

Faculty Survey on Undergraduate Science Process Skills

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Dear Respondent,

We are inviting you to participate in a research project to study the acquisition of science process skills during undergraduate education. Along with this letter is a short survey that asks a variety of questions about science process skills. We are asking you to look over the survey and, if you choose to do so, complete it and submit your responses. It should take you about 10 minutes to complete.

Through your participation we hope to understand faculty perspectives about the importance for science undergraduates to acquire such skills. We hope that the results of the survey will be useful for science faculty at all institutions. We may share the results of this project in a publication about the teaching of science process skills.

We do not know of any risks to you if you decide to participate in this online survey and guarantee that your responses will be anonymous as there is no personal information collected during the process. Your participation is voluntary.

If you have any questions or concerns about completing the survey or about being in this study, you may contact us by email (see below). The Institutional Review Board (IRB) at the Evergreen State College has approved this study.

Sincerely,

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Question 1.

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

Required.

	Very important	Important	Moderately important	Of little importance	Unimportant
Interpreting data: graphs and tables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpreting data: gels, blots, microarrays, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpreting data: ability to construct an argument from data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding basic statistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reading and evaluating primary literature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducting an effective literature search	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to create a testable hypothesis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very important	Important	Moderately important	Of little importance	Unimportant
Ability to design an experiment: identifying and controlling variables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to design an experiment: proper alignment of experiment and hypothesis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to design an experiment: development of proper controls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating the appropriate graph from data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating results: Oral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating results: Written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating a bibliography and proper citation of references	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very important	Important	Moderately important	Of little importance	Unimportant
Working collaboratively to accomplish a task	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being an effective peer mentor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working independently when needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing when to ask for guidance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being able to infer plausible reasons for failed experiments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being able to effectively monitor their own learning progress	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to use basic online bioinformatics tools (NCBI databases, BLAST, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very important	Important	Moderately important	Of little importance	Unimportant
Problem solving/Critical thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 2.

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

	Most Important (choose 3)
Interpreting data	<input type="checkbox"/>
Understanding basic statistics	<input type="checkbox"/>
Reading, evaluating, and locating primary literature	<input type="checkbox"/>
Ability to design an experiment	<input type="checkbox"/>
Communicating results: Oral and Written	<input type="checkbox"/>
Working collaboratively to accomplish a task	<input type="checkbox"/>
Working independently when needed	<input type="checkbox"/>
Knowing when to ask for guidance	<input type="checkbox"/>
Being able to effectively monitor their own learning progress	<input type="checkbox"/>
Problem solving/Critical thinking	<input type="checkbox"/>

Question 3.

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

	Least Important (choose 3)
Interpreting data	<input type="checkbox"/>
Understanding basic statistics	<input type="checkbox"/>
Reading, evaluating, and locating primary literature	<input type="checkbox"/>
Ability to design an experiment	<input type="checkbox"/>
Communicating results: Oral and Written	<input type="checkbox"/>
Working collaboratively to accomplish a task	<input type="checkbox"/>
Working independently when needed	<input type="checkbox"/>
Knowing when to ask for guidance	<input type="checkbox"/>
Being able to effectively monitor their own learning progress	<input type="checkbox"/>
Problem solving/Critical thinking	<input type="checkbox"/>

Question 4.

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

Question 5.

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

Required. Enter an integer (without commas). Limit response to three characters.

Question 6.

Do you feel that the amount of time you spend teaching science process skills is sufficient (Y/N)?

Required.

- Yes
- No

Question 7.

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

Required.

- 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:

Question 8.

At what type of institution do you teach? (please choose the closest type)

Required.

- R1 University
- Non-R1 University
- 4-Year Liberal Arts College
- 2-Year Community College
- Research Institute

Question 9.

Please choose which of the following best describes your current position

Required.

- Faculty
- Postdoc

Question 10.

How many years have you taught?

Required. Enter a number (without commas). Limit response to two characters.

Question 11.

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

Required. Enter a number (without commas). Limit response to two characters.

Question 12.

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

Required. Enter a number (without commas). Limit response to two characters.

Question 13.

Other comments?

Submit responses