NAME THAT SCENARIO: AN ONLINE STUDY TOOL FOR STATS 250

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Introduction

Name that Scenario (NTS) is an online learning tool that aims to help improve student learning in Stats 250 by offering students an opportunity to identify the correct statistical test from a given scenario. NTS was originally an application written in flash which was ported to JavaScript to improve its flexibility and generate better usage logs. The tool allows students to select up to 10 types of statistical tests about which they receive scenarios. NTS is made available to students 2 weeks before Exam 2 and is open until the end of the term.

Design of NTS

NTS code follows a model–view–control design pattern which keeps the model code (application data), view code (display) and the control code (event handling) separate. This makes it easier to rework and maintain. The scenario files are included in the application as JavaScript JSON files. Log events are fired from each of the event handlers in the control module to create log files from which we took the snapshots below.

Three Screen Shots of NTS

To examine matching or any simple process which asks whether the user responds in a correct manner, it is important to understand how the user interacted with the environment. We used an event-driven environment and collected all the data that the user interacted with. We collected all the data that the user interacted with.

Correct: 1

A major advantage to using this approach is that we can easily verify the accuracy of the user responses. We used the same approach to verify the accuracy of the user responses. We collected all the data that the user interacted with.

Correct: 0

Analysis on the usage logs tells us when students use NTS, which statistical tests they chose, how many they at once, and how often they answer correctly.

Analysis of Usage

On the left is a description of our matching algorithm which helps remove the selection bias in this observational data. On the right are four outputs from running this algorithm. We demonstrate the design of an online study tool which creates detailed usage logs and then use those logs to understand the tools adoption and effectiveness among students. We have found that students who used NTS and answered more than 20 questions prior to exam 2 did 3.3 / 75 points (~4.4%) better on that exam.

Acknowledgments

Special thanks to MELO (Michigan Education through Learning Objects) Grant (from ISS) and MELO team members from Statistics: Dave Childers, Joel Vaughan, Josh Errickson, James Henderson and Scott Hamm for the original NTS ideas.