**Participant 16**

**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.”

Answer: “sole” in the sense of 100% autonomy is not available in our department.

GSIs do teach classes on their own to varying degrees. In all our undergraduate introductory level service classes we use the following structure: For each course there are typically several sections. One section is taught by a faculty member, the remaining sections are taught by GSIs. The faculty is in charge of what we refer to coordinating the course and all sections being taught. Because of that I would say there are limits to the autonomy GSIs have. We encourage our GSIs to be creative and welcome ideas but usually these are first discussed in the weekly group meetings before implementing them.

Within the service classes some coordinating faculty involve GSIs more some less, e.g., participate in creating homework assignments or exam questions.

There are a few courses for computer science and engineering majors. Advanced GSIs (usually in their last year prior graduation and with a good teaching record) are often used to teach these classes. In theory, there should always be a supervising faculty, but this may not always work out, so these instructors have much more autonomy in the classroom than the aforementioned ones.

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.

Answer: generally, yes

* + - Do you find these definitions specific enough to clearly describe these activities to a general graduate student teaching audience? If not, please explain.

Answer: No, for example many of our GSIs have not heard about specific technology products such as Tableau or CODAP. The definition of real data places a lot of emphasis on data collected by students. This is good but I would give equal weight to data available from already existing research studies as there are limits to the type of data students can collect and the precision students can collect the data with.

* 1. If applicable, please use the space below to refine the definitions and address any concerns you noticed.

I would replace the word “fake” with fictitious or made up. Although it is technically correct, it is also a very loaded word and these days it is unfortunately even more so than it already had been in the past.   
In Technology, perhaps add the term statistical software to allow students to analyze data on their own.

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.   
     
   Answer: This is not an active learning strategy, but I wonder if it is still relevant to assess students’ motivation to use active learning strategies in the classroom. I would also survey what knowledge or understanding GSIs have about general learning theory/the science of learning. For example, do GSIs know how the brain processes information, how people generally learn, different types of learners, etc. because such knowledge motivates the use of various active learning strategies. This might require the expertise of a researcher with a stronger background in education science because I do not have the adequate training and background.

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.

Answer: 1-technology, 2-real data, 3-group work, 4-large group discussions. The rationale of my ordering relates to what activities might be easiest for GSI’s to understand/envision/implement and thus provide you with more accurate measurements.

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.  
   Answer: I would love to be of any help, but I never formally assessed the content validity of a survey instrument. I am open to discuss what such a process would entail if this is helpful.

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.