

Sources, Types, and Analysis of Data in SoTL

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Method to Collect Data	Description	Data Potentially Yielded	Quantitative Analysis Possible?	Qualitative Analysis Possible?	Misc. Thoughts
Surveys	Surveys collect data to reflect participant perceptions or knowledge about a particular phenomenon at one point in time.	Data generated via a survey are answers to specific questions drafted and administered. Survey questions can be closed ended (e.g., multiple choice answers or Likert-type scale data) or can be open ended in nature. Different question types yield different data.	Yes	Yes	<ul style="list-style-type: none"> Look for previously validated surveys to use. For non-validated surveys, consider soliciting 2-3 expert reviewers to provide feedback re: survey content and format. If survey is collecting indirect data (e.g., student perceptions), consider a plan to triangulate these data with a different source.
Interviews/ Focus Groups	Considered a subset of survey research, these methods gather information about participant knowledge and feelings individually or with a group of people in a manner that allows (in some designs) for follow-up questions and non-standard data collection. Interviews are generally conducted with a single person, while focus groups are group interviews.	Interactions occurring within interviews and focus groups are typically audio or video recorded. Orthographic transcriptions of these interactions can be created and analyzed to identify relevant trends across participants. Observations of specific behaviors might be quantified, as well, depending on the intent of the study's design.	Yes, but less frequent than qualitative analysis	Yes	Collection of interview and focus group data often causes extra human subjects review board scrutiny due to threats to confidentiality and/or anonymity. Consider how you will protect and explain protections for your study participants.
Think Alouds	Think alouds are specific types of interviews where participants are asked to verbalize thoughts for internal cognitive processes in a sequential manner (e.g., how to complete a professionally-oriented task)	Like with interviews/focus groups, think alouds are typically audio or video recorded so that orthographic transcriptions of these interactions can be created and analyzed to identify relevant trends across participants.	Yes, but less frequent than qualitative analysis	Yes	Similar to interviews and focus groups, collection of think aloud data often causes extra human subjects review board scrutiny due to threats to confidentiality and/or anonymity. Consider how you will protect and explain protections for your study participants.
Pre/Post Tests	Pre/post tests allow for collection of data to reflect changes resulting from some sort of intervention or experience over a pre-determined span of time.	Data collected is intended to reflect any changes (either positive or negative) resulting from an intervention or experience. Pre/post-test data could be collected via a survey, reflection, or interview/focus group. The key here is that there are two (or more) sets of data to reflect differences across time.	Yes	Yes	<ul style="list-style-type: none"> Look for previously validated instruments to use for pre/post test designs. For non-validated surveys, consider soliciting 2-3 expert reviewers to provide feedback re: survey content and format. If pre/post test collects indirect data (e.g., student perceptions), consider a plan to triangulate these data with a different source.

Method to Collect Data	Description	Data Potentially Yielded	Quantitative Analysis Possible?	Qualitative Analysis Possible?	Misc. Thoughts
Onlooker/ Participant Observations	Specific, systematic observations conducted to collect behavioral data about participants within a teaching or learning context. In onlooker observations, the observer is not a part of the intervention/ experience. In participant observation, observers are active participants in the intervention/ experience.	Data collected from trained observers will quantify or describe the behaviors of participants at one or at multiple timeframes. These data might be tallies of observed behaviors, descriptive notes describing behaviors, or time-managed tracking of behaviors in an environment.	Yes	Yes	<ul style="list-style-type: none"> All observers should be carefully trained to collect data that reflects the intent of the study. Observations can be made in real time or via videotaped sample. Consider gathering inter-rater reliability data if more than one reviewer is operating within the context or project.
Course Assignments/ Projects/ Assessments	Course assignments, projects, or assessments are any tasks students complete as a part of your class which can be used to understand participant mastery of content or performance at a given point in an academic term or program. This might include: writings, journals, projects, online assignments, quizzes, tests, etc.	Data reflects a wide array of possibilities, but commonly would reflect participant knowledge and/or understanding of course content at a specific point in time during the course's duration.	Yes	Yes	<ul style="list-style-type: none"> Any artifact that is part of the course you regularly teach or a course you have taught in the past can be used in a SoTL study. Consider the use of archival data to compare groups with and without a particular intervention or experience. If you can no longer obtain consent from past students, you can ask the IRB for a waiver of informed consent, so long as you have a plan to protect participant identity.
Student Reflections (written)	Written student reflections are comprised of student thoughts and ideas presented that are expressed to demonstrate deep thinking and consideration (e.g., reflective journals).	Generally, data are journal entries or responses to specific reflection questions. Written data is analyzed to identify changes or trends across study participants.	Yes, but less frequent than qualitative analysis	Yes	<ul style="list-style-type: none"> Reflection data is almost always derived from some sort of prompt (e.g., journal prompt, reflective question). Craft these prompts carefully to ensure that you're collecting the data most valuable for your study. Analysis of written reflection data is almost always a qualitative endeavor. There are a variety of valid approaches to this sort of work, so consulting with a qualitative researcher if this is a new form of method for you is a good idea.
Student Reflections (visual)	Visual student reflections are comprised of student thoughts and ideas presented that are expressed to demonstrate deep thinking and consideration (e.g., concept maps, drawings, figures, photos).	Visual reflection data provide representations of knowledge, skills, or learning at a given point in time to identify changes or trends across study participants.	Yes	Yes	<ul style="list-style-type: none"> Visual reflection data is almost always derived from some sort of classroom project or activity. Craft these experiences carefully to ensure that you're collecting the data most valuable for your study. Consider various visual data analysis methods as a lens for understanding your data.