Secondary PSTs’ Understanding of A Tri-Focal Approach Integrated in a Science Methods Course
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Need

- Preservice teacher education programs, especially secondary science tracks (Tolbert et al., 2019), often do not have an explicit literacy and EL focus in science methods course courses.
- Reconceptualizing science content and the language of science in the NGSS raises a variety of challenges for students and teachers.

Guided Questions

RQ1: What do PSTs know about science, second language acquisition, and disciplinary literacy (DL) in science classrooms at the beginning of the semester as demonstrated in their belief paper?

RQ2: Are there any statistically significant differences between the posttest and pretest scores of lesson plans that are rated using a trifocal rubric? If yes, What are the differences?

RQ3: What understanding about the roles of the trifocal approach in supporting science teaching and student learning do PSTs demonstrate in their reflection paper?

Outcomes

R1: PSTs demonstrated general understanding of science, second language acquisition, and science-specific literacy (DL) in their belief paper.

R2: There were statistically significant differences between the posttest and pretest scores of lesson plans in total scores, six concepts, and three subject areas (see figures on the right).

R3: PSTs made more connections between three subject areas, especially how DL and language support science teaching and learning.

Broader Impacts

- The primary direct outcomes of the project are 13 PSTs, their mentor teachers, and the public-school students.
- The present study adds to this conversation by providing implications for the potential design of science teacher education programs through interdisciplinary collaborations.