

# Preparing to Collect Data

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## INFORMATION BRIEF:

### *Choosing evaluation methods and data sources*

#### ***General***

As you plan the evaluation of your school or district's project, you'll want to consider a variety of evaluation methods and data sources. Some of the most common and practical methods or strategies are interviews, focus groups, questionnaires, observations, analysis of teacher products, analysis of student products, and tests or other learning assessments. In the following sections, you'll find descriptions of each of these strategies including advantages, disadvantages, and examples. As you peruse the other web materials, you'll also find pointers for developing necessary data collection/analysis instruments and for actually carrying out the strategies. Table 1 summarizes some of this information.

As you plan your study and the methods you want to employ, it is very important to ***revisit and think carefully about your overall evaluation questions*** and which methods would actually provide the answers to these questions. For example, let's consider an overall question about improved student achievement in mathematics. Interviews or observations may yield opinions on the improved achievement or evidence of change in classroom teaching and learning activities in mathematics. But to really answer the desired question will require different data gathering strategies such as: analysis of student products, e.g., mathematics projects or journals; project-designed tests or other learning assessments; or results of standardized or state tests.

Likewise, it is important, as you plan your evaluation, to ***consider using multiple data collection strategies*** to answer a given evaluation question. This is generally referred to as triangulation. For example, let's consider that one of your evaluation questions concerns changes in the instructional use of technology by teachers of mathematics. One strategy might be to interview the teachers and the students to ask them about the changes in the use of technology. The interviews from these two different data sources will likely yield very useful information. However, actually observing the classroom activities and the ways in which technology is or is not used, will greatly enhance your understanding of changes in practice that are actually taking place.

Finally, in selecting the evaluation methods you wish to use, be sure to ***consider the school context***, the people power at your disposal, and the timeframe you must use.

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***Personal and telephone interviews***

*General description.* Interviews are an extremely valuable data collection method that many educators find fairly easy to plan and conduct. An interview consists of a one-on-one interaction between the data gatherer and the participant (interviewee). Interviews can be conducted face to face or by telephone and can last from a few minutes to an hour or longer, depending on the depth of information needed. Interviews generally remain confidential, with interviewees not identified in reports. Interviews are useful for gathering information about perceptions, attitudes, and intended actions or application of learning and can be used to gather such data from any group of stakeholders, e.g., teachers, administrators, parents, or students.

*Preparation required.* You'll need to select the sample of people to be interviewed, develop the interview protocol (a list of questions to be asked), inform interviewees of the purpose of the interview, arrange a time and place for the interview to take place, and arrange for tape recording of the interview if desired. [See example interview protocol.](#)

*Advantages.* Interviews are used when you need in-depth information from a relatively small group of people. Interviews generally:

- Require a minimal amount of time to develop protocols or questions that you want to ask.
- Provide the opportunity for the interviewer to probe for further explanation when an initial response is unclear or too brief.
- Provide the opportunity for the interviewee, likewise, to ask for clarification of questions.
- Yield in-depth, detailed information, with useful anecdotes and quotations.
- Allow interviewers to learn from body language and tone of voice of the interviewees.
- Provide useful qualitative data gathered from small numbers of people that serve to elaborate or explain less detailed responses received on questionnaires from a broader sample of people.
- Allow interviewees to feel comfortable responding honestly to questions, especially when confidentiality is guaranteed.
- Offer participants the opportunity to reflect on their work.
- Build buy-in and ownership of the project by interview participants.
- It is sometimes useful to gather questionnaire data prior to conducting individual interviews, as questionnaires may provide general patterns or highlight areas that you want to probe more deeply through interviews.

*Disadvantages or Limitations.* Interviews:

- Take considerable time to set up and conduct.

- Are often difficult to arrange during regular school hours.
- Do not allow the anonymity of participants.
- Yield data from fewer people generally than questionnaires.
- Sometimes yield minimal data if the interviewer fails to establish rapport or asks questions in a way that puts off the person being interviewed.
- Yield data that are limited to self-report, unlike observations or product analysis.
- Unlike focus groups, do not encourage sharing of ideas or building on other participants' thinking.
- Yield qualitative data that some people feel unprepared to analyze.

*Example.* A district project has provided professional development in five schools for middle school mathematics teachers in using technology applications to enhance student learning. Principals have participated in some of the professional development and are expected to support teachers in this area through instructional supervision. A series of in-person or telephone interviews of the principals might be a very useful strategy, given the in-depth, yet confidential nature of the information needed, especially that concerning the collegial context of their schools and progress and obstacles faced as the teachers actually apply their learning in classrooms. Interviews also might be the best choice of method as well because of the challenge of being able to bring together all principals for a focus group discussion.

*See also sections on developing interview protocols and analyzing qualitative data.*

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#### ***Focus groups***

*General Description.* Focus groups are group interviews or discussions ideally involving 8-12 people for a period of about an hour and a half to answer and discuss a set of questions focused on a common experience. Focus groups are useful for gathering information about perceptions, attitudes, and intended actions or application of learning and can be used to gather such data from any group of stakeholders, e.g., teachers, administrators, parents, or students. They are particularly effective in determining underlying issues and concerns that can later be addressed in broader data gathering efforts such as questionnaires.

*Preparation required.* You'll need to select the sample of people to be invited to the focus group, develop the focus group protocol, arrange a time and place for the focus group, invite participants, and arrange for tape recording or a note taker if desired. See [example focus group protocol](#).

*Advantages.* Focus groups are used when you need in-depth information from a relatively small group of people. Focus groups:

- Require a minimal amount of time to develop protocols or questions that you want to ask.
- Provide the opportunity for the focus group facilitator to probe for further explanation when an initial response is unclear or too brief.
- Provide the opportunity for the focus group participants, likewise, to ask for clarification of questions.
- Encourage sharing of multiple perspectives from a variety of participants.
- Yield in-depth, detailed information, with useful anecdotes and quotations.
- Allow the facilitator to learn from body language, tone of voice, and reaction to other participants.
- Provide useful qualitative data gathered from small numbers of people that serve to elaborate or explain less detailed responses received on questionnaires from a broader sample of people.
- Provide an opportunity to gather in-depth data from 10 or so people in the same time that it takes to conduct one or two individual interviews.
- Allow participants to build on each others' ideas and experiences.
- Allow participants to share learning and ideas.
- Provide an opportunity to build communication and trust among participants in a school community.

- Encourage buy-in to the project work and the evaluation through communication, sharing of experiences, and a sense of being heard.
- Identify key issues, needs, or concerns that can then serve as the basis for construction of questionnaires that address the issues that matter to respondents.
- Monitor progress as projects proceed.

*Disadvantages or Limitations.* Focus groups:

- Take considerable time to arrange.
- Sometimes require extra incentives for participants.
- Are often difficult to arrange during regular school hours.
- Do not allow the anonymity of participants and allow only limited confidentiality.
- Yield data from fewer people generally than questionnaires.
- Can yield less valuable information if the facilitator is unskilled.
- Yield data that are limited to self-report, unlike observations or product analysis.
- Yield qualitative data that some people feel unprepared to analyze.

*Example.* An example of when focus groups are very useful is to bring participants together at the conclusion of a teacher professional development activity. For example, after an all-day technology training, participants welcome an opportunity to talk about what was learned, how it will be used, and what value they see for students. At this time, it is also good to encourage participants to bring up challenges, issues or ongoing concerns, thus raising the awareness of all involved and obtaining important data for planning of future professional development or to use when constructing questionnaires for the larger population.

*See also sections on developing focus group protocols and analyzing qualitative data.*

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#### **Questionnaires**

*General Description.* Questionnaires are an evaluation method very familiar to most educators. Questionnaires, paper or electronic, consist of a set of questions or items that are designed for a selected group of people, such as teachers, administrators, parents, students, or others. Questionnaires vary in length, focus, and types of items, such as checklists, scaled items, or open-ended questions and are particularly useful in gathering data from large groups of people about perceptions, attitudes, intended actions or application of learning. See section on Developing Questionnaires for examples.

*Preparation Required.* You will need to select the samples of people who need to respond to the questionnaire, develop or select the actual questionnaire, pilot test the questionnaire, and plan the distribution process and timeline. See [example questionnaire protocol](#).

*Advantages.* Questionnaires:

- Yield data from a broader range of people generally than interviews or focus groups.
- Provide both quantitative and qualitative data.
- Can be used to compare responses among identified subgroups.
- Can include a wide variety of question formats, depending on the focus of the evaluation.
- Increase buy-in from stakeholders when the questionnaire reflects their own experiences and issues.
- Enhance credibility of the evaluation data when well-constructed and when large numbers of potential respondents complete the questionnaire.
- After analysis of data, allow broad sharing of the perspectives of large samples of stakeholder groups.
- Provide a learning experience for respondents as they take the time to reflect on their experiences in order to answer questionnaire items.
- Can provide anonymity for respondents, sometimes encouraging more candid responses.
- Allow respondents a window of time in which they can respond.

*Disadvantages or Limitations.* Questionnaires:

- Require a significant amount of time to either select or to develop and pilot test.
- Yield data that are limited to self-report, unlike observations or product analysis.

- Unlike focus groups, do not encourage sharing of ideas or building on other participants' thinking.
- Unlike focus groups and interviews, do not allow the evaluators to probe further when a response is unclear or incomplete.
- Yield quantitative and qualitative data that some people feel unprepared to analyze.
- Sometimes yield minimal or skewed data if the questions are not well designed, if communication about the questionnaire has not been clear, or if only certain groups of people respond.

*Example.* A district project has provided optional professional development for teachers at all levels in integration of technology into their curriculum and instruction. Participation, however, has been mixed, varying by subject matter and grade level taught. Focus groups have raised issues about the location, format, and timing of professional development offerings as well as the relevance to other curriculum and instruction initiatives under way in certain schools. Questionnaires administered to all teachers may provide critical information about these concerns that will inform project planning of future professional development.

***See also sections on developing questionnaires, analyzing quantitative data, and analyzing qualitative data.***

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### **Observations**

*General Description.* Observation as an evaluation method provides another level of information, reaching beyond the self-report of interviews, focus groups, and questionnaires. Observation means that evaluators are actually viewing important activities, perhaps classroom teaching and learning, professional development sessions, or community meetings. Observations can be extremely focused, e.g., the number of students who respond to a teacher's questions or the type of questions asked by the teacher. Conversely, observations can be fairly open-ended, e.g., examining the type and quality of teacher collaboration in small groups during professional development. Observations are especially useful in documenting learning activities, classroom interactions, application of teacher and student learning to new tasks, engagement of students and teachers in discussions involving higher order thinking, teacher questioning techniques, or student time on task.

*Preparation Required.* You will need to select the activities, individuals, or groups to be observed, develop the observation protocol, communicate with those to be observed about the purpose of the observation and its use, and arrange a time and location as needed. See [example observation protocol](#).

### *Advantages.* Observations:

- Provide data that reach beyond self-report and thus add credibility to the study.
- Provide essential triangulation of data gathered through interviews, focus groups, or questionnaires.
- Can be designed with a very narrow focus or not, depending on the need of the evaluation.
- Can be designed to yield both quantitative and qualitative data.

### *Disadvantages.*

- Observation protocols can be difficult and time-consuming to develop.
- Reliability of observation protocols across observers can be questionable.
- Teachers and others can feel threatened and "personally evaluated" by observations.
- Observations are time-consuming to arrange and conduct.
- Observers often have at least a minor impact on the event being observed, e.g., quality of facilitation.

*Example.* A school district project is focused on improving reading achievement of elementary level students. Teachers are participating in ongoing professional development to prepare them for using new instructional materials and strategies. Midway through the first year of implementation, teacher focus group discussions and interviews indicate that many teachers are trying the new materials and strategies, but are becoming disheartened by the student reaction and learning results. Classroom observations at this point in time would provide critical information on the extent to which the teachers are implementing the new materials and strategies as designed, how students are engaging with the materials and strategies, and the extent to which the culture of the classroom is compatible with the new instructional strategies.

*See also sections on developing observation protocols, analyzing quantitative data, and analyzing qualitative data.*











