# Student-Centered Teaching Through Experiential Learning and Assessment

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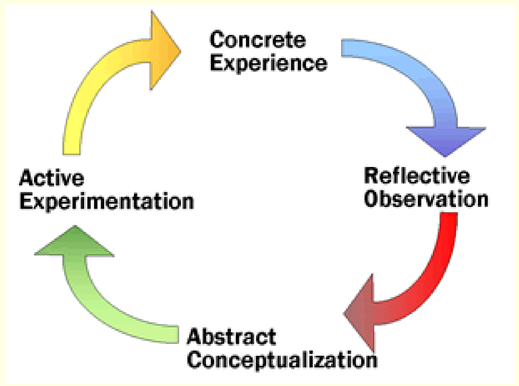
## Introduction

- **Experiential learning:** "the process whereby knowledge is created through the transformation of experience." Kolb (1984).
- **Why Experiential Learning:**
  Students are better able to effectively apply principles when instruction is combined with experiential learning.

  **"Tell me and I will forget,**
  **show me and I may remember,**
  **involve me and I will understand"**
  (Confucius 450 BC).
- **Kolb's Experiential Learning Theory**:
  - In order to gain genuine knowledge from a learning experience, the students must go through the 4 steps of the cycle of (Fig. 1).

**Fig. 1. Kolb's Experiential Learning Cycle**




## Objectives

- Assess and document impact of an experiential learning project on conceptual knowledge of the students and their ability to synthesize and apply the concepts learned.

## Methods

### I. Project

- A semester long project incorporating all the four steps of the Kolb's Experiential Learning Model introduced.
- Student pairs managed 13 different species of cover crops and 6 vegetable crops including planting, weeding, taking care, and harvesting of their crops (Figure 2).
- Recorded crop growth and soil quality parameters.
- Reflected upon their observations on their crop plots and others, and synthesized concepts.

**Figure 2. Students experiencing the 4 stages of the experiential learning cycle.**

### II. Assessment

1. Conceptual knowledge:
   i. Self-assessment: pre/post
   ii. Direct assessment: post
2. Applied knowledge: crop evaluations
3. Critical thinking, analytical ability, and problem-solving: comprehensive report

## Results

**Figures 3 & 4. Students' conceptual knowledge about various topics as observed in self-assessment (Fig. 3a-c); and direct assessment (Fig. 4a-c).**

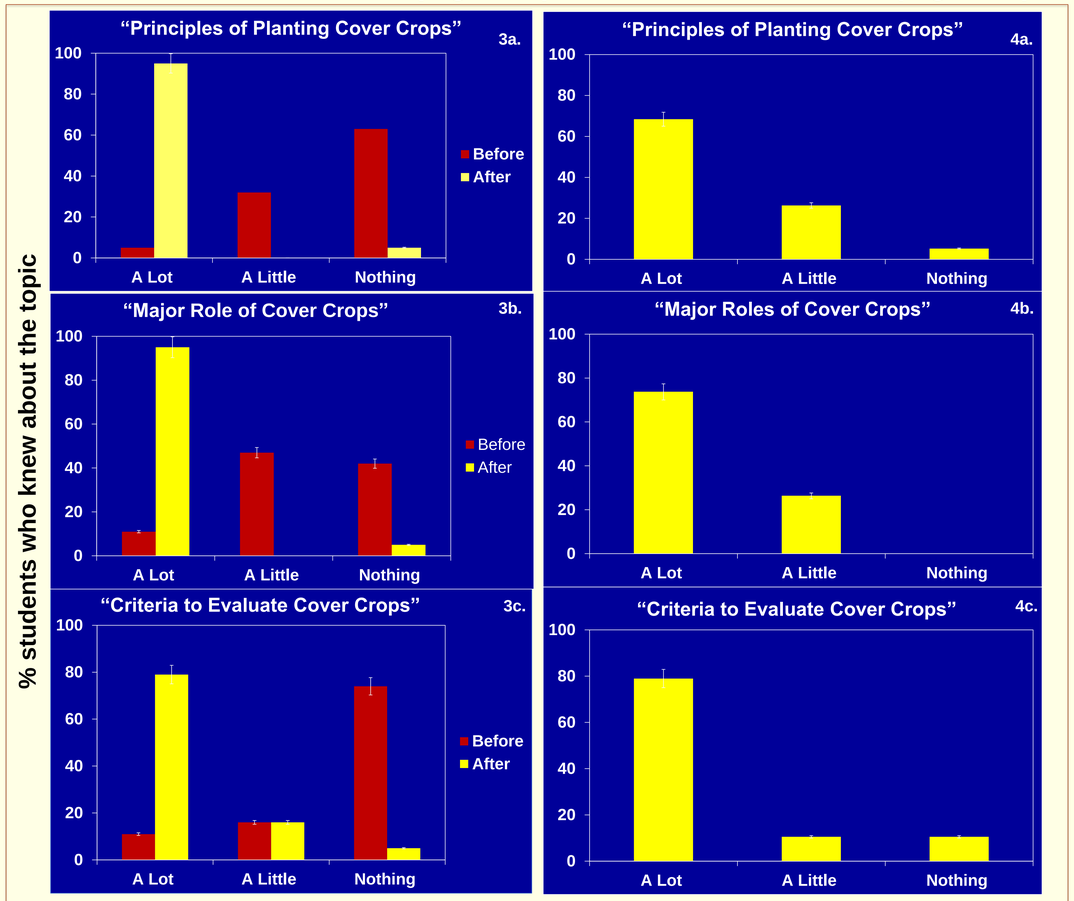



**Figure 5a-b. Students' applied knowledge as observed in in-field direct assessment (n=19).**


- Majority of the students showed an increased level of conceptual and applied knowledge after completing the experiential learning project (Figs. 3, 4, & 5).
- More than 90% of the students earned 95-100% grade in their final report evaluated based on critical thinking, analytical ability, and problem-solving.

### Reference

Kolb, D.A. 1984. Experiential learning: experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall.

### Acknowledgements

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## Conclusion

The experiential learning project improved both the conceptual knowledge of the students and their ability to synthesize and apply the concepts learned.

### Student Testimonials




### New Initiative