

### Statistics Teaching Inventory: Face-to-face form

Please answer each question carefully and candidly and respond to all the questions in reference to an introductory statistics course. Refer to one course that you currently teach or have recently taught.

#### Directions:

For questions with a radio button: ☐ Select only one answer.

For questions with a checkbox: ☐ Select all that apply.

For some questions, you will be asked for a percentage: for example, the percentage of time that a certain activity happens in your class. You will see a number line, and a box, like these:



%

Please mark an X along the line corresponding to the percentage you would like to give, OR just write the percentage on the box to the right of the numberline. (You need not do both.)

For example, to enter 25%, you would mark:



OR

25%

To enter one of the endpoints (0 or 100), just place an X in the circle corresponding to the endpoint.

For example, to enter 100% you would mark:



OR

100%

If you are unsure of an exact percent, please enter an approximation.

## Part 1: What type of class do you teach?

1. Do you teach a class that is entirely (100%) online?

- ☐ Yes → **Go to STI Online version**
- ☐ No → **Proceed to #2**

2. Do you teach a class that is entirely (100%) face to face?

- ☐ Yes → **Go to question 2a)**
- ☐ No → **Go to #3, then STI Hybrid version**

2a) If yes, does your class use recitations or lab sessions led by someone else (e.g. a teaching assistant)?

- ☐ Yes → **Lecture/Recitation Version**
- ☐ No → **Regular face-to-face version**

*Proceed to Part 2: Pedagogy*

## Part 2: Pedagogy

**Consider the total amount of time that you meet face-to-face with your students. Approximately what percentage of this time is spent on each of the following? (Note: The percentages below should add up to 100%)**

1. Students meeting together as a whole class (not in small groups) for lecture, discussion, or demonstration:



%

2. Students working in groups:



%

3. Students working individually on an activity:



%

4. Students taking an assessment:



%

5. Consider a student who was fully engaged in your course. To what extent do you think that **student** would agree or disagree with the following statements about this course?

|   | <b>Strongly<br/>Disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Strongly<br/>Agree</b> |
|---|------------------------------|-----------------------|-----------------------|---------------------------|
| a) The content was presented mostly through the instructor's lectures.  | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |
| b) The instructor asked challenging questions that made me think.   | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |
| c) The course frequently required students to work together.  | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |
| d) The content was presented mostly through activities.   | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |
| e) This course encouraged students to discover ideas on their own.  | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |
| f) This course often used technology (e.g. web applets, statistical software) to help students understand concepts. | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     |

### Part 3: Curricular Emphasis

The following items will ask you about your curricular emphasis. Consider the entirety of your course as you complete this section.

To what extent are the following addressed in your course?

|   | Seldom or not at all  | A few times           | Repeatedly            |
|---|-----------------------|-----------------------|-----------------------|
| 1. The need to base decisions on evidence (data)                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Difficulties involved in getting good quality data                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. The study of variability is at the core of statistics                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. The need to select an appropriate model for making a statistical inference       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. The process of selecting an appropriate model for making a statistical inference | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

To what extent do you emphasize each of the following approaches to statistical inference in your course?

|  | Not at all            | To some extent        | A major emphasis      |
|--|-----------------------|-----------------------|-----------------------|
| 6. Parametric methods (e.g. t-test, z-test)                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. Bayesian methods  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. Simulation/resampling (e.g. randomization, bootstrap methods) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. Other (please describe):<br>_____                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

10. Of all the data sets students see in this course, what portion of them are real data?


- ☐ None
- ☐ A few
- ☐ About half
- ☐ Most of them
- ☐ All of them

## Part 4: Technology

**For this section, consider your entire course – time spent both in class and outside of class.**

1. Other than hand calculators, do students use technology tools during the course?

☐ Yes --> skip to question #3

☐ No  


2. What are your reasons for not using technology other than hand calculators in your course?  
(Select all that apply.)

- ☐ there is no computer technology available
- ☐ there are departmental constraints on technology use
- ☐ students are already provided with statistical output
- ☐ students use hand calculators to compute statistics using formulas
- ☐ Other: \_\_\_\_\_

*Skip to Part 5: Assessment*

3. In what settings do students work with each of these technology tools? (Select all that apply.)

|  | Delivery of course content | Activities and assignments (e.g. homework, projects) | Assessments (e.g. quizzes, exams) |
|--|----------------------------|--|-----------------------------------|
| a) Statistical analysis package (e.g. Minitab, SPSS, JMP, StatCrunch...) | <input type="checkbox"/>   | <input type="checkbox"/>                             | <input type="checkbox"/>          |
| b) Graphing calculator with built-in statistical functions               | <input type="checkbox"/>   | <input type="checkbox"/>                             | <input type="checkbox"/>          |
| c) Spreadsheet tools (e.g. Excel)  | <input type="checkbox"/>   | <input type="checkbox"/>                             | <input type="checkbox"/>          |
| d) Web Applets   | <input type="checkbox"/>   | <input type="checkbox"/>                             | <input type="checkbox"/>          |
| e) Conceptual software (e.g. TinkerPlots, Fathom)                        |                            |  |                                   |
| e) Other: _____  | <input type="checkbox"/>   | <input type="checkbox"/>                             | <input type="checkbox"/>          |

Questions 4 and 5 ask you to consider how students use technology. In answering these questions, consider the total amount of time that students use technology. (These responses do not need to add up to 100%.)

4. What percentage of time that students spend using technology is designed to be spent **analyzing data**?




5. What percentage of time that students spend using technology is designed to be spent **understanding statistical concepts**?



## Part 5: Assessment

**Consider your total set of assessments that count for a grade in your class. Approximately what percentage of the students' grade is dedicated to evaluating each of the following? (These percentages do not need to add up to 100%.)**

1. Students' ability to use formulas to produce numerical summaries of a data set:



%

2. Students' ability to perform step-by-step calculations to compute answers to problems:



%

3. Students' ability to critically examine statistics in the media:



%

4. Students' ability to interpret results of a statistical analysis:



%

5. Students' ability to reason correctly about important statistical concepts:



%

6. Students' ability to successfully complete a statistical investigation (e.g., a course project):



%

7. Other (please describe): \_\_\_\_\_



%



## Part 6: Beliefs

Please rate the extent to which you agree or disagree with each of the following statements as they reflect your beliefs (but not necessarily your actual teaching) regarding the teaching, learning, and assessment of introductory statistics:

|  | Strongly Disagree     | Disagree              | Agree                 | Strongly Agree        | UNDECIDED             |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Rules of probability should be included in an introductory statistics course.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. The topic of theoretical probability distributions (e.g., the binomial distribution) should be included in an introductory statistics course. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Students should learn how to read statistical tables of theoretical distributions (e.g., t-table, F-table).                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Technology tools should be used to illustrate most abstract statistical concepts.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. Students should learn the importance of using appropriate methods for collecting data.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. Students should learn connections between the quality/nature of the data and inferences that are made.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. Students should learn fewer topics in greater depth instead of learning more topics in less depth.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. Lectures should be the primary way for students to learn statistical content.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. Quizzes and exams should be used as the primary way to evaluate student learning.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. Alternative assessments (e.g., projects, presentations,) should be used to provide important information about student learning.             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

|   | <b>Strongly<br/>Disagree</b> | <b>Disagree</b>       | <b>Agree</b>          | <b>Strongly<br/>Agree</b> | <b>UNDECIDED</b>      |
|---|------------------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| 11. All assessments should be regularly reviewed to see that they are aligned with important student learning goals.                          | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 12. Assessments should be used to provide formative feedback to students to improve their learning.   | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 13. Students should be assessed on their ability to complete an open-ended statistical problem.   | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 14. Students should be assessed on their statistical literacy (e.g., ability to read a graph, understand common statistical words, etc.).     | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 15. Students should analyze data primarily using technology.  | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 16. Statistics courses should be updated continually in light of developments such as new technology and common core curriculum requirements. | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |
| 17. Statistics instructors should be actively engaged in the statistics education community.  | <input type="radio"/>        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>     | <input type="radio"/> |

## Part 7: Course Characteristics

1. How many students are enrolled in one typical section of this course?

\_\_\_\_ students

2. Please indicate the mathematical prerequisite for this course:

☐ Calculus

☐ College algebra

☐ High school algebra

☐ None

☐ Other: \_\_\_\_\_

3. Do you have teaching assistants who help with the course?

☐ Yes



3a) What is the role of the teaching assistant in the course? (Select all that apply):

☐ No

- ☐ Facilitate discussions or activities
- ☐ Grade assignments
- ☐ Answer students' questions
- ☐ Other (please specify): \_\_\_\_\_

4. Identify any constraints that keep you from making changes that you would like to implement to improve your course. (Select all that apply):

Personal time constraints

- ☐ Departmental or institutional constraints
- ☐ The teaching assistants you work with
- ☐ Technology constraints (e.g., lack of computer lab, cost of software)
- ☐ Characteristics of students (ability, interest, etc.)
- ☐ Limitations in terms of what can be done within the classroom management system
- ☐ Your own comfort level with the classroom management system
- ☐ Other: \_\_\_\_\_

## Part 8: Additional Information

1. How would you classify the institution at which you teach statistics?

☐ Four-year college

☐ High school

☐ Two-year college

☐ University (grant advanced degrees)

☐ Other: \_\_\_\_\_

2. How would you classify the department in which you teach statistics?

- ☐ Business
- ☐ Educational Psychology/Educational Statistics
- ☐ Mathematics
- ☐ Mathematics Education
- ☐ Psychology
- ☐ Sociology
- ☐ Statistics
- ☐ Other: \_\_\_\_\_

3. Please classify your position:

- ☐ Adjunct Faculty/Instructional Staff (Part Time)
- ☐ Adjunct Faculty/Instructional Staff/Non-Tenure Track Faculty (Full Time)
- ☐ Faculty (Tenure Track)
- ☐ Faculty (Tenured)
- ☐ Graduate Student
- ☐ High School Teacher
- ☐ Other: \_\_\_\_\_

4. How many years have you been teaching an introductory statistics course?

\_\_\_\_\_ years

5. In your graduate coursework, how many courses did you take in theoretical statistics (e.g., mathematical statistics, probability)?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

6. In your graduate coursework, how many courses did you take in applied statistics (i.e., involved the analysis of data)?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

7. Please rate the amount of experience you have had in analyzing data outside of your coursework in statistics (e.g., in your own research, consulting, etc.).

- ☐ No experience
- ☐ Very little experience
- ☐ Some experience
- ☐ A lot of experience

8. Please rate your level of interaction with [www.causeweb.org](http://www.causeweb.org) (the website for the Consortium of Advancement of Undergraduate Statistics Education):

- ☐ I've never heard of it
- ☐ I am aware of it, but never used it
- ☐ I've used it every once in awhile
- ☐ I've used it frequently

9. Please rate the level of your interaction with each of the following statistics education journals:

|  | I've never heard of it | I'm aware of this journal, but never read it | I've read the journal a few times | I've read the journal frequently |
|--|------------------------|--|-----------------------------------|----------------------------------|
| <i>Statistics Education Research Journal</i> (SERJ)          | <input type="radio"/>  | <input type="radio"/>                        | <input type="radio"/>             | <input type="radio"/>            |
| <i>Journal of Statistics Education</i> (JSE)                 | <input type="radio"/>  | <input type="radio"/>                        | <input type="radio"/>             | <input type="radio"/>            |
| <i>Teaching Statistics</i>                                   | <input type="radio"/>  | <input type="radio"/>                        | <input type="radio"/>             | <input type="radio"/>            |
| <i>Technology Innovations in Statistics Education</i> (TISE) | <input type="radio"/>  | <input type="radio"/>                        | <input type="radio"/>             | <input type="radio"/>            |

10. Each of the following conferences has sections on statistics education. To what extent has your participation in each of the following impacted the way you teach statistics?

| Conference   | Never participated    | No impact             | Small impact          | Large impact          |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| <i>U.S. Conference on Teaching Statistics(USCOTS)</i>                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <i>International Conference on Teaching Statistics(ICOTS)</i>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <i>Joint Statistical Meetings (JSM) Sections on Statistics Education</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <i>Joint Mathematics Meetings(JMM) Sections on Statistics Education</i>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other:<br>_____<br>_____   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**For items 11-14, please indicate the number of professional development opportunities in which you have participated during the last 2 years to improve your teaching of statistics.**

11. Live or pre-recorded webinars (online seminars):

- ☐ 0  
☐ 1-5  
☐ 6-10  
☐ More than 10

|                                | 0                     | 1                     | 2                     | 3                     | 4                     | 5 or more             |
|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12. Workshops                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. Short courses/mini-courses | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. Other:<br>_____<br>_____   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



15. Please provide any additional comments in the space below.

While all responses will remain confidential, we would appreciate some information about you. Please fill out the following:

Full Name:

Institution:

E-mail: