

Early Detection of At-risk Students – Then What?



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INTRODUCTION

Temple instructors post midterm progress ratings for all undergraduates. Few students rated U (unsatisfactory) at the midterm finish well, so this research looked at the benefits of earlier messaging.

Research Questions

1. Can Canvas LMS data be used to identify at-risk students earlier in the semester?
2. Does notifying at-risk students earlier in the semester improve outcomes?

METHODS

- Logistic regression was used to measure the increased likelihood of poor outcomes for students with unsatisfactory midterm progress ratings.
- A pilot study of roughly 1000 students in the Fall 2022 term compared daily risk scores calculated by Dropout Detective™ using Canvas student data against final grades to determine how early in the semester at-risk students could be identified.
- The pilot continued in Spring 2023 term with course sections divided into control and test groups, with the test groups receiving their progress ratings at weeks 3-4, rather than at midterm (weeks 7-8).

Using predictive analytics and Canvas data we identified at-risk students as early in the semester as weeks 3-4.

Earlier warnings did not improve outcomes.

Intervention, not detection, is real the challenge.

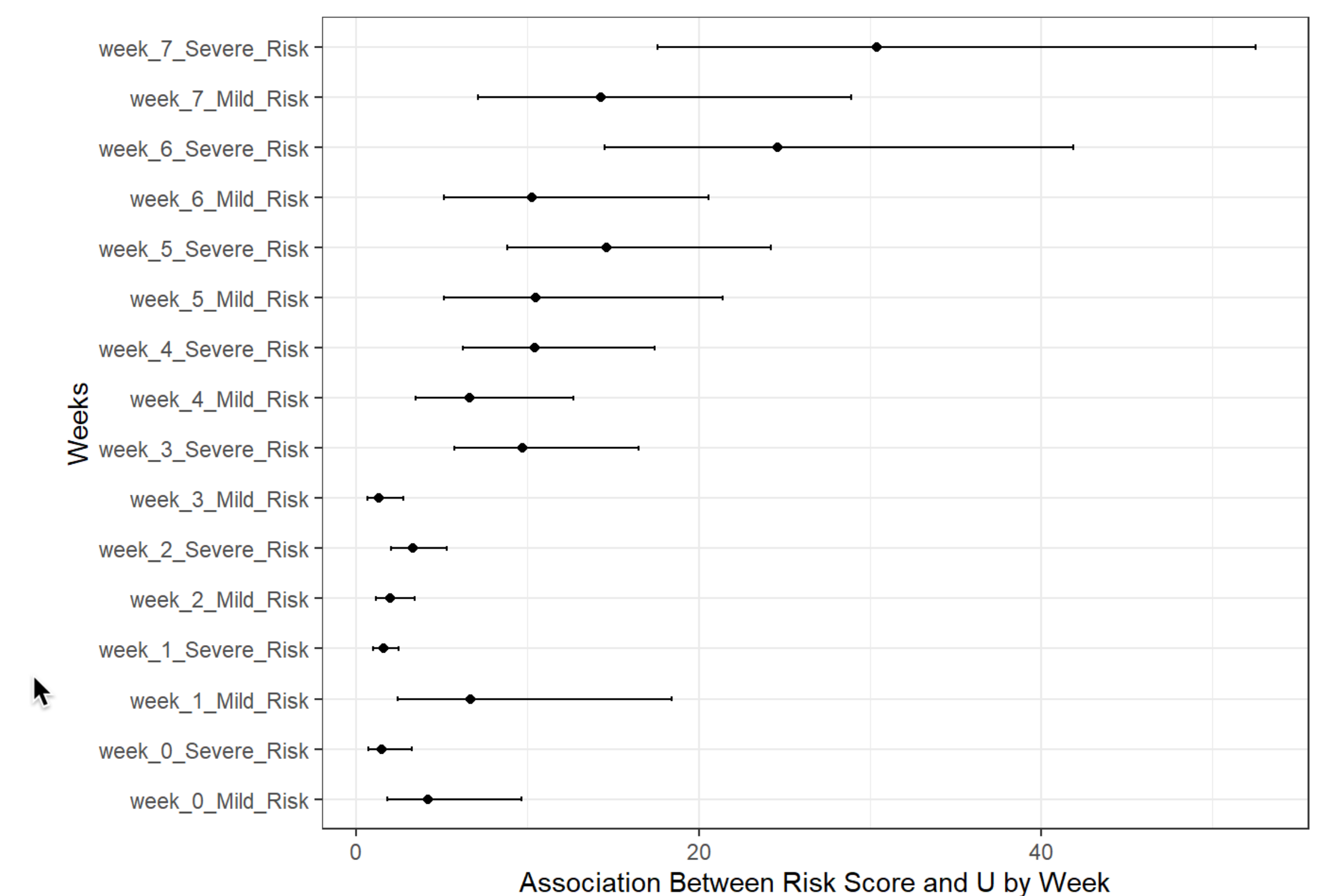
Poster: <https://tinyurl.com/4wf2662j>
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RESULTS

Answer to Research Question 1:

Risk scores based on Canvas data became highly predictive by weeks 3-4.



Answer to Research Question 2:

Students in sections receiving the usual warning letter earlier in the semester, and in sections that received both a letter and enhanced outreach by their instructor, fared no better than students in the control sections. There was a slight correlation between early warning and students withdrawing from the class.

DISCUSSION

Predictive analytics can be used to detect at-risk students early in the semester, though not why they are struggling. Earlier warning letters and faculty outreach did not change outcomes. The real challenge is not identifying at-risk students, but designing cost-effective interventions that help more students succeed.