Making Connections: The impact of modelling connections between science and society on scientific literacy



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Introduction

- Increasing science literacy is often a goal of introductory biology classes.
- However, college students who took general education science courses had a similar level of science literacy as the general public.¹
- We could use models to emphasize the connections between science and society as a method for teaching science literacy because:
 - Models focus on connections between concepts.²
 - Student motivation increases when students see the impact on society, especially in their local community.³



Methods

- 4 sections of an introduction biology lab at MSU in Spring 2023.
- All sections took the same pre and post science literacy survey (28 questions).⁴
- 2 sections completed the modelling activity (Fig. 1).
- All students gave group presentations on their experiments.





References

¹Impey et al. (2011) J Coll Sci Teach. ²Long et al. (2014) Front Ecol *Environ*. ³Bransford *et al.,* Eds. (2000) *How people learn: brain, mind,* experience, and school. ⁴Gormally, et al. (2012) CBE Life Sci Educ.

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Science literacy refers to the skills students need to make use of scientific knowledge in real-world situations. Gormally et al. (2012) define 9 science literacy skills: Identify valid scientific arguments

- Evaluate the validity of sources
- Evaluate the use and misuse of scientific information 3
- Understand elements of research design and how they impact scientific 4. findings

Question 1: How does modelling impact science literacy survey scores and presentation scores?

Department at Michigan State University for travel funding.

What is science literacy?

- 5. Create graphical representations of data
- 6. Read and interpret graphical representations of data
- 7. Solve problems using quantitative skills, including probability and statistics
- 8. Understand and interpret basic statistics
- Justify inferences, predictions, and conclusions based on quantitative data 9.

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