

# Lab or No Lab: The Utilization of Experiential Learning in an Introductory Animal Science Course

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## Introduction/Lit Review

- Hands-on learning is beneficial in science education (NRC, 2000)
- Agriculture is a science (Thoron & Myers, 2010)
- Laboratory exercises are essential in science education (NRC, 2000; NRC, 2006; Roth, 1990)
- Laboratory experiences must emphasize student-learning not procedures (NRC, 2006)



## Methods

- Counter-Balanced Design
  - Control group (C-C-C-C) (n=23)
  - Test group 1 (T-T-C-C) (n=18)
  - Test group 2 (C-C-T-T) (n=22)
- Meeting once per week
  - Control – Review for upcoming exam
  - Treatment – Experiential Learning (EL)
- Scores on course exams and final

**Table 1. Content Topic Score Comparisons**

Content Topic	Group 1 (n=23)		Group 2 (n=18)		Group 3 (n=22)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Laboratory Session 1	83.28	14.37	87.06	14.65	83.55	13.82
Experiential	40.70	6.16	43.53	6.43	39.30	7.69
Laboratory						
Meat	35.0	5.59	38.25	4.48	33.89	6.13
Experiential	26.65	4.47	29.86	3.73	25.70	5.06
Nutrition	48.28	10.86	48.81	11.48	49.66	8.44
Experiential	14.04	2.55	13.67	3.84	13.59	2.99
Laboratory Session 2	74.46	18.91	79.69	11.34	76.11	16.15
Experiential	31.07	6.84	32.64	5.04	31.55	6.20
Laboratory						
Genetics	26.52	6.32	26.61	6.43	26.68	5.68
Experiential	15.54	3.93	15.25	3.95	15.50	2.89
Genetics						
Reproduction	47.94	14.26	53.08	6.33	49.84	13.03
Experiential	15.52	4.04	17.39	1.79	16.05	4.35
Reproduction						
Final Exam	83.85	21.26	95.11	20.99	82.71	27.12
Meat	9.04	2.51	8.78	1.93	8.82	2.32
Nutrition	44.20	13.21	50.03	10.44	43.68	13.90
Genetics	2.57	.66	2.39	.61	2.14	1.17
Reproduction	27.35	7.77	33.08	9.81	28.21	11.13

## Conclusions

- Practical significance does indicate experiential learning influenced knowledge
- Experiential learning needs to be well planned and executed
- Laboratory activities should follow the class content
- Exams should be written in line with the objectives of the lessons