

Teaching Large Classes

A Few Practical Tips to Increase Engagement

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A Few Practical Tips to Increase Engagement

- In order of priority, I believe I have benefited from four practical tools, increasing student engagement in my synchronous online course in Statistics (since March 2020). They include:
 - In-class quizzes... on steroids!
 - Playing radio host on Zoom
 - Students introductions
 - Online games

In-class Quizzes

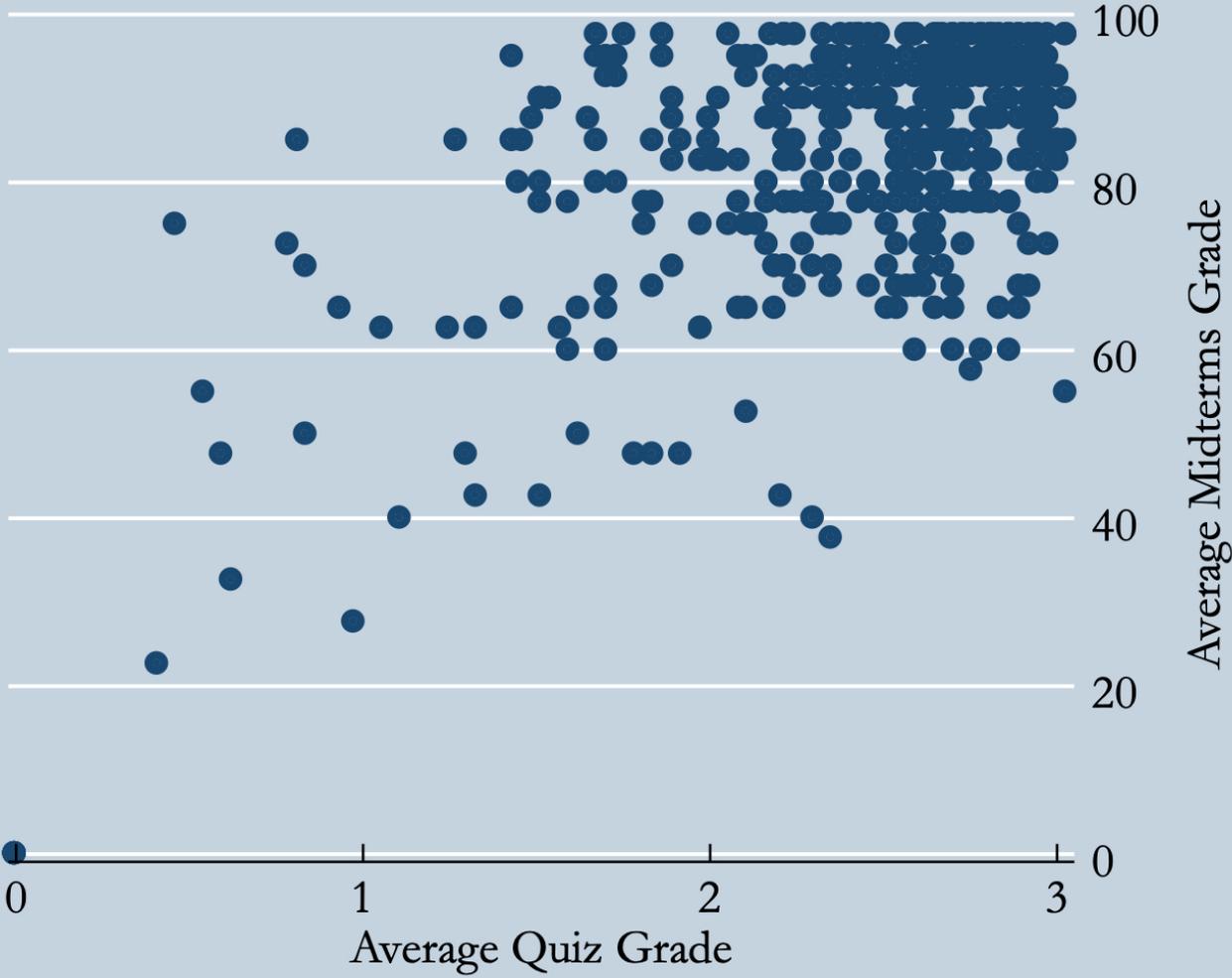
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- Note, however, that such quizzes are “*learning tools*” rather than “*assessment tools*”.



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- Note, however, that such quizzes are “*learning tools*” rather than “*assessment tools*”.
- Ultimately, you may want to develop a rhythm like this:
 1. Lecture for a few minutes (e.g., 10 minutes)
 2. Put forth an example, delivered as an in-class quiz built into Canvas—ask students to work on it for a few minutes (e.g., 3 minutes)
 3. Solve for or reflect upon (part of) the above example—ask students to submit their answers on Canvas once they decide upon their final answer
 4. Repeat the above steps.
- Assign a significant weight (e.g., 10%-15%) to in-class quiz grades.

Quiz and Midterm Grades



Pairwise Correlation Coefficient=59.89%; Pairwise Correlation Coefficient for Logs=70.91%

Play Radio Host

- Let your students know that they can ask you questions using their microphone or using the Zoom chat box.
- Play radio host when you receive a question in the Zoom chat box:
 - Read the question for all students.
 - Carefully, address the question.
 - When you are done, ask: "*Did I manage to address your question?*"
 - Circle back if follow-up is needed, until the question is addressed fully.
- The number of questions that I receive increased *significantly* when we started using Zoom chat box. That, in return, led to:
 - Better delivery (of lecture materials, numerical examples, etc.)
 - Greater student engagement.

Student Introduction

- At the beginning of your live lecture, ask a randomly-selected student to introduce himself/herself to his/her classmates.
- Engage in a conversation with them by asking questions, like:
 - What is their major (or minor)?
 - Why is it that they decided to pursue such major (or minor)?
 - Did they get a chance to follow, say, college football this season? ...
- If you have time, call another randomly-selected student.
- Students feel that they are included and valued, and that they are not just part of a roster of names on a Zoom display. Plus, you get to know your students better.
- Skip the student introduction part from time to time. Otherwise, some may skip the first 5 minutes of your lectures.



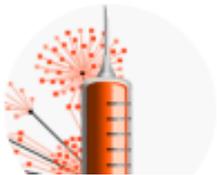
Play Online Games

- Your students may benefit from an online game that directly relates to a topic that you discuss in your lecture series:
 - Some of these games are developed by others (and may not be directly linked to Canvas). Here is an example:

Chair the Fed: A monetary policy game

FEDERAL RESERVE BANK OF SAN FRANCISCO

- Some of these games are developed at OUK20 Center and could easily be linked to Canvas. Here is an example:



Deadly Distribution

Central Limit Theorem



Effect of a Serious Educational Game on Academic and Affective Outcomes for Statistics Instruction

Meredith Wronowski , Angela Urick, Alison S. P. Wilson, more...

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Abstract

The overuse of lecture-based approaches for instruction in university courses may have limited student access to knowledge, particularly the transfer of complex concepts, such as central limit theorem in statistics. This study seeks to contribute to empirical research regarding the effectiveness of serious educational games (SEGs) to increase undergraduates' conceptual understanding and affective interest in statistics. An experimental design was used to test the efficacy of an SEG, Deadly Distribution, which simulates a real-world context to learn and interact with statistics concepts, compared to traditional notes and homework problems, as supplements to instruction in addition to class lectures. Students who played the game had similar increases in academic growth of conceptual knowledge as students who studied traditional course material. Furthermore, this treatment group had a significant increase in affective outcomes compared to the control group. These findings extend the current literature, which is mixed and sparse, on the effectiveness of SEGs in the undergraduate classroom. In an undergraduate introductory statistics course, an SEG might be an effective substitute for traditional study time of course materials outside of class to increase their affect toward the subject matter and produce similar gains for students who might not otherwise study.

