



# Self-Determination Fostered Through Undergraduate Research

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**“I know of no more encouraging fact than the unquestionable ability of man to elevate his life by a conscious endeavor.”**

**Henry David Thoreau**

# Overview

- Participant Experience
- Factors in Student Learning and Success
  - Self-Determination Theory
  - Engagement Theory
  - Autonomy Support Theory
- Course Objectives
- Undergraduate Research
- Group Activities
- Group Discussion
- Closing thoughts

# Self-Determination Theory (SDT)

- **Student Success**
  - Occurs when students engage in independent, purpose-driven behavior (Gagne & Deci, 2005)
  - Aligns student values , skills and knowledge (Konrad, et al., 2007)
- **External Factors Impact Student Motivation**
  - Deadlines, surveillance, and evaluations diminish motivation (Gagne & Deci, 2005)
  - Choices, rewards and autonomy increase motivation (Gagne & Deci, 2005)

# Self-Determination Theory (SDT)

## Elements of Learning that Support Self-Determination

- Goal setting
- Decision making
- Problem solving
- Observation
- Evaluation
- Awareness
- Instruction
- Reinforcement
- Self-advocacy
- Internal control
- Self-efficacy

(Wehmeyer, Sands, Doll, & Palmer, 1997)

# Engagement Theory

- Considerations include involvement, structure, and autonomy support (Skinner & Belmont, 1993)
- Three primary means to accomplish engagement
  - Collaboration
  - Project based assignments
  - Non-academic focus

# Autonomy-Support Theory

- Encourages students and faculty academic freedom (Niemi & Ryan 2009)
  - Academic voice and choice
- Teaching practices are associated with positive outcomes (Niemi & Ryan 2009)
- Intrinsic goals have direct effects on well-being (Vansteenkiste, et.al., 2004)

# Importance of Undergraduate Research

## Student Perceptions

- 91% referenced gains from the research experience (Hunter, et al., 2007 )
- 71% cited intrinsic interest as the primary motivation for undertaking a research project

## Faculty Perceptions

- 90% find undergrad research highly beneficial
- Exposes students to concepts beyond the classroom and textbook (Mustafa, 2004)
- Encourages student research in future career life (Mustafa, 2004)

# Importance of Undergraduate Research

## Administration Perspectives

- Undergraduate research is the pedagogy of the 21<sup>st</sup> century  
(Garcia & Hughs, 2008)
- “Creating a culture of research among undergraduates has become the gold standard in universities and colleges”  
(Behar-Horenstein & Johnson, 2010, p1)



# Developing Course Objectives

- Identify what students should be able to do when they complete the course.
  - Concise
  - Measurable
  - Observable
  - Attainable
  - Specific
- Use appropriate language
- Consider elements of student success theories

(Beebe, Mottet, & Roach, & 2004)

# Community Research

- Identify problems to address in the community:
  - Health
  - Social Justice
  - Environmental
  - Ethical
  - Business



# Group Activities



# Group Activity I

- Develop an engagement model for research course
  - Share engagement methods
  - Faculty and student characteristics
  - Actions and outcomes

# Discussion



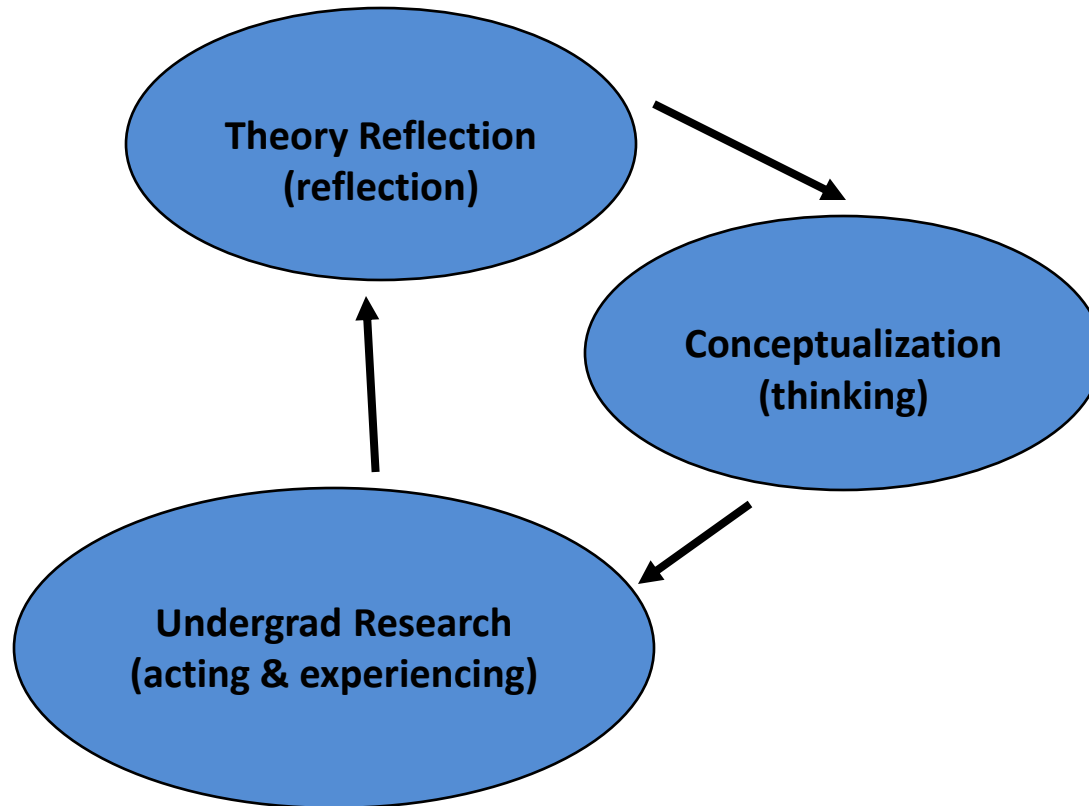
# Group Activity 2

- Construct a model for a collaborative research project
  - Identify problem
  - Develop plan to address the problem
  - Gather resources
  - Implement plan
  - Evaluate results

# Discussion



# Student Learning: Accomplished



Based on Kolb's Experiential Learning Theory  
(Chapman, 2003)

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