

Supplemental Material

CBE—Life Sciences Education

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Appendix A. Graduate Teaching Assistant Sense of Self-Efficacy Scale

How confident am I in my ability to...

1. Promote student participation in my classes
2. Make students aware that I have a personal investment in them and in their learning
3. Create a positive classroom climate for learning
4. Think of my students as active learners, which is to say knowledge builders rather than information receivers
5. Encourage my students to ask questions during class
6. Actively engage my students in the learning activities that are included in the teaching plan/syllabus
7. Promote a positive attitude towards learning in my students
8. Provide support/encouragement to students who are having difficulty learning
9. Encourage the students to interact with each other
10. Show my students respect through my actions
11. Let students take initiative for their own learning
12. Appropriately grade my students' exams/assignments
13. Evaluate accurately my students' academic capabilities
14. Prepare the teaching materials I will use
15. Spend the time necessary to plan my classes
16. Clearly identify the course objectives
17. Provide my students with detailed feedback about their academic progress
18. Stay current in my knowledge of the subject I am teaching

Scale:

1. Not at all confident
2. Slightly confident
3. Neutral
4. Moderately confident
5. Very confident

Appendix B. Approach to Teaching Inventory

1. I design my teaching with the assumption that most of the students have very little useful knowledge of the topics to be covered
2. I feel it is important that course topics should be completely described in terms of specific objectives relating to what students have to know for formal assessment items
3. In my interactions with students I try to develop a conversation with them about the topics we are studying
4. I feel it is important to present a lot of facts to students so that they know what they have to learn
5. I feel that the assessment should be an opportunity for students to reveal their changed conceptual understanding
6. I set aside some teaching time so that the students can discuss, among themselves, the difficulties that they encounter in the course
7. I concentrate on covering the information that might be available from a good textbook
8. I encourage students to restructure their existing knowledge in terms of the new way of thinking about the course material that they will develop
9. In teaching sessions, I use different or undefined examples to provide debate
10. I structure class time to help students to pass the formal assessment items
11. I think an important reason for running teaching sessions is to give students a good set of notes
12. I only provide the students with the information they will need to pass the formal assessments
13. I feel that I should know the answers to any questions that students may put to me
14. I make available opportunities for students to discuss their changing understanding of the subject
15. I feel that it is better for students to generate their own notes rather than always copy mine
16. I feel a lot of teaching time should be used to question students' ideas

Scale:

1. This item was only rarely true for me in this subject
2. This item was sometimes true for me in this subject
3. This item was true for me about half the time in this subject
4. This item was frequently true for me in this subject
5. This item was almost always true for me in this subject

Sum scores from 8 items in each subscale:

- ITTF – Information Transmission/Teacher Focus – surface approach to learning by student – Items 1, 2, 4, 7, 10, 11, 12, 13
- CCSF – Conceptual Change/Student Focus – deep approach to learning by student – Items 3, 5, 6, 8, 9, 14, 15, 16

Interview Protocol

1. Will you talk about how the semester went for you as a TA?
2. Which tasks were you most confident in performing?
3. Did any experiences, observations, or interactions improve your confidence?
4. Explain any obstacles or difficulties you may have had to overcome to improve your confidence.
5. How would you compare your instructional techniques to those of instructors you have had?
6. Have there been any critical moments or pieces of information that have changed how you think about your instruction?
7. What would you attribute your instruction style to?
8. Is there any other feedback you want to give regarding your experience as a TA?