

News & Comments

Optimal Screening for Mathematics At-Risk Students

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A screening assessment's goal is to precisely pinpoint any possible issues, like learning challenges. Screening tests used in schools can reveal a wide range of issues, including issues with cognitive functioning, social-emotional functioning, and academic achievement, to mention a few. Implementing a multi-tiered system for detecting and supporting students' instructional requirements is thought to be made possible by the practice of employing screening measures to identify educational needs early on. By utilizing data gathered from several screening measures concentrating on various academic domains, we hope to expand the current gated screening framework in this study. The Star Early Literacy assessment's goal is to inform classroom instruction in the subjects that are the cornerstones of learning to read. To provide teachers with constant feedback regarding the improvement in skill development for each of their children, Star Early Literacy was created to be utilized frequently. Based on a student's initial Star Math score throughout a school year, we first projected kids at risk for math learning issues in the typical gated screening analysis. These children were identified since their initial Star Math scores had to be greater than those in the 30th, 40th, or 50th percentiles.

An effective assessment system that can recognize children who are at risk for academic issues may be facilitated using the same measures for both screening and progress tracking. If this dual goal is feasible, the data would be able to detect troubled pupils early in the academic year, allowing teachers to put supports in place before the problems get worse. The results of the gated screening in this study were somewhat unexpected because, when different evaluation criteria were considered simultaneously, they did not always result in significant gains over the single-stage techniques. This study closes a knowledge gap that is necessary to facilitate the creation of increasingly complex predictive models for screening techniques. Researchers can use the screening techniques presented in this study to create screening procedures that are more effective based on several academic measures and test those procedures' efficacy based on multiple evaluation metrics (e.g., sensitivity, specificity, accuracy, F1, and MCC). Additionally, the findings of this study offer educators a critical chance to use the data at their disposal to pinpoint pupils who are likely to perform poorly in mathematics.

Source: [information](#)

KEYWORDS

Mathematics, screening, progress monitoring, computerized assessment, machine learning, Random Forest

