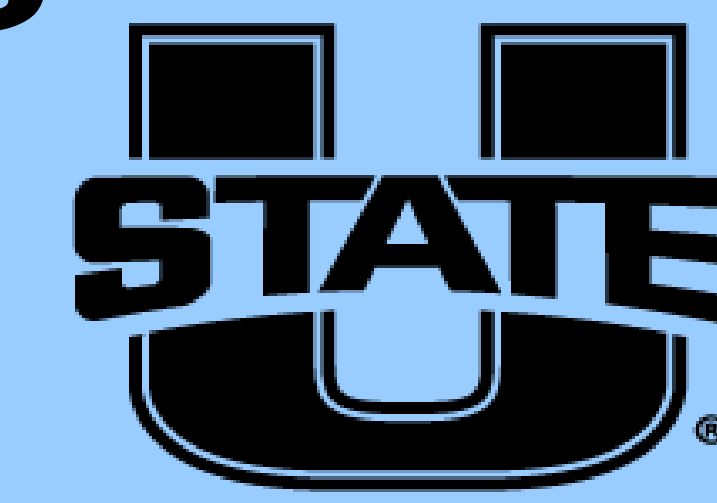


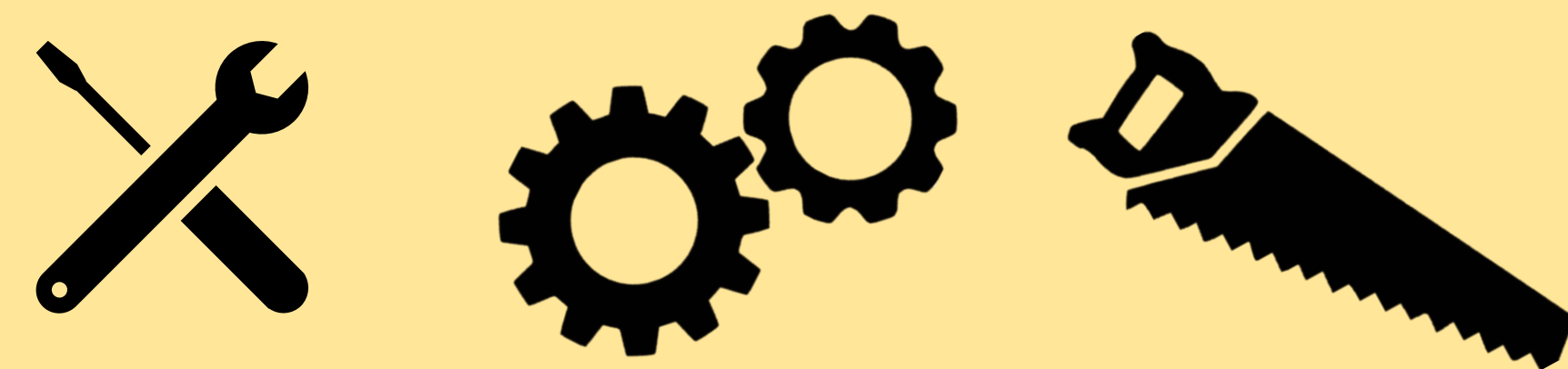
Differences in Post-Secondary Student's Tinkering Self-Efficacy: Implication for Skill Development

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What is Tinkering Self-Efficacy?

- ✓ An individuals' belief in themselves regarding their ability, experience and comfort levels in manual activities.

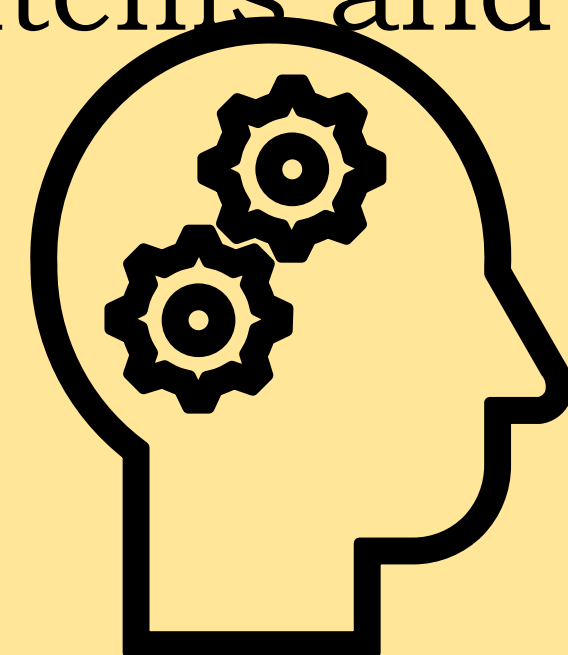


Methodology:

- ✓ Describe male & female students tinkering self-efficacy and determine if differences exist between male & female students
- ✓ Population – Undergraduate students enrolled in a post-secondary welding course
- ✓ 7-Item Tinkering Self-Efficacy scale (Adapted from Baker & Krause, 2007)

Example Survey Items:

- ✓ "I enjoy learning how machines operate"
- ✓ "I enjoy taking apart items and seeing how they work"



Tinkering Self-Efficacy Scores:

| Student Participants | Week 4 Self-efficacy | SD | Week 12 Self-efficacy | SD |
|----------------------|----------------------|------|-----------------------|------|
| Female (n = 4) | 5.10 | 1.14 | 4.96 | 1.15 |
| *AFAB (n = 1) | 7.00 | -- | 7.00 | -- |
| Male (n = 20) | 6.59 | 0.44 | 6.52 | 0.68 |

*AFAB – Assigned Female at Birth

Need for Research:

- ✓ Agricultural Education & mechanics were overlooked disciplines few females pursued until recent years.
- ✓ Many ag. Mechanics disciplines have unbalanced ratio of males to females (3.5% of welders are female).
- ✓ Females have been described as lacking tinkering self-efficacy (lack experience & apprehensive in the field).

Conceptual Framework:

- ✓ Agricultural Education & mechanics were overlooked disciplines few females pursued until recent years.
- ✓ Many ag. Mechanics disciplines have unbalanced ratio of males to females (3.5% of welders are female).
- ✓ Females have been described as lacking tinkering self-efficacy (lack experience & apprehensive in the field).

Results:

- ✓ All Tinkering self-efficacy scores decreased between the beginning and end of the semester.
- ✓ The females' score was significantly lower than the males' score
- ✓ The AFAB student score 7 on both pre & post (indicating high levels of tinkering self-efficacy)
- ✓ Female students received lower lab grades (84.51%) compared to the male students (89.13%).

Conclusions:

- ✓ Female students in our sample revealed significantly lower levels of tinkering self-efficacy.
- ✓ Students may have been more confident before being exposed to more difficult welding techniques.
- ✓ We recommend additional research be conducted to investigate measures which affect tinkering self-efficacy.