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RURAL EDUCATION INSTITUTE

Theory & Practice in Rural Education (TPRE) *Call for Special Issue on Rural STEM Teacher Development*

Guest Editors:

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STEM Teaching and Learning in Rural Communities: Exploring Challenges and Opportunities

All students have a right to a high-quality STEM education. Since the 1980s, a shortage of mathematics and science teachers has been recognized (Monk, 2007; Rumberger, 1987; Levin, 1985). Rural school districts face challenges recruiting and retaining in specialized subject areas. According to Lavalley (2018), the unique needs of rural education are “often obscured by their urban and suburban counterparts.” Nationally 19% of all students are enrolled in rural schools, and in 13 states, that percentage is greater than 33%, and “more than 9.3 million, or nearly one in five in the United States attend a rural school” (Showalter, et.al., 2019).

STEM Teaching and Learning in Rural Communities - Challenges and Opportunities

Darling-Hammond (1999) found that “high quality” teachers are one of the most important factors to improve student achievement. Nationally, there is a shortage of qualified STEM teachers (100Kin10, 2019). These problems are magnified when disaggregated for rural schools-as rural school districts have difficulties recruiting and retaining teachers in mathematics and science (Brownell, Bishop, & Sindelar, 2005). But the challenge of rural schools in providing effective teaching and learning is not unsurmountable.

We often hear about the less than stellar performance of the United States on the NAEP reported in the media (NAEP, 2019). Contributing factors include funding issues which makes STEM resources more difficult to access, technology gaps, access to resources, cultural challenges, and STEM teacher shortages. Rural districts face these unique challenges, as well as professional development, advanced coursework, diversity, and relevant and meaningful curriculum.

While rural educators and communities face unique challenges, they also provide opportunities. They bring knowledge, experiences, and local connections that can strengthen STEM education. When the complexities of rural spaces are acknowledged and factored in, collaborative partnerships can help to bring external and internal assets together to meet the very real challenges and boost STEM learning and teaching in rural schools. When asked about advantages to teaching STEM in rural communities, Buffington (2019) said that “people who live in these communities have applied understandings of STEM and can contribute that knowledge to STEM learning.” This special issue is seeking articles from the field discussing rural school success stories of how rural districts have overcome challenges to have effective and rich STEM teaching and learning in rural schools.

Call for Articles

This issue explores the complexities, practices, and challenges and opportunities facing rural schools and universities as they design, implement STEM teaching and learning. Articles might address issues such as:

- Recruiting and retaining a skilled STEM teaching workforce
- Technology and networking solutions to support/enhance STEM teaching and learning
- Partnerships to improve and support STEM teaching and/or learning
- Advantages, challenges, and/or opportunities to teaching STEM in rural communities

- Making STEM teaching and learning relevant in rural schools
- Community-based curriculum initiatives
- Using local knowledge in STEM education
- Promising and effective educational practices in rural schools STEM education
- Educator preparation for rural STEM teaching

Those interested in being considered for this special issue should submit a full manuscript to the TPRES system (<http://tpre.ecu.edu>) by **February 28, 2022**. Questions about possible topics or ideas should be sent to Janet Stramel (jkstramel@fhsu.edu). All submissions will go through the TPRES process of double-blind review by experts in the field.

TPRES Author Guidelines: <http://tpre.ecu.edu/index.php/tpre/about/submissions#authorGuidelines>

Estimated Timeline

- Manuscripts Due:
 - February 28, 2022
 - Accepted on a rolling basis up until the close date
- Double Blind Review Process:
 - Approximately 2 month turnaround (March/April)
- Articles selected for Revise/Resubmit or Minor Edits
 - Revise/Resubmit Deadline: 45 days from receipt of feedback (May/June)
- Second (limited) Double Blind Peer Review Process From resubmissions:
 - Approximately 1 month turnaround (July)
 - Final selection of articles selected for Minor Edits:
- Deadline: one month from receipt of feedback (August)
 - Expected Publication Date: October 2022

References

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