# CASE STUDY LEARNING: A TOOL FOR TEACHING CRITICAL THINKING

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# INTRODUCTION

## Presenters

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## Presentation Outline

- Course Background
- Case Study Learning
- Harvard Business Cases and Method
- Research Methods
- Discussion of Results
- Q & A

# BACKGROUND: DEVELOPMENT OF THE COURSE

Syllabus & Assessment

CT Module

5 Case Studies

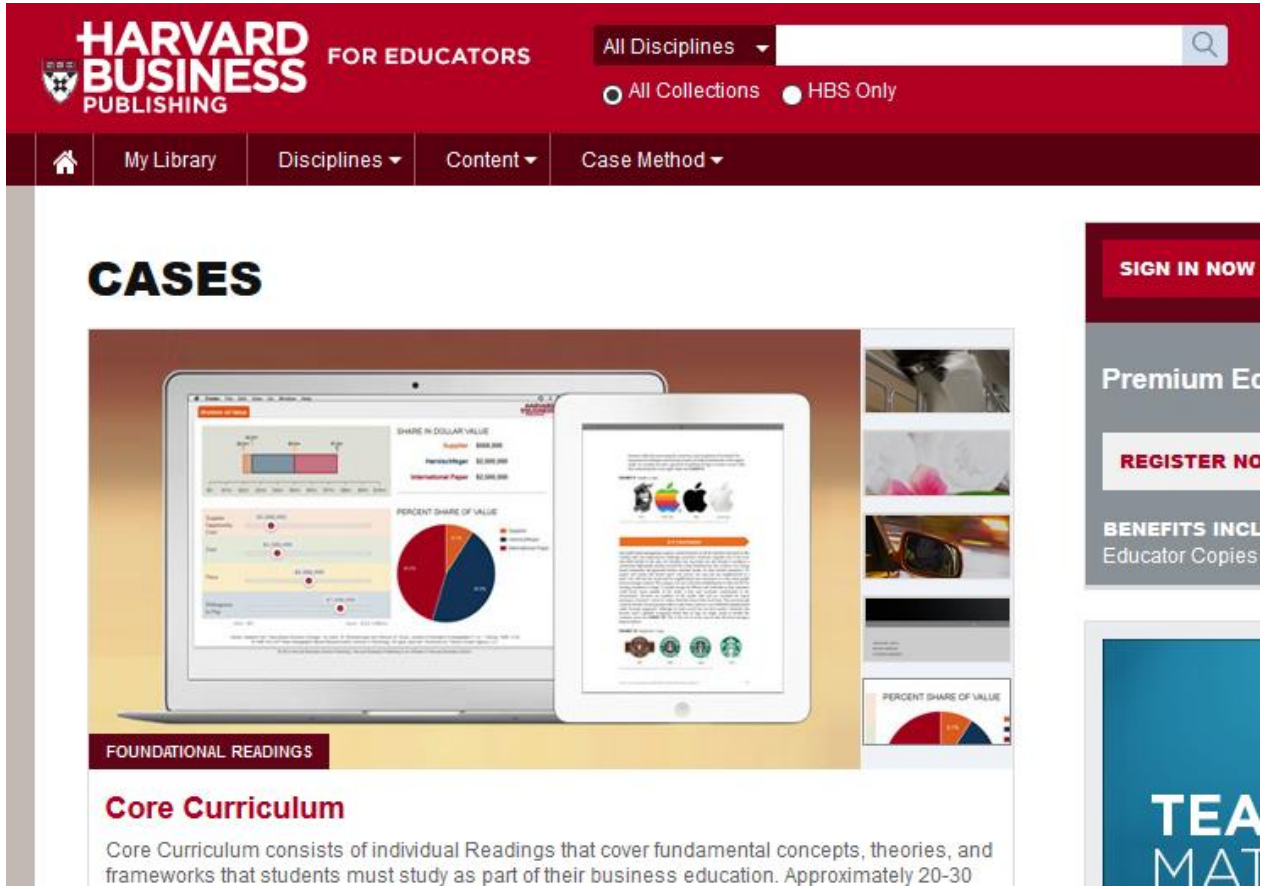
# CASE STUDY LEARNING

A description of ***an actual administrative situation*** involving a decision that needs to be made, and is written in such a way that ***the reader takes the role of the manager, or key decision maker***, whose responsibility it is to make that decision to help solve the problem.

## Fit for teaching CT?

- Multidimensional situations (Boyce, 1995; Scott, 2007; Vaugeois, 2005)
- Real-world scenarios in safe environments (Boyce, 1995)
- Unstructured problem-based learning (Scott, 2007)
- Synthesis of information (Boyce, 1995)
- Must think analytically and demonstrate reasoned evidence (Leonard & Cook, 2010)
- Application of theory/ concepts (Davis & Wilcock, 2003)

# UTILIZING HARVARD BUSINESS CASES




## Case Pack

- Case
- Teaching Notes
- Supplementary Materials

# HARVARD CASE METHOD

**Our Process**

Introduce Case

Case Write-up

Debrief Case

**The HBR Process**

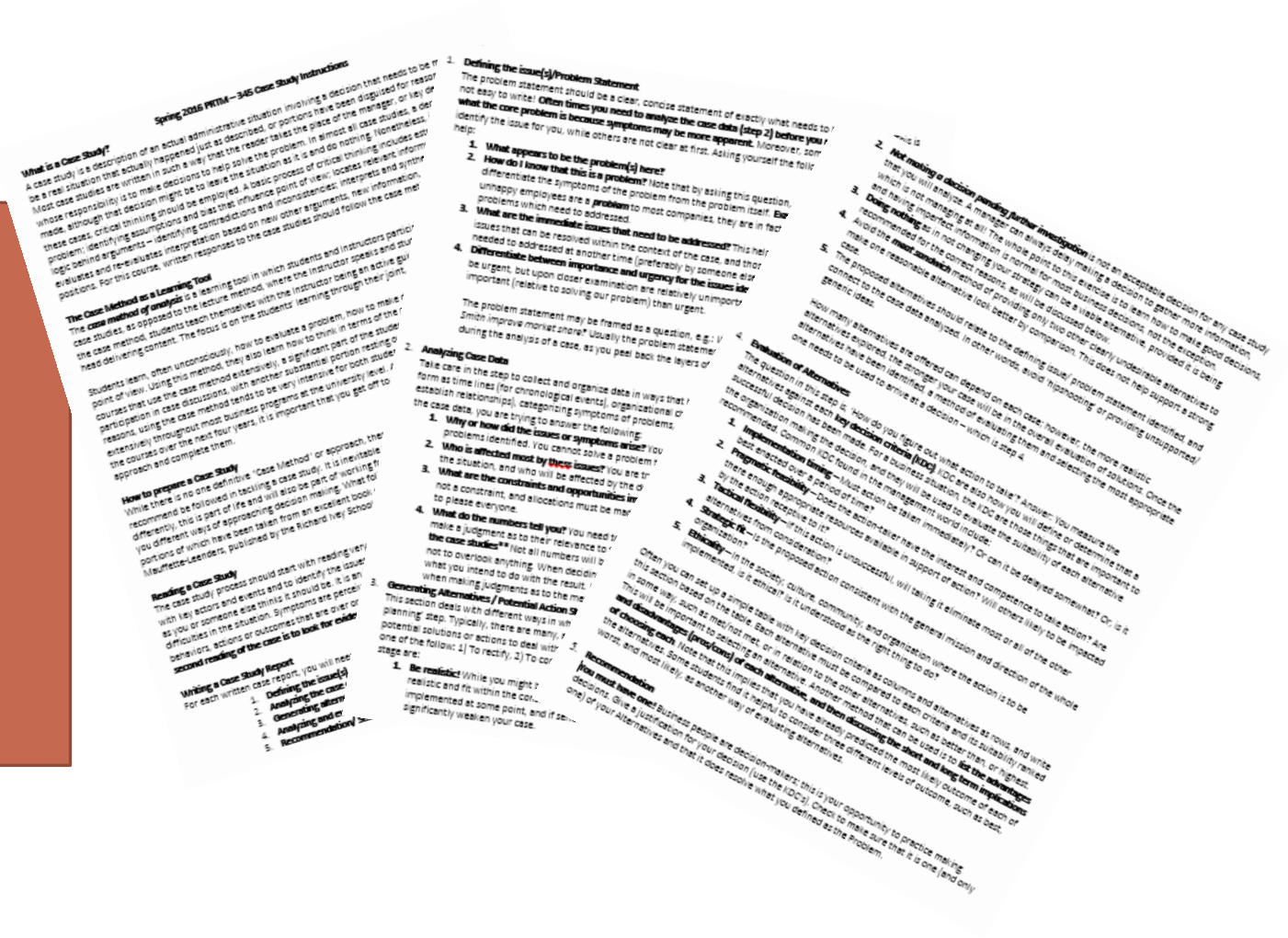
Describe

Analyze

Generate Alternatives

Evaluate Alternatives

Make Recommendations



# METHODS

## Quasi-experimental, pre/postdesign

- Fall 2014, Spring 2015, Spring 2016 (2 sections)
- N = 85

## California Critical Thinking Skills Test (CCTST)

- Online completion during first and last week of classes
- Incentivized with class credit
- Specific instructions provided

## Analysis

- Paired t-tests across overall score, 5 domains, time spent on test, and percentage of answered questions
- Holm's Sequential Bonferroni Procedure, G*Power 3
- Corrected vs. uncorrected models

**5 Domains**

Analytic skills

Inference skills

Evaluation skills

Deduction skills

Induction skills

# RESULTS

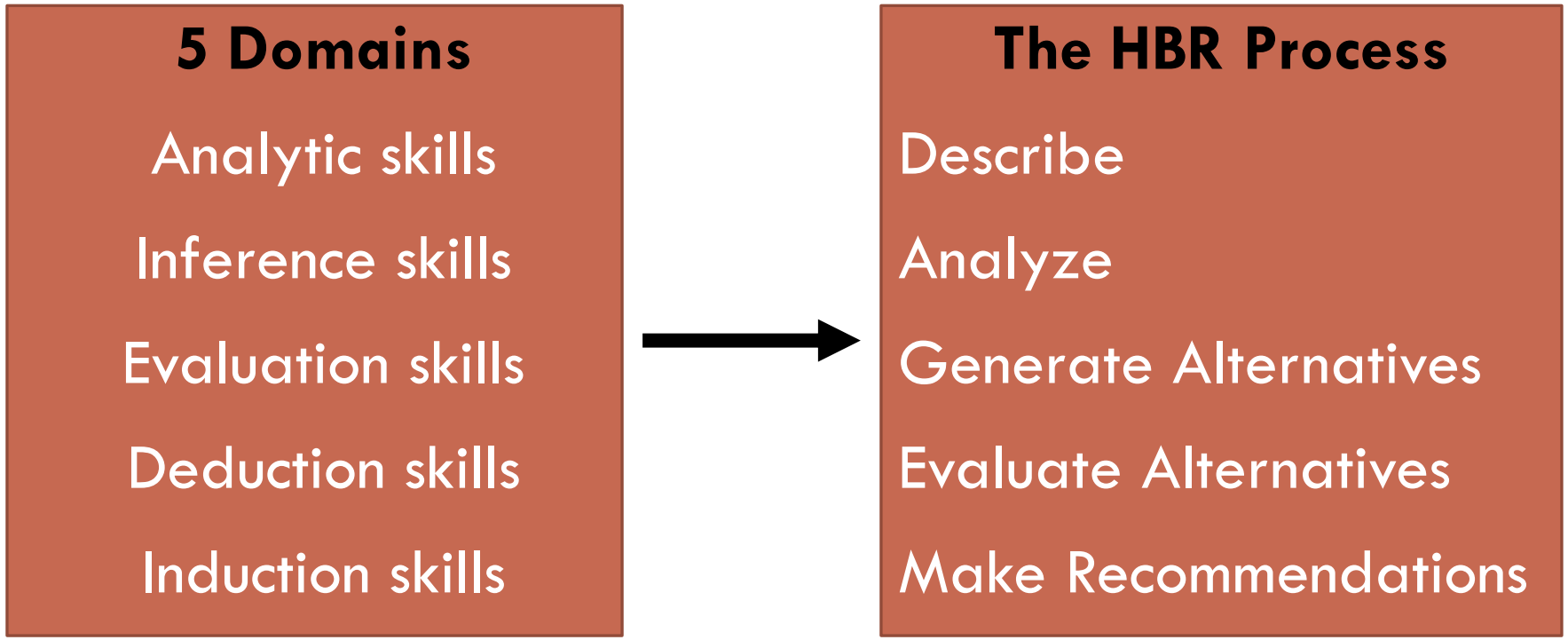
**Table 2.** Results of paired sample *t* test.

| Variable | Pre-score | Post-score | Mean diff. | *SD* | *t* | *df* | *p* | *p′* | Effect (Cohen's *d*) | Power |
|---|---|---|---|---|---|---|---|---|---|---|
| Percent answered | 0.9961 | 0.9972 | 0.0011 | 0.0249 | 0.395 | 84 | 0.694 | 0.978 | 0.062 | 0.069 |
| Time | 26.34 | 30.52 | 4.176 | 11.821 | 3.257 | 84 | 0.002* | 0.018** | 0.499 | 0.896 |
| Percentile | 35.62 | 40.91 | 5.282 | 20.751 | 2.347 | 84 | 0.021* | 0.168 | 0.359 | 0.641 |
| Overall | 14.12 | 15.02 | 0.906 | 3.627 | 2.302 | 84 | 0.024* | 0.168 | 0.353 | 0.624 |
| Analysis | 3.08 | 3.29 | 0.212 | 1.589 | 1.228 | 84 | 0.223 | 0.892 | 0.188 | 0.229 |
| Inference | 7.54 | 8.09 | 0.553 | 2.281 | 2.235 | 84 | 0.028* | 0.892 | 0.342 | 0.599 |
| Evaluation | 3.49 | 3.64 | 0.141 | 1.872 | 0.695 | 84 | 0.489 | 0.978 | 0.106 | 0.106 |
| Deduction | 6.26 | 6.87 | 0.612 | 2.411 | 2.340 | 84 | 0.022* | 0.168 | 0.359 | 0.638 |
| Induction | 7.86 | 8.15 | 0.294 | 2.478 | 1.094 | 84 | 0.277 | 0.978 | 0.168 | 0.191 |

*Significant at the $p < 0.05$ level, uncorrected. **Significant at the $p < 0.05$ level, corrected. The value 0.80 is typically used as an indicator of "good" power. Effect sizes are typically described as small ($d = 0.2$), medium ($d = 0.5$), and large ($d = 0.8$; Cohen, 1988; Lakens, 2013).

# DISCUSSION

1. This case study learning process went beyond only *analyzing* and *evaluating*, which are common active learning objectives, to also focus on *inference, deduction, and induction.*




2. Change in time spent taking test could mean different things

# DISCUSSION

## Case study learning concerns and considerations:

- Labor intensive and take significant class time (Velenchik, 1995)
- Additional readings/content sometimes needed to help frame issues
- Oversimplify real-world issues (Leonard & Cook, 2010)
- Internationality in developing, implementing, monitoring, and assessing
- Alignment with course objectives and students prepared to engage (Davis & Wilcock, 2003; Vaugeois, 2005)
- Class discussion moderation is important (Vaugeois, 2005)

## Limitations

- Homogeneous sample, lack of control group
- Weak to moderate statistical power
- Standardized, multi-choice testing

# QUESTIONS