

Using the SENCER-SALG for Assessment of Student Learning

Trace Jordan

Director, Foundations of Scientific Inquiry

College Core Curriculum

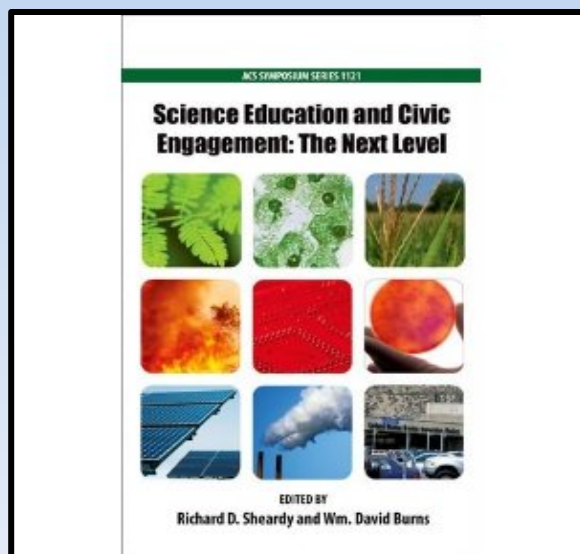
New York University

Using the SENCER-SALG To Reveal Student Learning in a Large-Scale Environmental Chemistry Course for Non-Majors

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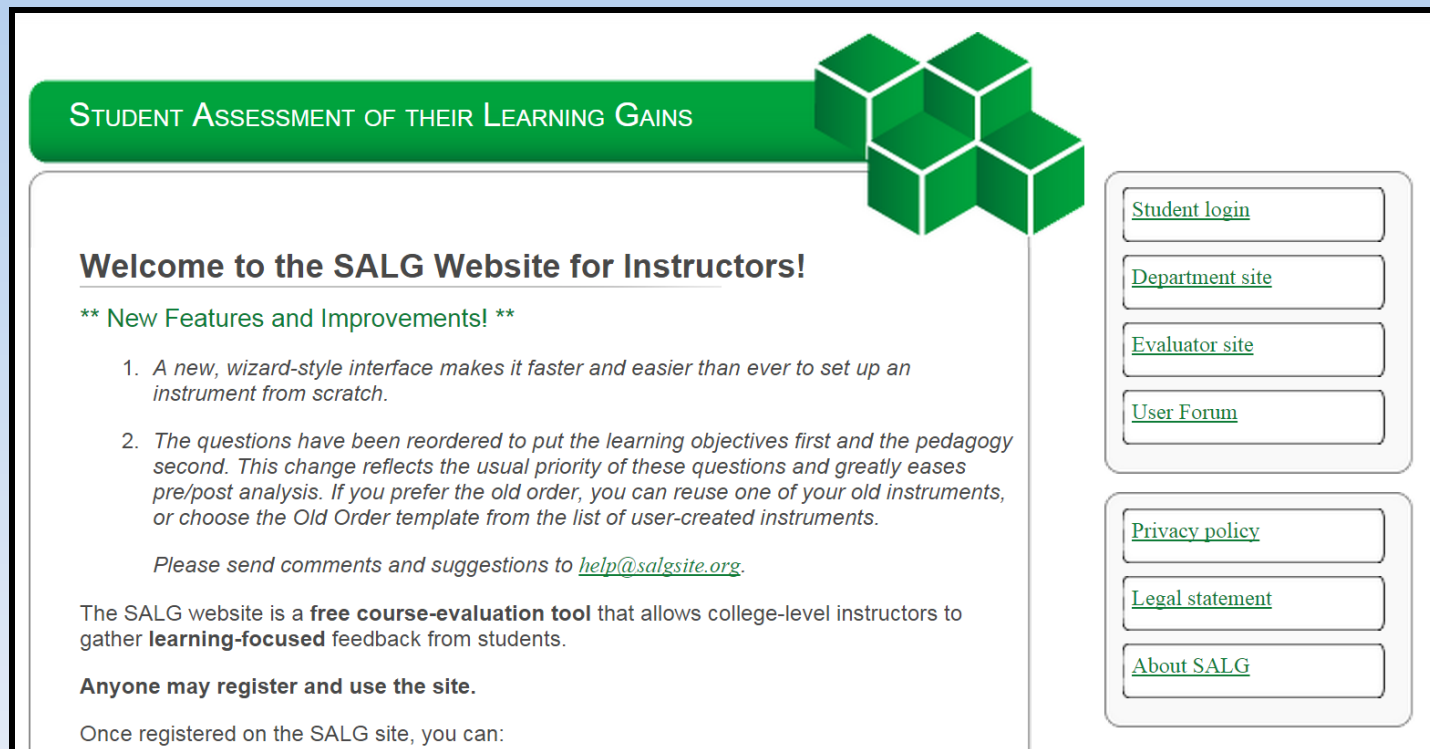


Are the students in my general education science course making gains that reflect the educational mission of SENCER?

- **Increased content knowledge in science.**
- **Increased skills in critical thinking / evaluating evidence.**
- **Change in attitudes and confidence regarding science.**
- **Enhanced interest in science-civic connection.**

Using the SALG as an assessment instrument.

I used the SENCER-SALG survey template on SALG website.
Questions address core educational goals of SENCER.
I added content questions specific to my course.



The screenshot shows the SALG website interface. At the top, a green banner reads "STUDENT ASSESSMENT OF THEIR LEARNING GAINS". To the right of the banner is a 3D graphic of green cubes. Below the banner, the main content area is titled "Welcome to the SALG Website for Instructors!". It features a section for "New Features and Improvements!" with two numbered points: 1. A new, wizard-style interface makes it faster and easier than ever to set up an instrument from scratch. 2. The questions have been reordered to put the learning objectives first and the pedagogy second. This change reflects the usual priority of these questions and greatly eases pre/post analysis. If you prefer the old order, you can reuse one of your old instruments, or choose the Old Order template from the list of user-created instruments. Below this, it says "Please send comments and suggestions to help@salgsite.org". Further down, it states "The SALG website is a **free course-evaluation tool** that allows college-level instructors to gather **learning-focused** feedback from students." and "Anyone may register and use the site." At the bottom, it says "Once registered on the SALG site, you can:". On the right side of the page, there are two columns of buttons with links: "Student login", "Department site", "Evaluator site", "User Forum", "Privacy policy", "Legal statement", and "About SALG".

STUDENT ASSESSMENT OF THEIR LEARNING GAINS

Welcome to the SALG Website for Instructors!

**** New Features and Improvements! ****

1. A new, wizard-style interface makes it faster and easier than ever to set up an instrument from scratch.
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Once registered on the SALG site, you can:

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Your understanding of class content

7. As a result of your work in this class, what GAINS DID YOU MAKE in your UNDERSTANDING of each of the following? no gains a little gain moderate gain good gain great gain not applicable

7.1 How scientists ask questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.2 How scientific research is carried out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.3 The scientific issues and methods discussed in science-related stories in the media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.4 The connections between science and civic issues at the local, national and global level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5 Air quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6 The ozone hole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.7 Global warming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.8 Water quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.9 Acid rain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.10 Hydrogen fuel cells	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.11 Solar cells	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7.12 Please comment on HOW YOUR UNDERSTANDING OF THE SUBJECT HAS CHANGED as a result of this class.

Increases in your skills

8. As a result of your work in this class, what GAINS DID YOU MAKE in the following SKILLS? no gains a little gain moderate gain good gain great gain not applicable

8.1 Evaluating the quality of scientific evidence in what I read and hear in the media

8.2 Conducting a systematic search for scientific evidence that is relevant to a specific question

8.3 Determining what is--and what is not--valid scientific evidence

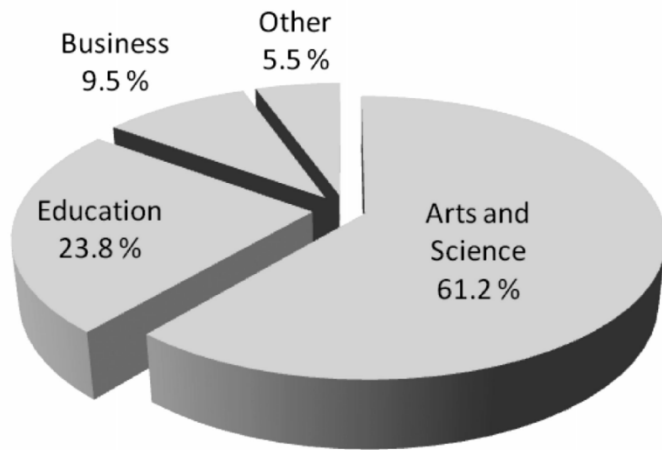
8.4 Extracting the important points from a scientific article or website and writing a coherent summary

8.5 Understanding tables and graphs commonly found in scientific texts and articles

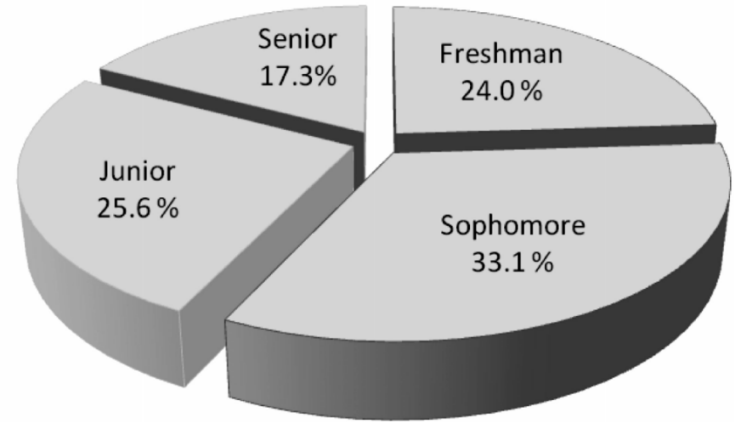
8.6 Understanding quantitative information commonly found in scientific texts and articles

8.7 Writing a policy briefing using scientific data as evidence to support my position

8.8 What skills did you gain from the course that are not listed above?



N = 484

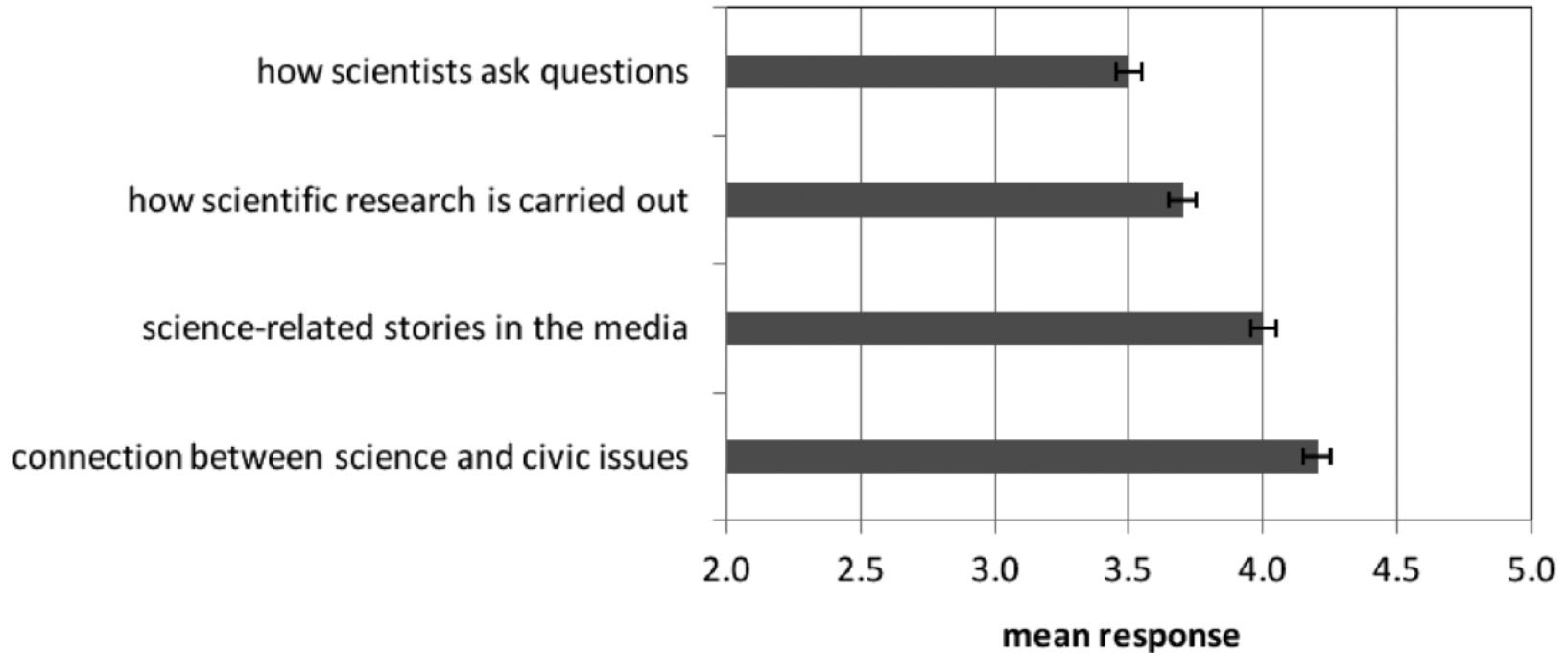


N = 484

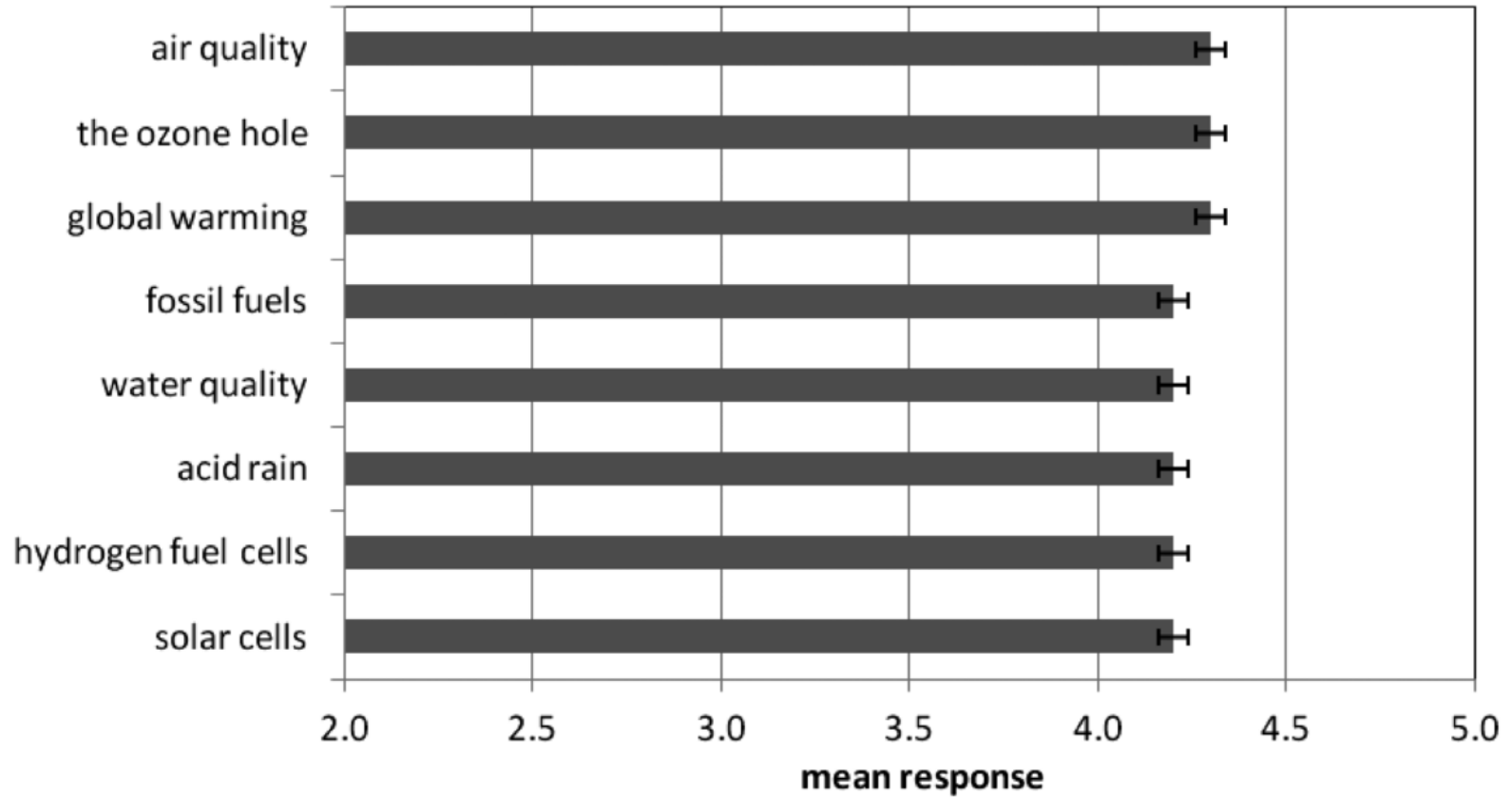
65.5% identified as female

34.5% identified as male

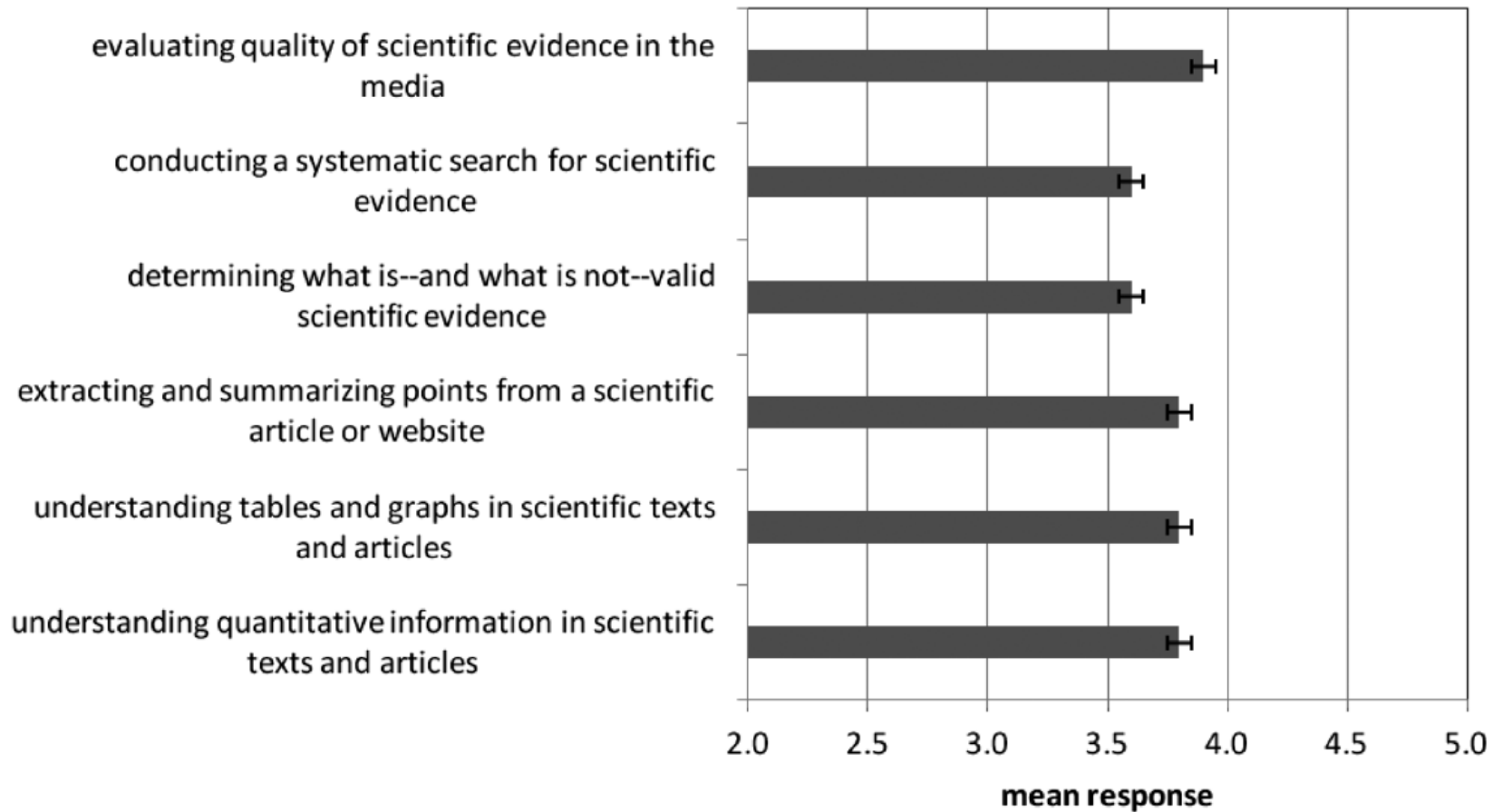
As a result of your work in the course, what gains did you make in your understanding of each of the following?



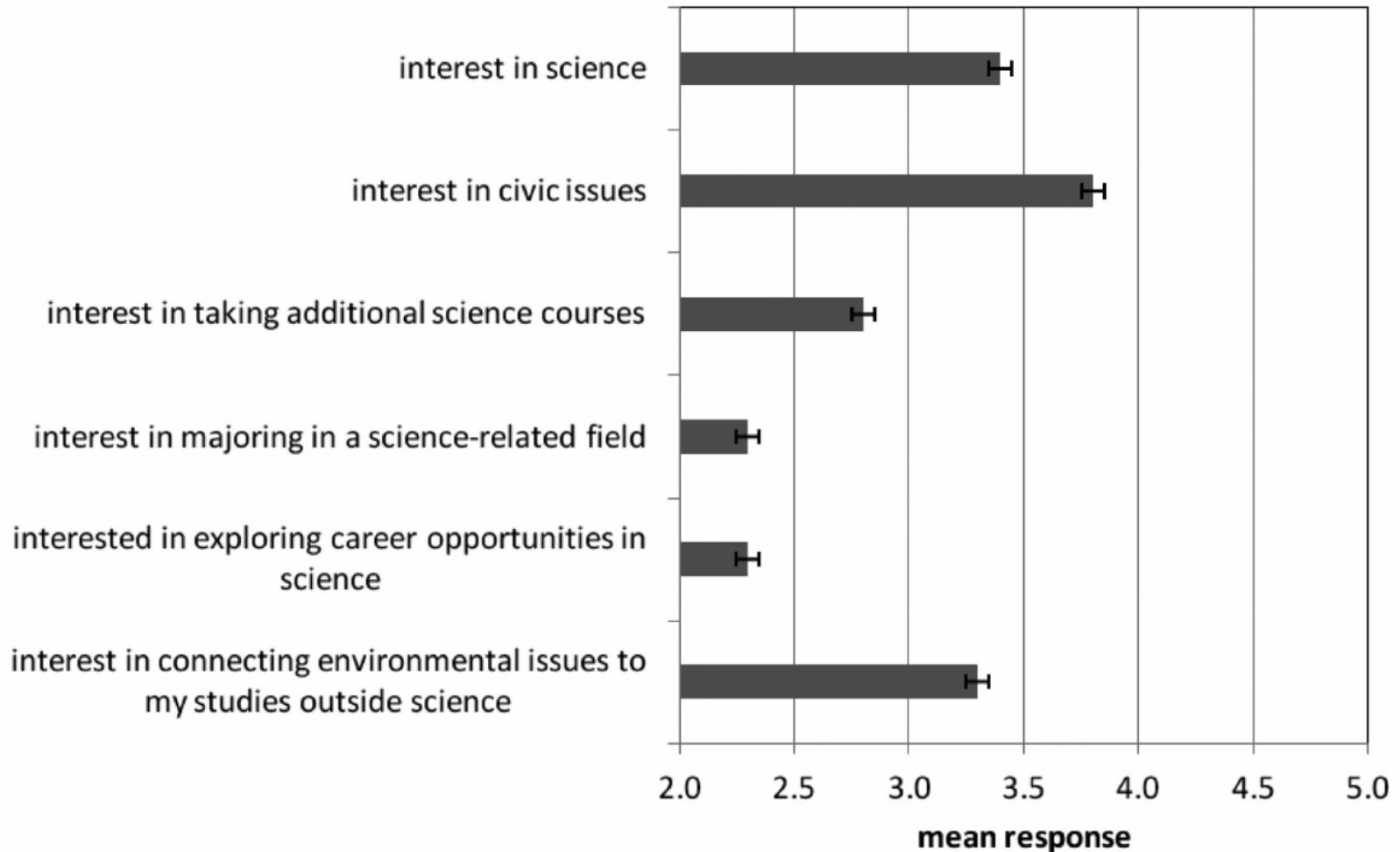
As a result of your work in the course, what gains did you make in your understanding of each of the following?



As a result of your work in this class, what gains did you make in the following skills?



As a result of your work in this class, what gains did you make in the following?

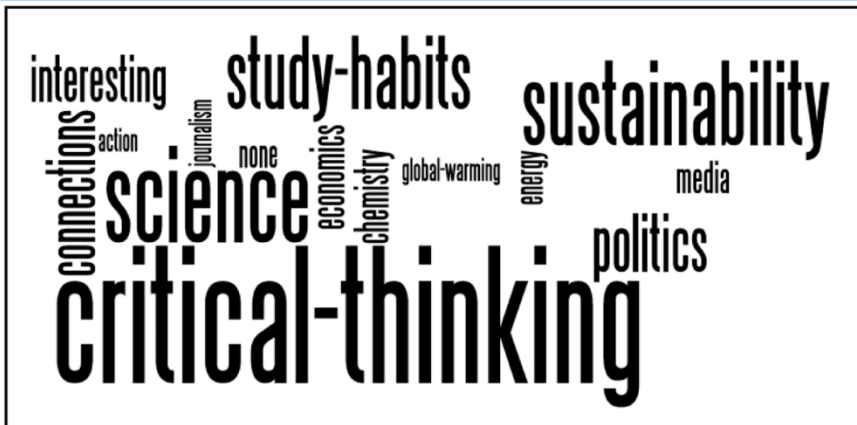


Final Thoughts

11. What is the ONE MOST IMPORTANT INSIGHT that you have gained from this class...

11.1 ...which is relevant to your studies at NYU

11.2 ...which is relevant to your life outside the classroom



Best practices for using the SENCER-SALG.

- Invest time designing a survey that is appropriate for your course...what do YOU want to know about your students' learning?
- Explain to students WHY you are using this assessment tool.
- Discuss benefits to the instructor (feedback on student learning) and benefits to the students (promotes metacognition).
- Administer a baseline survey and an end-of-semester survey.
- Give homework credit to students for completing the survey.