

Murdock College Science Research Conference 2017
Faculty Enrichment Workshop | CURE: Current Landscape and Ideas for Future Innovation
Defining Learning Outcomes | Break-out Session with Cecilia Toro, Linfield College

CURE defining characteristics:

- Students perform research associated with a course
- Research outcomes are unknown
- Results are interesting to a larger community outside of lab

Learning outcomes based on learning goals

- Research goals
 - Specific to research project
- Pedagogical goals
 - Conceptual
 - Technical
 - Affective

Overall research goal of CUREs: Contribute new scientific knowledge to the scientific community.

Overall pedagogical goal of CUREs: Provide students with the experience of conducting scientific research, allowing them to be engaged in the scientific process.

Examples of pedagogical learning outcomes

Conceptual

Increased understanding of the process of science
Improved ability to select or design an experiment
Increased content knowledge
Improved ability to read and evaluate science literature

Technical

Increased technical skills
Increased data analysis skills
Discipline-specific skills

Affective

Enhanced science identity (being a “science person”)
Increased sense of belonging (to scientific community)
Increased scientific self-efficacy
Improved attitudes about science
Increased feelings of project ownership
Increased interest in graduate education
Increased tolerance for obstacles and persistence
Career clarification
Persistence in science
Improved communication skills through presentation within and outside of class
Improved collaboration skills

References / Resources

Cooper KM, Soneral PAG, and Brownell SE. (2017) Define Your Goals Before You Design a CURE: A Call to Use Backward Design in Planning Course-Based Undergraduate Research Experiences *Journal of Microbiology & Biology Education* 18(2):1-7.

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