Growth Mindset Mediates the Influence of Motivation and Self-efficacy in Programming

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Abstract:

In the context of integrated learning strategies, this study investigated pathways to improve programming self-efficacy for undergraduate students who were not computer science majors. An experimental course, designed to bridge foundational programming understanding with practical application, effectively integrated hands-on, problem-based, and project-based learning, alongside digital learning strategies. A process model analysis was employed to examined the relationship between motivation, growth mindset, and self-efficacy in programming. Findings revealed significant positive relationships between motivation and growth mindset, as well as between mastery experience and self-efficacy. Critically, a growth mindset significantly mediated the relationship between motivation and mastery experience. However, motivation had a non-significant direct association with programming self-efficacy. This study suggests a clear path for enhancing self-efficacy in programming for undergraduate students who were not computer science majors. Moreover, the findings highlight the crucial roles of a growth mindset in empowering non-computer science learners.