ADOPTING COMPUTER SCIENCE PEDAGOGICAL PATTERNS IN DEVELOPING AND ENHANCING COMPUTATIONAL THINKING AMONG ZERO-YEAR ENGINEERING STUDENTS

Loice Victorine Atieno, Márta Turcsányi Szabó

Abstract: Prospective undergraduate engineering students are assumed to possess Computational Thinking (CT) skills through basic programming. They are thus required to have considerable programming experience to enable them execute tasks involving CT skills. Unfortunately, this is not the case as existing studies demonstrate lack of these skills among the students leading to poor academic performance. This was the case with first year computer science international students at Eötvös Loránd University, faculty of Informatics, prompting the management not only to seek the causes of poor academic performance among the students but also proper interventions. Two intervention courses were created to help develop and enhance CT among the students – *Introduction to Computational Thinking* and *Scratch Programming.*

The paper demonstrates the adoption of computer science (CS) pedagogical patterns in the development and teaching of Scratch Programming course to zero-year students in the faculty. The research was carried out for a period of 12 weeks and data was collected using evaluation of students' projects, observation and questionnaires. The results proved that students' CT skills improved significantly with the pedagogical approach and tools used.

Contact address

Loice Victorine Atieno
Eötvös Loránd University
Atienomunira04@gmail.com

Márta Turcsányi Szabó
Eötvös Loránd University
tszmarta@inf.elte.hu