

Minitab and Pizza: A Workshop Experiment

Jorge Luis Romeu
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Problems and Solutions

- lack of involvement/interesting examples
- mathophobia/statistical software
- student weakness/group learning
- lack of interaction/email connection
- lack of examples/email tutorials
- lack of interest/material incentives
- lack of class time/voluntary workshop
- Solution: pizza workshop!!!

Lab Description

- one hour, weekly, voluntary attendance;
- free pizza and soda incentive;
- two student lab assistants for help;
- taught by class instructor;
- previously emailed lab session;
- problem solving exercises;
- theory reinforcement;
- never new material -but enhancements;
- no course related reward.

Lab Sessions:

- 1) Intro (input/edit/output with minitab/vax)
 - 2) First Minitab stats commands
- 3) Bivariate Qualitative Data (cont. tables)
- 4) Bivariate Quantitative Data (regr./corr.)
- 5) Expected Vals/Variance/Discrete Dist.
- 6) Generation/Eval. for Normal/Binomial
 - 7) Central Limit Theorem Effect
- 8) Confidence Intervals (large/small)
- 9) Hypothesis Testing (large/small)
- 10) The Two Sample Problem

Three Data Collection Stages:

1) Questionnaire (eighth week)

- * one-pager essay
- * not anonymous
- * required/rewarded

2) Survey (13th week)

- * totally anonymous
- * fifteen qual/quant vars
- * required/rewarded

3) Course Work Data

- * from blue book
- * from attendance sheet
- * by instructor

Essay Questions/Answers:

1) For those attending the Pizza Lab:

* why? Pizza? Other?

*Most useful feature and why?

Least useful, and why?

How can we improve?

If stopped attending, why?

How can this be prevented?

2) For those not attending the Pizza Lab:

* why? schedule? incentive?

* What can be done regarding this?

* What do you think you missed?

* What have you done to compensate?

Most Frequent Comments:

*** Best Features:**

- software practice; reinforcing class material;
- connection between theory and applications
- able to ask more questions on one-to-one
 - hands on experience with data

***Worse Features:**

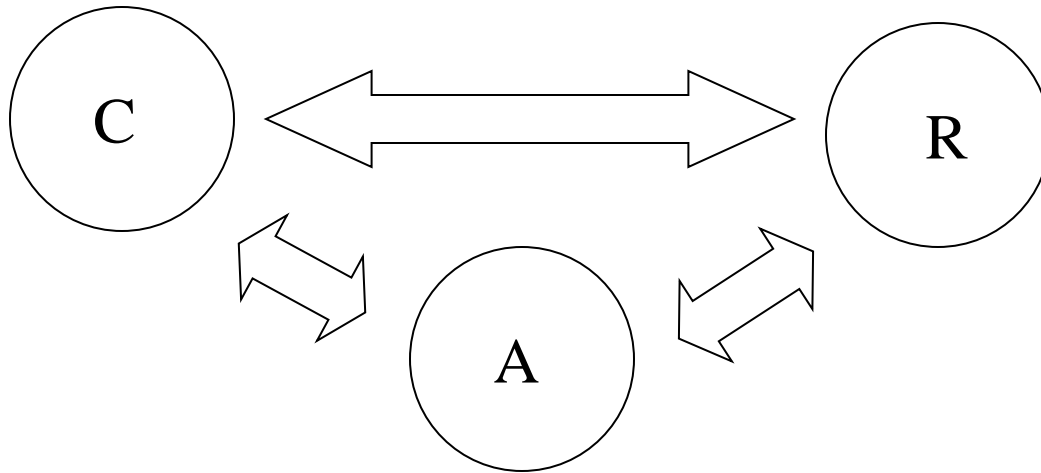
- time collision with other activities
- not part of course (no extra credit)
- lack of TA's expertise in some areas
- lack of a Minitab manual for students
- extra, unrewarded effort for student

Annecdotal Results:

- 1) best students in Lab
- 2) worse students never in Lab
- 3) Decreasing attendance trend
- 4) Percent Attendance \ll 50%

Conjecture

- A triple association:
 - QUALITY-RESULTS-ATTENDANCE



- Teaching Assistance, without doubt:
 - Have benefited most from Lab!!!

Conclusions:

- 1) Students won't attend voluntarily
- 2) only if mandatory and rewarded
- 3) anecdotal evidence supports success
- 4) if students come, they like it
- 5) good students enjoy it
- 6) bad students avoid it
- 7) three-way association
- 8) Lab Assistants gain the most