowship. This two-year project was designed to simultaneously build the capacity of educators and empower students by facilitating the co-design of planetary health curricula.

Learn more about this contribution to the Faculty-wide curriculum co-design project here

AIMS

This study aimed to:

- Understand the extent to which integrating planetary health education into an Exercise Physiology unit using curriculum co-design is effective at improving knowledge, attitudes and self-efficacy amongst students.
- Identify the planetary health concepts featured in student responses to a co-designed assessment activity and examine how they relate to the Sustainable Development Goals (SDGs).

METHODS

To achieve these aims, five stages of research were conducted to develop, pilot and evaluate the new assessment activity:

Stage 1 - Initial workshop with Planetary Health Education Champions (1 Educator and 3 Students) from an exercise physiology unit to conceptualise and develop the assessment activity.

See co-designed assessment task materials here.

Stage 2 – Pilot the new assessment activity with students enrolled in the unit during 2023 (n = 240), including a five-question pre-poll questionnaire to measure knowledge, attitudes and self-efficacy.

Stage 3 – Analyse submitted assessment responses from students. Data were deductively analysed against the Sustainable Development Goals and a frequency graph generated (see results).

Stage 4 – Analysis of pre-post poll data to explore the efficacy of the activity using paired samples t-test.

Stage 5 – Facilitation of a post-pilot co-design workshop with the same Planetary Health Education Champions to refine the assessment activity for future use. Data from the pre-post poll, assessment responses and reflections on aspects that were effective and those that could be improved from Champion students and their educator were used to inform the refinement process.

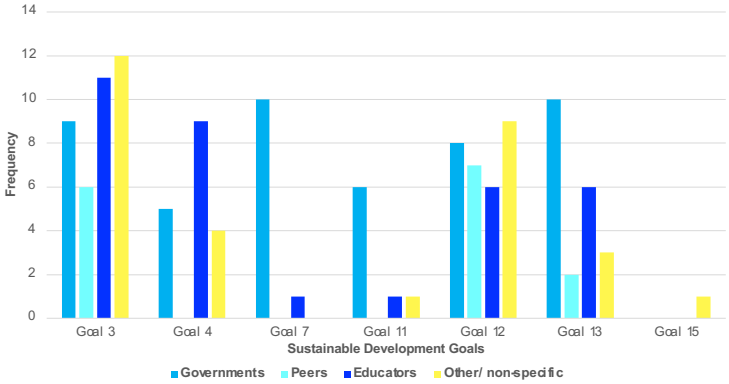
RESULTS

Student responses before (n = 169) and after (n = 152) exposure to the planetary health assignment. 5 out of the 5 prompts demonstrated a statistically significant improvement.

Pre-Post Student Poll Prompts	p-value
I know how to best explain what planetary health means for healthcare professionals.	≤ 0.0001
I know what healthcare professionals in my field can do to address the causes and consequences of climate change.	≤ 0.0001
Planetary health should be core business for healthcare professionals.	≤ 0.01
I feel equipped to advocate for change to promote planetary health within my field.	≤ 0.0001
My training has prepared me to address the causes and consequences of climate change within my field.	≤ 0.0001

One of the assessment activities required students to answer the question: ***Based on your research topic and your desire to improve planetary health, what is one call to action for the government, your peers and/ or educators?***

Thematic analysis of student responses revealed that physiology students' work was relevant to seven of the 17 Sustainable Development Goals.



Example student work attributable to four of the SDGs:

- **Goal 4 (Quality education): "***The government must place a compulsory teaching at university, schools and other educational institutions about planetary health, what it is and how we as a society can contribute in improving the planetary health"*
- **Goal 12 (Responsible consumption and production):** *"…making conscious consumer choices, we can drive demand for environmentally-responsible products, pushing industries to adopt better practices."*
- **Goal 13 (Climate action): "***One call to action for the government is that governments should conduct investigation… and make relevant laws or policies to ensure that agricultural food is more eco-sustainable, eco-friendly, reduce dependence on fossil fuels."*
- **Goal 15 (Life on land): "***…focus on reducing deforestation and preserving Australia's natural habitats so they can work with us to reduce the effects of climate change."*

CONCLUSIONS & FUTURE RESEARCH

Integrating planetary health curricula into tertiary education can effectively improve knowledge, attitudes and self-efficacy amongst students. Applying a planetary health lens to existing assessment tasks can prompt students relate their work to the Sustainable Development Goals (SDGs). To adequately equip our future workforce, planetary health education must be integrating into the curriculum and this must occur urgently as the triple planetary crisis continues to escalate. Future research is required to examine and share effective ways to facilitate planetary health education in all relevant degrees for both undergraduate and post-graduate students. Research is currently underway to explore the efficacy of using co-design as a mechanism to develop educator capacity and empower students in the field of planetary health education.

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References: United Nations Climate Change. What is Triple Planetary Crisis. https://unfccc.int/news/what-is-the-triple-planetary-crisis Accessed 16th, September 2024.

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