STEM Skills Survey

Default Question Block

The survey consists of 13 questions. Please take the next five to ten minutes to answer the questions.

In what category would you classify your position?

- ○ Tenured
- ○ Tenure-track
- ○ Senior lecturer
- ○ Lecturer
- ○ Other

With which department(s) are you affiliated?

- ☐ Agronomy
- ☐ Animal Science
- ☐ BBMB
- ☐ Chemistry
- ☐ Computer Science
- ☐ EEOB
- ☐ Entomology
- ☐ GDCB
- ☐ Geology and Atmospheric Sciences
- ☐ Mathematics
- ☐ NREM
- ☐ Plant Pathology and Microbiology
- ☐ Psychology
- ☐ Physics and Astronomy
- ☐ Other

Please rank how important it is for an undergraduate majoring in the sciences to obtain the following science process skills by the time they graduate with a four-year degree.

	Unimportant	Of little importance	Moderately important	Important	Very important
Interpreting data: graphs and data	○	○	○	○	○
Interpreting data: ability to construct an argument from data	○	○	○	○	○
Understanding basic statistics	○	○	○	○	○
Reading and evaluating primary literature	○	○	○	○	○
Conducting an effective literature search	○	○	○	○	○
Ability to create a testable hypothesis	○	○	○	○	○
Ability to design an experiment: Identifying and controlling variables	○	○	○	○	○
Ability to design an experiment: Proper alignment of experiment	○	○	○	○	○

	Unimportant	Of little importance	Moderately important	Important	Very important
and hypothesis					
Ability to design and experiment: Development of proper controls	○	○	○	○	○
Creating the appropriate graph from data	○	○	○	○	○
Communicating results: Oral	○	○	○	○	○
Communicating results: Written	○	○	○	○	○
Creating a bibliography and proper citations of references	○	○	○	○	○
Working collaboratively to accomplish a task	○	○	○	○	○
Being an effective peer mentor	○	○	○	○	○
Working independently when needed	○	○	○	○	○
Knowing when to ask for guidance	○	○	○	○	○
Being able to infer plausible reasons for failed experiments	○	○	○	○	○
Being able to effectively monitor their own learning process	○	○	○	○	○
Problem solving/ critical thinking	○	○	○	○	○

If you could choose only 3 of the following skills to focus on, which are the most important for students to acquire?

- ☐ Interpreting data
- ☐ Understanding basic statistics
- ☐ Reading and evaluating primary literature
- ☐ Ability to design an experiment
- ☐ Communicating results: oral and written
- ☐ Working collaboratively to accomplish a task
- ☐ Working independently when needed
- ☐ Knowing when to ask for guidance
- ☐ Being able to effectively monitor their own learning progress
- ☐ Problem solving/ critical thinking

Which of the following skills are the least important for a student to acquire? Please choose 3.

- ☐ Interpreting data
- ☐ Understanding basic statistics
- ☐ Reading and evaluating primary literature
- ☐ Ability to design an experiment
- ☐ Communication results: oral and written
- ☐ Working collaboratively to accomplish a task

- [ ] Working independently when needed
- [ ] Knowing when to ask for guidance
- [ ] Being able to effectively monitor their own learning progress
- [ ] Problem solving/ critical thinking

What other science process skills do you think students should have by the time they graduate?

What percentage of time do you estimate that you spend teaching science process skills (as opposed to content)?

Do you feel that the amount of time you spend teaching science process skills is sufficient?

- ○ Yes
- ○ No

What prevents you from spending more time teaching science process skills (check all that apply)?

- ○ I already spend adequate time teaching skills
- ○ I don't know how to teach skills in a classroom format
- ○ Teaching skills is too time-consuming
- ○ I would have to re-work all of my lectures and course material
- ○ I think students need to have adequate content before they can learn science process skills
- ○ Other

How often do you have substantive discussions with your colleagues about teaching?

- ○ Nearly every day
- ○ Once a week
- ○ Once a month
- ○ Once a semester
- ○ Less than once a semester

How much do you pay attention to developments in research on learning in your field?

- ○ I follow closely
- ○ I am aware of the major developments
- ○ I sometimes turn to it when seeking an answer to a specific question
- ○ I do not pay attention to it

How important is teaching excellence in tenure and promotion decisions in your department?

- Teaching excellence is required
- Teaching excellence is helpful, but not required
- Teaching excellence is not important

Does your department support faculty efforts to adopt new teaching methods?

- Yes, financial support and/ or course release time is available
- Yes, adopting new teaching methods is encouraged, but no direct support is available
- No, faculty are free to teach as they wish (adopting new teaching methods is neither encouraged nor discouraged).
- No, adopting new teaching methods is discouraged

How traditional are your teaching practices as compared to those of your colleagues?

- Much more traditional
- Somewhat more traditional
- About the same
- Somewhat less traditional
- A lot less traditional

How many years have you taught?

Please estimate how many freshman/ sophomore level classes you teach in a four year period.

Please estimate how many junior/ senior level classes you teach in a four year period.

Other comments?

Thank you for completing the survey. If you have any questions, please contact Dr. Elizabeth Addis at addis@iastate.edu