



Differences Among University Instructors' Adaptability

Kayla Osen¹, Grace Panther², Heidi Diefes-Dux²
Purdue University¹, University of Nebraska-Lincoln²



Background

- COVID-19 pandemic forced online instruction for universities
- Instructors had to change teaching methods
- A wide array of teaching practices & strategies graduates better engineers
- Definition of adaptability: "individual's capacity to constructively regulate psycho-behavioral functions in response to new, changing, and/or uncertain circumstances, conditions and situations"¹
- Two adaptability frameworks
 - Cognitive/behavioral & emotional summing to a total score¹
 - Work Stress, interpersonal, learning, creativity and uncertainty²

Purpose

- Quantify the variability of adaptability of engineering instructors at an R1 university
- **Research Question:** Do differences exist in adaptability of engineering instructors based on gender, position, tenure status or department?

References

1. Martin et al. *Aus J of Guidance and Counselling*. **2012**, 22, 1.
2. Ployhart, & Bliese. *Understanding Adaptability: A Prerequisite for Effective Performance within Complex Environments*. **2006**, 3–39.

Methods

- Online survey with two instruments sent to 7 departments in the fall of 2021
 - "I am able to reduce negative emotions (e.g., fear) to help me deal with uncertain situations"¹
 - "I am easily rattled when my schedule is too full"²
- Scores based on factor pairings
- Descriptive statistics
- Statistical Analyses: t-test, ANOVA, Cohen's *d*

Results

Dimension	Subgroup	Mean	<i>p</i> -value	Cohen's <i>d</i>
Martin ¹				
Cognitive/Behavioral	Male	25.4	0.003	0.90
	Female	27.5		
Total Adaptability	Male	37.5	0.025	0.64
	Female	39.2		
I-ADAPT ²				
Learning	Male	36.6	0.049	0.53
	Female	39.1		
Learning	Tenured	36.4	0.039	0.49
	Tenure-Track	38.6		
Creativity	Male	19.0	0.033	0.57
	Female	20.5		

Findings

- Female instructors scored higher in the following dimensions: cognitive/behavioral, total adaptability, learning and creativity
- Tenure-track instructors were more adaptable in the learning dimension
- Large effect size for all significant differences
- No differences in department or professor of practice vs traditional professor

Conclusions & Future Work

- Adaptability is a personality trait that is fixed in the context of workplace
- Certain personalities are drawn to careers in academia
- Need more career specific adaptability research
- Need to combine with course complexity trends to make Program of Tiered Commitments

Acknowledgements

- NSF #2105156, Research: Evidencing Epidemic Change in Engineering Education: Shedding Light on Instructor Adaptability and Course Complexity for Sustained Change
- NSF #1950597, REU Site: Sustainability of Horizontal Civil Networks in Rural Areas