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Citation

Lee, Y. (2022). Teaching Innovation Learned from the 2022 AMTE Conference: Prepare Future Mathematics Educators. *Publications and Presentations*. Retrieved from <https://scholarworks.uark.edu/wctfscpub/43>

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Teaching Innovation Learned from the 2022 AMTE Conference: Prepare Future Mathematics Educators

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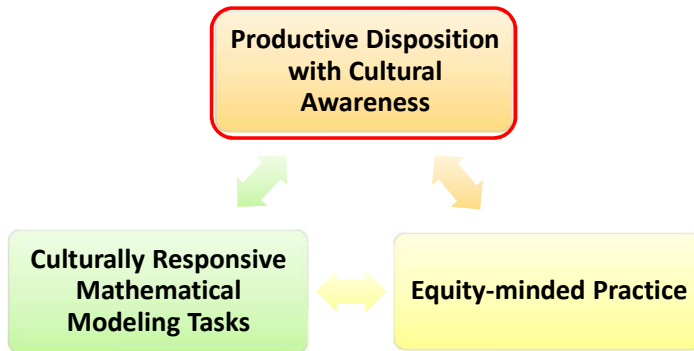
Introduction

It has been a pivotal goal to train effective mathematics teachers in every teacher education program around the world when mathematics is considered a gatekeeper in K-12 schools and a critical factor in career readiness.

The New Mathematics Framework (CDE, 2022) incorporates three Drivers of Investigation to guide mathematics teaching and learning:

- (DI1) Making Sense of the World (Understand and Explain)
- (DI2) Predicting What Could Happen (Predict)
- (DI3) Impacting the Future (Affect)

Therefore, education programs must adopt effective teaching approaches while preparing future mathematics teachers. The selected teaching innovation is Culturally Responsive Mathematical Modeling, which integrates a) productive disposition with cultural awareness, b) the instructional design with modeling tasks, and c) equity-minded practice. In particular, I shared a revised approach that can be adopted to improve teaching design with a focus on cultural awareness.



Acknowledgement

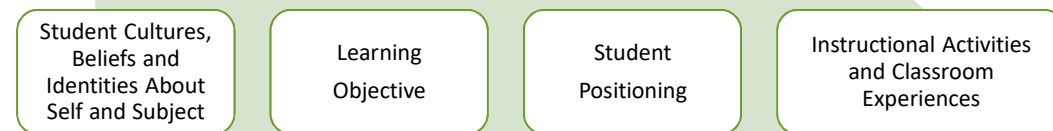
Provost's Collaborative Research Grant by Provost and Vice Chancellor for Academic Affairs and Teaching Improvement Grant by Teaching and Faculty Support Center, University of Arkansas, Fayetteville

A Revised Approach to Improve Teaching Design

Traditional Approach:



When it is common to take students' disposition as the final product resulting from instructional moves under the learning objective, the element of cultural awareness was suggested to be added before setting the learning object for learners in the lesson design. Moreover, the instructional activities and students' classroom experiences should be identified as the final product rather than an intervention. The learners will productively engage in the learning materials when they center themselves in the learning. A revised approach was presented below (Rhodes, 2021):



References

California Department of Education. (2022, March 28). *Mathematics Framework: Curriculum frameworks provide guidance to educators, parents, and publishers, to support implementing California content standards.* <https://www.cde.ca.gov/ci/ma/cf/>

Rhodes, S. (2021, June 3). *Equity by Design: Student-Centered Planning in Mathematics.* ASCD. <https://www.ascd.org/blogs/equity-by-design-student-centered-planning-in-mathematics>