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Feb 12th, 11:30 AM - 12:20 PM

Teaching Inquiry-based Science Through the Critical Lens of Social Justice

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Jeffery, Tonya D.; Aldrich, Isaac; Anderson, Jordan; Bettencourt, Bailey; Castillo, Lucy; Carriger, Lily; and Hawkins, Tosha, "Teaching Inquiry-based Science Through the Critical Lens of Social Justice" (2021). *Diversity Conference*. 8.

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Presenter Information

Tonya D. Jeffery, Isaac Aldrich, Jordan Anderson, Bailey Bettencourt, Lucy Castillo, Lily Carriger, and Tosha Hawkins

OMA Diversity Conference Proposal

Presenter:

Dr. Tonya D. Jeffery, Asst. Professor, SFA Faculty and ELED 4310 Course Instructor

Co-Presenters (Preservice Teachers (Undergraduate ‘Honors’ Students)):

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Title: Teaching Inquiry-based Science Through the Critical Lens of Social Justice

Abstract: In this session, the first presenter who is a teacher educator from a historically marginalized group, share their own experiences about what led them to teach their science methods course through the critical lens of social justice and through the theoretical frameworks of culturally responsive education. In addition, the presenter will discuss the tools and strategies utilized for teaching this course and for creating a safe space for preservice teachers’ dialogue and critical reflections about their own lives and experiences, identity, racism, biases, and the systemic and structural oppression among various groups in K-12 education.

Six (6) preservice teachers participated in an honors project in this course. The project involved the development of 5E inquiry-based science lesson plans which incorporates elements of culturally responsive teaching; children’s picture books from the National Science Teachers Association (NSTA); social justice standards; nature of science (NOS); teaching science to English Learners (ELs); history and impact of female scientists and scientists of color; and/or socio-cultural issues that influence science in our everyday world.

During the second part of this session, the preservice teachers will showcase their honors projects and share their own experiences and lessons learned to include how this project impacts their perspective on learning their students’ backgrounds and cultures, their own science identity, and how this experience informs their future teaching practices.

Finally, the presenters will discuss the limitations of this project and future recommendations of ways in which we might consider implementing social justice practices in teacher preparation courses.

Key Words

Science education, science methods, preservice teacher, teacher education, social justice, inquiry-based instruction, culturally responsive pedagogy, multicultural education, equity, inclusion

Learning outcomes for presentation (at least 3):

1. Attendees will discover innovative strategies for integrating issues of social justice into a teacher education science methods course.
2. Attendees will explore various examples of 5E inquiry-based science lesson plans containing social justice standards.
3. Attendees will examine how discourse and awareness of equity and diversity issues in classroom teaching shapes preservice teacher identity.

How does your session relate to diversity, social justice and/or multiculturalism?

1. This session emphasizes the importance of embedding social justice concepts of diversity, equity and inclusion in teacher education courses.
2. The session provides an opportunity to hear preservice teachers' experiences and reflections from participating in discourse on racism and biases in the classroom, completing an honors project involving social justice standards and how this experience has informed their identity.
3. This session highlights innovative approaches that engages preservice teachers to develop a deeper awareness and understanding of the importance of creating a classroom environment and safe space that is accessible for all learners.

Category: i. Multicultural education

Time: 50 min

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