

Appendix 1: Lecture observation protocol
Politics a 'chilly' environment for undergraduate women in Norway

In the following observation protocol, we characterize classroom participation by quantifying types of interactions that occur over a class period, and noting the gender of students who participate. Our hope is to provide valuable insight into the nature of these interactions for a variety of purposes related to gender equity in the classroom.

A few terms that we use to characterize interactions may not be familiar. A **Think Pair Share** is when an instructor poses a question, allows for students to discuss the question with their group or with a partner, and then calls on a group to share their answer. We use the term **iclicker** to describe any personal response system that students can use after the instructor poses a multiple-choice question on the overhead projector. Students use iclickers to 'vote' for which answer they think is correct (A, B, C, or D).

We note the following types of lecture interactions and break them up by color according to their classification.

Red classifications: single responses

Blue classifications: group responses

Green classifications: instructor circulating

1. Individual spontaneous question

- When a student asks an instructor an unprompted question or is only very generally prompted (e.g. 'does anyone have a question?').

2. Individual spontaneous call

- When a student makes an unprompted comment

3. Individual volunteer response

- A voluntary response. Instructor poses a question, an individual raises their hand to answer without conferring with group.

4. Cold call

- A non-voluntary response: if the instructor calls *randomly* on an individual (a 'cold call'). In this scenario, students have not conferred with a group.

5. Spontaneous call post-Think Pair Share

- A non-voluntary response. Instructor calls *randomly* on a group after they discuss a posed question.

6. Volunteer response post-Think Pair Share

- A voluntary response. Instructor poses a question, students confer, and a student answers the question.

7. Volunteer response post-Think Pair Share and iclicker

- A voluntary response. Instructor poses a question, students confer, students answer question using poll everywhere/iclicker, and a

student answers the question (either after the instructor shows the answer or before). The difference between this response and the 'post-TPS' response (#6) is in this scenario, students have committed to an answer before responding.

8. Circulating instructor question or comment

- During group work, when the instructor is circulating around the classroom, and a student calls them over with a question or comment (note: we do not distinguish based on content of the interaction because it is often difficult to identify what is said from the observer's perspective)

For each of these types of interactions that take place during a class period, we do our best to identify the gender identity of the student participant (1 = male or 0 = female).