Program Evaluation Toolkit
Module 5, Chapter 1: Data Quality

Regional Educational Laboratory Central

From the National Center for Education Evaluation at IES

Speaker 1:

Welcome to the fifth module in the *Program Evaluation Toolkit*. If you do not yet have a logic model, evaluation questions, an evaluation design, and a sampling plan, please review modules 1 through 4 before beginning this module. The content from those modules, especially module 2 ("Evaluation Questions"), as well as the AMMP! example introduced in module 1 will be referenced throughout module 5. AMMP! is a fictitious after-school math program started in response to lower-than-expected math homework completion rates and a lack of meaningful after-school activities for middle school students. The complete *AMMP! Logic Model* from module 1, which includes citations, is available on the resources page of the website.

With an understanding of logic models, the types of evaluation questions, evaluation design categories, and a sampling plan, you can now consider the types of data available. Module 5 introduces different types of data you can use to address your program evaluation needs. The module also presents the limitations of data sources and will help you identify the data you need to answer your evaluation questions.

Module 5 includes three chapters, each covering key considerations related to the data you might use to address your evaluation questions.

Chapter 1 covers the types of data that you can use in program evaluations.

Chapter 2 explores key elements of data quality that will help you ensure that your findings accurately represent the program.

Chapter 3 addresses the data sources that you might use to address your evaluation questions.

After completing this module, you will have a basic understanding of the data you can use to address your evaluation questions as well as the limitations of those data.

Let's get started with our first chapter, in which we will review the types of data used in program evaluation.

To address your evaluation questions, you may use quantitative and qualitative data. These types of data are differently suited to answering various kinds of questions.

Let's first look at quantitative data, which refer to numerically measurable information. Quantitative data include survey responses, assessment results, and sample characteristics such as age, years of experience, and qualifications. In the AMMP! example, quantitative data might be math test scores, tutor qualifications, student participation in the program, or responses to categorical survey questions. These data lend themselves to statistical analysis and are often used

to address evaluation questions beginning with “how much,” “how many,” and “to what extent.” For example, to answer whether AMMP! improved high school math readiness, the evaluation team could use data related to students’ high school math placement tests.

What about qualitative data? Qualitative data refer to information that cannot be measured numerically. Qualitative data include interview responses, focus group responses, and notes from observations. In the AMMP! example, qualitative data might be tutor responses during interviews, recorded observations of student interactions during after-school activities, and teacher responses to questions about their perceptions of AMMP! during focus groups. Most commonly, qualitative data are used to answer evaluation questions beginning with “why” and “how.” Qualitative data might aid in identifying barriers. For example, tutor responses during interviews might bring to light specific barriers to using AMMP!. Identifying and addressing these barriers early can help to keep the program on track.

In module 6, you will learn how to develop data collection instruments for both qualitative and quantitative data.

Many evaluations include both types of data to fully address the evaluation questions. With both quantitative and qualitative data, you can more easily get a complete picture of the implementation of your program and the progress in meeting its short-term, mid-term, and long-term outcomes.

Now, let’s consider a few examples related to the AMMP! evaluation and decide whether the data are quantitative or qualitative, or both, in each example.

To address the evaluation question “What barriers exist that prevent students from completing homework?” the AMMP! evaluation team decides to interview teachers, parents, and students. The team collects details about how students spend their time in and out of class, along with teachers’, parents’, and students’ perceptions of engagement and common distractions for students. What type of data is the team using?

Because the evaluation team collects interview responses from teachers, parents, and students about homework completion, the data are qualitative. The team probably has interview transcripts, which the team can review to identify themes or overarching ideas about why students might be struggling to complete homework. This process for reviewing data to identify themes is called “coding.” You will learn about coding qualitative data in module 7.

To address the evaluation question “How do AMMP! participant scores on high school math placement tests compare to those of nonparticipants?” the evaluation team decides to collect math placement test scores from all students who participated in AMMP! and from all students who did not participate, within the same school. What type of data is the team using?

In this case, the data are quantitative because the test scores are numerical values that estimate math content knowledge. After collecting the data, the evaluation team can use a statistical test to compare the performance of AMMP! students on the high school placement test to the performance of non-AMMP! students. You will learn how to do this in module 7.

Let's consider one final example. After collecting qualitative interview data to address the question "What barriers exist that prevent students from completing homework?" the AMMP! evaluation team decides to develop a survey for teachers, parents, and students to learn more about student homework completion. The survey includes questions for which respondents use a scale from *strongly agree* to *strongly disagree* to answer as well as open-ended questions for which respondents can write in their responses. What type of data will the team collect through this survey?

In this case, the evaluation team will collect both qualitative and quantitative data. The team can convert responses using the scale to quantitative data, and the team can examine the open-ended responses, which are qualitative data, for themes and new ideas not captured by the other questions. You'll learn how to convert survey responses to quantitative data as well as how to code qualitative data in module 7.

From the previous examples, you can see how you might use quantitative and qualitative data sources together to fully address your evaluation needs. Just as an evaluation team may use multiple evaluation designs, the team will often use both types of data. The handout *Data Sources: Advantages and Disadvantages*, available on the resources page of the website, presents common sources of quantitative and qualitative data as well as the benefits and limitations of each source.

Many education agencies may already be using the data sources listed in the handout. Using existing data sources can be particularly beneficial because it decreases the burden on not only an evaluation team but also the participants in an evaluation. For example, you can often use existing data on assessments, attendance, behavioral referrals, and graduation rates. If you find that the data you need do not exist, you may need to develop a data collection instruments such as a survey. You will learn how to develop your own instruments in module 6.

In the next chapter, you will review considerations when assessing the quality of data you plan to use in answering your evaluation questions.

This handout was prepared under Contract ED-IES-17-C-0005 by Regional Educational Laboratory Central, administered by Marzano Research. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.