



# Psychological Statistics: Redesigning the Traditional Final Exam into an Authentic Group Research Project

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## Overview

Psychological Statistics has been redesigned over the past several years. There have been three distinct phases: It began as a traditional lecture format, next came a flipped class with lecture plus some online resources, and finally a hybrid class has evolved with many online resources and active engagement in the classroom. One aspect of this final phase of redesign was to give students a more authentic experience of using statistics as a research tool. We redesigned the traditional final exam into a group research project that culminates with a poster presentation. All students complete a survey that collects data on a wide range of variables and topics of interest. The survey results are compiled into a large data set that students use for the final project. Informal feedback suggests that students are initially nervous about a group project and presenting a research poster but that they end the semester feeling positive about the experience and prefer it to a traditional final exam. Declining D-F-W rates across course formats suggest that this overall course redesign, including the more experiential group project final exam, has been successful at helping students better master the material from this class.

## The Survey & Data Set

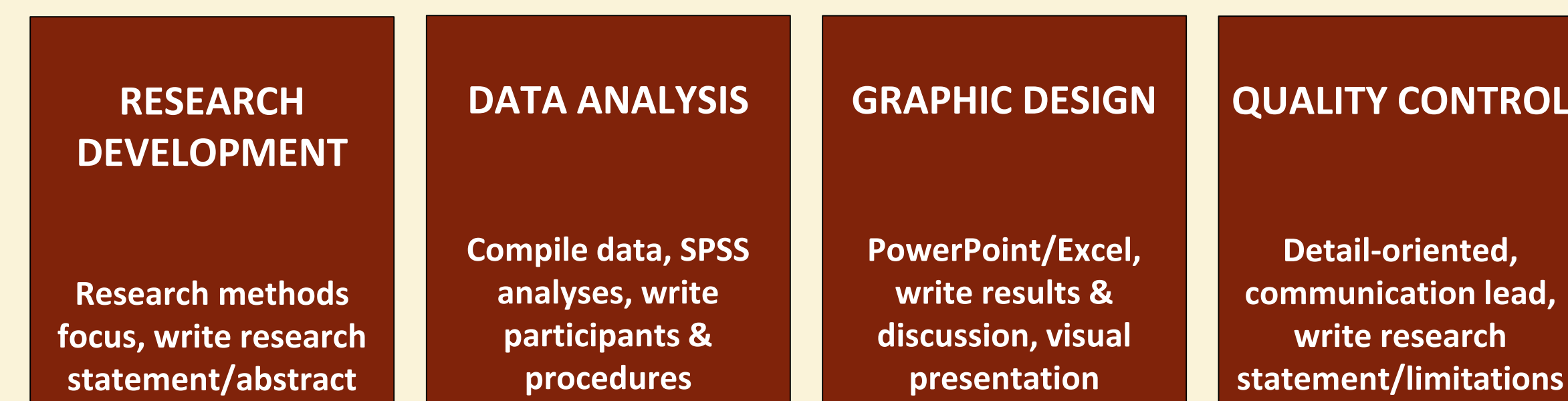
The survey that all students take at the beginning of the semester asks about a variety of characteristics and topics that offer a range of scales and variables to analyze. For example:

- Size and distance from hometown/high school
- Social media use (Facebook, Twitter, Instagram)
- Personality variables: Extroversion, neuroticism, etc.
- Physical fitness, healthy/unhealthy habits, height, weight
- Time spent watching TV or engaging in other online behaviors
- Caffeine and alcohol consumption
- Participation in Greek life or other campus clubs/activities
- Amount of time spent working, doing homework, sleeping
- GPA, college major, year in school, hours enrolled
- SES, parent education, gender, age, race
- STARS: Statistics Anxiety Rating Scale

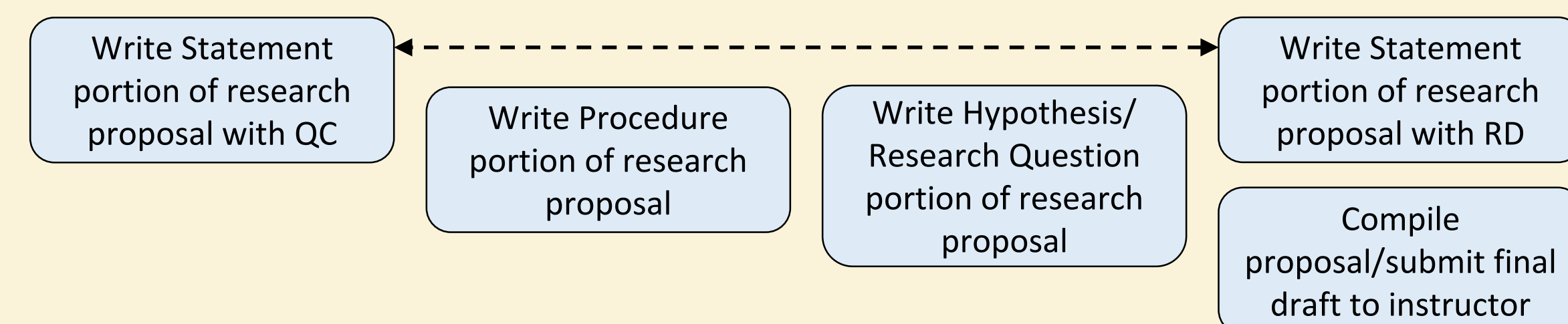
Data is combined across all sections of the class into an SPSS file that students use to hypothesize research questions, evaluate how to address those questions with the data, conduct the appropriate analyses, interpret results, and create a research poster that is then presented at the final exam poster session.

## Scaffolding the Project—Team Roles

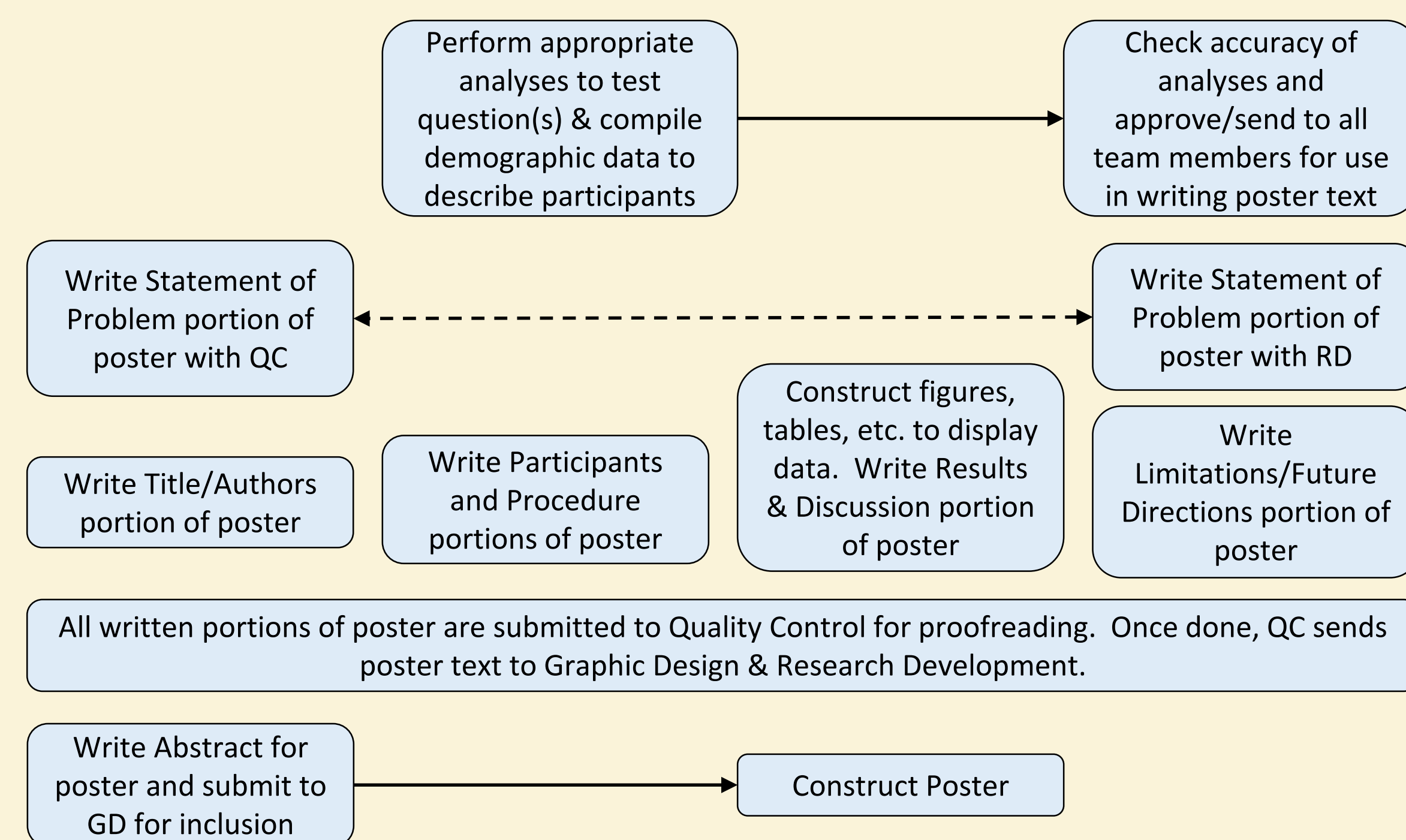
Four Roles were created to help scaffold the team project and to divide up the work that would be required. Students were given the following flow chart in order to help lead them through successful completion of the poster. Teams were encouraged to assign Roles in a way that would maximize the use of each student's strengths.



Team meets to brainstorm, identify research question(s) of interest, identify relevant variables, create hypotheses, and decide on appropriate analyses.



Team meets to incorporate instructor feedback into project plan and finalize details. Once this has been done, individual work can begin on the project.



Team meets to go over final poster version, give feedback to Graphic Design on any final changes, and to prepare verbal presentation for use at the poster session.



## The Final Exam Poster Session

All teams present their posters at a large 2-hour poster session during finals week.

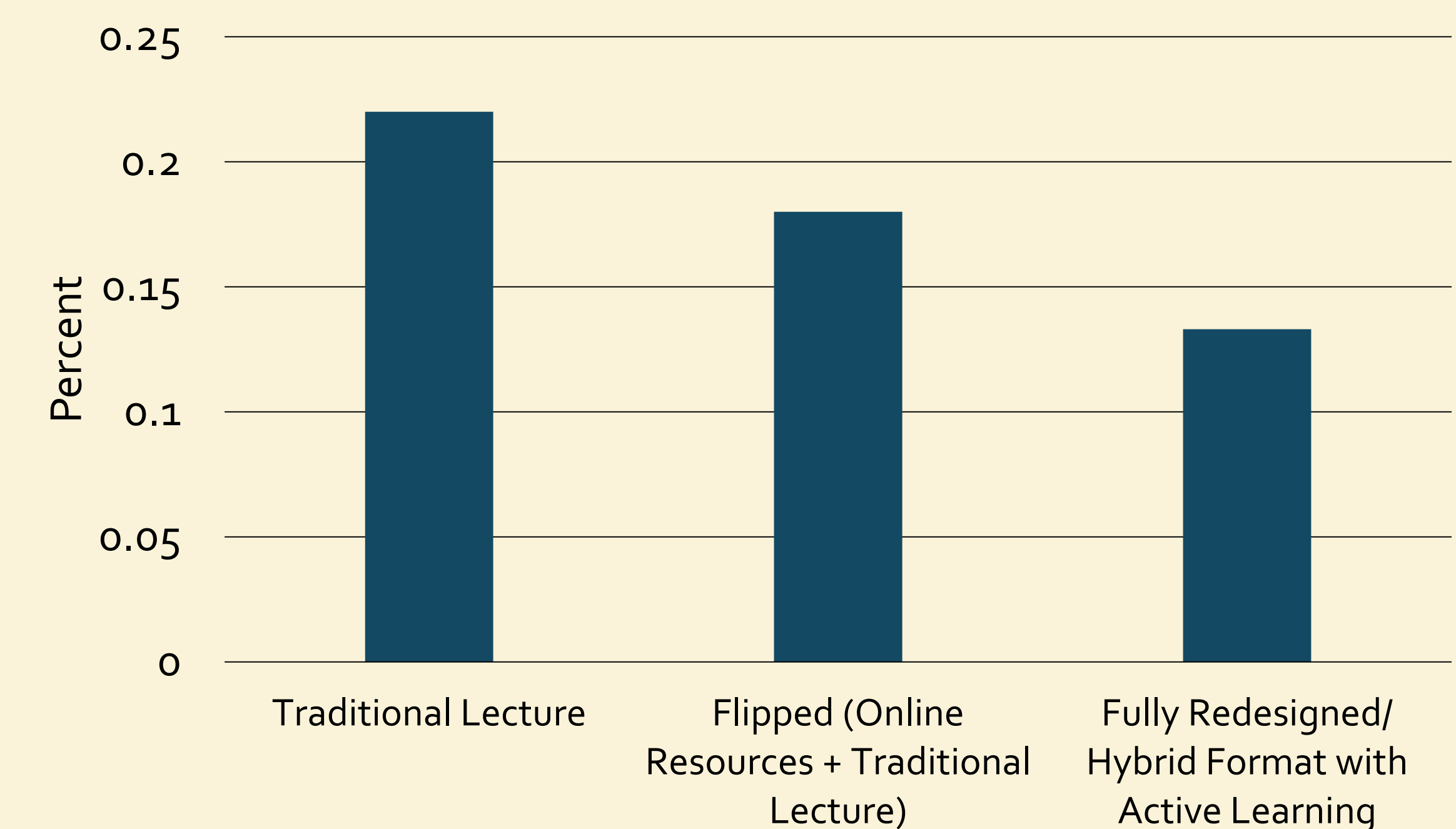
During this final exam:

- Posters and verbal presentations are evaluated by the instructor using an extensive rubric.
- All students must evaluate at least six other posters using a peer review rubric. This ensures a constant flow of visitors to each poster throughout the event.
- Students complete an evaluation for each member of their team as a check for equal contribution to the project.

The event is publicized across campus to attract outside faculty and GTAs, which helps to lend a very authentic feel to the poster session.

## D-F-W Rates by Course Format

Declining D-F-W rates across the course formats suggest that this overall redesign of Psychological Statistics has been successful at helping students better master the material from this class.



## Contact Information

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