

Evaluating an Online Series of Courses for Undergraduate Researchers: Competency Gains and Perceptions

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Intended Outcomes

Through engaging in this session, participants will:

- *Learn how we evaluate the series of online courses.*
- *Exchange ideas for their similar courses, and/or take away ideas adaptable to their institution.*



This QR code will take you to the website:

(<https://purdue.edu/undergrad-research/conferences/CUR2024.php>)

containing information from multiple ConnectUR presentations by staff in the Purdue University Office of Undergraduate Research.



Course Evaluation

■ What we have:

- 5 outcome-driven online courses
- Institutional evaluation
- Course perceptions evaluation
 - Research proficiencies (excellence)
 - Benefits (gain; agreement)
 - Assignments (effectiveness)
 - Rubrics (helpfulness)
 - Instruction (excellence)

■ What we want to know:

- To what extent do students gain knowledge in core concepts of a course?

■ What we piloted:

- 19-item pre-test consisting of fundamental knowledge and comprehension items.
- Same items added as a post-test to the course perceptions evaluation.

Sample: What does "peer review" mean in the context of research?

- *Reading over someone's work in a research class*
- *Experts reviewing manuscripts before publications*
- *Assessing other students' performance at conducting research*



Sample Results

Table 1. Comparison of Knowledge Exam Scores from Time 1 to Time 2.

Term	Timing	Mean	N	S.D.	Comparison			Effect Size	
					Change in Mean	t	Sig	Cohen's d	Description
All	T1	11.47	70	2.30	2.17	7.38	p<.001	2.46	large
	T2	13.64	70	2.42					
Summer 2022	T1	11.06	31	2.31	1.97	3.61	p<.01	3.04	large
	T2	13.03	31	3.10					
Summer 2023	T1	11.79	39	2.26	2.33	7.63	p<.001	1.91	large
	T2	14.13	39	1.58					

Fig 1. Knowledge Exam Change in Scores

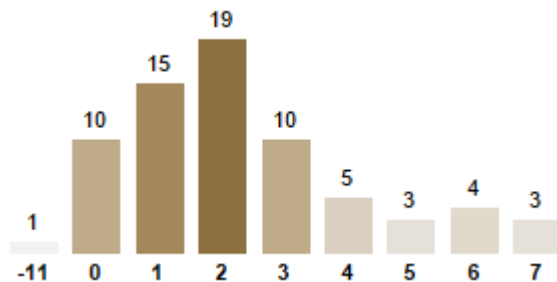


Fig 2. Knowledge Exam Gains, as a Percent of Change Possible

