Knowledge gain and student perception of experiential learning activities.

L.M.White and K.M. Wells

New Mexico State Unviersity

Introduction

- Background & Setting
  - Hands-on and real life experience is essential to the industry
  - Concept of Experiential Learning (EL) is not new
  - Time and budget consuming

- "The focus of experiential learning is placed on the process of learning and not the product of learning" (UC Davis, 2011).

Introduction

David Kolb's (1984) experiential learning theory

- Concrete experience (exploring/doing)
- Abstract conceptualization (processing/analyzing)
- Transforming experiences through reflective observation (sharing/reflecting)
- Active experimentation (generalizing/applying)

Objective

To determine the effect of Experiential Learning (EL) on students' knowledge gain and perception of an EL activity.

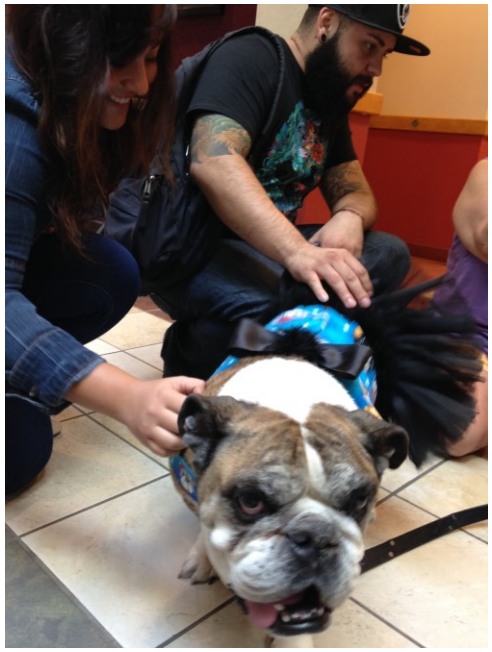
Materials & Methods

Research was conducted on four animal science classes in the fall of 2015 (n=233, 61 males and 172 females)

- ANSC 103 Introductory Horse Science
  - Identification, vital signs, bcs, leg wrapping, biomechanics
- ANSC 100 Introduction to Animal Science Labs
  - Vaccination, vital signs
- ANSC 311 Companion Animal Behavior and Training
  - Vital signs
- ANSC 423 Animal Breeding
  - Dairy breeding simulations

Experiential Learning

EL at NMSU	Kolb, 1984
Instructor discusses and demonstrates an activity	Abstract conceptualization
Students actively participate	Active experimentation *concrete experience*
Student and instructor lead discussion about the activity	Transforming experiences through reflective observation



Materials & Methods

- Knowledge gain was assessed using pre- and post-tests given before and after an EL laboratory

- Pre/post tests contained 5-10 questions
  - Multiple choice
  - Fill in the blank
  - Short answer (1-2 sentences)

Materials & Methods

Perceptions were assessed using self-reflection

- Post-then-Pre surveys (Likert Scale: 1*(not at all)*–5*(very much)*)
  - Familiarity
    - Student familiarity with technique
  - Satisfaction
    - Satisfaction with opportunity to learn the technique, including likelihood of learning in another setting
  - Importance of Learning
    - How important learning each technique is to the students future
  - Ability to Perform
    - Student ability to use or perform each technique

Materials & Methods

Please indicate how **familiar** you are with each of the following techniques related to activities in ANSC 425 laboratory. Please give an estimation of familiarity **BEFORE** and **AFTER** learning about the technique in lab.

Familiarity	*BEFORE* ANSC 425 Lab					AFTER ANSC 425 Lab				
	Not At All → *Very Much*					*Not At All* → *Very Much*				
Support Wrap	1	2	3	4	5	1	2	3	4	5
Injury Wrap	1	2	3	4	5	1	2	3	4	5
Heat Wrap (Sweat Wrap)	1	2	3	4	5	1	2	3	4	5
Cold Wrap (Poultice)	1	2	3	4	5	1	2	3	4	5
Hoof Wrap (for abscesses or injury)	1	2	3	4	5	1	2	3	4	5

Materials & Methods

Each lab was categorized by the amount of hands-on activity

- Minimal hands-on (MIN)
  - n=3
- Moderately hands-on (MOD)
  - n=3
- Completely hands-on (COMP)
  - n=2

Results – MIN, MOD, and COMP

Lab	Pre	Post	Change
MIN	$50.92^{a,1} \pm 26.41$	$73.45^{b,1} \pm 19.59$	$19.98^{1} \pm 26.28$
MOD	$23.37^{a,2} \pm 22.32$	$75.32^{b,1} \pm 20.38$	$45.15^{2} \pm 31.25$
COMP	$31.55^{a,2} \pm 25.51$	$74.27^{b,1} \pm 20.51$	$37.87^{2} \pm 28.62$

^{a,b} within row: means with different superscripts differ significantly ($P < 0.01$)
^{1,2} within row: means with different superscripts differ significantly ($P < 0.03$)

Results – All topics combined

All pre and post test scores. Results show significant increase between pre and post test ($P < 0.0001$).

Pre	Post
40.27 ± 27.57	72.40 ±19.22

Results - Perceptions

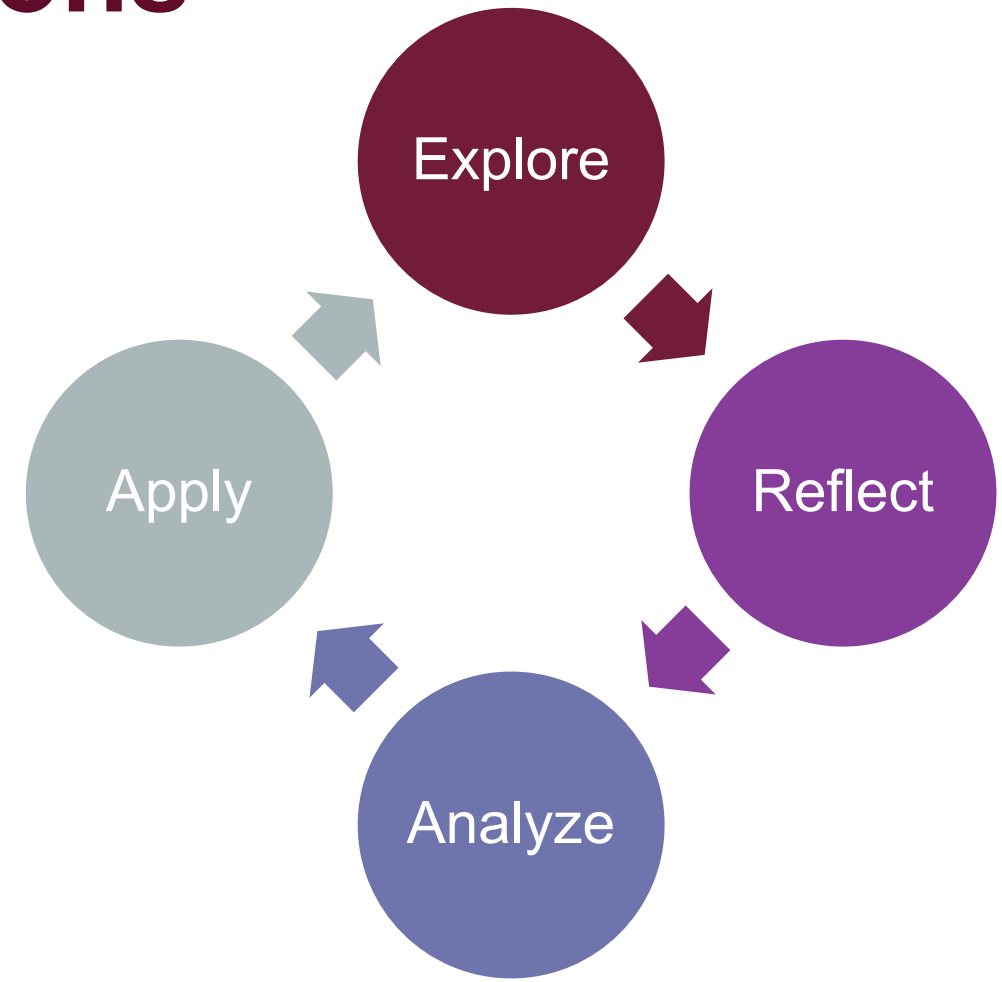
Category	Before	After
Familiarity	2.51 ±1.45	4.41±0.75
Satisfaction	2.67±1.44	4.58±0.67
Ability to Perform	2.41±1.48	4.35±0.86
Importance of Learning	3.27±1.44	4.71±0.59

All categories significantly increased ($P < 0.0001$)

Discussion

- Findings indicate that students gain knowledge effectively through EL.
- Students perceive EL to be beneficial to their future.
- EL is an important component to higher education, even amid budget cuts and reductions.

Limitations



Questions?