

Towards a Tribal College and University Mathematics Education Research Agenda

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Keywords: tribal colleges and universities, developmental math, math pathways

Background

There is a vast underrepresentation of contexts of Indigenous learners and from the contexts of TCUs. Further exacerbating this underrepresentation is the general lack of presence of research in developmental mathematics education in mathematics education research spaces. Research in undergraduate mathematics education focusing on developmental math and research on mathematics education in TCU contexts are each severely lacking. Research at the intersection, developmental mathematics education in TCU contexts, is scant if not nonexistent. In order to advance knowledge in these areas, there is a need to highlight the work being done at TCUs.

TCU faculty are tasked with aligning mathematics education with TCU missions to revitalize language and cultures, but there are limited existing mathematics resources that are ready to implement in the classroom in ways that directly align with TCU values and missions (Marshall, 2018; Crazy Bull & Guillory, 2018; Crazy Bull et al., 2020). Furthermore, TCU faculty are often working with extensive teaching and service duties in small mathematics departments. This results in little time and few resources to engage in mathematics-specific collaborative learning opportunities (Al-Asfour & Young, 2018). While TCUs work to provide innovative STEM education to Indigenous communities, what is known and published about STEM education in TCU contexts is limited. With such limited research on developmental math education in TCU contexts, there is rich potential that such research can contribute to the RUME community by taking perspectives rooted in TCU missions and values.

Current Trends in Mathematics Education at TCUs

This project provides snapshot of current contexts for developmental mathematics education and mathematics pathways in TCU contexts, with a particular focus on developmental mathematics and math pathways, consisting of: a literature review that provides an analysis of trends in the literature pertinent to mathematics education at TCUs, targeting trends and needs in research and practice in the areas of developmental math and math pathways; a landscape analysis consisting of summary of qualitative and quantitative data on mathematics programs, in particular developmental math and math pathways at TCUs; and a Promising Practices report summarizing innovative and promising practices in developmental math and mathematics pathways as shared by TCU math faculty participating in the project.

Towards a TCU Mathematics Education Research Agenda

Given the current trends in mathematics education at TCUs, we call not only for more research and opportunities to highlight innovative mathematics education at TCUs. We also outline a research agenda that situations math ed research in the context of TCU's roles of empowerment of Indigenous communities and tribal nation building.

References

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