

# Comparing agriculture and non-agricultural student's value of communication and critical thinking experiences

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# Measuring Outcomes

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- Measuring outcomes of student learning, collegiate quality, and institutional improvement is very important today.
- Usually tied to accreditation and rankings



# Student Engagement & Success

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- Academic Engagement research originated from work by Tyler (1932), Pace (1980, 1984), Astin (1984), Chickering & Gamson (1987), and Kuh & Associates (1991).
- Student engagement results are a direct indicator of students' exposure to effective practice.

# Student Engagement & Success

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- Student success provides an indicator of institutional quality and can be used to explain student learning (Axelson & Flick, 2011).
- Institutions can influence the extent to which students engage in educationally purposeful activities (Zilvinskis, Masseria & Pike, 2013).

# Student Engagement data used to:

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- productively inform and strengthen undergraduate education.
- advance assessment efforts within a specific institutional context
- effect changes in teaching and learning



# About NSSE®



## The National Survey of Student Engagement (NSSE)

- Collects information from first-year and senior students on characteristics and quality of their undergraduate experience using:
  - 10 engagement indicators , 6 high impact practices, 38 questions
  - Behaviors associated with desired outcomes
  - More than 1,500 institutions participate

NSSE results indicate areas for improvement and are “actionable”, thus appropriate in improvement plans.

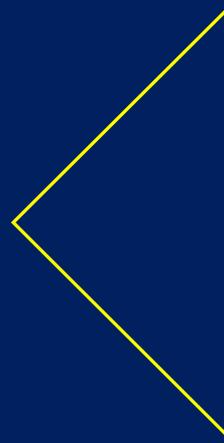
# Example: NSSE & Accreditation

## University Outcome

The education offered by the institution recognized the human and cultural diversity of the world in which students live and work.

## NSSE Item Referenced

“to what extent has your experience at this institution contributed to your knowledge, skills and personal development in understanding people of other racial and ethnic backgrounds.”



# Example: NSSE & Accreditation

## University Outcome

Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing skills adaptable to changing environments.

## NSSE Items References

- During the current school year, about how often have you examined the strengths and weaknesses of your own views on a topic or issue?
- To what extent has your experience at this institution contributed to your knowledge, skills and personal development in learning effectively on your own?
- To what extent has your experience at this institution contributed to your knowledge, skills and personal development in solving complete real-world problems?

## NSSE 2014 Survey Items Mapped to HLC–NCA Criteria and Core Components

NSSE 2014 Survey Items	HLC–NCA Core Components
<b>1. During the current school year, about how often have you done the following?</b>	
a. Asked questions or contributed to course discussions in other ways	3.B, 3.E
b. Prepared two or more drafts of a paper or assignment before turning it in	3.B, 3.E
c. Come to class without completing readings or assignments	3.E
d. Attended an art exhibit, play, dance, music, theater, or other performance	3.B, 3.E
e. Asked another student to help you understand course material	3.E
f. Explained course material to one or more students	3.B
g. Prepared for exams by discussing or working through course material with other students	3.B, 3.E
h. Worked with other students on course projects or assignments	3.B, 3.E
i. Gave a course presentation	3.B, 3.E
<b>2. During the current school year, about how often have you done the following?</b>	
a. Combined ideas from different courses when completing assignments	3.B, 3.E
b. Connected your learning to societal problems or issues	1.C, 3.B, 3.E
c. Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	1.C, 3.B, 3.E
d. Examined the strengths and weaknesses of your own views on a topic or issue	3.B, 3.E
e. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	3.B, 3.E
f. Learned something that changed the way you understand an issue or concept	3.B, 3.E
g. Connected ideas from your courses to your prior experiences and knowledge	3.B, 3.E
<b>3. During the current school year, about how often have you done the following?</b>	
a. Talked about career plans with a faculty member	3.C, 3.E
b. Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	3.B, 3.C
c. Discussed course topics, ideas, or concepts with a faculty member outside of class	3.B, 3.C
d. Discussed your academic performance with a faculty member	3.C

# 2013 Engagement Indicators

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Theme	Engagement Indicator
Academic Challenge	Higher Order Learning Reflective & Integrative Learning Learning Strategies Quantitative Reasoning
Learning with Peers	Collaborative Learning Discussion with Diverse Others
Experience with Faculty	Student-Faculty Interaction Effective Teaching Practice
Campus Environment	Quality of Interactions Supportive Environment

# Student Success – Traditional Measures

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## TRADITIONAL MEASURES

Scores on standardized tests

College grades

Credit hours earned

Post graduation achievements

Discipline or field-specific examinations

## OTHER MEASURES

Student satisfaction with experience

Student impressions of institutional quality,

Willingness to attend institution again

Overall satisfaction



NEW

# Student Success- Personal Development

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- Proficient in writing, speaking, critical thinking, scientific literacy and quantitative skills
- Highly developed levels of personal functioning (self awareness, self-worth, confidence, social competence and sense of purpose)
- Appreciation for human differences,
- Commitment to democratic values,
- Capacity to work effectively with people from different backgrounds to solve problems
- Information literacy
- Well developed sense of identity

# Objectives

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- To determine students' value that academic and application experiences have contributed to knowledge, skills and personal development.
- To compare agriculture and non-agricultural students' value of the experiences on knowledge, skills and personal development

# Methods

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Obtained institutional IRB approval

Data: 2013 National Survey of Student Engagement (NSSE)

- Obtained from Office of Institutional Research
- Disaggregated to college levels for comparison purposes
- Used data of college seniors



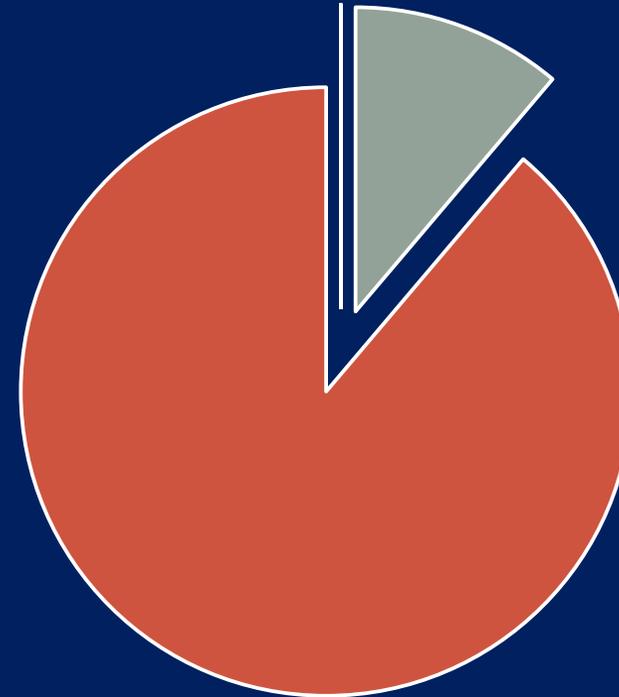
# Population

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1,022 Senior students

114 - agriculture students

908 - non-agricultural  
students



■ Agri ■ Non-Ag

# Academic and Interpersonal Variables

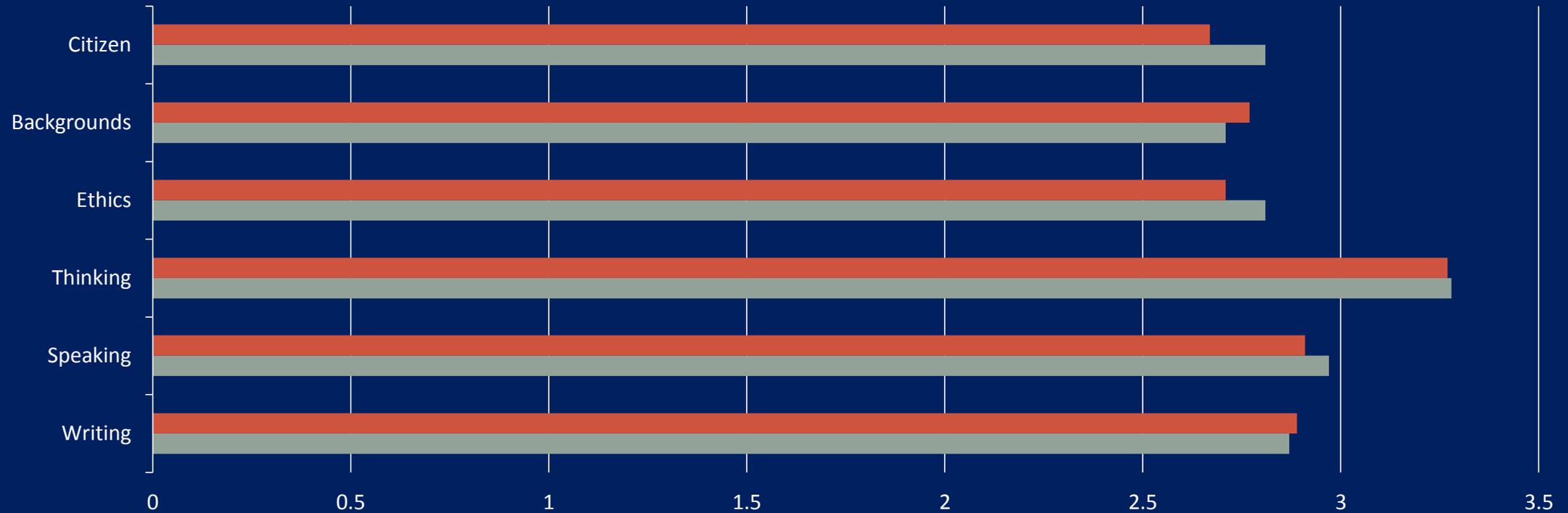
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How has your experience at this institution contributed to your knowledge, skills and personal development in:

- Writing clearly and effectively
- Speaking clearly and effectively
- Thinking critically and analytically
- Developing or clarifying a personal code or values and ethics
- Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)
- Being an informed citizen

Rating scale: 1=very little, 2=some, 3=quite a bit, 4= very much

# Comparison of Agriculture and Non-Agriculture students' value of academic skills



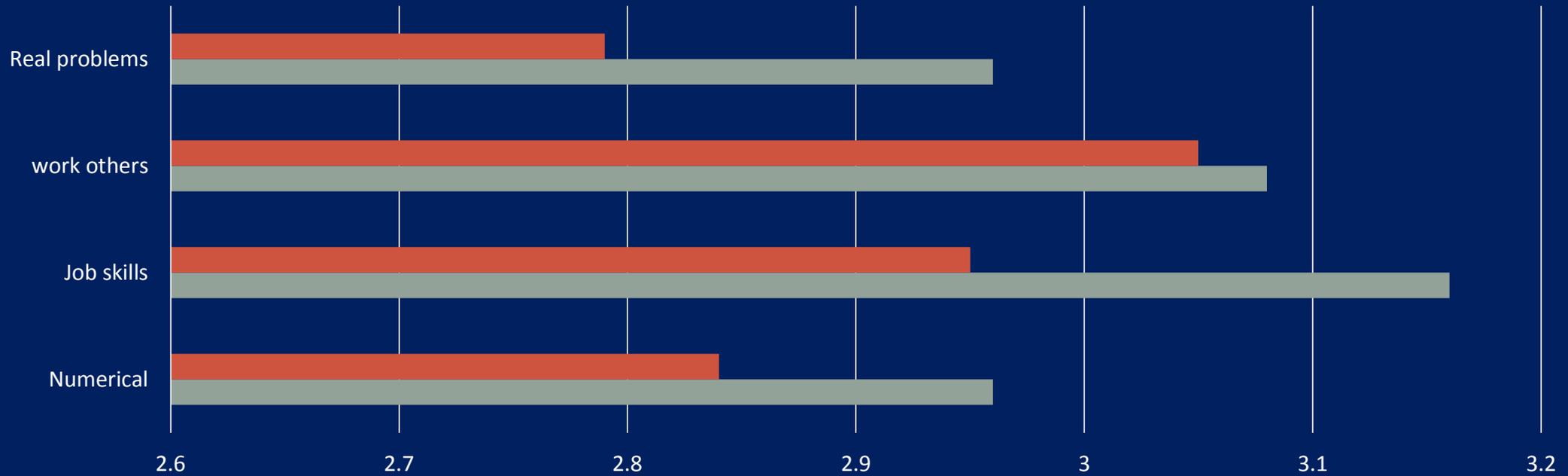
	Writing	Speaking	Thinking	Ethics	Backgrounds	Citizen
Non-Agri	2.89	2.91	3.27	2.71	2.77	2.67
Agri	2.87	2.97	3.28	2.81	2.71	2.81

# Application Variables

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- How has your experiences at this institution contributed to knowledge, skills and personal development in:
  - Analyzing numerical and statistical information
  - Acquiring job or work-related knowledge and skills
  - Working effectively with others
  - Solving complex real-world problems
  
- Rating Scale: 1= very little, 2= some, 3=quite a bit, and 4= very much

# Comparison of agriculture and non-agricultural students value of application experiences



	Numerical	Job skills	work others	Real problems
Non-Agri	2.84	2.95	3.05	2.79
Agri	2.96	3.16	3.08	2.96

Experience	Agriculture Students				Non-agriculture Students			T-Value
	N	M	SD		N	M	SD	
Writing clearly & effectively	113	2.87	0.98		905	2.89	0.95	0.0814
Speak clearly & effectively	114	2.97	0.94		907	2.91	0.95	0.4851
Thinking critically & analytically	114	3.28	0.78		905	3.27	0.78	0.9317
Developing or clarifying a personal code of values and ethics	114	2.81	1.00		906	2.71	1.04	0.3380
Understanding people of other backgrounds	114	2.71	0.98		906	2.77	0.97	0.8071
Being an informed citizen	114	2.81	0.94		899	2.67	1.00	0.1744

Experience	Agriculture Student				Non- Agriculture Student			T-Value
	N	M	SD		N	M	SD	
Analyzing numerical & statistical information	113	2.96	0.93		900	2.84	0.98	0.1945
Acquiring job or work related knowledge and skills	114	3.16	0.82		905	2.95	0.95	0.0113**
Working effectively with others	114	3.08	0.89		904	3.05	0.88	0.7241
Solving complex real-world problems	114	2.96	0.91		905	2.79	0.95	0.0667

# Conclusions

- Lowest Mean score for non- agriculture students for being an informed and active citizen and understanding people of different backgrounds for agriculture students.
- Highest Mean score for both group of students was thinking critically and analytically.
- Agriculture students agree they acquire job related skills more than non-agriculture students
- Overall, agriculture and non-agriculture students place some value on academic skills in communication and quite a bit with critical thinking experiences.
- Understanding people of other backgrounds, clarifying a personal code of values and ethics, and being an informed citizen were the lowest rated experiences by all students.

# Recommendations

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1. Additional study is needed to determine how to provide experiences with students of differing backgrounds. Assess commitment, climate, multi-cultural affairs, diversity component in curriculum, etc.
2. Additional study is needed to determine how to provide experiences that will aid students in developing a personal code of ethics.
3. Additional study is needed to develop knowledge, skills and personal development experiences to help students become informed and active citizens. What/where is the process that these experiences are introduced?

# Discussion and Questions

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