



Step 5: Data Collection and Survey

How to Write Effective Questions

Before using any of the data collection techniques you will need to write the specific questions you will be asking during the research. The following section will overview how to write effective questions.

- [Open or Closed Questions](#)
- [Common Errors in Question Construction](#)

Data Collection Tools

Once your questions are established you are ready to begin collecting data. There are many ways to collect data. Depending on what type of information you want to collect, different collection techniques can be employed. The goal of this section is to give you the resources to be able to use any of the following data collection tools.

- Survey
- Interview
- Focus Groups
- Photovoice
- Participant Observation

Survey

The survey is one of the most popular and widely used data collection techniques. It is effective at collecting quantitative data, although some basic qualitative data can be collected in this manner as well.

Surveys are appropriate for research questions about opinions and behaviours. A major advantage is that a survey allows a researcher to ask about many things at one time.

Questions to Ask in a Survey

Behavior	What people do	Frequency of activity, Have you ever? Do you? Etc.
Attitudes/Beliefs/Opinions	The perceptions people hold, their thoughts, feelings, ideas, judgments, or ways of thinking	What do you think about... Do you agree/disagree with...Did you enjoy....
Characteristics/Demographics	Exclusive categories people fit into	Male/Female/Other Age Marital Status
Expectations	Predictions for the future	How many years of school do you expect your child to complete? What grade do you think you will get in this class? How successful do you think this program will be with ELS students?
Knowledge	What people know or how well they understand something	Test style questions

Writing Survey Questions

Question Types

Open Ended: Questions to which there is no set answer

Uses	Advantages	Disadvantage	Examples
Obtain a large	Identifies issues	Requires more time	1. Describe how you

range of responses	more important to participants	and personnel to complete	integrate technology X into your classroom?
Explore participants' views in depth	Generates new ideas about topic Clarifies participants' views Provides detail and depth	Time consuming data entry Can result in irrelevant data More complicated data summary and analysis	2. What did you enjoy most about this course?

Multiple Choice: Questions that allow the participant to pick the best answer for them from a pre-determined set of answers

Uses	Advantages	Disadvantage	Examples
Ask many questions in a short time period	Fast and easy to complete	Limits response options	What aspect of the course do you feel is most effective? 1. Lectures 2. In class activities 3. Assigned readings 4. In class videos
Assess learning or attitudes when issues are clear	Enables automated data entry	May omit a preferred answer	
Measure knowledge or ability	Facilitates data analysis & summary of data	Requires moderate knowledge of the topic to write appropriate questions and responses Lacks detail and depth	

Partial Open Ended: Questions that allow the participant to pick the best answer for them from a pre-determined set of answers, with an option of 'other' where the participant can provide their own answer

Uses	Advantages	Disadvantage	Examples
Ask many questions in a short time period	Enables respondents to create their own response if choices do no represent their preferred response Generates new ideas	Requires moderate knowledge of topic to write appropriate questions and responses	What aspect of the course do you feel is most effective? 1. Lectures 2. In class activities 3. Assigned
Assess learning or attitudes when issues are clear		Lacks depth and	

and identifiable	about topic	detail	readings
Discover relevant issues	Fast and easy to complete	Complicates data analysis and summary	4. In class videos 5. Other (specify)

Ranking: Questions that ask participants to rank the importance/significance of their responses.

Uses	Advantages	Disadvantage	Examples
Determine the relative importance to respondents of various options	Allows respondents to indicate importance of choices	More difficult to answer Limits number of response options May omit a respondent's preferred answer	Rank the following activities in this course by how engaging you have found them to be (1=most engaging) __ Reading the text __ Listening to the Lecture __ Watching videos in class __ Writing the term paper
Choose among various options	Enables automated data entry		

Types of Response Scales

Likert Scale: Measures attitudes and opinions. Provides statements to which respondents indicate degree of agreement or disagreement. Usually contains strongly worded statements that can be phrased positively or negatively

Advantages	Disadvantage	Examples
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<p>Contains items that are easily understood and quantified</p> <p>Accommodates neutral or undecided responses</p> <p>Provides a meaningful way to group a series of items</p> <p>Enables computation of overall scores</p>	<p>Requires a great deal of decision making</p> <p>Fails to measure true attitudes if respondents are concerned with looking good or meeting expectations of the researcher</p>	<p>Use of Technology in the classroom will positively effect student test scores</p> <p><input type="checkbox"/> Strongly Agree</p> <p><input type="checkbox"/> Agree</p> <p><input type="checkbox"/> Neutral</p> <p><input type="checkbox"/> Disagree</p> <p><input type="checkbox"/> Strongly Disagree</p>
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Frequency Distribution: Indicates the frequency of a behaviour

Advantages	Disadvantage	Examples
<p>Enables measurement of behaviors rather than attitudes</p>	<p>Does not measure the reasons for behavior</p> <p>Frequency ratings may have different meanings for different respondents</p>	<p>How often do you use your computer to prepare lessons for students?</p> <p><input type="checkbox"/> Never</p> <p><input type="checkbox"/> Rarely</p> <p><input type="checkbox"/> Sometimes</p> <p><input type="checkbox"/> Often</p> <p><input type="checkbox"/> Always</p>

Quality Scale: Provides rating of quality

Advantages	Disadvantage	Examples
<p>Enables direct evaluation</p>	<p>Requires a great deal of decision making</p> <p>Fails to measure true attitudes if respondents are concerned about meeting expectations of the researcher</p>	<p>Overall, how would you rate the quality of this program?</p> <p><input type="checkbox"/> Excellent</p> <p><input type="checkbox"/> Very Good</p> <p><input type="checkbox"/> Good</p> <p><input type="checkbox"/> Fair</p> <p><input type="checkbox"/> Poor</p>

Things to Consider When Writing a Survey!

Length

- How long a survey should be will be determined by the way the survey is conducted (face-to-face or by paper, internet, or phone). The length of the survey will also vary depending on the sample population. The more engaged or educated a population is the longer a survey can be.
- There is a fine balance to strike when determining the length of a survey. Avoid asking too many questions because responses dramatically drop for longer surveys, however you want to ensure that you are asking enough questions so that the survey is actually able to answer your research question.
- For surveys that are conducted face-to-face you can typically ask more questions because the participant is personally engaged with someone else in the process. For paper or web surveys 3 to 4 pages (approximately 12-20 questions) is appropriate for the general population.

Order

Responses to the survey will be affected by the order you ask the questions. It is the aim to order the questions in a way that minimizes the participant's confusion and discomfort. A survey should have a clear opening, middle and end.

Opening:

A typical structure would include easing the participant into the survey with basic demographic information, or easy subject information. Avoid asking sensitive questions, overly detailed questions, or open response questions at the beginning of the survey, they may either bore or scare participants from participating.

Examples of appropriate opening questions

- Age
- Gender
- Have you ever used X program/service?

These questions should ease the participant into the survey and provide the researcher with a basic overview of who is answering the survey.

Middle:

The middle of the survey should explore the topic of the survey by asking questions in an order that groups similar questions together. Providing themes for questions, with either topic sentences or headings helps organize the questions, and helps the participant follow the survey. The middle of the survey is the most appropriate place to ask more sensitive

questions if that is the nature of the study.

Ending:

The ending of the survey is a good place to put open ended questions, or give the participant the opportunity to add any additional comments or recommendations. Avoid asking sensitive questions right at the end of the survey. Always end the survey with a thank-you!

Format

A clear, neat and easy to follow survey is very important in retaining participants in a survey. Ensuring that the survey looks professional will increase the likelihood of having participant completing the survey.

Survey Format Tips:

- Clearly number questions
- Use subheadings for sections
- Space questions clearly apart
- Differentiate between the question text and answer text by using different font/style/spacing etc.

Example Survey!

Check [here](#) for a sample survey and explanations of the above skills.

For CBE Staff, you can access our survey database within weboffice.

To find survey data base:

1. Link to [Weboffice](#)
2. Login using personal/school passwords
3. Click on Databases
4. Scroll down to 9.a for CBE Surveys

Survey Programs

Surveys can be conducted in many forms, in person, via paper submissions, and by telephone. Online surveys are becoming more common because they are cost effective, and they save the research team a lot of time because the data is automatically tabulated by the online survey program.

If you wish, the [Curriculum and Learning Technologies Research Team](#) can set up your survey for you using [Survey Monkey](#) which is currently licensed.

[Accountability Services](#) can also offer survey assistance to Calgary Board of Education staff, and offer the use of [Teleform](#)

Face to Face Interviews

Interviews are an information gathering exercise (Sheppard, 2004).

The goal of an interview is to create a story, or perception of the world. They are effective for collecting data in qualitative, quantitative, and mixed method research projects. This data collection technique can be useful when you want to collect anecdotal data, stories, or in-depth participant opinion.

The qualitative interview can allow the researcher to understand the motivations and reasons for the way people act or how they perceive the world. There are few ways to gain better insight into the reasons people feel, act or think particular things.

The advantage of face-to-face interviews is the detail that topics can be explored in. A disadvantage of this approach is that it is very time consuming, and often draws on small sample sizes.

Types of Interviews

Standard/Structured Interview

This type of interview is typically used when trying to gain survey type data, such as the number of times something occurs. There is room in this format for qualitative responses to some part of the questions; however the primary intent is to gain very specific information. This type of data collection is used when the researcher has a fairly solid idea about the things they are exploring, and when questions can be worded in a manner that allows all participants to clearly understand what is being asked (e.g. the terms/concepts are easily defined, or a definition is provided).

Example Questions

- What extra curricular activities do you participate in?
- How often do you participate in this activity?

Un-standardized Interview

The un-standardized interview is conducted with only a set of general themes that are the concern of the researcher. The themes are explored throughout the interview, rather than through specific questions. This type of interview is used when the research takes the position that they know very little about the topic, and makes as few assumptions as possible before starting. In this type of interview the goal is to discover the important themes and issues as the interview evolves. This type of interview is used to generate questions and areas for future study.

Example Questions

- Can you discuss your views/experiences on professional development?
- Can you discuss your views/experiences on technology in the classroom?

Semi-structured Interviews

This type of interview has a pre-determined question set that is used, but it also allows for, and encourages, further elaboration on questions. In a semi-structured interview the researcher is free to use probes in order gain further understandings or insights on a topic. These probes or additional questions are not scripted before the interview, but rather emerge out of the interview, or the conversation occurring around the predetermined questions or themes.

Example Question

- What has your experience been with integrating new technology X into your classroom?

Examples of Probe

- Can you tell me more about that?
- What do you mean when you say X?

Helpful Web Links

[Creating Good Interview and Survey Questions](#)
[Interviewing How To's](#)

Focus Group

A focus group is “socially oriented research procedure” (Sheppard, 2004, p.153).

A focus group is a type of interview in which an interviewer asks questions to a group, and answers are given in an open discussion format amongst the group members (Neuman, 2004, p. 357). It is an excellent tool to collect anecdotal data, stories and themes. Focus groups allow for open expression among group members. Participants can engage with one another to deepen understanding, and the researcher can engage participants to gain further insight (Neuman, 2004).

A focus group typically involved 6-12 people and last 60- 90 minutes. The researcher is non-directive and facilitates free and open discussion among the group members.

Advantages of Focus Groups	Limitations of Focus Groups
The natural setting allows people to express opinions/ideas freely Open expression of marginalized group members is encouraged. Survey researchers are provided insight	Polarization may occur (attitudes become more extreme as the group discusses issues) Limited topics can be covered in a

into how people talk about survey topics

The interpretation of quantitative survey results can be facilitated

Participants may question each other, explain their answer to each other, and clarify points of view

focus group session

A moderator may limit open, free expression of group members

Focus group participants may produce fewer ideas than individual interviews

Researchers cannot reconcile the differences that arise between individual-only and focus group context responses.

Participants may feel limited in their answers because of the presence of other people.

How to Set up & Run a Focus Group

How to conduct a focus group

1. Determine the questions to be explored Book space to hold the focus group
2. Invite participants (open or criteria invitation)
3. Have a determined way to keep track of information shared (Examples: Note taking, or video/audio recording. You will need release form from participants or [parents/guardian](#) if participants are under 18 years of age.)
4. Facilitation of focus group
5. Analyze data from focus group.
- 6.

Photovoice

“Photovoice is a process by which people can identify, represent, and enhance their community through a specific photographic technique.”

(Wang & Burris, 1997)

Photovoice allows individuals who are lacking in social power to influence public policy through photography, utilizing the representational power of the visual to give voice to common concerns/experiences. It is an effective tool to engage participants in the research process. The goal of empowering participants through photovoice has great potential within education.

When to use Photovoice?

A creative data collection technique such as photovoice can be an excellent tool to use in order to engage participants in the research process and to develop interactive and visually appealing result sets. Through the use of photovoice the results of the research

can be used in promoting programs through web and print material alongside the more traditional written qualitative and statistical data.

How to use Photovoice?

1. Participants are invited to an introduction session where the project is overviewed
2. Participants are given a theme, issue, or series of questions that they respond to through the use of taking photographs. It is helpful to provide participants with a disposable camera if they do not have access to a camera (preferably digital)
3. Participants are given an allotted amount of time to take the photos
4. Participants can then share their photos with the researcher or with the participant group
5. Participants share the meanings of the photos and how these photos speak to the theme/issue/question asked; these explanations are recorded in addition to the photos being collected
6. The researcher, along with the participant(s) identify the main themes and messages to be taken away from the process. The final report includes the issue being examined, selected photos, and their meaning
- 7.

This approach is very useful in creating innovative, qualitative data that lends itself easily to effective marketing of research.

Helpful Web Links

[Definition of Photovoice](#)

[Overview and Examples of Photovoice](#)

[Teachers Toolkit for Evidence Based Practice](#)

Observation/Participant Observation

In its purest form, observation involves no interviewing. The observer remains apart from the group or persons being observed. In participant observation, the observer becomes an active participant in the research situation

(Grinnell, 1993).

Pure observation typically happens with groups that cannot directly interact with the researcher (e.g. animals, very young children, etc). In contrast participant observation uses both observation and interviews.

What Does Observation Look Like in the CBE?

Conducting observation in the CBE will typically involved the researcher observing students, parents, and/or teachers in a particular setting. Participant observation would be a useful tool to use in addition to one of the other data collection techniques, (survey, interview, focus group etc).

How To Conduct Participant Observation?

- Observes events and everyday activities in natural settings, in addition to any unusual occurrences
- Becomes directly involved with the people being studied and personally experiences the process of daily social life in the field setting
- Uses a variety of techniques and social skills in a flexible manner as the situation demands
- Produces data in the form of extensive written notes, as well as diagrams, maps or pictures to provide very detailed descriptions
- Sees events holistically, (as a whole unit, not in pieces) and individually in their social contact
- Understands and develops empathy for members in field setting
- Notices both explicit (recognized, conscious, spoken) and tacit (less recognized, implicit unspoken) aspects of culture
- The goal is to observe ongoing social processes without upsetting, disrupting or imposing an outside point of view

Helpful Web Links

[Definition](#)

[Observation Resource Package](#)

[Overview](#)