

Enhancing learning efficiency after analysing the users' results in a gamified learning portal for computer programming education

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The dynamically developing IT industry is struggling with the lack of qualified software developers, while the number of students studying in higher education institutions and IT fields is scarcely increasing, while drop-outs is high. The number of students could be increased if more youngsters were in contact with programming in public education. The developed `kodolosuli.hu` portal offers interactive programming courses and coding challenges in three different programming languages: C++, C# and Java for free.

Our goal with the design and development of `kodolosuli.hu` was to give the younger generation the opportunity to learn the basics of programming in a playful way. We started operating the `kodolosuli.hu` portal in 2016. In this article, we primarily present the experience gained over the last 4 years and the results of the analysis of the data collected during the operation of the portal.

Based on the collected experiences, the possible future development directions are also presented. This article also outlines our future goals, which are primarily aimed at enhancing learning efficiency. The purpose of the research aims primarily to improve the quality of learning through intelligent algorithms (e.g. neural networks) built into the LMS system.

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