

## Impact Variables for The Mitigation of Student Dropout in Virtual Learning Environments

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### Abstract

Considering the last changes regarding education generated by the recent pandemic, virtual education presents an alternative for those students who search to improve their abilities, especially when the main interest now is computational programming and innovation. The goal is based in achieving an environment which allows them to review the contents, enrich the knowledge acquire in synchronous classes with asynchronous activities, and recorded classes, which can be used and accessed depending on their necessities and availability. In an ideal case, this can be achieved with a platform that allows the students to learn any time, and regarding of their situation, the case of study used in this work, shows a different perspective, generating a new set of variables that impact directly in the learning process and the reduces the opportunities this new technologies bring. This work identifies the most influential features regarding virtual education and the high levels of dropout in Colombia's rural areas, which represents the more vulnerable population and constitutes most of the students who participated, one of the most important and successful educational projects carried by the Colombian government to ensure school students learn and reinforce abilities in computational programming and software development. The authors present an improvement tool to strengthen future education projects considering the requirements and complications in rural populations, to ensure an increase on the number of future students, reduce the conditions that do not allow the proper development and learning processes, and reduce the dropout.

**Keywords:** Distance learning, dropout, pedagogical variables, variables categorization