

# Supplemental Material

*CBE—Life Sciences Education*

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## Supplemental Material: STEP-U Survey

Rate the following skills in terms of importance to you in your undergraduate education:

**Not important**

**Slightly important**

**Fairly important**

**Important**

**Very Important**

1. Work in groups
2. Scientific writing
3. Memorize some basic facts
4. Acquire major scientific concepts
5. Learn basic sets of laboratory skills
6. Understand the dynamic nature of science
7. Understand how science applies to everyday life
8. Remember formulas, structures, and procedures
9. Apply quantitative reasoning
10. Problem-solving
11. Develop information literacy (e.g., being able to understand articles about science). \*
12. Develop creativity and innovation
13. Develop understanding of interdisciplinary nature of science (e.g., how biology relates to chemistry, how physics relates to biology). \*
14. Decision-making based on evidence

\*revised items based upon response process analysis (interviews).

In the undergraduate courses for your major, how often did instructors use these methods?

**None of my courses**

**A few of my courses**

**Some of my courses**

**Most of my courses**

**Almost all of my courses**

15. Communicating course goals and objectives to students
16. Group work
17. Extensive lecturing (more than 15 minutes per session without breaks for questions or active engagement of students)
18. Class discussions
19. Online discussions
20. Writing assignments

21. Online module with immediate feedback (such as mastering CHEM or MathBench)
22. Inquiry-based learning (e.g., problem-based learning, case studies)
23. Personal Response System (clickers)
24. Use of multimedia (e.g., video clips, animations, sound clips)
25. Answering questions from individual students in class
26. Graphic organizers (such as concept maps)
27. Interpreting graphical information
28. Homework that counts toward final grade
29. Solving quantitative problems
30. Reading primary literature
31. Teaching with an interdisciplinary approach (e.g., making connections between physics and biology, between chemistry and biology).
32. Relating course material to scientific research
33. Relating course material to the real world