**Participant 6**

**Consent for Participation**

Participation in this study is voluntary. You are free to stop participating in the research at any time and may withdraw your consent at any time. You are not obligated to submit the survey, and you may skip any questions in the survey you want. There are no foreseen risks or benefits to you as a participant. We will not identify you by name in any reports using information obtained in the survey, and your confidentiality as a participant in this study will remain secure.

**Contact Information**

If you have any questions about the survey or this research project, you may contact me ([elijah.meyer@montana.edu](mailto:elijah.meyer@montana.edu)), Jennifer Green ([jg@msu.edu](mailto:jg@msu.edu)), or Stacey Hancock ([stacey.hancock@montana.edu](mailto:stacey.hancock@montana.edu)). If you have additional questions about the rights of human subjects, you may contact the Chair of the Institutional Review Board, Mark Quinn ([mquinn@montana.edu](mailto:mquinn@montana.edu)).

**Study Description and Purpose**

The purpose of this research study is to develop an instrument to measure graduate student instructors’ (GSIs’) motivation to use active learning teaching techniques. The instrument’s target population is GSIs who teach an introductory statistics course or a recitation section.

Within the context of this study, we are currently defining active learning and motivation in the following way:

Active learning refers to “classroom practices that engage students in activities, such as reading, writing, discussion, or problem solving, that promote higher-order thinking” (CBMS, 2016, 1).

Motivation is a multi-dimensional construct characterizing why individuals choose to use (or not use) active learning teaching techniques. Motivation is the “why” of behavior (Deci & Ryan, 1985).

There are many different types of active learning techniques GSIs may use when teaching introductory statistics. The purpose of this survey is to gather experts’ opinions about which active learning techniques are most valuable to include on an instrument measuring GSIs’ motivation. Your opinions will help us identify which techniques to address when creating research instrument items.

**Survey Questions**

1. At your institution, what are the teaching roles and responsibilities of graduate student instructors (GSIs) who teach statistics? Please also state whether GSIs at your institution are sole instructors of any statistics courses and, if so, which ones. If you do not have GSIs at your institution, please type, “We do not have GSIs at our institution.”

Within our department, there are only about 4-5 courses that GSIs have an opportunity to teach; the most common being EPsy 3264—Basic and Applied Statistics, and EPsy 5261—Introductory Statistical Methods. We generally teach 3-4 sections of these courses each semester. While the GSIs are the “sole instructors” of these courses in that they are responsible for the delivery of the course content, overseeing the sections, etc.; they are not asked to develop the course content. We do that as a team of instructors with oversight by a faculty member. This is to ensure that all the sections are taught in a similar manner and the students have similar experiences.

We have several courses that graduate students TA for where they might teach 1-2 days of content in the course as a teaching experience.

1. Based on the GAISE Guidelines and other literature on active learning in statistics classrooms, we have selected four activities for you to review. These are:

**Group work** – Method of instruction that gets students to work together in groups of two or more. Group work involves strategies that allow students to communicate with peers, share their ideas, and think critically about the topic(s). This may include think-pair-share, group presentations, or other small group work activities that have the characteristics described above.

**Technology** – Technological tools that assist in the communication, development, and exchange of knowledge. Using technology is about designing a lesson that allows students to acquire information through discovering material for themselves. This may include having students work with Tableau, CODAP, R, etc. to discover information. This does not include passive technology, such as displaying a power point.

**Real data** – Data that is not fake or simulated. Using real data may include collecting data from students during class or preparing real world data to integrate into a lesson that focuses on the data’s context and purpose. Collecting data may involve the administration of an in-class survey or an out-of-class survey to obtain information from students.

**Large-group discussions** – Conversation about the topic(s) at the class level. Large-group discussions are designed to help students think about and express their ideas with others in the class. During discussion, instructors prepare open-ended questions and move the discussion forward by having students elaborate on their thinking through providing explanations, evidence, or clarifications, and inviting others to react and respond by providing similar and/or alternative viewpoints.

* 1. These definitions will be provided to GSIs when filling out the research instrument. Please review these definitions and answer the following questions:
     + Do you agree with each definition? If not, please explain.

I think overall I agree with these. I would re-write the. Technology definition a bit. For example, the second sentence seems to be the most important part of this. Lead with that.

* + - Do you find these definitions specific enough to clearly describe these activities to a general graduate student teaching audience? If not, please explain.
  1. If applicable, please use the space below to refine the definitions and address any concerns you noticed.

For group work, I think it is important to actually consider the active participation of students within the work. The spirit of GAISE (at least as it was originally conceived) was that students needed to be active participants in the learning process, and that group work (if employed correctly) might be one way to do that. In this spirit, I might not consider a group-presentation GAISE compliant if all students don’t actively engage in the work leading up to the presentation. Perhaps you need to define this beyond just having a group. (In my experience, many teachers—especially those just beginning—equate the act of forming groups to be groupwork.)

For real data, your examples primarily focus on survey data. Are there other real data examples you could give?

Are all large-group discussions at the class-level? If so, would it be better to just call them class-level discussions? Is it important to say something about the instructor building on ideas that students bring up in the discussion? What about including something about having other students answer questions that are brought up? The key word here is “discussion”…a Q&A is not necessarily a discussion.

1. Please list any other active learning techniques that you would like us to consider having on the research instrument we are developing. Please include a working definition and description of each active learning teaching technique you list.

For us, the most important thing is that students are leading and owning the learning. We try to have new TAs and instructors focus on that…If a student asks a question, try to ask questions that get a student or other students to answer their question rather than just answering it. Set a classroom culture that before they can ask the instructor they need to ask 2-3 classmates.

1. Please rank the following active learning techniques (including your own listings) in order of which techniques you would like to be included on an instrument measuring GSIs’ motivation to engage in active learning techniques. Assign a value of 1 to the active learning technique in which you have the largest interest, then continue numbering in order of preference until you have reached the total number of active learning techniques.

I’m not sure I understand this…did you mean to have me rank the 4 things from above? If so, I don’t see how real-data is an active learning technique. Maybe you meant that the active learning technique is to engage students in the data collection process? If that is the intent, I would rank them as:

(Most important) Group work, discussion, technology, real-data (Least important)

Moreover, I think there is an awfully big gap between discussion and technology. In my mind technology and real-data are only useful as tools that can facilitate active learning, not active learning in their own right.

1. Would you be willing to serve as an expert reviewer of drafted instrument items? As an expert reviewer, you would be asked to assess the validity of the items in relation to the chosen active learning techniques, as well as identify potential concerns or issues with each item’s wording. We expect to complete a draft of these items during the Spring 2020 semester. If willing, you will be sent an email with more information about the items and the review process at a later date. Thank you for your support in advancing this research.

Sure. Although, if I could suggest something: I would be more apt to give better, more nuanced responses in an interview than in writing out responses.

1. (Optional) If willing, please list the names and contact information of others you recommend contacting to complete this survey and/or review a draft of research instrument items.

Nicol Justice ([justicng@plu.edu](mailto:justicng@plu.edu)) would be excellent given her work with GTAs. I would also suggest someone who is a cognitive scientist (not necessarily a statistician) to give you more perspective on the whole active learning as learning method. Two people who come to mind are Keisha Varma ([keisha@umn.edu](mailto:keisha@umn.edu)) and Marsh Lovett (don’t have a current email address, although she was at Carnegie Mellon).