

**EXPLORING THE INTRINSIC
MOTIVATION OF STUDENTS
IN A SUSTAINABLE
AGRICULTURE TOUR
CLASS**

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LEARNING CHARACTERISTICS

- External environment will influence internal conditions of the learner

Dewey, 1938

- Motivation – desire to learn
 - Extrinsic or intrinsic
 - Extrinsic – reward and punishment
 - Intrinsic – within and if affected by factors such as self-determination, curiosity, challenge and effort
 - Results in high-quality learning

Deci and Ryan 1985, 2000; Santrock, 2011

FACETS OF LEARNING

- Learning style of participants

- “the characteristic cognitive, affective, and psychological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and responds to their learning environment”

DeBello, 1990

- Students have a desire for “real-life” settings

Mankin et al., 2004

- Experiential learning – allows students to connect formal education with “real world” experiences

Russell et al., Chapman 1992

TEACHING CHARACTERISTICS

- Teach information in a variety of methods
- Recognize 2 factors that influence learning
 - Stimuli
 - environment
 - emotional
 - sociological
 - physical
 - psychological
 - Preference for learning new material

ASSESSMENT OF LEARNING

- Assessment – systematic collection of information about student learning
 - Normal behavior of teachers
 - 3 steps of assessment
 1. Goals – what do we want the students to be able to do?
 2. Information – what did they learn and what factors influence learning?
 3. Action – can we use the information to improve student learning?

Walvoord. 2010



ASSESSMENT OF LEARNING

- **Intrinsic Motivation Inventory (IMI)**
 - Comprises questions to determine a person's desire to learn
 - Ascertain information regarding the intrinsic motivation of learners
 - Utilizes the personal and emotional issues of the learner
 - Interest and enjoyment
 - Perceived confidence
 - Effort-importance
 - Pressure and tension
 - Value and usefulness

Markland and hardy, 1997; Guay et al., 2000

COURSE DESCRIPTION AND PURPOSE

- Between 10-13 locations are toured per year
- Have conducted the class 5 times
 - Over 140 students
- Students roomed with no more than one other person from their respective university
 - Facilitate inter-peer connections
- Students assigned to groups responsible for introducing each location
- Mandatory informational meetings via Interactive Television



OVERALL COURSE OBJECTIVES

1. Expose students to the to the process of experiential and problem based learning
2. Allow students to define sustainable agriculture
3. Introduce students to a broad spectrum of agricultural enterprises and business owners/researchers



SPECIFIC COURSE OBJECTIVES

1. Explore attitudes, philosophies, and relationships of production agriculturalists
2. Understand how multiple philosophies of agriculture combine and are used by scientists, marketers, and producers
3. Observe employer characteristics which make their business successful
4. Understand how decision-making at various levels enhances the success of an agricultural enterprise
5. Enhance communication and sharpen leadership skills
6. Prepare students with technical expertise
7. Increase student's understandings of issues in agriculture

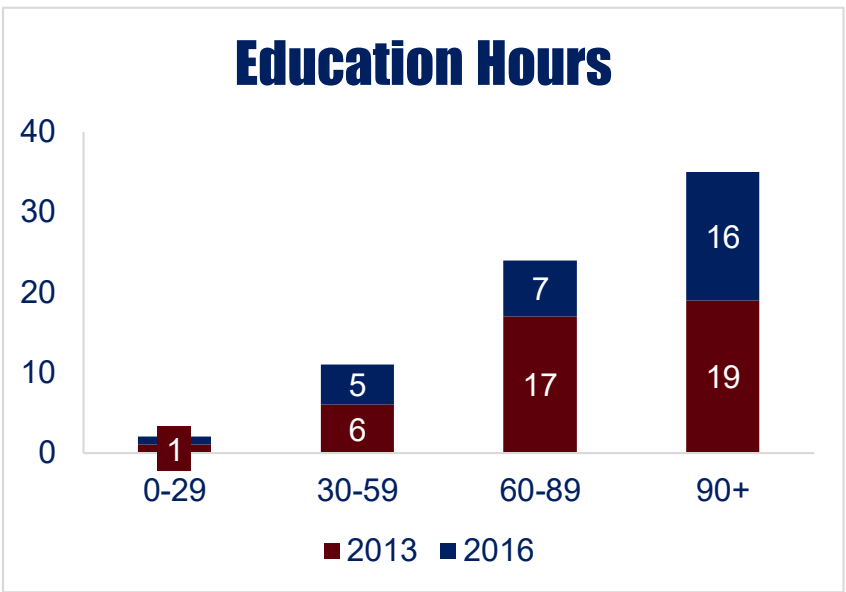
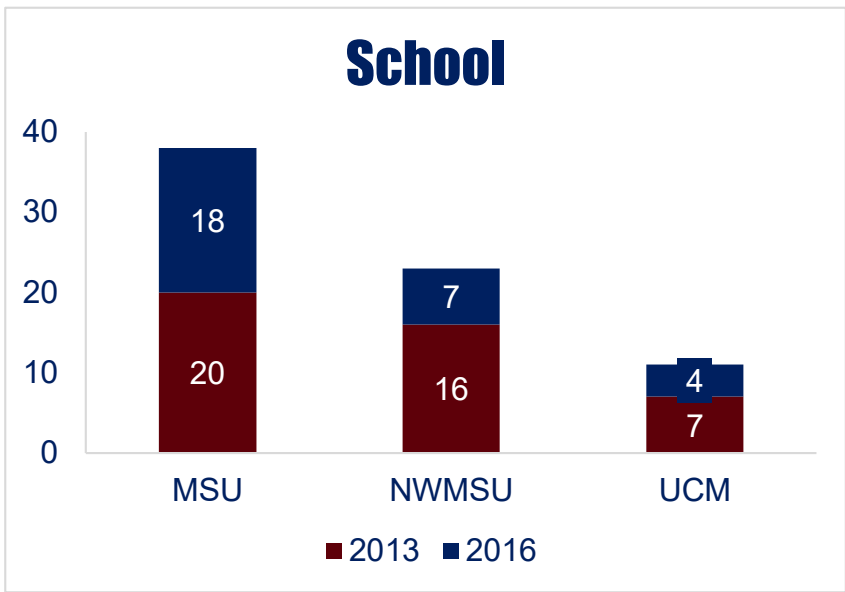
METHODS

- Modified Intrinsic Motivation Inventory Survey Instrument
 - Administered day 1 and day 5
 - Part 1 – Intrinsic Motivation
 - 5 sections – Interest & Enjoyment, Perceived Competence, Effort & Importance, Pressure & Tension, Value & Usefulness
 - 39 questions
 - Likert scale – 1 = not true; 7 = very true
 - Part 2 – Technical & Interpersonal Skills
 - 17 questions; sorted into soft vs hard skills
 - Likert scale 1 = highly skilled; 5 = not skilled
 - Part 3 – Demographic Information
 - 7 questions

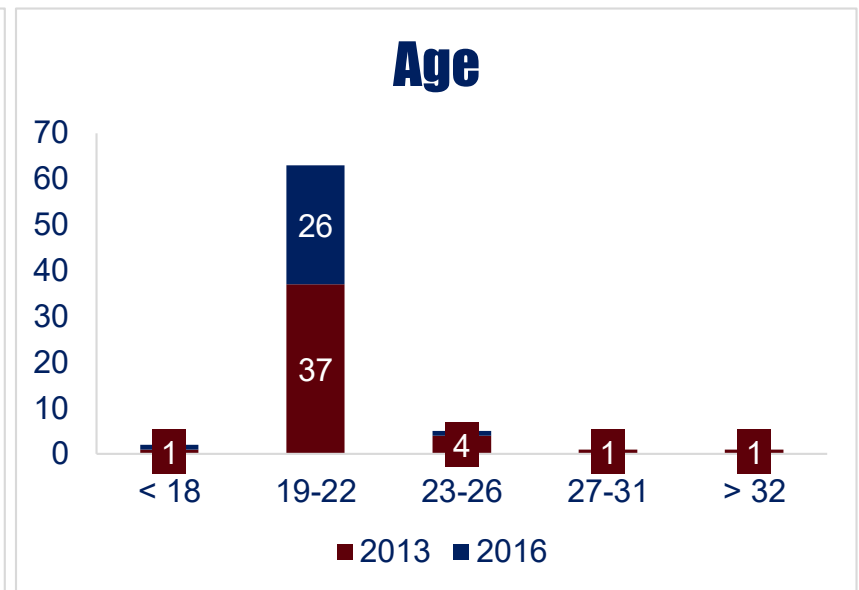
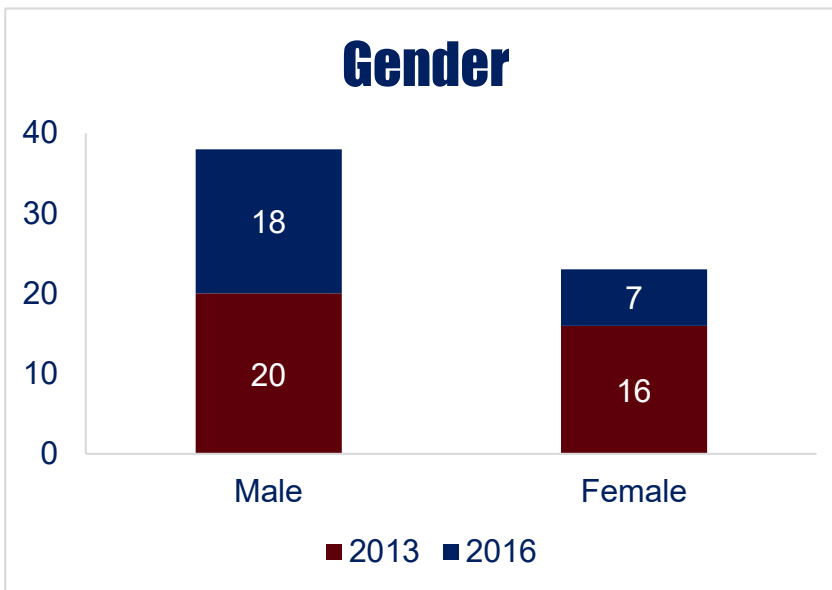
METHODS

- Statistics
 - Mixed-model ANOVA used to determine interaction of school and participation
 - Year fixed effect
 - Independent t-tests used to determine differences
 - Correlations among responses evaluated

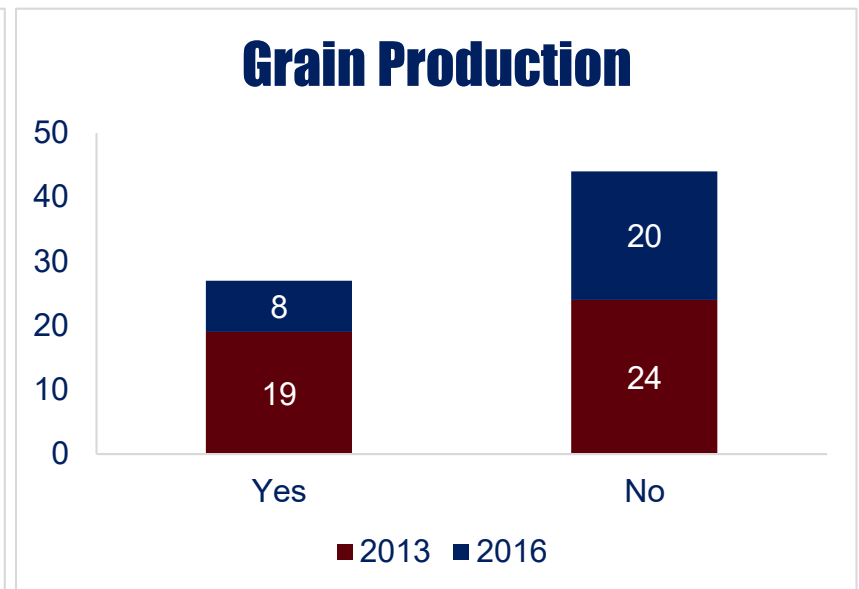
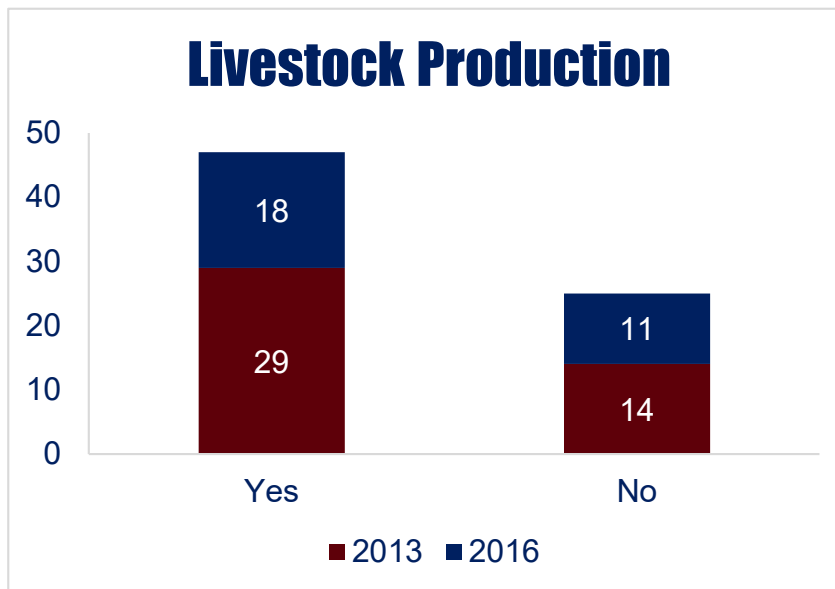
PERSONAL CHARACTERISTICS OF PARTICIPANTS



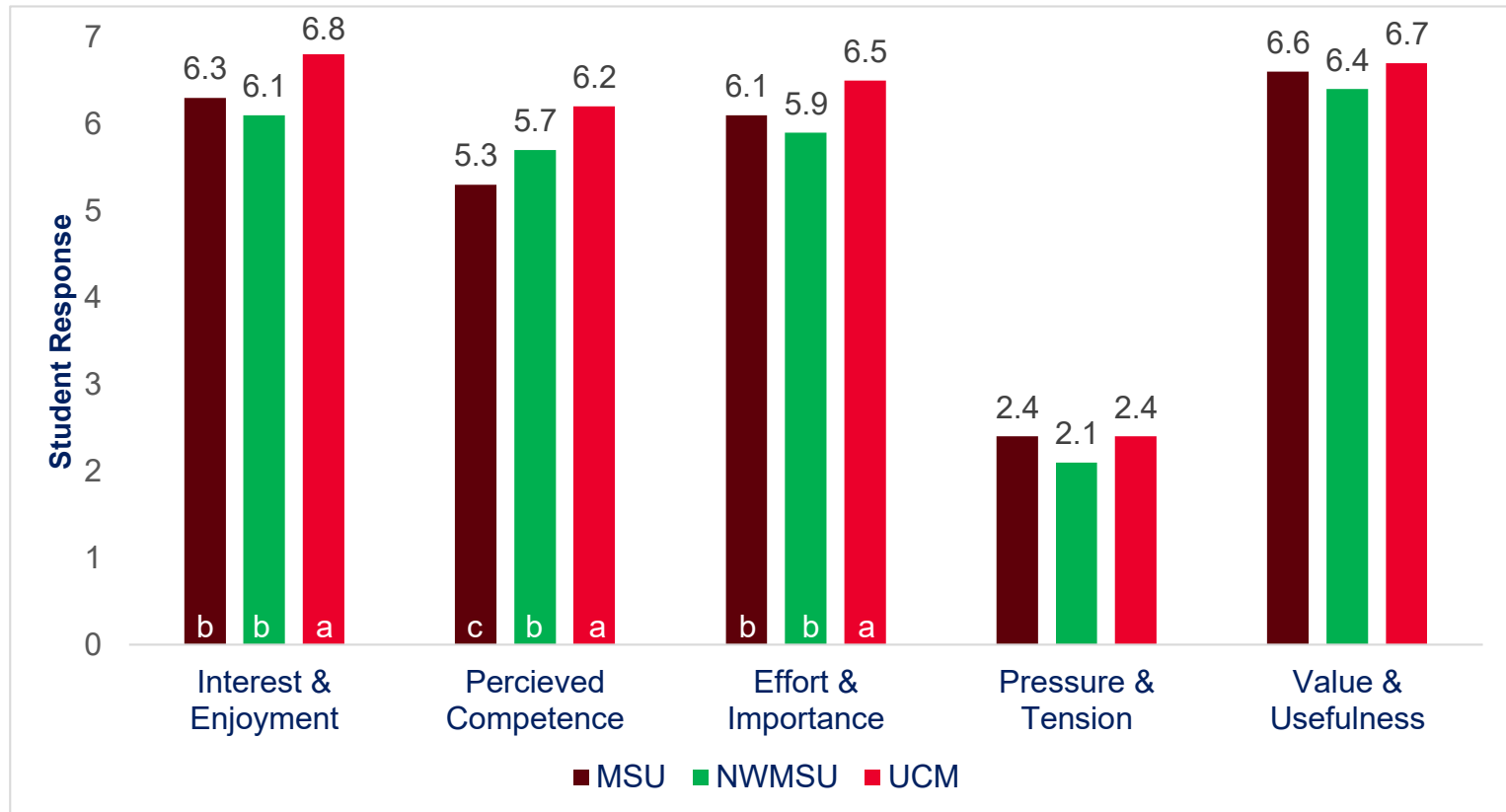
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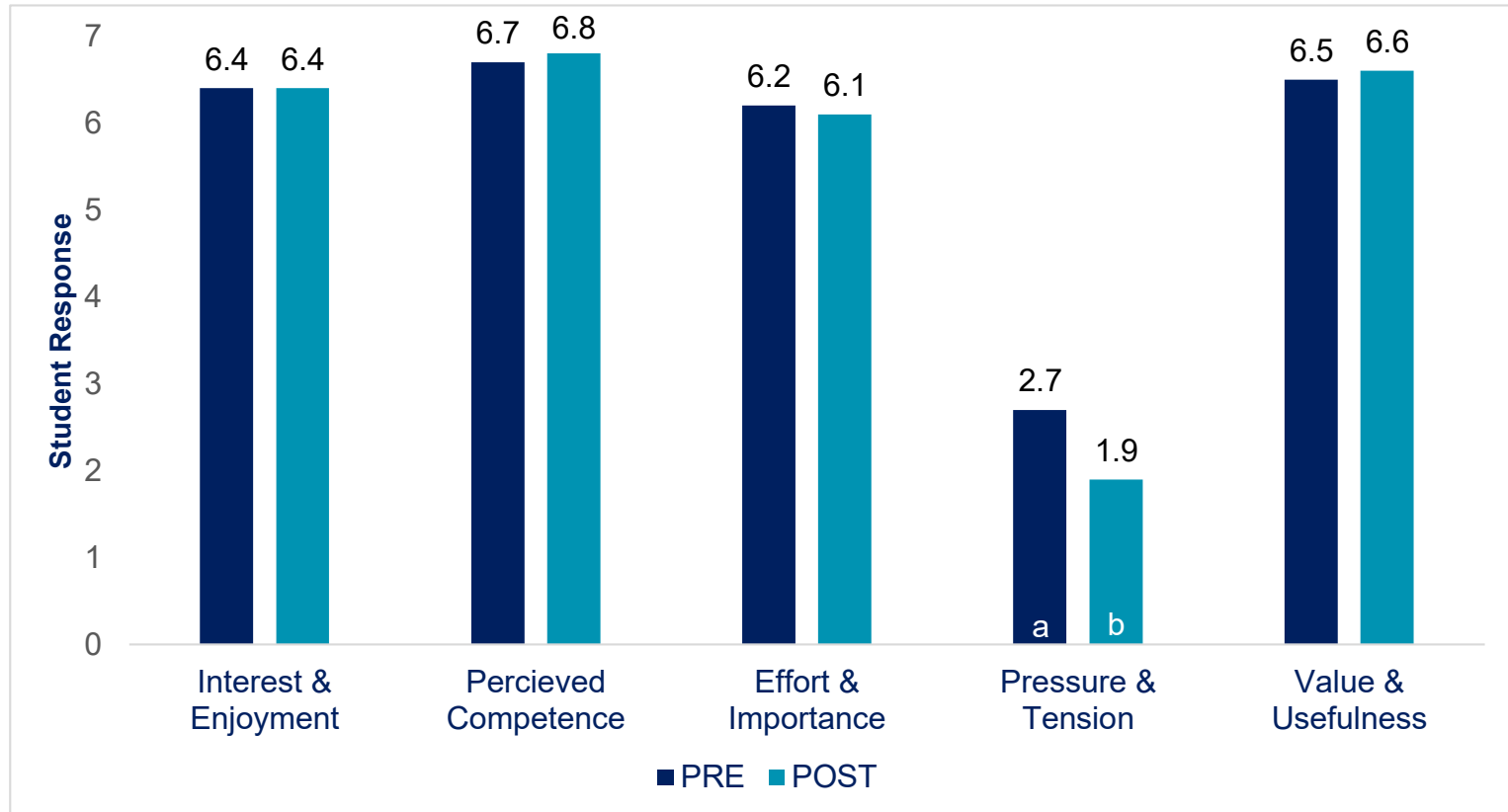


STUDENT RESPONSES¹: IMI CONSTRUCTS 2013 & 2016



¹Based upon Likert-type scale with 1 = not true at all, 4 = somewhat true, 7 = very true. Data are pooled across year. Similar letters indicate similar means within each constraint ($p \leq 0.05$).

STUDENT RESPONSES¹: IMI CONSTRUCTS



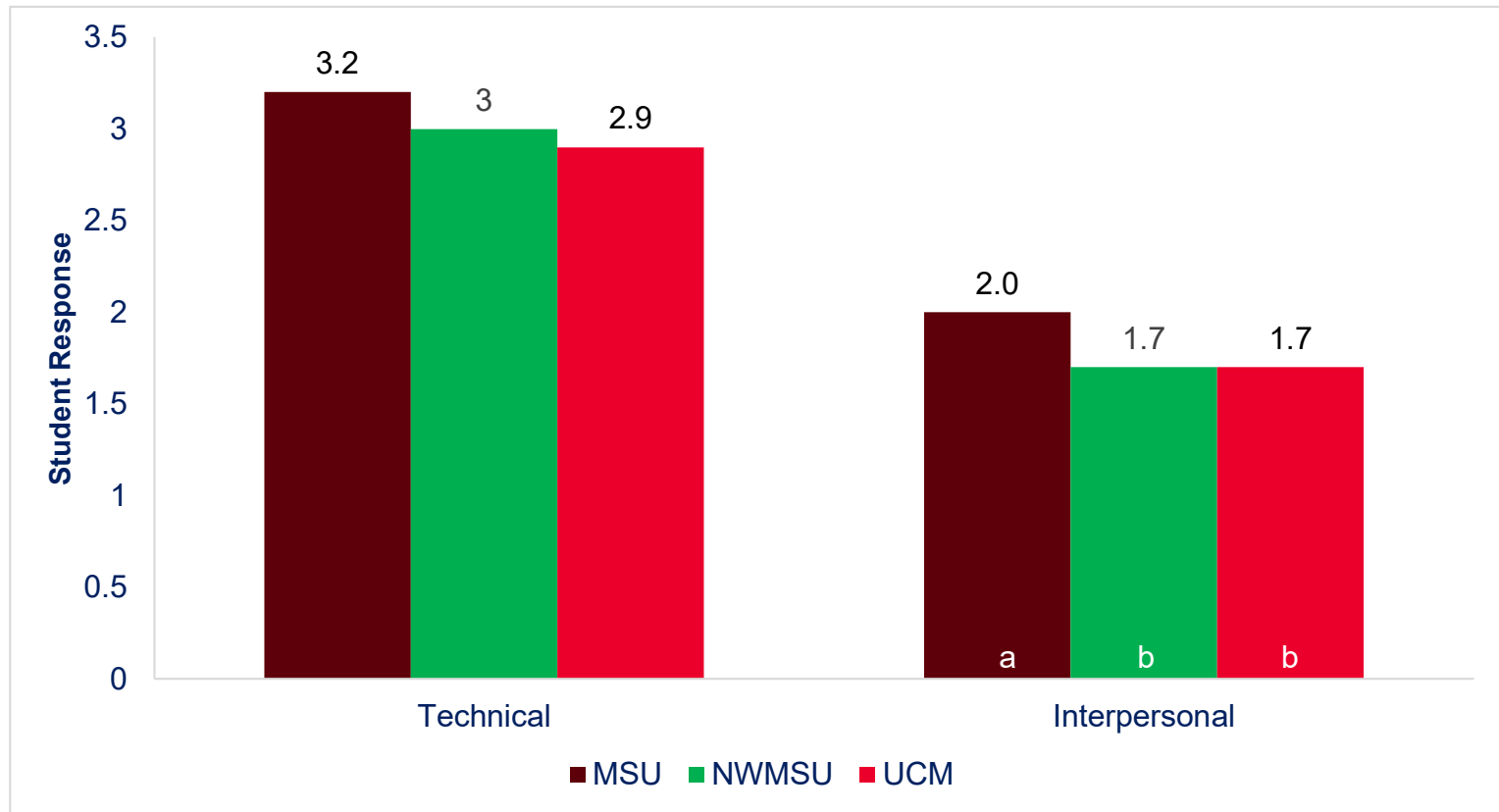
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STUDENT RESPONSES1: IMI CONSTRUCTS

School	Interest & Enjoyment		Perceived Competence		Effort & Importance		Pressure & Tension		Value & Usefulness	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST	PRE	POST
MSU	6.1 b	6.5 a	5.2	5.5	6.1	6.1	2.8	2.1	6.5	6.6
NWMSU	6.3 a	5.8 b	5.7	5.6	6.0	5.8	2.3	1.8	6.4	6.4
UCM	6.8 a	6.9 a	6.1	6.4	6.4	6.5	1.8	2.9	6.5	6.9

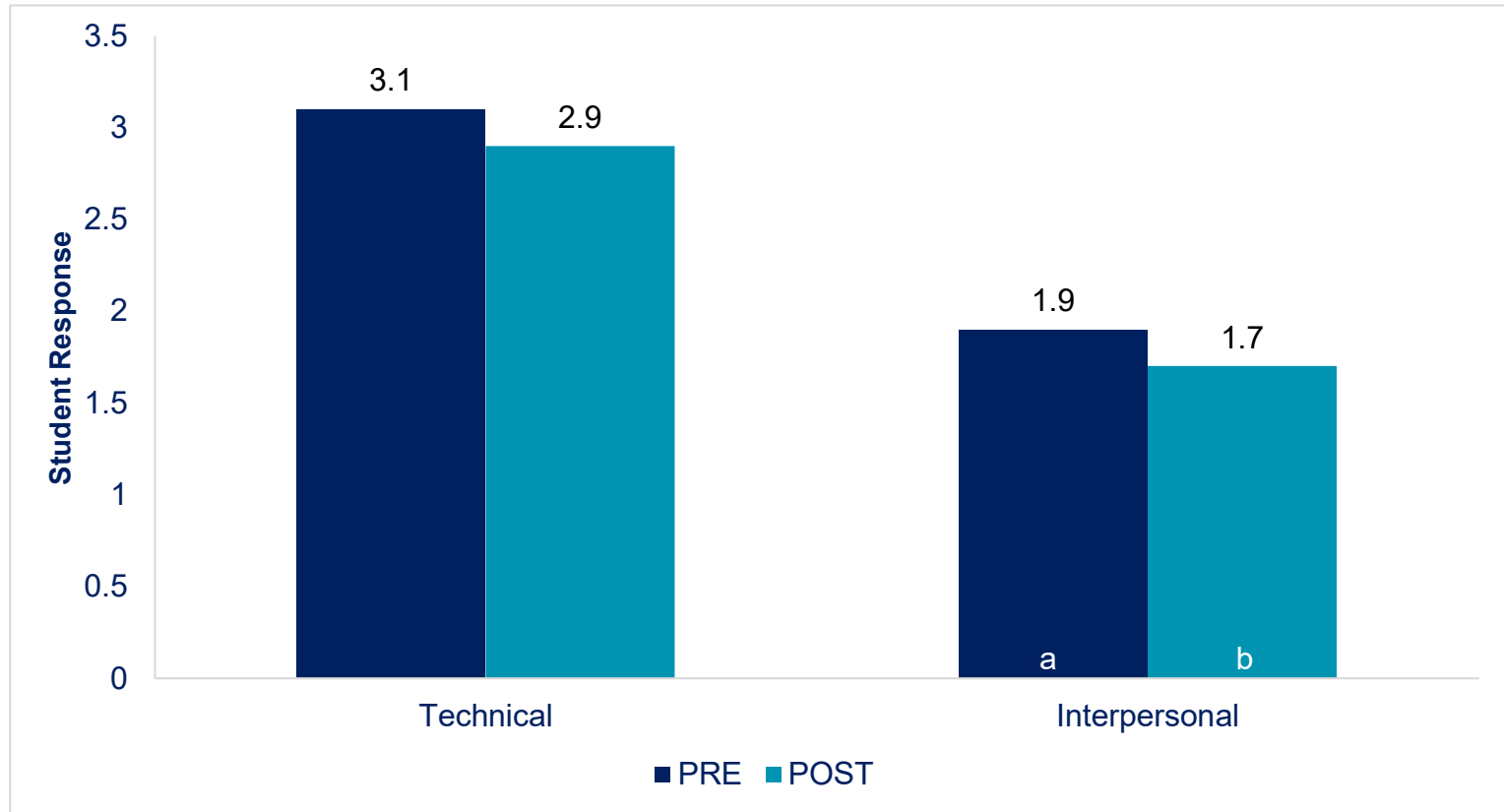
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STUDENT RESPONSES¹: PERCEIVED SKILLS



¹Based upon Likert type scale 1 = highly skilled, 3 = somewhat skilled and 5 = not skilled. Data are pooled across year and survey time. Similar letters indicate similar means within each skill set ($p \leq 0.10$).

STUDENT RESPONSES¹: PERCEIVED SKILLS



¹Based upon Likert type scale 1 = highly skilled, 3 = somewhat skilled and 5 = not skilled. Data are pooled across year and survey time. Similar letters indicate similar means within each skill set ($p \leq 0.10$).

IMI RELATIONSHIP WITH PERSONAL CHARACTERISTICS

Construct	Gender	Age	Education Level	Livestock Production	Grain Production	Technical Skills	Social Skills
	Correlation Coefficient						
Interest & Enjoyment	0.15*	-0.09	0.01	0.00	0.17**	-0.11	-0.18**
Perceived Competence	0.08	-0.18**	0.00	0.05	0.02	-0.22**	-0.35***
Effort & Importance	0.04	-0.07	0.09	0.01	0.04	-0.08	-0.31***
Pressure & Tension	0.10	0.03	-0.01	0.01	0.03	0.10	0.18**
Value & Usefulness	0.02	-0.02	0.12	0.08	0.03	-0.13	-0.22**

*Indicates $p \leq 0.10$

**Indicates $p \leq 0.05$

***Indicates $p \leq 0.01$

DISCUSSION

- Teachers need to embrace assessment of courses
- Indication of Intrinsic Motivation by students
 - Enjoyed this class
 - Felt that learning about agriculture was important
 - Put effort into learning
 - Did not feel pressured or tense
 - Thought the class was useful
- Students tended to feel their intrapersonal skills improved
- Intrinsic motivation is linked to learning
- Conclude that students had a high quality learning experience

DEEP THOUGHTS – WHAT I HAVE LEARNED

- Agriculture cannot be your passion, it has to be your obsession
- Successful businesses treat employees with respect
- Sustainable Agriculture cannot be defined – it has too many meanings that differ with stakeholders
- Seeing the joy in students as they learn is a gift

