

Editorial

Dear new and returning readers,

Welcome to Volume 25, Issue 4 of The Journal of STEM Education: Innovations and Research. We at JSTEM hope you enjoy this issue and the amazing contributions from our authors.

The issue begins with “A Phenomenological Study of Adinkra Values Exemplifying Concreteness Fading in Multiplication of Numbers,” an article by Clement Ayarebilla Ali. This article explores the use of Adinkra artifacts in teaching one-digit multiplication through “Concreteness Fading,” highlighting that mathematical learning can be hindered by an overreliance on concrete objects without gradual abstraction.

“SAFE Passage to Social and Academic Support: First Year STEM Identity and Belonging Interventions for Under-resourced Students” is by Haywood et al. The article discusses a project conducted at Furman University investigating ways to broaden STEM participation among students from low socio-economic backgrounds and underrepresented minorities. Using evidence-based practices, the study presents specific results that highlight effective interventions for promoting student success and retention for under-resourced students.

The third article in this issue is “Empowering STEM Education at High Schools by Talkative Power Based Learning Program” by Homayounnasab et al. This article presents a hybrid hardware/software-based STEM learning platform that integrates Project-Based Learning to bridge theory and practice while simultaneously enhancing students’ soft skills. Using Talkative Power Conversion concept, the platform combines power electronics, digital communications, and informatics, offering hands-on, adjustable learning experiences for young students.

Next is “The Effect of Concept Map Scaffolding On Learning Effectiveness For Chemistry Student.” This article is by Fabiyi et al. and examines how scaffolding and motivational strategies can improve students’ receptiveness to concept mapping. Using multivariate one-way ANOVA, the study analyzes differences among chemistry students to assess the impact of these interventions on learning effectiveness.

The final article of this issue, “In-Service Secondary Mathematics Teachers’ Conceptions of Tangent Lines in Calculus” by Mark D. Hogue and Dominic Scarcelli, examines whether in-service secondary mathematics teachers share similar misconceptions about tangent lines previously observed in first-year calculus students. Through interviews with 16 certified educators, the researchers explore patterns in understanding and draw meaningful conclusions.

We would like to extend our appreciation to several staff members for their dedication to the journal. These include Format Editors Wally Ridgway and Ashera Ly, Editor Eliza Banu, Managing Editor Murty Raju, and Editorial Assistants Anastasia Johnston, Brandon DeLoach, and Abigail Ruma.

If you are interested in publishing your own research in our journal, please visit jstem.org for submission instructions. Please contact jstemed@gmail.com with any comments or questions, and our editorial staff would be happy to assist you. Thank you for reading!

Thank you,
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