

Asking Questions

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Learning Objectives

1. Why methodology matters
2. Prototyping methods

How to apply methodology and prototyping to your research project

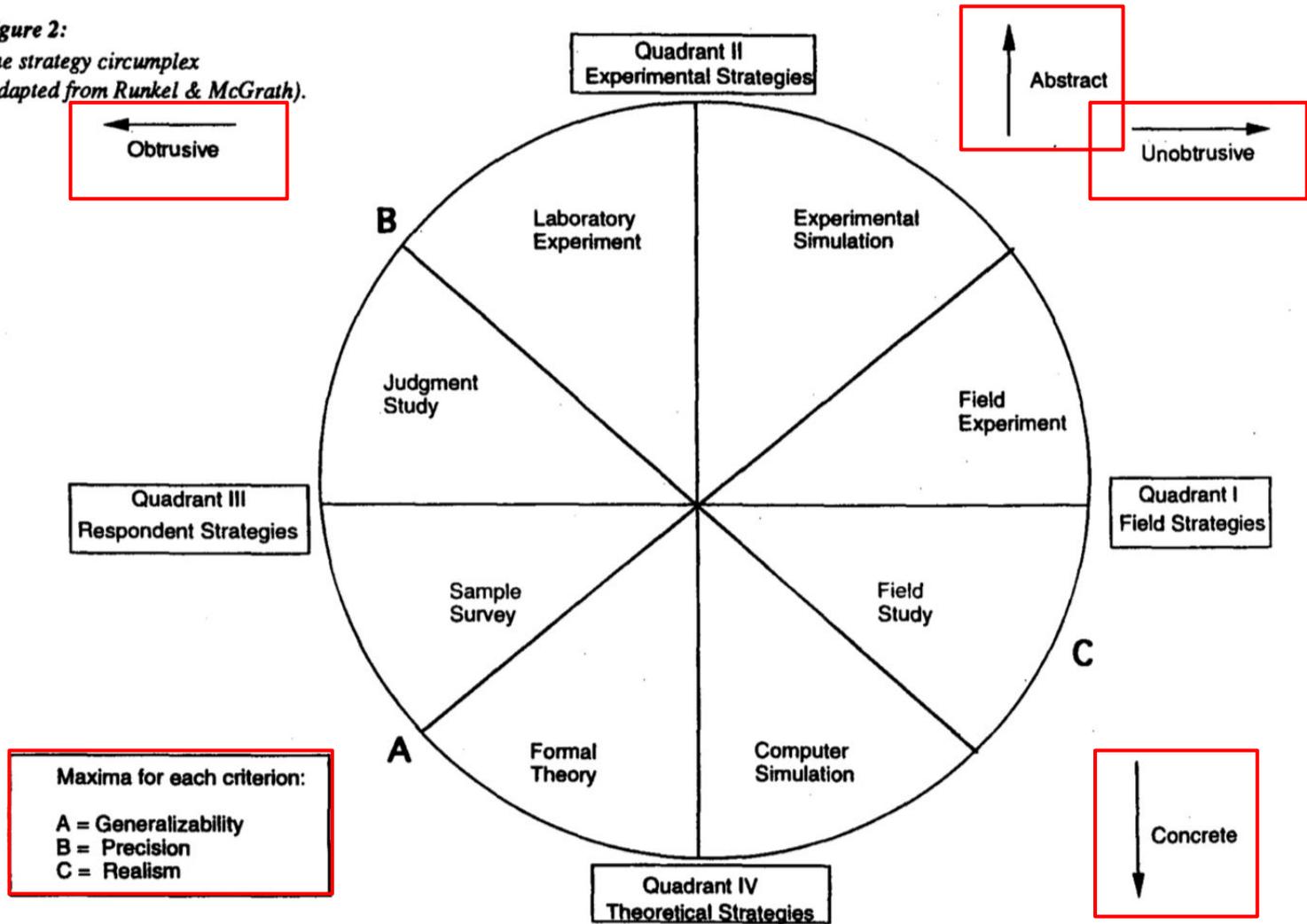
Methodology Matters: Doing Research in the Behavioral and Social Sciences

What is a research method?

Tools, instruments, techniques,
procedures to gather and analyze
information

* each method has benefits and considerations

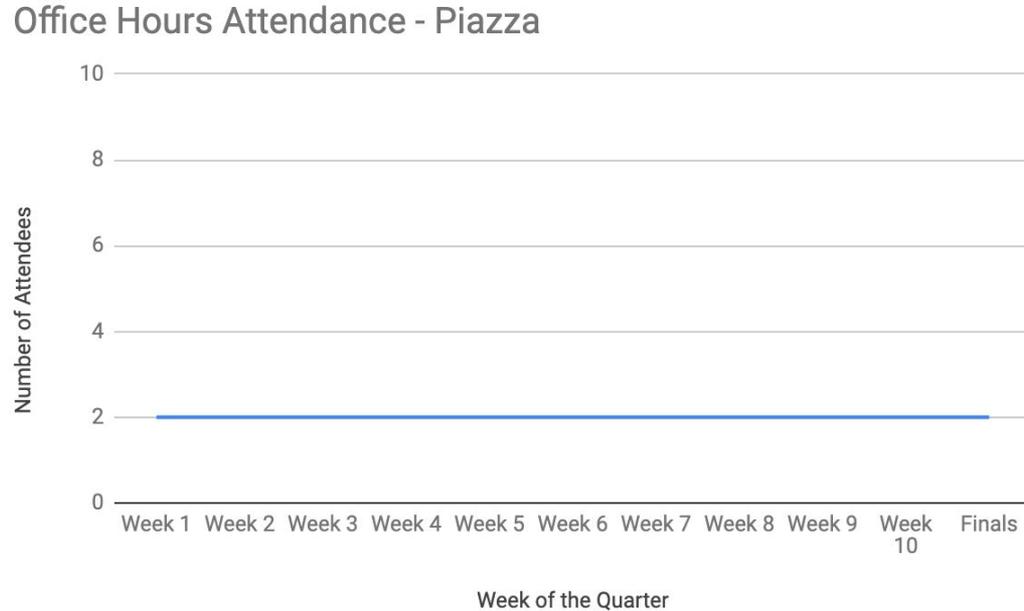
Figure 2:
The strategy circumplex
(adapted from Runkel & McGrath).



How do you get data?

Self-Report
Observations
Trace Measures
Archival Records

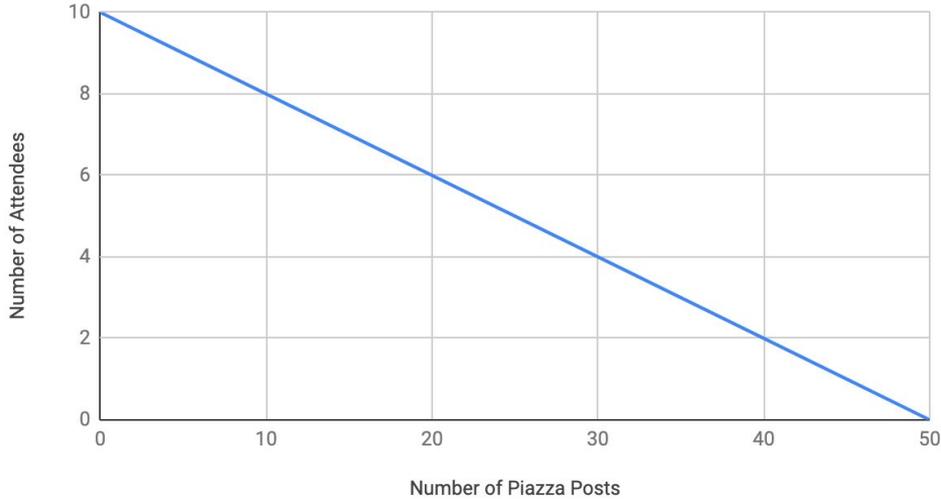
Baserates



Compare Y rates in general condition to a Y rates in particular case

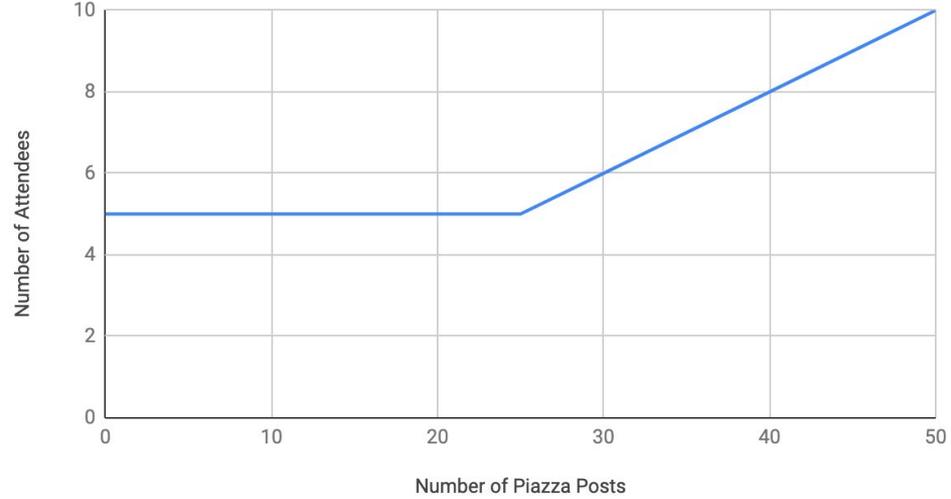
Correlation

Office Hours Attendance vs. Piazza Post Rate



Linear

Office Hour Attendance vs Piazza Post

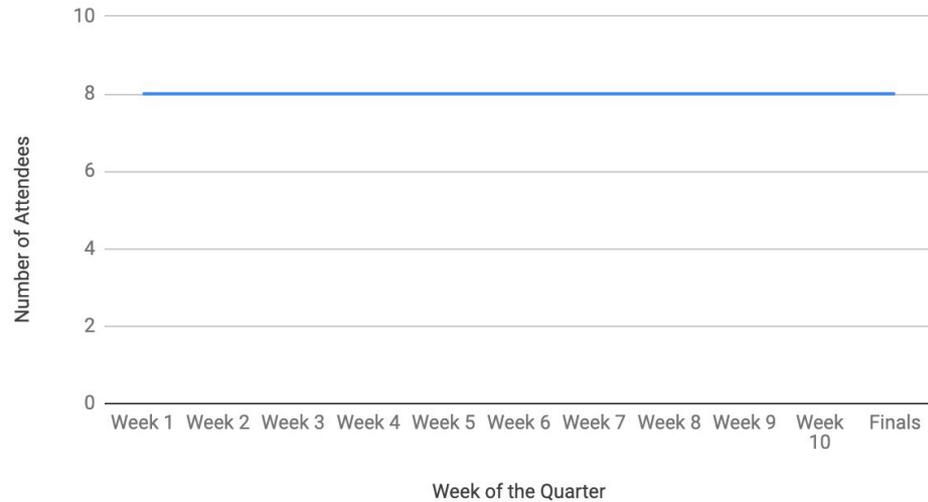


Non-Linear

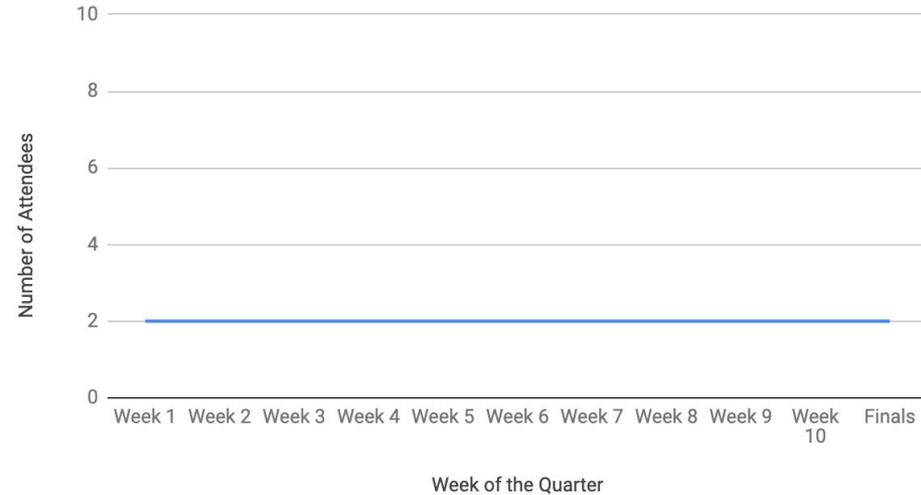
Do the values of X covary systematically with Y?

Difference

Office Hours Attendance - No Piazza



Office Hours Attendance - Piazza



Is Y present/high when X is present/high

Internal Validity

Extent to which study results supports an inference about causal relations

External Validity

Extent that the findings can be repeated in another study

Construct Validity

How well defined are the theoretical ideas
of the study

“Random” in Sampling & Allocation

Refers to procedure

No guarantee that result is ideal

Required to be a “True Experiment”

“However, regarding modern research, especially for those Pasteur’s style that need to focus on both of applications and theoretical understanding, balancing among [the three criterion] will be extremely necessary.”

Critique the research strategy/strategies of a different group.

Approach the project with another method. What kinds of conclusions can you make with a different approach?

Prototyping Tools & Techniques

What is a prototype?

Concrete representation

Tangible artifact

Envision and reflect on final system

What kind of prototypes are there?

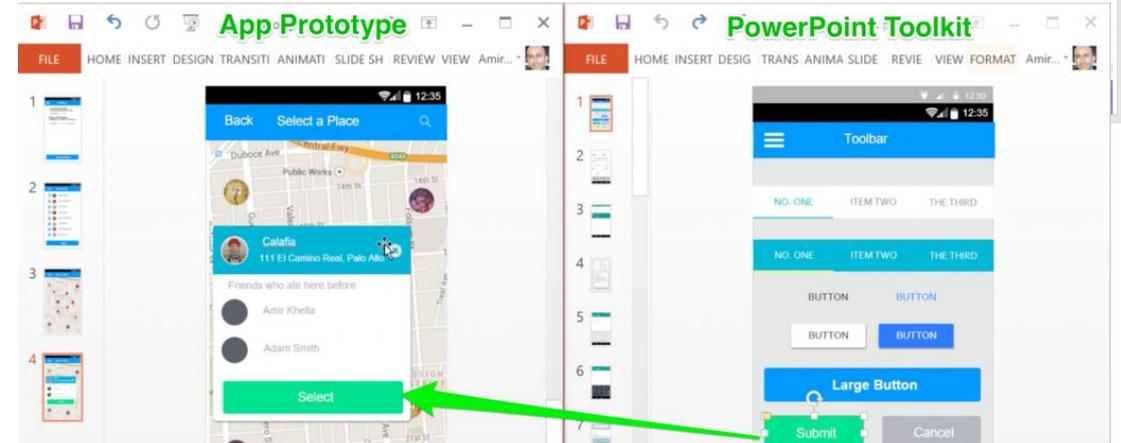
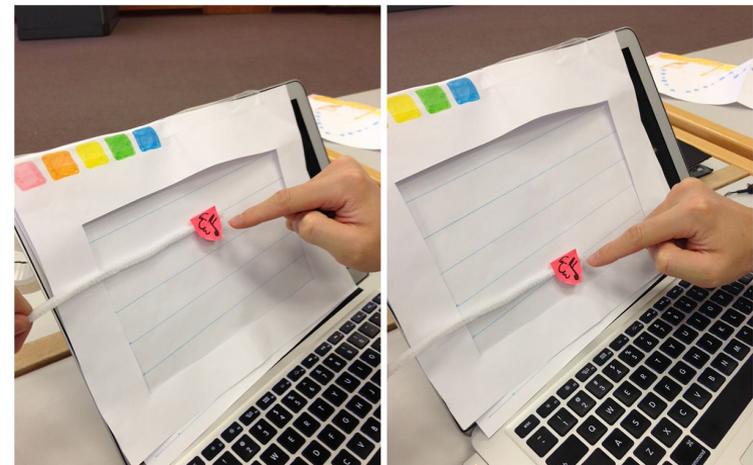
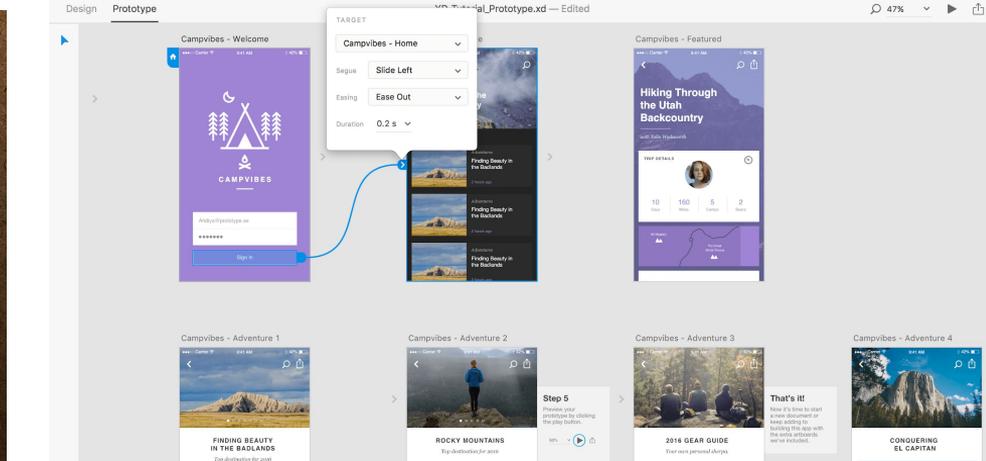
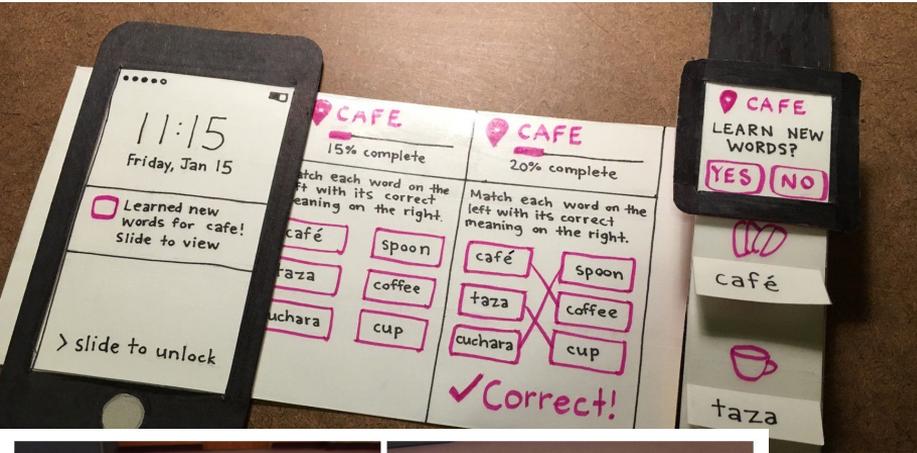
Takes on many forms

Each method has their own benefits and considerations

What are prototyping strategies?

Horizontal
Vertical
Task-Oriented
Scenario-Based

Rapid Prototyping



“The issue of more quiet members of the design team not being heard is very interesting. With the social dynamics and differing personalities, it could be hard for shy and introverted designers to express their (potentially amazing) ideas.”

What kind of prototyping methods are you planning on using for your project? What kind of information can you get/conclusions can you draw from using that method?