Addressing Academic Integrity Among FE 1100 Students

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MISSOURI S&T

Rationale

- Academic dishonesty is an increasing problem among undergrads (McCabe, Trevino, & Butterfield, 2001; Yeo, 2007)

- It appears more common among engineering students (Newstead, Franklyn-Stokes, & Armstead, 1996; McCabe, 1997)

Previous Research

- Belter & du Pre (2009)
  - Online tutorial vs No intervention
  - Significantly fewer incidents of plagiarism in Tutorial group
  - Quasi-experimental design

- Henslee, Goldsmith, Stone, & Krueger (in press)
  - Randomized groups: pre-recorded/generic lecture vs specific/online tutorial
  - No significant differences in incidents of plagiarism
  - Suggests equally effective techniques

FS 2013

- FE 10 students randomized, by section, to Online Tutorial (N=303) vs No Intervention (N=332)
- T1 and T2 assessment on Quiz performance
- Tutorial was written text only (Belter & du Pre, 2009)
- Quiz included 10 items
- 1 week between T1 & T2

Incoming 2013
FE 10 Class

T1: Demographics ,
Self-report & Quiz

T1: Demographics,
Self-report & Quiz

Academic Integrity
Module

No Intervention

T2: Integrity Quiz

T2: Integrity Quiz
& Academic
Integrity Module

FS 2013 Results

- At T1, students were uncertain and misunderstood what is and is not plagiarism
  - Incorrect or I Don't Know answers ranged from 10-49%
- No significant difference between groups at T1 on Total Quiz Score
  - Intervention group scored significantly lower (p=0.015) on the 3 plagiarism items, but only by 0.15 points
- Both groups improved on Total Quiz Score & Plagiarism Items at T2, but not significantly so
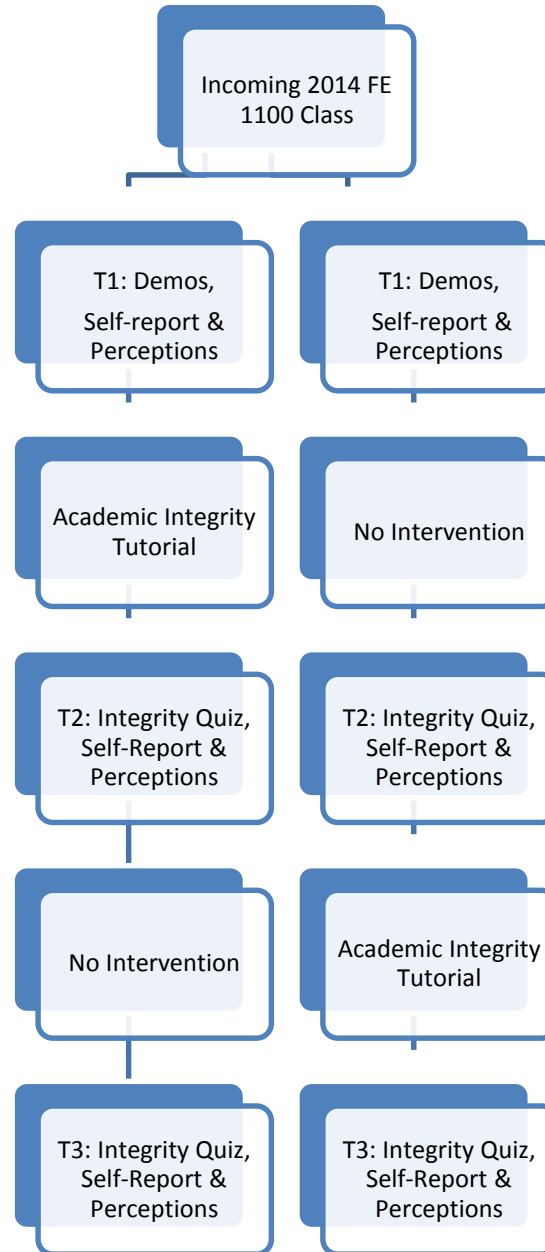
FS 2013 Limitations

- Difficulties with randomization & implementation

- So, we wanted to run the study again in FS 2014

- Expand tutorial to address integrity more broadly

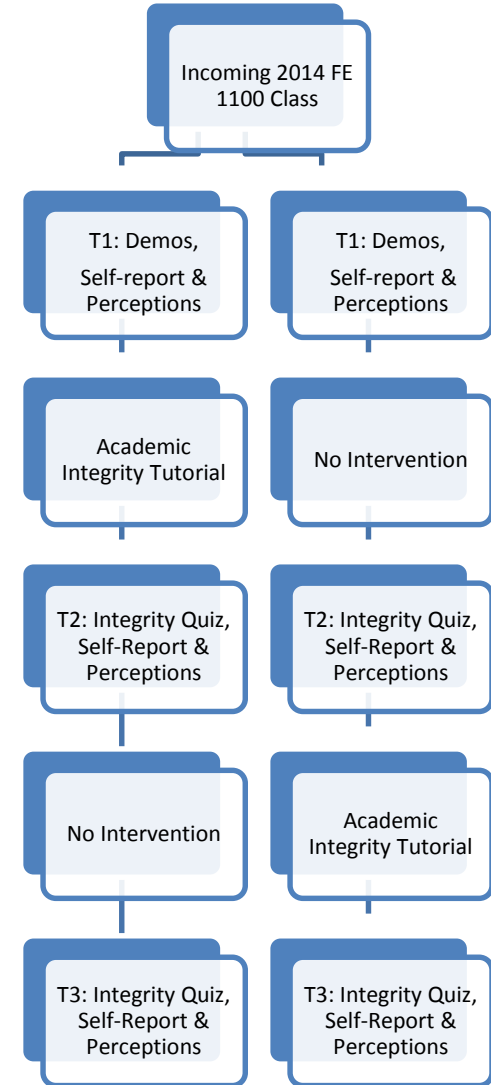# Current CERTI Mini-Grant Project

- Modified the Tutorial to include video clips of Drs. Ludlow, Cawlfield, Berry, & Murray
- Emphasized overall integrity, S&T values, engineering professionalism, in addition to cheating, plagiarism, & sabotage
  - Consistent with a "systems approach" (Gallant, Einde, Ouellette, & Less, 2014)
- Modified Quiz (14 items)
- Intervention (N = 410) & Control (N = 337)

Incoming 2014 FE 1100 Class

T1: Demos, Self-report & Perceptions

T1: Demos, Self-report & Perceptions

Academic Integrity Tutorial

No Intervention

T2: Integrity Quiz, Self-Report & Perceptions

T2: Integrity Quiz, Self-Report & Perceptions

No Intervention

Academic Integrity Tutorial

T3: Integrity Quiz, Self-Report & Perceptions

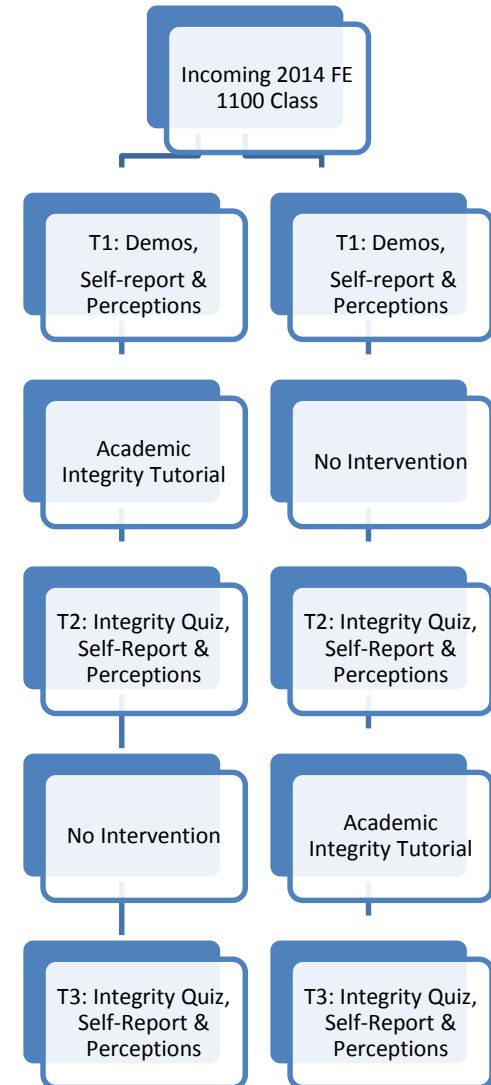T3: Integrity Quiz, Self-Report & Perceptions

Primary Hypotheses

- **After exposure to the Academic Integrity Tutorial**
  1. T2 Intervention would perform better than T2 Control
  2. T2 Intervention & T3 Control performance would not be significantly different

Incoming 2014 FE 1100 Class

T1: Demos, Self-report & Perceptions	T1: Demos, Self-report & Perceptions
Academic Integrity Tutorial	No Intervention
T2: Integrity Quiz, Self-Report & Perceptions	T2: Integrity Quiz, Self-Report & Perceptions
No Intervention	Academic Integrity Tutorial
T3: Integrity Quiz, Self-Report & Perceptions	T3: Integrity Quiz, Self-Report & Perceptions

Primary Hypotheses

- **After exposure to the Academic Integrity Tutorial**
    3. T2 Intervention and T3 Intervention performance would not be significantly different
    4. T3 Control would perform better than T2 Control

Incoming 2014 FE 1100 Class

| T1: Demos, Self-report & Perceptions | T1: Demos, Self-report & Perceptions |

| Academic Integrity Tutorial | No Intervention |

| T2: Integrity Quiz, Self-Report & Perceptions | T2: Integrity Quiz, Self-Report & Perceptions |

| No Intervention | Academic Integrity Tutorial |

| T3: Integrity Quiz, Self-Report & Perceptions | T3: Integrity Quiz, Self-Report & Perceptions |

Current CERTI Mini-Grant Project

- Results* (corresponding to hypotheses)

1. There was no statistically significant difference (p=0.111) in Quiz scores between Intervention (M=9.09, SD=0.89) and Control (M=8.98, SD=1.03) at T2

2. There was no statistically significant difference (p=0.873) in Quiz scores between Intervention at T2 (M=9.09, SD=0.89) and Control at T3 (M=9.10, SD=0.91)

3. There was a statistically significant difference (p=0.033) in Quiz scores within the Intervention at T2 (M=9.09, SD=0.89) and T3 (M=8.99, SD=1.00)

4. There was a statistically significant difference (p=0.019) in Quiz score within the Control at T2 (M=8.98, SD=1.03) and T3 (M=9.10, SD=0.91)

*Analyses based on 10 of 14 items

Current CERTI Mini-Grant Project

- Discussion (corresponding to results)

1. Intervention did perform better at T2 compared to Control, but not significantly so

2. There was no statistically significant difference in Quiz scores between Intervention at T2 and Control at T3

   Suggests that both groups had similar baseline knowledge

3. T3 scores were statistically lower than T2 score in the Intervention, but perhaps not practically significant

4. Control did perform significantly better at T3 compared to T2, but perhaps not practically significant

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