2016 National Survey of Geoscience Teaching Practices

This study is being supported by grants from the National Science Foundation (#1022844, #1125331) in order to better understand the trends in teaching of undergraduate geosciences; this is the fourth time the survey has been administered since 2004. Thank you for participating—your responses will help us see how teaching in both introductory and majors courses has changed over time and why.

All your responses will be kept confidential. The survey should take about 15 minutes to complete. If you cannot complete the survey in a single session, your responses will be saved and you may return to the survey by clicking on the link sent in your email.

I have read the Description of the Geosciences Teaching Practices Survey Participation and Implications of Consent (http://serc.carleton.edu/integrate/GTPsurvey_research.html) or it was read to me. I know the possible risks and benefits. I know that being included in the survey is voluntary. I choose to participate in the survey. I know that I can quit at any time. I am at least 18 years of age and voluntarily grant permission for the described release related to the survey.

Background

First, we have some questions about you and your teaching.

Q1 Which of the following best describes your disciplinary focus?
Choose one of the following answers

(1) Geology or Geophysics
(2) Oceanography or Marine Sciences
(3) Atmospheric Science or Meteorology
(4) Geoscience Education/Science Education
(5) Other, please specify:

Q2 Which of the following best describes your current position?
Choose one of the following answers

(1) Professor
(2) Associate Professor
(3) Assistant Professor
(4) Instructor or Lecturer
(5) Adjunct Faculty
(6) Visiting Professor
(7) Other, please specify:

Q3 What is the highest degree level that you have completed?
Choose one of the following answers

(1) Masters
(2) PhD or doctorate
(3) Other, please specify:

Q4 What was the year of your highest degree?
Please insert the 4-digit year:
(4-digit number)

Q5 How many years have you taught at the college or university level?
Please do not include any experiences as a graduate teaching assistant.

(2-digit number)
Only numbers may be entered in this field

Q6 In the past academic term, how many hours per week did you spend teaching in class and/or lab?

(2-digit number)
Only numbers may be entered in this field

Q7 In the past academic term, how many unique courses did you teach?

If you taught multiple sections of a course, please count that course only once. For example, if you taught two sections of Earth Sciences 101 and one section of Climate Change 101, indicate that you taught two different courses.

(2-digit number)
Only numbers may be entered in this field

Q8 In the last academic school year (Fall 2015 – Spring 2016), did you teach any geoscience courses for undergraduates?
Choose one of the following answers
(1) No, I did not teach any courses at all ***[SKIP to Q30]***
(2) No, I taught only graduate-level geoscience courses ***[SKIP to Q30]***
(3) Yes, I taught one or more undergraduate geoscience courses

[Appears only if respondent indicates not teaching courses or teaching graduate courses only]
While you did not teach any undergraduate courses in the last academic school year, we'd like to ask you about your research background and ways you continue to develop your teaching.

Please click the "Next" button to continue.

Q9 What type of undergraduate geoscience courses did you teach?
Choose one of the following answers

(1) Introductory courses ***[SKIP to Q10.1A]***
(2) Courses for majors ***[SKIP to Q10.2A]***
(3) Both introductory and major courses ***[Randomize SKIP to either Q10.1A OR Q10.2A]***

Introductory course

Now we would like for you to think about the most recent introductory geoscience course that you taught. If you taught two or more courses simultaneously, please pick one and answer the following questions about that course.

Q10.1A What is the name of the most recent introductory geoscience course that you taught?
(Open-ended)

Q10.1B How many times have you taught this course?

(1) 1-2 times
(2) 3-5 times
(3) 6 or more times

Q11.1A How many students were in your most recent introductory course?

(3-digit number)
Only numbers may be entered in this field

Q11.1B Which of the following best describes the *majority* of students in your course?
Choose one of the following answers [Randomize]

(1) Students who are or plan to become geoscience majors
(2) Students fulfilling a General Education requirement
(3) Students fulfilling a major requirement for a non-geoscience major
(4) Students majoring in education/science education (pre-service teachers)
(5) I don't know

Q12.1A Is your course: [Do not randomize]

(1) In-person only
(2) Online only
(3) Hybrid (Hybrid courses typically reduce the number of in-person classroom sessions offered by requiring online participation.)

Q12.1B Is your course:

(1) Lecture
(2) Lecture plus lab
(3) Fully integrated lecture and lab

Q13.1 When you taught this course, was anyone else involved in teaching the same course?

Choose all that apply:
(1) No one else was involved in teaching the course.
(2) One or more full-time faculty taught the same course during the same term.
(3) One or more adjunct faculty taught the same course during the same term.
(4) Graduate teaching assistant(s) taught the lab section(s).
(5) I had graduate and/or undergraduate teaching assistant(s) in class with me.
(6) I co-taught this course with another faculty member.
(7) None of the above.

Q14.1 Do other people at your institution teach this course?
(1) No
(2) Yes

Q15.1 In the "lecture portion" of your introductory course, please estimate the percentage of class time spent on student activities, questions, and discussion.
Your response must be between 0 and 100.

(3-digit number)
Only numbers may be entered in this field

Q16.1 In the "lecture portion" of your introductory course, please indicate how frequently you used the following teaching strategies: [Do not randomize]

(1) Never (2) Once or twice (3) Several times (4) Weekly (5) Nearly every class

Q16A.1: Traditional lecture
Q16B.1: Lecture with demonstration
Q16C.1: Lecture in which questions posed by instructor are answered by individual students (e.g. professor calls on individual students)
Q16D.1: Lecture in which questions posed by instructor are answered simultaneously by the entire class (e.g. students vote using cards or electronic response systems)
Q16E.1: Small group discussion or think-pair-share
Q16F.1: Whole-class discussions
Q16G.1: In-class exercises

Q17.1A In your introductory course, please indicate how frequently you include photos and stories of individual geoscientists and their work?

(1) Never ***[SKIP to Q18.1]*** (2) Once or twice (3) Several times (4) Weekly (5) Nearly every class

Q17.1B Considering the images and stories of individual geoscientists you included in your course, what percent of the geoscientists included are female?
(1) Less than 30% (2) Between 30 and 70% (3) More than 70%

Q17.1C Considering the images and stories of individual geoscientists you included in your course, what percent of the geoscientists included are people of color?
(1) Less than 10%, (2) Between 10 and 25% (3) More than 25%

Introductory course: Course activities & student behaviors

Q18.1 In your most recent introductory course, did your students:
Check all that apply [Randomize]

Q18A.1: Collect their own data and analyze them to solve a problem
Q18B.1: Address a problem of national or global interest
Q18C.1: Work on a problem of interest to the local community
Q18D.1: Address a problem that required bringing together geoscience knowledge with knowledge from another discipline
Q18E.1: Work on a community-inspired research or service project
Q18F.1: Address environmental justice issues
Q18G.1: Address uncertainty, non-uniqueness, and ambiguity when interpreting data
Q18H.1: Recognize distinctions among data sources (e.g. direct, indirect, and proxy)
Q18I.1: Describe quantitative evidence in support of an argument
Q18J.1: Evaluate important assumptions in estimation, modeling, or data analysis
Q18K.1: Access and integrate information from different sources
Q18L.1: None of the above

Q19.1 In your most recent introductory course, how often did your students:
(1) Never (2) Once or twice (3) Three or more times [Randomize]

Q19A.1: Read the primary literature
Q19B.1: Use algebraic equations
Q19C.1: Conduct statistical analyses
Q19D.1: Use skills learned in a calculus course
Q19E.1: Make field observations
Q19F.1: Make a geologic map
Q19G.1: Work with geospatial data
Q19H.1: Practice 3D spatial thinking

Q19I.1: Practice temporal reasoning
Q19J.1: Distinguish observations from interpretations
Q19K.1: Complete formal writing assignments (e.g. papers and abstracts)
Q19L.1: Formally present project results in a talk or poster
Q19M.1: Work as part of a team

Q20.1 Are there elements in your course that enable your students to:
Check all that apply [Randomize]

Q20A.1: Discuss a change that has multiple effects throughout a system
Q20B.1: Analyze feedback loops
Q20C.1: Make systems visible through causal maps
Q20D.1: Explore systems behavior using computer models
Q20E.1: Build predictive models
Q20F.1 Discuss relationship between implications and predictions
Q20G.1 Discuss complexity of scale and interactions
Q20H.1 Distinguish outcomes of current processes from results of prior history
Q20I.1: Describe a system in terms of its parts and relationships

Q21.1 Do you ask students in your class to:
Check all that apply. [Randomize]

Q21A.1 Reflect on the effectiveness of their study skills or time management strategies
Q21B.1 Use knowledge or skills developed in previous courses or learning experiences
Q21C.1 Reflect on their success in learning a concept or skill during the course
Q21D.1 Reflect on the strategies they used to solve a problem as part of the course
Q21E.1 Reflect on effective study strategies.
Q21F.1 Form student study groups
Q21G.1 Make explicit connections from course content to their lives
Q21H.1 None of the above

Q22.1 In your most recent introductory course, which of the following did you do?
Check all that apply. **[Do not randomize]**

Q22A.1: Include information about geoscience and STEM careers and career pathways in your course.
Q22B.1: Inform your class that many populations are under-represented in STEM disciplines, and especially in the geosciences.
Q22C.1: Highlight alumni from your program who are working in geoscience.
Q22D.1: Give an assignment in which students explore geoscience careers.
Q22E.1: Promote internship and research opportunities to all students.
Q22F.1: Publicize job search and career resources available on your campus.
Q22G.1: Help students with applications for internships, research experiences, and/or jobs.

Q22H.1: Make explicit connections between skills needed in the geoscience workforce and course assignments and outcomes.
Q22I.1: Develop strategies to support less successful groups of students based on data from the course.

Introductory course: Course goals and design

Q23.1 When you are designing a new activity, which of the following do you routinely do? Check all that apply [Randomize]

Q23A.1: Talk with my colleagues about how they teach this topic
Q23B.1: Discuss new ideas with students
Q23C.1: Look on the web to see what activities others have developed on this topic
Q23D.1: Look for activities in texts, lab manuals, or instructor guides
Q23E.1: Look first to see what data are available
Q23F.1: Brainstorm ideas before looking to see what is available
Q23G.1: Read education research papers about the methods I am considering
Q23H.1: Look for ideas from campus Learning and Teaching Center
Q23I.1: None of the above

Introductory course: Course changes

Q24.1 Have you made any changes in the <u>content</u> that you teach in your introductory course within the past two years?

(1) No ***[SKIP to Q26.1]***
(2) Yes

Q25.1 Which of the following content changes did you make in your introductory course in the past two years?
Check all that apply [Randomize]

Q25A.1: Updated content with latest research findings
Q25B.1: Changed textbook
Q25C.1: Reorganized the topics covered
Q25D.1: Included recent geological events covered in the general media
Q25E.1: Added new content area
Q25F.1: Increased emphasis on environmental issues
Q25G.1: Added content linking geoscience to societal issues
Q25H.1: Added content drawn from another discipline
Q25I.1: Increased emphasis on systems thinking

Q25J.1: Increased focus on quantitative skills
Q25K.1: Increased focus on communication skills
Q25L.1: Other, please specify:
Q25M.1: None of the above

Q26.1 Have you made any changes in the teaching methods used in your introductory course within the past two years?
(0) No ***[SKIP to Q28.1]***
(1) Yes

Q27.1 Which of the following changes in teaching methods did you make in your introductory course in the past two years?
Check all that apply [Randomize]
Q27A.1: Spent less time lecturing
Q27B.1: Employed more demonstrations during lectures
Q27C.1: Increased questioning of students during lectures
Q27D.1: Changed class to hybrid format
Q27E.1: Changed class to entirely online format
Q27F.1: Added group work or small group activities
Q27G.1: Increased time spent on field trips
Q27H.1: Revised lab activities
Q27I.1: Spent more time on class discussions or small group discussions
Q27J.1: Changed assessment tools or strategies
Q27K.1: Increased out-of-class work preparing for class
Q27L.1: Increased time students spent working or discussing with one another
Q27M.1: Increased time spent by students reflecting and synthesizing
Q27N.1: Integrated lab and lecture activities
Q27O.1: Other, please specify:
Q27P.1: None of the above

Q28.1 Reflect on the last time you made a substantive revision to a course. Which of the following statements most closely approximates your motivation for making this change?
Check one [Randomize]
Q28A.1: The previous time I taught the course, I was not happy with the results
Q28B.1: I adopted a new philosophy for my teaching
Q28C.1: The content needed to be updated
Q28D.1: I received a great new idea from a colleague, a publication, or the web that I developed for my course
Q28E.1: I found a data set or software tool that opened up new teaching possibilities
Q28F.1: New facilities (e.g. computers, analytical equipment, or classroom space provided new opportunities for teaching)

Q28G.1: I attended a workshop or other professional development opportunity that inspired me to make changes
Q28H.1: I updated my course to better meet the needs of all students
Q28I.1: It was part of a department-wide effort to improve our courses.
Q28J.1: I would receive credit toward tenure and promotion
Q28K.1: Other (describe)
Q28L.1: None of the above

Q29.1 Reflect on the last time you wanted to make a substantive revision to your introductory course, but decided not to. Which of the following statements most closely approximates your reasons for deciding against changing your course?
Check all that apply. [Randomize]

Q29A.1: I didn't have the support I needed from my department chair or dean.
Q29B.1: I didn't have support from my colleagues.
Q29C.1: I didn't have the financial resources needed.
Q29D.1: I didn't feel qualified to make the changes.
Q29E.1: My institution wouldn't value my efforts.
Q29F.1: Someone else is in charge of this course; I don't have the authority to make changes.
Q29G.1: The physical infrastructure (classroom spaces) would not allow the changes I was interested in making.
Q29H.1: Time constraints.
Q29I.1: Other: (describe)
Q29J.1: None of the above

Major course

Now we would like for you to think about the most recent geoscience course for undergraduate majors that you taught. If you taught two or more courses simultaneously, please pick one and answer the following questions about that course.

Q10.2A What is the name of the most recent geoscience course for majors that you taught? *(Open-ended)*

Q10.2B How many times have you taught this course?

(1) 1-2 times
(2) 3-5 times
(3) 6 or more times

Q10.2C How well does the subject area of the course align with your disciplinary training? (Likert Scale) [Do not randomize]

(1) The course subject area and my disciplinary training are in good alignment
(2) The course subject area and my disciplinary training are somewhat aligned
(3) The course subject area and my disciplinary training are marginally aligned
(4) The course subject area and my disciplinary training are not aligned

Q11.2A How many students were in your most recent majors course?

(3-digit number)
Only numbers may be entered in this field

Q12.2A Is your course: [Do not randomize.]

(1) In-person only
(2) Online only
(3) Hybrid (Hybrid courses typically reduce the number of in-person classroom sessions offered by requiring online participation.)

Q12.2B Is your course:

(1) Lecture
(2) Lecture plus lab
(3) Fully integrated lecture and lab

Q13.2 When you taught this course, was anyone else involved in teaching the same course? Choose all that apply:

(1) No one else was involved in teaching the course.
(2) One or more full-time faculty taught the same course during the same term.
(3) One or more adjunct faculty taught the same course during the same term.

(4) Graduate teaching assistant(s) taught the lab section(s).
(5) I had graduate and/or undergraduate teaching assistant(s) in class with me.
(6) I co-taught this course with another faculty member.
(7) None of the above.

Q14.2 Do other people at your institution teach this course?
(1) No
(2) Yes

Q15.2 In the "lecture portion" of your recent majors course, please estimate the percentage of class time spent on student activities, questions, and discussion.
Your response must be between 0 and 100.

(3-digit number)
Only numbers may be entered in this field

Q16.2 In your recent majors course, please indicate how frequently you used the following teaching strategies: [Do not randomize]

(1) Never (2) Once or twice (3) Several times (4) Weekly (5) Nearly every class

Q16A.2: Traditional lecture
Q16B.2: Lecture with demonstration
Q16C.2: Lecture in which questions posed by instructor are answered by individual students (e.g. professor calls on individual students)
Q16D.2: Lecture in which questions posed by instructor are answered simultaneously by the entire class (e.g. students vote using cards or electronic response systems)
Q16E.2: Small group discussion or think-pair-share
Q16F.2: Whole-class discussions
Q16G.2: In-class exercises

Q17.2A In your recent majors course, please indicate how frequently you include photos and stories of individual geoscientists and their work?

(1) Never ***[SKIP to Q18.2]*** (2) Once or twice (3) Several times (4) Weekly (5) Nearly every class

Q17.2B Considering the images and stories of individual geoscientists you included in your course, what percent of the geoscientists included are female?

(1) Less than 30% (2) Between 30 and 70% (3) More than 70%

Q17.2C Considering the images and stories of individual geoscientists you included in your course, what percent of the geoscientists included are people of color?

(1) Less than 10% (2) Between 10 and 25% (3) More than 25%

Major course: Course activities & student behaviors

Q18.2 In your most recent majors course, did your students:
Check all that apply [Randomize]

Q18A.2: Collect their own data and analyze them to solve a problem
Q18B.2: Address a problem of national or global interest
Q18C.2: Work on a problem of interest to the local community
Q18D.2: Address a problem that required bringing together geoscience knowledge with knowledge from another discipline.
Q18E.2: Work on a community-inspired research or service project
Q18F.2: Address environmental justice issues
Q18G.2: Address uncertainty, non-uniqueness, and ambiguity when interpreting data
Q18H.2: Recognize distinctions among data sources (e.g. direct, indirect, and proxy)
Q18I.2: Describe quantitative evidence in support of an argument
Q18J.2: Evaluate important assumptions in estimation, modeling, or data analysis
Q18K.2: Access and integrate information from different sources
Q18L.2: None of the above

Q19.2 In your most recent majors course, how often did your students: [Randomize]
(1) Never (2) Once or twice (3) Three or more times

Q19A.2: Read the primary literature
Q19B.2: Use algebraic equations
Q19C.2: Conduct statistical analyses
Q19D.2: Use skills learned in a calculus course
Q19E.2: Make field observations
Q19F.2: Make a geologic map
Q19G.2: Work with geospatial data
Q19H.2: Practice 3D spatial thinking
Q19I.2: Practice temporal reasoning
Q19J.2: Distinguish observations from interpretations
Q19K.2: Complete formal writing assignments (e.g. papers and abstracts)
Q19L.2: Formally present project results in a talk or poster
Q19M.2: Work as part of a team

Q20.2 Are there elements in your course that enable your students to:
Check all that apply [Randomize]

Q20A.2: Discuss a change that has multiple effects throughout a system
Q20B.2: Analyze feedback loops
Q20C.2: Make systems visible through causal maps
Q20D.2: Explore systems behavior using computer models

Q20E.2: Build predictive models
Q20F.2: Discuss relationship between implications and predictions
Q20G.2: Discuss complexity of scale and interactions
Q20H.2: Distinguish outcomes of current processes from results of prior history
Q20I.2: Describe a system in terms of its parts and relationships

Q21.2 Do you ask students in your class to:
Check all that apply [Randomize]

Q21A.2: Reflect on the effectiveness of their study skills or time management strategies
Q21B.2: Use knowledge or skills developed in previous courses or learning experiences
Q21C.2: Reflect on their success in learning a concept or skill during the course
Q21D.2: Reflect on the strategies they used to solve a problem as part of the course
Q21E.2: Reflect on effective study strategies.
Q21F.2: Form student study groups
Q21G.2: Make explicit connections from course content to their lives
Q21H.2: None of the above

Q22.2 In your most recent majors course, which of the following did you do?
Check all that apply. **[Do not randomize]**

Q22A.2: Include information about geoscience and STEM careers and career pathways in your course.
Q22B.2: Inform your class that many populations are under-represented in STEM disciplines, and especially in the geosciences.
Q22C.2: Highlight alumni from your program who are working in geoscience.
Q22D.2: Give an assignment in which students explore geoscience careers.
Q22E.2: Promote internship and research opportunities to all students.
Q22F.2: Publicize job search and career resources available on your campus.
Q22G.2: Help students with applications for internships, research experiences, and/or jobs.
Q22H.2: Make explicit connections between skills needed in the geoscience workforce and course assignments and outcomes.
Q22I.2: Develop strategies to support less successful groups of students based on data from the course.

Major course: Course goals and design

Q23.2 When you are designing a new activity, which of the following do you routinely do?
Check all that apply [Randomize]

Q23A.2: Talk with my colleagues about how they teach this topic
Q23B.2: Discuss new ideas with students
Q23C.2: Look on the web to see what activities others have developed on this topic

Q23D.2: Look for activities in texts, lab manuals, or instructor guides
Q23E.2: Look first to see what data are available
Q23F.2: Brainstorm ideas before looking to see what is available
Q23G.2: Read education research papers about the methods I am considering
Q23H.2: Look for ideas from campus Learning and Teaching Center
Q23I.2: None of the above

Major course: Course changes

Q24.2 Have you made any changes in the content that you teach in your majors course within the past two years?

(1) No ***[SKIP to Q26.2]***
(2) Yes

Q25.2 Which of the following content changes did you make in your majors course in the past two years?
Check all that apply [Randomize]

Q25A.2: Updated content with latest research findings
Q25B.2: Changed textbook
Q25C.2: Reorganized the topics covered
Q25D.2: Included recent geological events covered in the general media
Q25E.2: Added new content area
Q25F.2: Increased emphasis on environmental issues
Q25G.2: Added content linking geoscience to societal issues
Q25H.2: Added content drawn from another discipline
Q25I.2: Increased emphasis on systems thinking
Q25J.2: Increased focus on quantitative skills
Q25K.2: Increased focus on communication skills
Q25L.2: Other, please specify:
Q25M.2: None of the above

Q26.2 Have you made any changes in the teaching methods used in your majors course within the past two years?

(0) No ***[SKIP to Q28.2]***
(1) Yes

Q27.2 Which of the following changes in teaching methods did you make in your majors course in the past two years?
Check all that apply [Randomize]

Q27A.2: Spent less time lecturing
Q27B.2: Employed more demonstrations during lectures

Q27C.2: Increased questioning of students during lectures
Q27D.2: Changed class to hybrid format
Q27E.2: Changed class to entirely online format
Q27F.2: Added group work or small group activities
Q27G.2: Increased time spent on field trips
Q27H.2: Revised lab activities
Q27I.2: Spent more time on class discussions or small group discussions
Q27J.2: Changed assessment tools or strategies
Q27K.2: Increased out-of-class work preparing for class
Q27L.2: Increased time students spent working or discussing with one another
Q27M.2: Increased time spent by students reflecting and synthesizing
Q27N.2: Integrated lab and lecture activities
Q27O.2: Other, please specify:
Q27P.2: None of the above

Q28.2 Reflect on the last time you made a substantive revision to a course. Which of the following statements most closely approximates your motivation for making this change?
Check one [Randomize]

Q28A.2: The previous time I taught the course, I was not happy with the results
Q28B.2: I adopted a new philosophy for my teaching
Q28C.2: The content needed to be updated
Q28D.2: I received a great new idea from a colleague, a publication, or the web that I developed for my course
Q28E.2: I found a data set or software tool that opened up new teaching possibilities
Q28F.2: New facilities (e.g. computers, analytical equipment, or classroom space provided new opportunities for teaching)
Q28G.2: I attended a workshop or other professional development opportunity that inspired me to make changes
Q28H.2: I updated my course to better meet the needs of all students
Q28I.2: It was part of a department-wide effort to improve our courses.
Q28J.2: I would receive credit toward tenure and promotion
Q28K.2: Other (describe)
Q28L.2: None of the above

Q29.2 Reflect on the last time you wanted to make a substantive revision to your majors course, but decided not to. Which of the following statements most closely approximates your reasons for deciding against changing your course?
Check all that apply. [Randomize]

Q29A.2: I didn't have the support I needed from my department chair or dean.
Q29B.2: I didn't have support from my colleagues.
Q29C.2: I didn't have the financial resources needed.
Q29D.2: I didn't feel qualified to make the changes.

Q29E.2: My institution wouldn't value my efforts.
Q29F.2: Someone else is in charge of this course; I don't have the authority to make changes.
Q29G.2: The physical infrastructure (classroom spaces) would not allow the changes I was interested in making.
Q29H.1: Time constraints
Q29I.2: Other: (describe)
Q29J.2: None of the above

Professional development

Next, we would like to know more about how you stay up-to-date and develop your geoscience teaching practices.

Q30 How often did you talk or correspond with your colleagues about course content over the past two years?
Choose one of the following answers

(1) Never
(2) Once or twice per term
(3) Several times per term
(4) Weekly
(5) Nearly every day

Q31 How do you learn about new teaching methods?
Check all that apply [Randomize]

Q33A: Professional meetings or workshops
Q33B: Publications
Q33C: Discussions with other faculty members in my department
Q33D: Discussions with other colleagues on campus
Q33E: Discussions with colleagues in other institutions
Q33F: Online resources
Q33G: My own research
Q33H: Learning and Teaching Center
Q33I: None of the above

Q32 Approximately how many talks on teaching methods, other topics related to science education, or geoscience education have you attended in the past two years at professional meetings, on campus, or at other venues?
Choose one of the following answers

(0) None
(1) 1 or 2
(2) 3 or 4
(3) 5 or 6
(4) 7 or 8
(5) 9 or 10
(6) 11 or more

Q33 How many workshops related to improving your teaching did you attend in the past two years?

Choose one of the following answers

(0) None ***[SKIP to Q35]***
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5 or more

Q34 Why do you attend workshops related to teaching?
Check all that apply [Randomize]

(A) I hope to figure out a solution to an issue I came across in a course.
(B) The workshop aligns with my academic/scientific interests.
(C) I am interested in using the content of the workshop to improve my teaching
(D) I want to learn from the workshop leader
(E) I want to take part in an activity with others likely to attend the workshop
(F) I expect to receive recognition, academic credit, or a stipend for participation.
(G) None of the above.
(H) Other, please specify:_____

Q35 Do you frequently communicate with your colleagues about the following?
Check all that apply [Randomize]

Q35A: New ideas in pedagogy
Q35B: How to assess student learning
Q35C: How well we are preparing students for careers
Q35D: How well we are preparing students for life on a finite planet
Q35E: How to meet the needs of groups that traditionally have been underserved and/or underrepresented
Q35F: How the courses you teach relate to others' courses
Q35G: None of the above

Q36 How often did you talk or correspond with your colleagues about <u>your teaching</u> over the past two years?
Choose one of the following answers

(1) Never
(2) Once or twice per term
(3) Several times per term
(4) Weekly
(5) Nearly every day

Q37 Have you ever heard of any of the websites on geoscience teaching housed at serc.carleton.edu?

(0) No – Skip to Q39

(1) Yes

Q38 How often did you use the serc.carleton.edu website in the last two years to help you prepare for class or design your course? [Only show if yes to Q37]

(0) Never
(1) Once or twice per term
(2) Several times per term
(3) Weekly
(4) Nearly every day

Q39 How has the use of online resources positively impacted your teaching within the past two years?
Check all that apply [Do not randomize]

Q39A: The use of online resources has not positively impacted my teaching within the past two years
Q39B: Increased the variety of methods that I use
Q39C: Increased my skill with a particular teaching method
Q39D: Increased my confidence as a teacher
Q39E: Increased my ability to assess student learning
Q39F: Increased my ability to connect my teaching to societal issues
Q39G: Increased my ability to integrate disciplinary skills and content from outside the geosciences
Q39H: Increased my ability to include data sets in my teaching
Q39I: Increased my ability to learn how others are approaching their teaching
Q39J: Other, please specify
Q39K: None of the above

Q40 To what extent do you consider yourself part of a community of geoscience educators that shares your goals, philosophy, and values for geoscience education?

Check one
Q40a. Not at all
Q40b. To a little extent
Q40c. To some extent
Q40d. To a great extent

[SKIP TO Q44 if "not at all"]

Q41 To what extent do interactions with this community help you become a better educator?

Check one
Q41a. Not at all
Q41b. To a little extent
Q41c. To some extent
Q41d. To a great extent

Q42 In which of the following ways do you interact with this community:
Check all that apply; Randomize

Q42B: Seeking people to talk to who have experience relevant to my situation
Q42C: Providing assets or resources to other community members
Q42D: Coordinating or strategizing to achieve a shared goal
Q42G: Discussing developments in geoscience education
Q42H: Finding collaborators for a new project
Q42I: Engaging in deep two-way conversation in support of our educational work
Q42J: Other, please specify:

Q43 How have your interactions with this community influenced you?
Check all that apply; [Randomize]

Q42A: Renewed my enthusiasm
Q42B: Built my confidence
Q42C: Introduced me to new professional opportunities
Q42D: Other, please specify:

Contributions to the field

In this last section, we would like to know more about your research participation in geoscience teaching.

Q44 At how many meetings have you presented your scientific research within the past two years?
Choose one of the following answers

(0) None
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5
(6) 6
(7) 7 or more

Q45 How many articles about your research have you published in the past two years?
Choose one of the following answers

(0) None
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5
(6) 6
(7) 7 or more

Q46 Have you presented research on teaching methods or student learning at meetings within the past two years?
(0) No
(1)Yes

Q47 How many articles have you published about educational topics within the past two years?
Choose one of the following answers
(0) None ***[SKIP to Q49]***
(1) 1
(2) 2
(3) 3
(4) 4
(5) 5
(6) 6
(7) 7 or more

Q48 Of these articles, how many describe:
Only numbers may be entered in these fields

(1-digit number for A & B)
(2-digit number for C)
Q48A: Your research on teaching methods or student learning
Q48B: Your classroom or curriculum innovations
Q48C: Other

Q49 Which of the following ways have you shared or published materials from your courses in the last two years?
Check all that apply
Q49A: In my department
Q49B: Posted online
Q49C: Talks at meetings or at workshops
Q49D: Published in journals
Q49E: None of the above

Additional comments

Q50 Do you have any additional comments you would like to make about your teaching practices? If so, please use the space below.
(Open-ended)

[Thank you screen]
Thank you so much for your participation! We greatly appreciate your time and help in contributing to the knowledge about geoscience teaching practices.