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A Study of Learning Achievement and Satisfaction Using the 5E Inquiry-Based Learning Integrated with Indigenous Astronomy Activity Sets in Science Subject for Grade 4–6 Students

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Astronomy education at the elementary level often lacks connection with students' cultural and lived experiences, particularly in regions with distinct ethnic identities. This study aimed to examine learning achievement and student satisfaction using the 5E inquiry-based learning model integrated with indigenous astronomy activity sets developed from the "Laboon" legend of the Moklen ethnic group in Ban Thap Pla, Phang Nga Province. The participants were 70 Grade 4–6 students at Chao Thai Mai School (Dome–Thaksin Anusorn), 38 of whom (54.29%) were Moklen. The activities were implemented during regular science classes and followed the 5E instructional phases: Engagement, Exploration, Explanation, Elaboration, and Evaluation. Lessons incorporated cultural elements, including storytelling, questioning, constellation design, and student presentations. Research instruments included a pre- and post-test and a satisfaction questionnaire. The results revealed that the average pre-test score was 40.25%, which increased to 85.15% after the intervention. Student satisfaction was rated "very high" ($\bar{X}$ = 4.67, SD = 0.32). These findings suggest that integrating indigenous astronomy with inquiry-based learning effectively enhances science understanding and supports culturally relevant education, especially for learners in remote and ethnic communities

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