



# **Promoting Learning with Academic Integrity Controls: A Scoreboard Excel Demonstration and Presentation of Evidence from Business Statistics**

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# Some Links and Contacts

- If you want to play along, go to:
  - <https://tinyurl.com/jetset2024excel>
- If you have questions later, email me (Tim) at:
  - [thaase@ramapo.edu](mailto:thaase@ramapo.edu)
- If you have more technical questions, feedback, or find an error, contact my colleague Raymond Frost at:
  - [raymstoi@gmail.com](mailto:raymstoi@gmail.com)
- The Scoreboard Website:
  - <https://www.scoreboardexcel.com/>

# Question! “Do you....”

- ✓ Like to retain full control over content?
- ✓ Dislike tedious grading?
- ✓ Want to prevent cheating? (or at least make it harder)
- ✓ Like to simplify numerical computations?
- ✓ Believe your students ought to be better at spreadsheets?
- ✓ Want to provide students with real-time feedback?
- ✓ Want to streamline your busy work?
- ✓ Would you like to do all of this with the click of a button?

# Scoreboard for Excel

- Downloadable (AND FREE) EdTech software that works with Excel (not Google Sheets)
  - Office 365 or Excel 2021 versions – Mac or Windows
- Make assignments, exams, in-class problems
- Customized to your students
- Provides feedback while they work on it
- Can create an entire class assignment/grade entire class in seconds
- Example:
  - The ten assignments posted in the link took about 40 seconds to generate
  - Grading my 35 student class' final exam (Stats) took 2 min 30 seconds to grade

# How I use it

- I make an assignment fully solved (formulas, cell operations, data analysis toolpak, etc)
- I make multiple copies of each sheet (tabs) and slightly change certain inputs. Make each tab the same color per question
  - Demo Answer Key file has: 4 q1; 4 q2; 4 q3; 3q4; 3 q5; 6 q6
- Color code certain numbers PURPLE
  - this will randomly change the value +/- 5% when assignments are made
  - There are other colors to use for increasing point value etc.
- Put class roster in a separate excel file (First Name, Last Name, Email)
- Save both files
- Open Scoreboard, click HW preset, adjust as necessary, create and save to your computer (hard drive, not cloud)

## How I use it (continued)

- I make G-drive folders for each assignment and share that link to my LMS
  - I'm using Canvas, my colleague uses Blackboard
- Students get their file, solve it, upload it into the assignment I make in the LMS
- I download the entire bunch in a zip, and then unzip it into my harddrive
- Reopen Scoreboard, enter your password, go to Recorder. Select the entire batch, and it will grade all at once. Produces a new spreadsheet with names and scores
- I punch those grades into the assignment gradebook (THIS is the tedious part, and I am talking about 3 minutes)
- If you have feedback turned off (like an exam), you can rezip the files and upload the entire class back to the LMS and each student will receive their file with feedback turned on

# What it does

- Randomly select one tab from each pool of color coded questions
- Randomly shift values that were coded purple
  - Student A may have \$1.12, Student B may have \$1.08
- Physically relocate cells to different locations
  - Student A's answer may be in cell G4, Student B in H7
- Copying answers won't work, inputting direct numbers won't work either
  - Taking a friend's file and naming it for yourself also gets flagged
- Promotes cooperation (My office hours have been busy)
- Feedback helps guide them along the way



# The Feedback

- Toggleable off/on/Taunt mode
  - Seriously, its pretty funny
- Instead of submitting a file and learning how you did, this happens within the assignment
- Values too low/high
- Needs formula or needs \$
- Formatting error (currency, percentage, decimal places)
- Ultimate tinker around and learn (insert your own scientific inquiry euphemism here)



# Examples

- Intro Macro
  - GDP, Real GDP, Deflator, Growth
  - CPI Basket, Inflation
  - Unemployment Calculations
- Statistics
  - I have run two semesters with this now. Everything from frequency distributions up to regression analysis
- Not just numerical calcs either!
  - Pulldown menus for logic selection, hypothesis conclusions
    - (I put a hypothesis test question in the demo to share)

# Evidence

- Fall 2023 ran a section of Stats with and without the Excel component
  - Used Pearson Mylab assignment scores as comparison
  - The Scoreboard class was supremely better in every chapter comparison
- Spring 2024 ran two Stats sections with Excel component
  - One class was given generic assignment files (all identical)
  - One class was given customized individual files
  - Curious to see if cheating would happen (no evidence)
  - Introduced Scaffolding examples leading up to tests
  - Students who practiced scored far better on exams (both classes)
  - Survey data: nearly all noted this helped their understanding of statistics
  - No difference in test scores based on pre-requisite, prior familiarity

# Have Fun!

- The initial creation is time consuming, but with the right setup and patience, you can reuse assignments over and over without complete duplication.
- If you teach anything involving data, give it a shot!
- Currently incorporating graphs for grading and that move in real-time when data is inputted
- Next up – introducing this into my Intro Macro class
- Please reach out to me if you have any questions
- Thanks!