

**A Common
Assessment for
Pre-College
Experiences**

Purdue Agribusiness Science Academy (PASA) High School Summer Institute

Students

27 students (26 participated in pre & post test)
High School Sophomores, Juniors, & Seniors
Underrepresented minorities

Program

2 weeks
Exploratory
3 tracks

Academic preparation
Career exploration
Social relationship building
Skill building

Molecular Agriculture Summer Institute (MASI)

Students

13 students
High School Juniors & Seniors
Suburban

Program

1 week
Lab-based
1 track

Pre-College Programs

- Summer programs that bring high school students to campus for career exploration, academic preparation, skill building, & social relationship & networking
- Expose students to careers & degrees in agriculture
- Strengthen the STEM pipeline to support student recruitment
- Increase the number, participation, & success of underrepresented minorities
- Determine if pre-college experiences are having the intended effect
- Assessment strategies

Previous Research

- higher awareness of agriculture one year after the program
- (Ortega, 2011)
- increased understanding of food, agriculture, & natural resources
- (Foster & Savala, 2012)
- positive effect on interest in pursuing a career in science
- (Markowitz 2004)
- non-agriculture students had increase in self-efficacy & career interest in agriculture
- (Settle et al, 2012)

Purpose

Test a common assessment tool and describe students' :

- Motivation to engage in the pre-college programs and activities
- Views of agriculture before and after the pre-college programs
- Agricultural career interests before and after the pre-college programs
- Future educational aspirations six months after the pre-college programs

Research Design

- Exploratory, descriptive study
- No causality
- Quantitatively driven with qualitative support

Participants

13

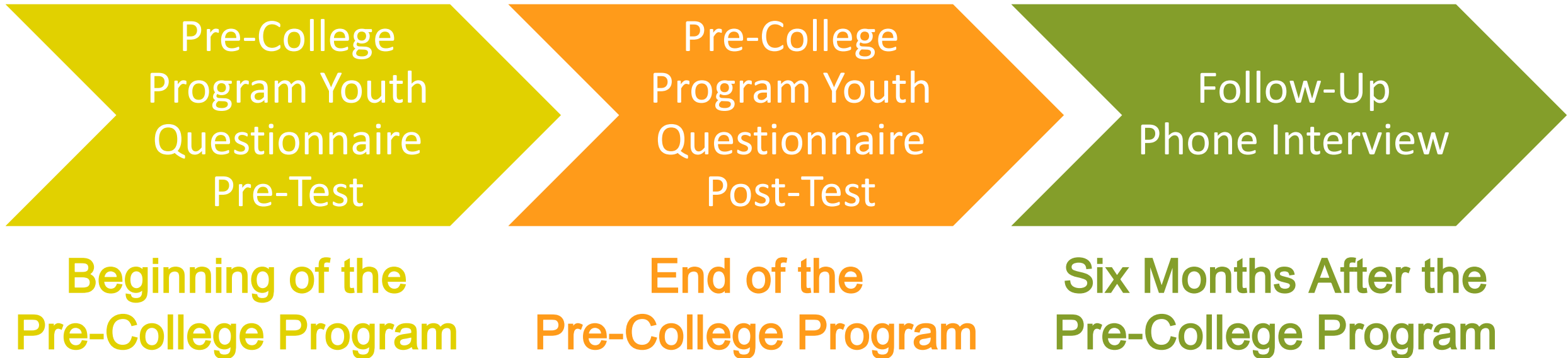
high school students
from the 2015
Molecular Agriculture
Summer Institute
(MASI)

26

high school students
from the 2015
Purdue Agribusiness
Science Academy
(PASA)

Selection based on: • Length: 1 week or longer • Audience: high school students

Data Collection Timeline



Pre-College Program Youth Questionnaire

Pre-Test

**Agricultural
Career
Interests**

**Views of
Agriculture**

Post-Test

**Agricultural
Career
Interests**

**Views of
Agriculture**

**Motivation to
Engage in the
Pre-College
Program**

Pre-College Program Youth Questionnaire

Agricultural Career Interests

13 items
(agricultural careers broadly defined)

- I am interested in working with animals.
- I am interested in working with natural resources.

Ag Discovery Camp Questionnaire

- Ortega et al., 2011

1 = none/not at all

2 = a little

3 = somewhat

4 = a lot

5 = absolutely

Pre-College Program Youth Questionnaire

Views of Agriculture

15 items
(perceived qualities of the
agriculture industry/field)

- Agriculture is an environmentally-sustainable industry.
- Agriculture is economically profitable.

Agricultural Awareness Survey

- Knobloch et al., 1997

5-point scale

Pre-College Program Youth Questionnaire

Motivation to Engage in the Pre-College Program

4 subscales

- Interest/Enjoyment (7 items)
 - Value/Usefulness (7 items)
 - Perceived Competence (6 items)
 - Effort/Importance (5 items)
-
- I would be willing to do this again because it has some value to me.
 - I enjoyed this pre-college program very much.

Intrinsic Motivation Inventory

- Informed by self-determination theory (Deci & Ryan, 1985)

5-point scale

Did it engage & create interest?

Instrument Validity and Reliability

Items pulled from other instruments

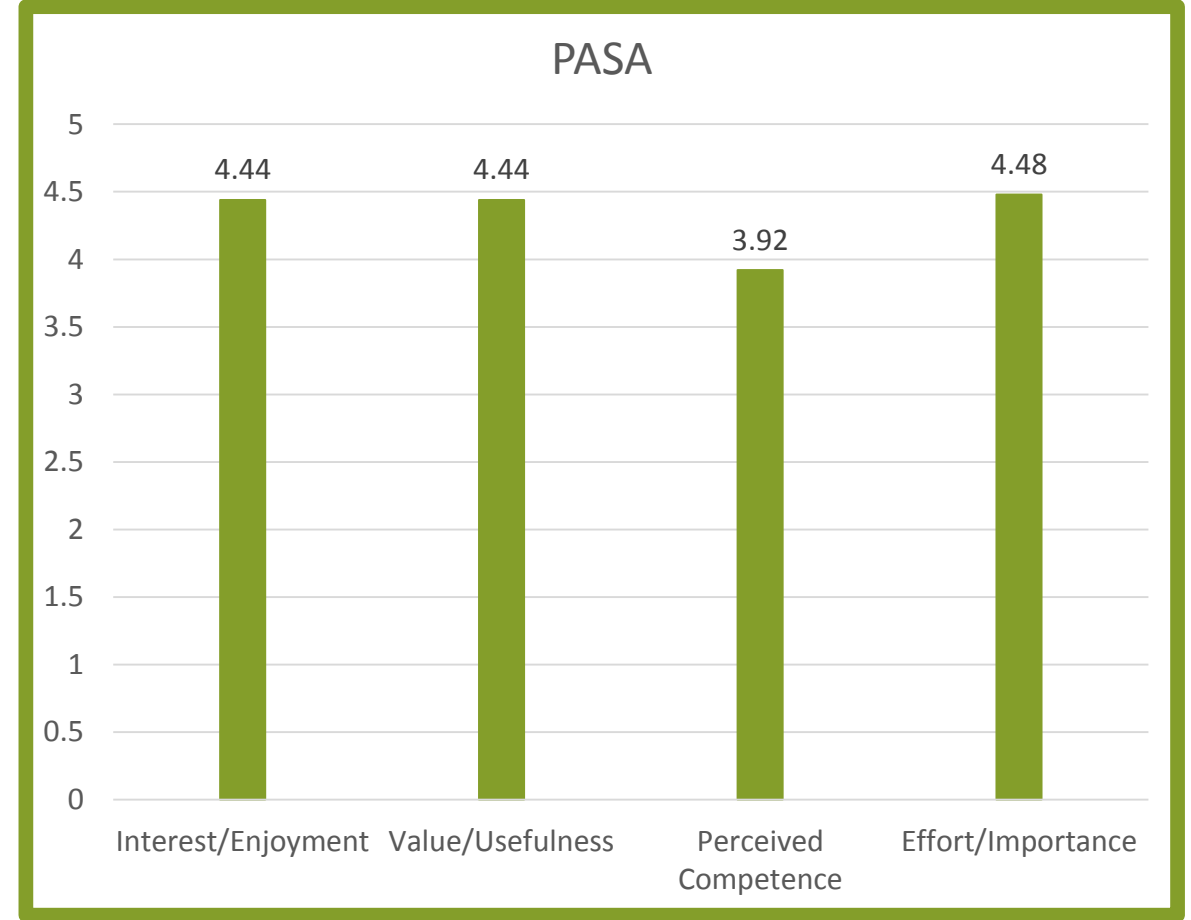
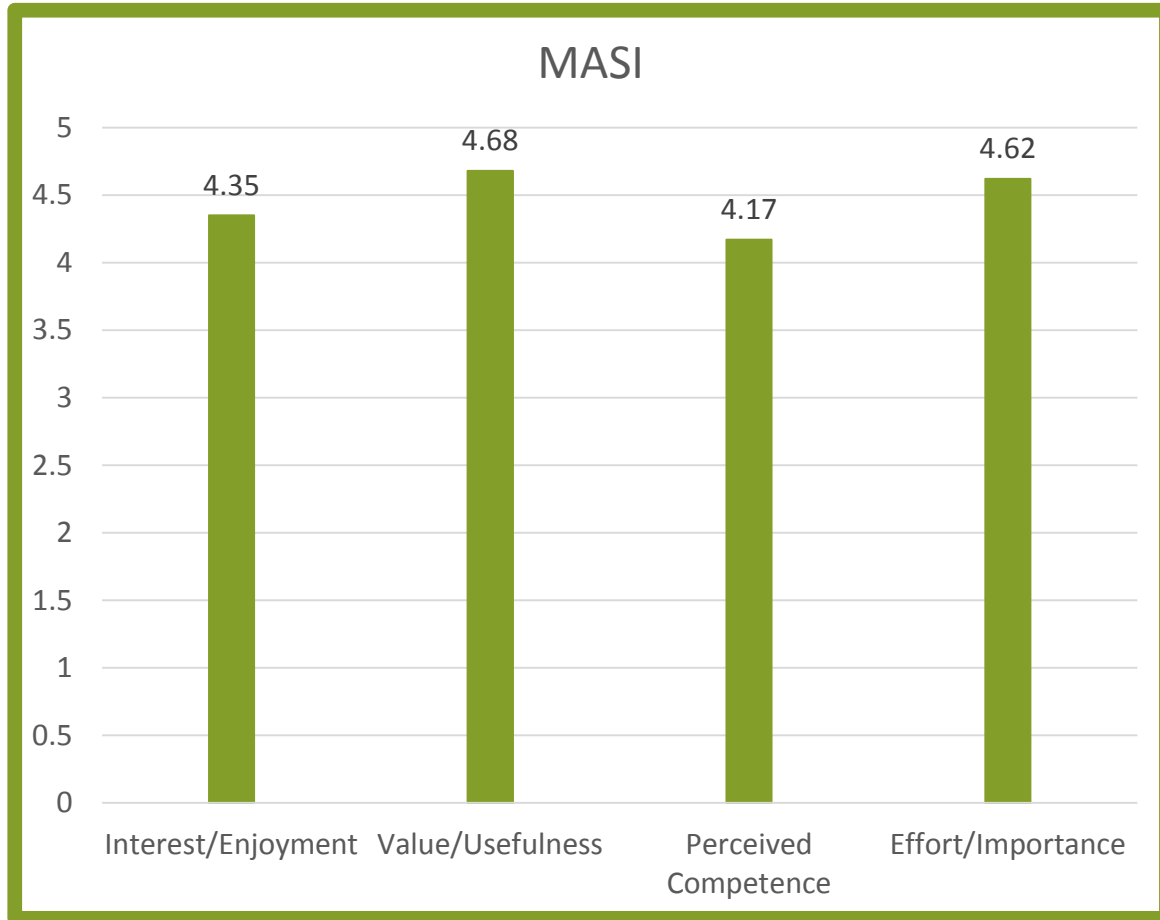
- Expert panels
- Pilot tested
- Factor Analysis

Cronbach's alpha post-hoc reliability coefficients

- Determined whether questionnaire components were reliable within the datasets

Results

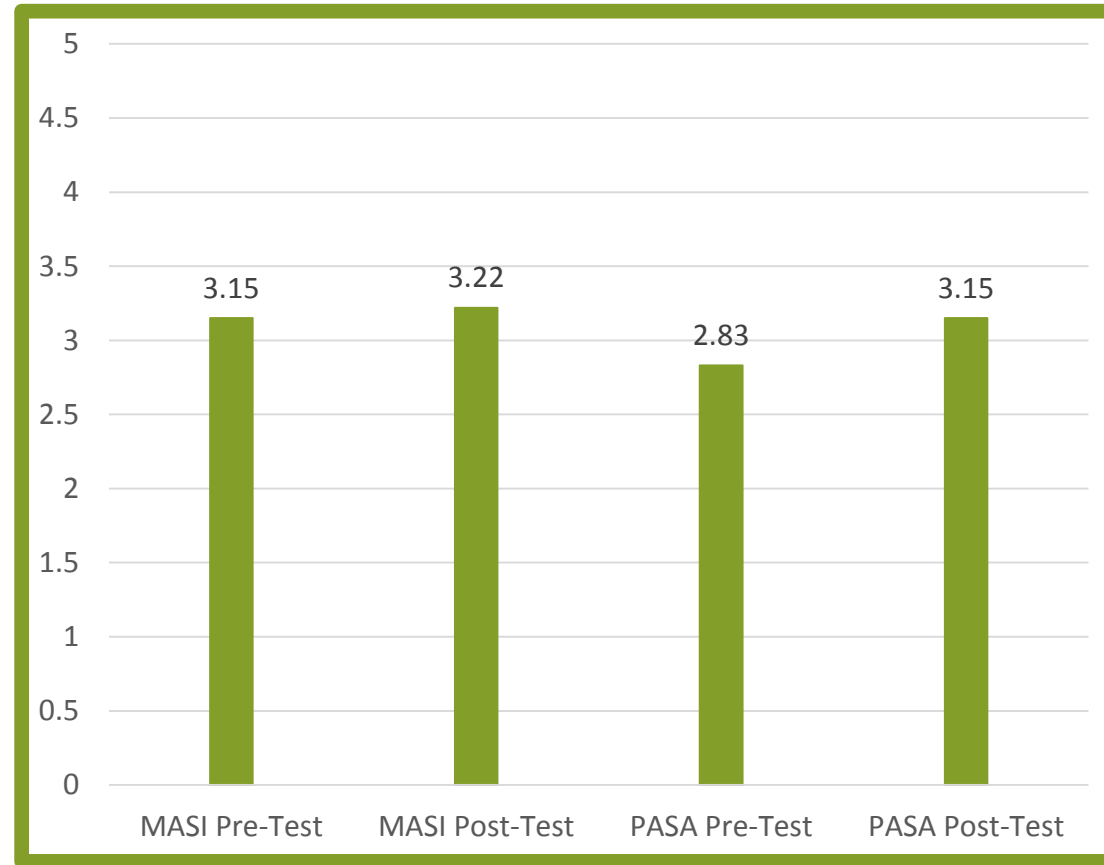
Motivation to Engage in the Pre-College Programs & Activities



Cronbach's *alpha* reliability analysis verified that the scale was reliable (.83).

Results

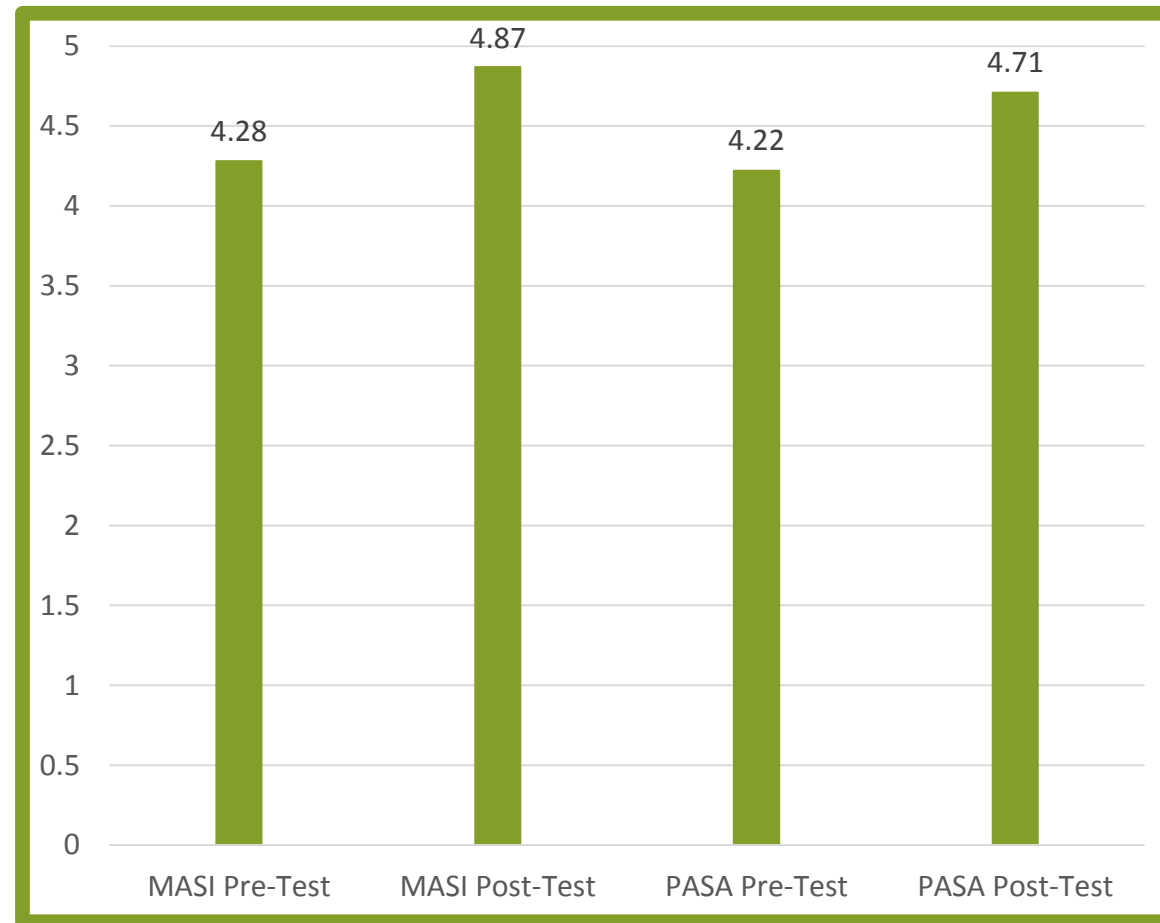
Agricultural Career Interests Before & After the Pre-College Programs



Cronbach's *alpha* reliability coefficients were used to ensure the reliability of the scale (pre-test = .70; post-test = .52)

Results

Views of Agriculture Before & After the Pre-College Programs



Cronbach's *alpha* reliability coefficients confirmed the reliability of the scale (Pre-test = .88; Post-test = .95).

Results

Molecular Agriculture Summer Institute (MASI)

38% had a higher
agricultural career interest
after participating in the
pre-college program

100% had a more positive
view of agriculture after
the pre-college program

Results

Purdue Agribusiness Science Academy (PASA)

77% had a higher
agricultural career interest
after participating in the
pre-college program

85% had a more positive
view of agriculture after
the pre-college program

Follow-Up Phone Interviews



Follow-Up Phone Interviews

7 student- MASI, 10 students- PASA

As they reflected on the pre-college experiences, students shared they were:

- More aware of career opportunities available in agriculture
- Had a greater understanding of agriculture

Results

Future Educational Aspirations Six Months After the Pre-College Programs

MASI

100% attend a 4-year university

100% definitely will apply to Purdue or already applied to Purdue

100% would consider a career in agriculture

PASA

70% attend a 4-year university

70% probably will apply to Purdue, definitely will apply to Purdue, or already applied to Purdue

70% would consider a career in agriculture

Conclusions

- Students reported that they were motivated to engage in the pre-college programs and activities
- Students described more positive views of agriculture after the pre-college programs
- Students reported higher agricultural career interests after the pre-college programs
- The future educational aspirations of most of the students involved attending a 4-year university

Implications and Next Steps

- What was learned through piloting the Pre-College Program Youth Questionnaire?
- What are the implications?
- What are the next steps?
- Would it be beneficial to use the common assessment instrument for other programs in the College? If so, which ones?
- Could the use of a common assessment instrument help with measuring reach and impact college-wide?