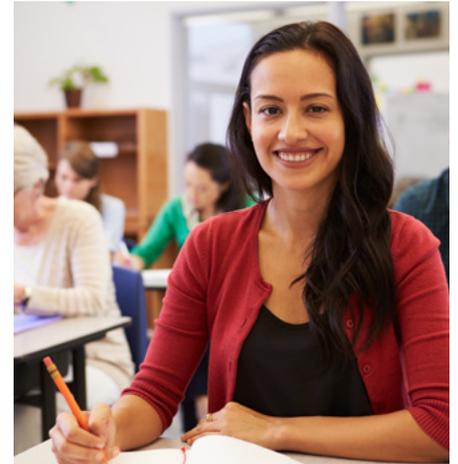




Measuring Implementation to Impact:

A GUIDE TO EVALUATING PROFESSIONAL DEVELOPMENT



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CONTRIBUTORS

Randahl Kirkendall, MPH
ICF

Dana Keener Mast, PhD
ICF

Syreeta Skelton-Wilson, PhD
ICF

Bridget Borgogna, MEd
CDC, National Center for Chronic Disease Prevention and Health Promotion

Melissa Fahrenbruch, MA
CDC, National Center for Chronic Disease Prevention and Health Promotion

Seraphine Pitt Barnes, PhD, MPH, CHES
CDC, National Center for Chronic Disease Prevention and Health Promotion

Julia Schaeman, MPH
ICF

Sarah Lee, PhD
CDC, National Center for Chronic Disease Prevention and Health Promotion

Elizabeth Haller, MEd
CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

Brittany Chen, DrPH
Health Resources in Action

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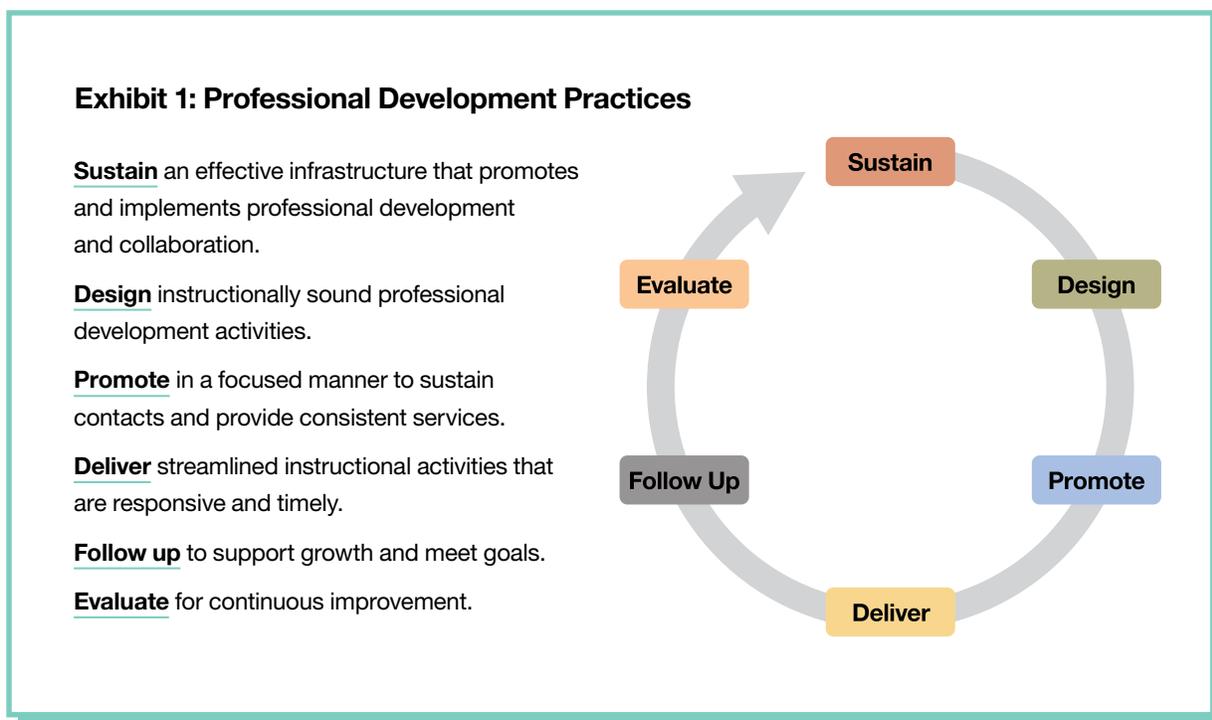
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Introduction

Professional development (PD) is a set of skill-building processes and activities consciously designed to assist targeted groups in mastering specific learning objectives. PD is a key strategy for promoting healthy environments in education and community settings and can be delivered in many forms such as trainings, workshops, technical assistance, and/or online or distance learning courses.

The Centers for Disease Control and Prevention (CDC) recommends that all CDC PD activities include six practices—sustain, design, promote, deliver, follow up, and evaluate—for optimal implementation (see Exhibit 1). This guide supports the sixth PD practice—evaluation—by providing step-by-step guidance on how to evaluate PD activities and events.¹



Why Evaluate Professional Development?

Professional development requires significant time and resources. Whether you are a program director or a PD provider, you and your stakeholders want to know if your PD is working and why (or why not). Evaluation is a systematic process you can use to learn if your PD activities are achieving their intended purpose. The results of evaluation can be used to demonstrate successful outcomes to your stakeholders, garner additional support for your PD activities, identify specific ways to improve PD implementation, and make strategic decisions about what PD activities to continue or change moving forward.

1. More information and resources to support other professional development practices can be found at <https://www.cdc.gov/healthyschools/trainingtools.htm>

Introduction

Levels of Professional Development Evaluation

Professional development can lead to a variety of outcomes ranging from participant satisfaction to changes in professional practices in the workplace. A good evaluation does not need to measure every aspect of PD development. In fact, the most useful evaluations are often highly focused on a few specific questions and outcomes.

This guide presents five levels of professional development that can define the focus of an evaluation: **implementation**, **participant reactions**, **learning**, **behavior**, and **impact** (see Exhibit 2).²

As you work through this guide, you will choose the levels of PD that you will examine to address your own evaluation needs and questions.

Before You Begin

This guide will lead you through seven practical steps to evaluating PD. Before you begin, identify a core evaluation team to plan and conduct the evaluation. If you are able to include an experienced evaluator on the team, engage them as early as possible. Determine dedicated staff time, data systems, and fiscal resources available for the evaluation. As you work through each evaluation step, record your ideas and decisions in the worksheets provided in Appendix A.

Exhibit 2: Levels of Professional Development Evaluation



Implementation Examines the process of professional development implementation, such as following the curriculum, providing adequate time for the training, and providing follow-up.



Reaction Examines the participants' response to or perception of the professional development event or activity.



Learning Examines the effect of professional development on knowledge and skills.



Behavior Examines the effect of professional development on behavior and effectiveness to change behaviors. Applies to individuals (i.e., teaching practices) and organizations (i.e., policies).



Impact Examines the effect of professional development on the goals and objectives of the professional development and on long-term outcomes, such as improved student health.

STEP 1 Identify and engage key stakeholders

STEP 2 Describe professional development activities and goals

STEP 3 Define your evaluation objectives and questions

STEP 4 Identify the indicators you will measure

STEP 5 Collect data

STEP 6 Analyze and interpret the results

STEP 7 Share and use the findings

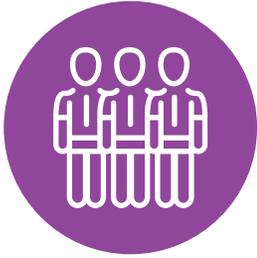
2. Levels are based on two common models used in evaluating professional development.

Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press.

Kirkpatrick, D.L., & Kirkpatrick, J.D. (2006). *Evaluating training programs: The four levels* (3rd ed.).

San Francisco, CA: Berrett-Koehler.

Step 1: Identify and Engage Key Stakeholders



Stakeholders are individuals and groups that have an interest (or stake) in the results of your evaluation. When engaged, key stakeholders can lend critical support for evaluation by increasing buy-in and helping with design, implementation, and dissemination of the findings.

Take some time with your evaluation team to identify the stakeholders you need to support your evaluation. Identify one or more individuals from each stakeholder group and work with them to define the roles they will each play.

Ways to Engage Stakeholders in Your Evaluation

- › Invite specific stakeholders to participate on the core evaluation team.
- › Invite stakeholders to serve on an evaluation advisory committee.
- › Interview or survey stakeholders as key informants for data collection.
- › Include them in briefing sessions to interpret evaluation results.
- › Ask stakeholders to champion the evaluation and promote the findings.

Potential Evaluation Stakeholders

- › Participant organizations
- › Training and technical assistance providers
- › Policy makers
- › Funders
- › Key decision-makers
- › Teachers/school staff
- › Parents
- › Students
- › Health professionals
- › Community members



ADDITIONAL TOOLS AND RESOURCES

Practical Guide for Engaging Stakeholders in Developing Evaluation Questions

Robert Wood Johnson Foundation

<https://www.rwjf.org/en/library/research/2009/12/a-practical-guide-for-engaging-stakeholders-in-developing-evalua.html>

Step 2: Describe PD Activities and Goals

Effective and informative evaluation requires a full understanding of the PD activities you want to evaluate. In this step, you will define the PD activities that will be implemented including content, format, and intended outcomes. Work with your team to articulate the elements of the PD activities that you will evaluate and record them in the worksheet in Appendix A.

Elements of Professional Development to Be Defined for Evaluation

▸ **FORMAT / TYPE OF DELIVERY:**

Will the PD be provided as a workshop, online, conference call, Webinar, or use a combination of events? How long will the event last or be made available? Will materials be provided online or in hard copy? What are the qualifications of the PD trainers?

▸ **ORGANIZATIONAL SUPPORTS:**

What administrative and other support structures will reinforce the practices promoted through PD? Are participants paid for their time in training? Will development of new skills be assessed in performance reviews? Will changes be made to physical structures to help reinforce healthy behaviors such as taking the stairs?

▸ **LEARNING OBJECTIVES:**

What new knowledge, skills, or abilities will participants gain from the PD? How will participants learn the new skills (reading, presentations, practice)?

▸ **BEHAVIOR GOALS:**

What are the intended outcomes in terms of behaviors or actions as a result of participating in the PD? Will participants be expected to develop an action plan for practicing new skills?

▸ **LONG TERM GOALS:**

Ultimately, what are the intended impacts as a result of participants using the skills and behaviors learned in PD? Is the focus on reducing risks to health or beyond that to improving health outcomes? Is the goal to improve the health of the participants or of others they influence, such as students?



Step 3: Define Your Evaluation Objectives and Questions



Evaluation can serve several purposes ranging from program improvement to demonstrating accountability. Defining and articulating your reasons for evaluating PD activities will help you decide what to measure and choose the most appropriate methods to achieve your evaluation objectives. In this step, you will identify your evaluation objectives, map them to the levels of PD evaluation, and articulate the evaluation questions that will focus your evaluation.

Identify Your Evaluation Objectives

Evaluation objectives reflect your reasons for doing the evaluation—strong objectives should be clear and achievable. Schedule a time to meet with your evaluation team to discuss your reasons for evaluating PD. Start by listing all possible objectives of the evaluation that you can think of (see the first column in [EXHIBIT 3](#) for examples). Be sure to include your key stakeholders in the meeting or talk with them ahead of time and bring their input to the meeting. Ask your stakeholders what they want to learn from the evaluation and how they plan to use the findings. Once you have a comprehensive list of possible objectives for the evaluation, work together to prioritize the objectives. Consider which objectives are feasible to achieve with the available time and resources. List your final objectives in the worksheet in Appendix A.



Map Your Objectives to the Levels of PD Evaluation

Now consider each of your evaluation objectives in terms of the levels of professional development evaluation—implementation, reaction, learning, behavior, and impact. Refer back to the description of each level in [EXHIBIT 2](#) to determine the levels of PD evaluation that need to be examined in order to meet each of your objectives. [EXHIBIT 3](#) provides a list of sample objectives mapped to the levels of PD evaluation.

Articulate Your Evaluation Questions

Evaluation questions are the overarching questions that you want your evaluation to answer about PD. Evaluation questions are generally not the same as the questions (e.g., survey items) you might pose to participants, but the responses to those survey items should help you answer your evaluation questions. For each evaluation objective, develop one or more measurable evaluation questions that, when answered, will help you achieve your objectives. Sample evaluation questions are listed in [EXHIBIT 3](#) for each sample objective and associated levels of PD evaluation.

Step 3: Define Your Evaluation Objectives and Questions

Exhibit 3: Sample Evaluation Objectives and Questions Mapped to Levels of PD Evaluation

Sample Evaluation Objectives	Level of PD Evaluation	Sample Evaluation Questions
Improve the content and delivery of PD activities.	Implementation	Was the content of the training aligned with the training objectives? Which training formats were rated most favorably by participants?
Improve participant satisfaction with PD events.	Reaction	How satisfied were participants with the PD? What percentage of participants would recommend the training to other staff?
Determine whether the training met the PD needs of staff.	Reaction	What proportion of participating staff reported achieving at least one PD goal as a result of the training? What additional PD is needed by participants?
Assess changes in administrators' knowledge as a result of PD.	Learning	Did school administrators increase their knowledge of the benefits of healthy school environments on student academic performance?
Measure changes in teacher practices.	Behavior	Did physical education teachers comply with physical education minimum requirements after being trained?
Assess changes in school health policies and/or environments.	Impact	How many schools adopted new policies to ban sugary drinks?
Show impact on student health behaviors and outcomes.	Impact	Have absenteeism rates due to illness declined one year after training was delivered to school nurses to improve management of chronic conditions?
Demonstrate accountability to funders.	All levels	Was implementation compliant with funding requirements? How cost-effective was the PD event?

Step 4: Identify the Indicators You Will Measure



Evaluation indicators describe the state, degree, extent, or quality of a process or outcome you want to observe or change. Indicators define “what” you will measure and should correspond to your evaluation objectives, evaluation questions, and selected levels of PD evaluation. For each evaluation question, use the following guidelines to identify indicators appropriate for the level(s) of your evaluation. Refer to Exhibit 4 for a list of sample indicators for each level of PD evaluation.

Engage your stakeholders to identify indicators that will be most meaningful to them.

Record your final indicators in the worksheets in Appendix A.

▸ **IDENTIFY INDICATORS THAT ARE MEASURABLE (CAN BE COUNTED, OBSERVED, DOCUMENTED, OR TESTED), SPECIFIC, AND DIRECTLY RELEVANT TO YOUR EVALUATION QUESTIONS.**

Example: “Percentage of participants who scored better than 70% on the post training assessment” is a measurable indicator that will directly answer the evaluation question, “How well did the participants know the information taught in the professional development?”

▸ **SELECT INDICATORS THAT ARE CULTURALLY, GEOGRAPHICALLY, LINGUISTICALLY, AND OCCUPATIONALLY APPROPRIATE TO THE PD PARTICIPANTS AND SETTING(S).**

Example: “Development of a comprehensive school district wellness policy” may be relevant to district level administrative personnel who have the power and authority to develop policy, but less so for teachers, nurses, or other staff.

▸ **STATE THE INDICATORS IN NEUTRAL TERMS AT A SINGLE POINT IN TIME.**

Example: “Minutes of daily physical activity” is a neutral indicator that can be measured at any point in time compared to “improved levels of physical activity,” which requires repeated measurement.

▸ **CONSIDER INDICATORS THAT CAN BE MEASURED USING READILY AVAILABLE DATA OR DATA THAT CAN BE EASILY COLLECTED.**

Example: An existing plate waste study could be used to measure “consumption of fruits and vegetables at lunch” rather than developing and implementing a new survey.

▸ **CONSIDER INDICATORS THAT ARE COMPARABLE TO PREVIOUS DATA TO OBSERVE CHANGE OVER TIME AND/OR ACROSS PD EVENTS.**

Example: Using the same satisfaction survey items used for previous PD events will allow you to compare satisfaction levels across PD events.

ADDITIONAL TOOLS AND RESOURCES

CDC Approach to Evaluation: Indicators

Program Performance and Evaluation Office

www.cdc.gov/eval/indicators/index.htm

Step 4: Identify the Indicators You Will Measure

Exhibit 4: Sample Indicators by Level of Professional Development Evaluation

<h3>Implementation Indicators</h3>  <ul style="list-style-type: none"> › Duration and frequency of PD events › Number of enrollments in training events/courses › Training completion rates › Proportion of content that is knowledge vs. skill-based › Alignment between content and learning objectives › Instructional strategies are appropriate for target audiences › Clarity of goals and objectives › Sufficient opportunities for active learning are offered › Materials are applicable to the target environment › Materials are clearly organized › Website hits and duration of page views for online courses 	<h3>Reaction Indicators</h3>  <ul style="list-style-type: none"> › Participant satisfaction with the event/activity/resource › Participant satisfaction with content, quality, duration, and frequency of event › Content aligns with participants' professional development goals › Clarity of materials › Feedback on the learning environment › Feedback on instructional staff › Appropriateness of instructional strategies › Sufficient opportunities for active learning › Perceived relevance to professional roles and responsibilities › Content and material is applicable to work environment 	<h3>Learning Indicators</h3>  <ul style="list-style-type: none"> › Participant awareness of concepts or skills › Participants understand the importance of concept or skill › Participants know how to apply new skill in their job/role › Participants are able to perform the skill during or immediately after training › Participants develop plans to apply knowledge and skills in work setting › Confidence to practice skills › Intent to apply skill in the next year › Participant use of resources/materials › Frequency and length of website visits to learning resources 				
<h3>Behavior Indicators</h3>  <table border="1"> <thead> <tr> <th>Individual participant behavior</th> <th>Organizational behavior</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> › Utilization of knowledge and skills › Skill proficiency › Promotion of the knowledge and skills learned › Journal or log entries that show implementation of the behaviors or skills › Use of downloads and links to access resources for use › Search terms used that indicate use of skills taught › Navigation to and within skill-based information on website › Participant contribution of experiences using the skills (to a website or to a future training) </td> <td> <ul style="list-style-type: none"> › Inclusion of health-related objectives in future planning › Compliance with local wellness policy › Conducting fitness testing › Offering fruits and vegetables at events › Availability of healthy options in vending machines › Bans on advertising of candy, fast foods, and soft drinks › Physical activity opportunities offered before and after school › Farm to school activities › Skills included in curriculums › Other organizational policies, practices, and procedures that promote healthy behaviors </td> </tr> </tbody> </table>		Individual participant behavior	Organizational behavior	<ul style="list-style-type: none"> › Utilization of knowledge and skills › Skill proficiency › Promotion of the knowledge and skills learned › Journal or log entries that show implementation of the behaviors or skills › Use of downloads and links to access resources for use › Search terms used that indicate use of skills taught › Navigation to and within skill-based information on website › Participant contribution of experiences using the skills (to a website or to a future training) 	<ul style="list-style-type: none"> › Inclusion of health-related objectives in future planning › Compliance with local wellness policy › Conducting fitness testing › Offering fruits and vegetables at events › Availability of healthy options in vending machines › Bans on advertising of candy, fast foods, and soft drinks › Physical activity opportunities offered before and after school › Farm to school activities › Skills included in curriculums › Other organizational policies, practices, and procedures that promote healthy behaviors 	<h3>Impact Indicators</h3>  <p>Student Health Behaviors</p> <ul style="list-style-type: none"> › Daily minutes of moderate to vigorous physical activity › Student prevalence of tobacco use › Daily consumption of vegetables and fruits › Student inhaler use <p>Student Health Outcomes</p> <ul style="list-style-type: none"> › Health status › Body Mass Index › Blood pressure › Incidence of diabetes, eating disorders, asthma in student population › Absenteeism rates
Individual participant behavior	Organizational behavior					
<ul style="list-style-type: none"> › Utilization of knowledge and skills › Skill proficiency › Promotion of the knowledge and skills learned › Journal or log entries that show implementation of the behaviors or skills › Use of downloads and links to access resources for use › Search terms used that indicate use of skills taught › Navigation to and within skill-based information on website › Participant contribution of experiences using the skills (to a website or to a future training) 	<ul style="list-style-type: none"> › Inclusion of health-related objectives in future planning › Compliance with local wellness policy › Conducting fitness testing › Offering fruits and vegetables at events › Availability of healthy options in vending machines › Bans on advertising of candy, fast foods, and soft drinks › Physical activity opportunities offered before and after school › Farm to school activities › Skills included in curriculums › Other organizational policies, practices, and procedures that promote healthy behaviors 					

Step 5: Collect Data



Now that you have decided what to measure (your selected indicators), it is time to decide how and when you will collect data for those indicators. When choosing your methods, consider whether the data you need for each indicator should be quantitative, qualitative, or both (see box). Either quantitative or qualitative data can be used across all five levels of PD evaluation. Quantitative data are useful for demonstrating the amount of change towards specific PD goals and objectives. Qualitative data can describe what occurred during the PD and/or why the PD was successful or not. Including both quantitative and qualitative data is recommended to identify areas for quality improvement and to demonstrate progress achieved. Thus, you might need more than one source and method of data collection for your evaluation.



Quantitative vs. Qualitative Data

Quantitative data assign a numerical value or range to the indicator that can be verified and used to demonstrate concrete changes resulting from the professional development.

Qualitative data are words that characterize and describe an indicator and are often used to explain the process or outcomes of professional development.

Identify Your Data Collection Methods and Instruments

Common data collection methods include **questionnaires**, **observations**, **interviews**, **focus groups**, **logs**, and **records** (see Exhibit 5 for a summary of pros and cons for each method). Before you decide to collect new data, find out what data already exist that are aligned with your indicators. Explore whether any existing data collection plans will provide the data you need. For example, you might be able to use data from organization records or data collected annually for school health improvement plans to measure progress toward health objectives, such as improving access to school health services. Similarly, data collected in course curricula plans might be used to measure the inclusion of health topics.

If you need to collect new data, consider the methods that are most appropriate for the level of your evaluation and whether you need quantitative data, qualitative data, or both. Appendix B contains a list of existing standardized instruments and sources of school health data that can be used for evaluating PD. List the method and tool you will use for each indicator in Appendix A.

Step 5: Collect Data

Exhibit 5. Methods for Data Collection

Methods	Most appropriate for...	Pros	Cons
QUESTIONNAIRES (SURVEYS) In-person, online, or by mail.	PD LEVELS: Implementation, Reaction, Learning, Behavior, Impact DATA: Quantitative, Qualitative	Standardized Easily repeated Cost-efficient for large groups	Possible survey fatigue Self-assessment bias
OBSERVATION Assessments of PD participants' behavior and skills.	PD LEVELS: Implementation, Learning (during PD), Behavior (after PD), Impact (on student behavior) DATA: Quantitative, Qualitative	Real-time accuracy Sensitive to emerging outcomes not previously identified	Scheduling difficulties Labor intensive Requires expertise and training of data collectors Requires approvals
INTERVIEWS Structured or unstructured questions with individuals.	PD LEVELS: Implementation, Reaction, Learning, Behavior DATA: Qualitative	Produces rich information Can be in-person or on the phone	Can be time intensive and costly
FOCUS GROUPS Structured or unstructured discussion/questions with a group.	PD LEVELS: Implementation, Reaction, Learning DATA: Qualitative	Rich data source More time-efficient than interviews	Scheduling difficulties Difficult to repeat with the same participants
WEBSITE ANALYTICS Frequency and duration of webpage visits, click-through patterns, sequence of pages viewed.	PD LEVELS: Implementation (for online PD), Learning or Behavior (for use of online resources) DATA: Quantitative	Precise measurement of website use Minimal burden	Requires prior set-up and knowledge of web analytic software Subject to data errors due to variations in computer usage
PARTICIPANT LOGS/ JOURNALS/ACTION PLANS May pre-exist or be part of PD intervention.	PD LEVELS: Learning, Behavior DATA: Quantitative, Qualitative	Use of existing records saves time May already be part of intervention	Generally not standardized May be difficult to access Labor intensive to analyze
STANDARDIZED TESTS Normed measures of knowledge and skills.	PD LEVELS: Learning DATA: Quantitative, Qualitative	Allows standard comparison between groups or time points No need to create new instruments	May require specialized expertise to score and analyze
ORGANIZATION RECORDS Policies, personnel records, student records.	PD LEVELS: Behavior, Impact DATA: Quantitative	Does not require new data collection	May be difficult to access due to privacy concerns, especially student health data Linking large data sets may require advanced skills

Step 5: Collect Data

Measuring the attainment of new skills is a common approach to evaluating PD at the learning and/or behavior levels. If your indicators are specific to skill development, refer to Exhibit 6 for additional guidance in selecting methods for data collection. Additional sample items for measuring skill development are also listed in Appendix B.

Exhibit 6. Measuring and Collecting Data on Skills

Stages of Skill Development	Methods	Sample Items or Procedures
<p>SKILL AWARENESS (LEARNING) Participant knowledge of the skill, the importance of the skill, and how to use it.</p>	<p>Participant Survey</p> <hr/> <p>Test of Knowledge and Skills</p>	<p>“In this session, I learned new strategies to improve my program.”</p> <hr/> <p>During the PD, trainers quiz participants’ knowledge of key steps to skill implementation.</p>
<p>SKILL ABILITY AND CONFIDENCE (LEARNING) Participant ability to demonstrate the skill in a practice setting.</p>	<p>Participant Survey</p> <hr/> <p>Test of Knowledge and Skills</p> <p>Observation of Learning/Behavior</p>	<p>“I am ready to use the knowledge and skills that I learned today in my job.” (agree/disagree)</p> <hr/> <p>During the PD, trainers test participants’ skill performance in a mock classroom.</p> <hr/> <p>Trainers review and rate participants’ plans for adapting and implementing the skills taught.</p>
<p>SKILL UTILIZATION (BEHAVIOR) Participant use of the skill in the intended setting.</p>	<p>Participant Survey</p> <hr/> <p>Evidence from Log/Journal</p> <hr/> <p>Observation of Learning/Behavior</p>	<p>“How often are you using the techniques in your job?”</p> <hr/> <p>Evaluator collects participant logs documenting implementation of taught skills.</p> <hr/> <p>Evaluators observe the work setting and record instances of skill utilization.</p>
<p>SKILL PROFICIENCY (BEHAVIOR) Participant use of the skill and ability to adapt to different situations.</p>	<p>Participant Survey</p> <hr/> <p>Observation of Learning/Behavior</p>	<p>“Rate your ability to adapt the curriculum for implementation in low-performing schools”. (low/moderate/high/very high)</p> <hr/> <p>Evaluators observe the work setting and record the level of skill proficiency demonstrated.</p>

Step 5: Collect Data

Participant surveys are a common data source for measuring participant reactions, learning, and behaviors. Often you will need to create your own participant surveys to align with your specific PD objectives and audience. Consider the following tips when developing items for your participant survey. You can find more examples of survey items in Appendix B.

Tips for Developing Participant Survey Items

1. Write survey items that align with your selected indicators. For example, if the indicator is satisfaction with instructional format, then an appropriate survey item would be, “How satisfied are you with the format of the training?” on a scale of 1=very dissatisfied to 5=very satisfied.
2. Write short survey items using plain and familiar language that participants will understand.
3. If you want to quantify responses into defined categories or along a continuum, use multiple choice items or rating scales.
4. If you want to explore all possible answers to a question, use open-ended questions that invite participants to compose their own answer (rather than offering a set of choices).
5. Avoid “yes/no” questions for richer data about the indicator you are measuring.
6. Ask only one question per survey item. For example, this double-barreled question: “Was the time and location of the training convenient for you?” should be split into two questions: “How convenient was the time of the training for you?” and “How convenient was the location of the training for you?”
7. Avoid leading survey items, such as “Why do you think this professional development training was effective?”
8. Avoid using absolutes in survey items that preclude other answer choices. For example, instead of asking “Do you always include health messages in your teaching?” a better item is “How often do you include health messages in your teaching?” and offer a range of response options.
9. When using rating scales, use a consistent number of response categories throughout your survey. Four-point and five-point rating scales are most common. Also, use consistent phrasing for items of a similar scale. For example, all agreement scales should be identical (don’t use “strongly agree” for some items and “mostly agree” for others).
10. Test your survey items with volunteers who are not part of the evaluation to help you identify and correct any problems in your survey before you use it with PD participants.

Step 5: Collect Data

Decide When to Collect Data

Data can be collected before, during, or after a PD activity or event. In order to demonstrate changes in learning or behavior as a result of PD, you will need to establish a baseline that you will compare to the data collected after the training.

Collecting data before PD establishes a baseline for making comparisons to show changes in outcome measures due to the professional development. Collect data before professional development when you need to demonstrate changes in the knowledge, skills, or behavior of the participants.

Collecting data during or immediately after PD provides data for evaluating implementation, reaction, and learning. This is the best time to assess immediate changes in knowledge and skills. Also, findings collected during events can be shared with facilitators for real-time feedback to make mid-course corrections during the training. When follow-up data collection is not feasible, immediate post-tests can be used to measure intended future behavior as a proxy for actual behavior.

Collecting data as a follow-up to PD is used primarily to assess learning, behavior, and impact indicators to see if changes observed immediately after PD are sustained for an extended period of time (e.g., three, six, or 12 months). Follow up assessments are particularly useful for assessing use and application of new skills in professional settings.

Indicate when you will collect data for each indicator in Appendix A.

Pre- vs. Retrospective Assessments to Establish Baseline

Baseline values can be established using data collected before a PD event (pre-assessment) and/or immediately following a PD event (retrospective assessment).

Pre-assessments measure what participants initially think or know before the training. However, their understanding can change during the training, so pre- and post-assessments may measure different understandings of the same concept.

Participants completing a retrospective and post-assessment after the training are conceivably using the same understanding of the concept to rate their pre and post knowledge. However, retrospective assessments can be subject to social bias.

- › **When resources permit, combine a pre-assessment and a retro-assessment to establish a common baseline.**
- › **When resources are limited, conduct a retro-assessment.**
- › **When social bias is a concern, use a pre-assessment baseline.**

ADDITIONAL TOOLS AND RESOURCES

The Qualtrics Handbook of Question Design

David L. Vannette

<https://www.qualtrics.com/ebooks-guides/qualtrics-handbook-of-question-design/?ty=mktocd-thank-you&alid=6002>

Teacher Professional Development Evaluation Guide

National Staff Development Council

<https://learningforward.org/wp-content/uploads/2017/08/teacher-professional-development-evaluation-guide.pdf>

A Professional Development Evaluation Framework for the Ohio ABLE System

Center on Education and Training for Employment

http://uso.edu/network/workforce/able/reference/development/PD_Eval_Framework_Report.pdf

Step 6. Analyze and Interpret the Results



Data analysis is the process of examining data to understand the results of your evaluation. The primary approaches to analysis are descriptive and inferential statistical analysis and qualitative analysis. Select an analytical approach based on the type(s) of data you have (quantitative or qualitative) and the frequency of data collection (one time point or repeated time points).

Descriptive Statistical Analysis

Descriptive statistics describe or summarize data (typically numbers) in a meaningful way, so they can be easily understood. Examples of descriptive statistics for PD include the mean (average) years of experience of the participants, the range of scores on a satisfaction survey, and the percentage of participants that reported use of a new skill. Descriptive statistics can be used to calculate changes over time (when you have data from multiple time points) and to compare groups (participants vs. non-participants).

Inferential Statistical Analysis

Inferential statistics allow you to make predictions (“inferences”) from data. Data collected from a sample of participants are used to make generalizations to a broader population. Inferential statistical analysis requires data collected at two time points or between different groups in order to show changes or outcomes that are attributed to the PD. Simple statistical tests such as t-tests (for continuous data) and chi-squares (for categorical data) can be employed to determine if changes or differences are significant. These tests may require statistical software and support from a statistician.

More advanced methods of inferential statistical analyses are used to determine how certain conditions observed in the data predict outcomes. For example, regression analysis estimates the extent that a particular element of your PD (e.g., role-playing a skill) influenced a specific outcome (e.g., skill proficiency). These analytical approaches can help you determine what elements of your PD were effective or not effective in producing desired outcomes. Inferential statistics require a sufficient sample size, so consult with an experienced evaluator or statistician to determine if they can be used for your evaluation.

Common Descriptive Statistics

- › Mean
- › Range
- › Distribution
- › Frequency
- › Proportion/percentage

Step 6. Analyze and Interpret the Results

Qualitative Analysis

Qualitative analysis aims to summarize and synthesize non-quantifiable information collected from interviews, focus groups, open-ended survey items, observations, and document reviews. Thematic analysis is a common qualitative technique in which a coding scheme is used to organize data by specific indicators. For example, codes for grouping participants' comments during a follow up focus group might include "use of new skills" and "barriers to using new skills". Basic software is often sufficient to code a modest amount of data whereas qualitative software may be needed for coding large volumes of data.

Once data are coded, the output is reviewed and analyzed for themes and patterns. For example, a review of all of the statements that were coded as "use of new skills" in the previous example might reveal that participants varied widely in their use of new skills and/or that certain skills were being used more frequently than others. Qualitative analysis can be labor intensive and may require specialized training, practice, and oversight.



ADDITIONAL TOOLS AND RESOURCES

Analyzing Quantitative Data for Evaluation

Centers for Disease Control and Prevention

<https://www.cdc.gov/healthyouth/evaluation/pdf/brief20.pdf>

Analyzing Qualitative Data for Evaluation

Centers for Disease Control and Prevention

<https://www.cdc.gov/healthyouth/evaluation/pdf/brief19.pdf>

Step 7: Share and Use the Findings



After you analyze your data, it is time to share the findings with your stakeholders and put your findings to use. Written evaluation reports and traditional presentations are common ways of sharing evaluation findings. However, consider using other formats that are more engaging and accessible to a range of audiences. For example, short graphic data summaries can provide key findings in a couple of pages as an alternative to long dense reports. Data parties are growing in popularity—simply post your results around a room and invite guests to stroll the room and share their input and reactions to the findings. Social media is also an effective tool for sharing key takeaways from your evaluation.

Work with your evaluation team to identify the groups that should know about the evaluation findings. Make a list of the products and dissemination activities you will use to share the results (e.g., report, brief, newsletter, presentation, data party). Consider which audience(s) you will target with each product/activity and how you will encourage them to use and/or apply the findings. Circle back to your evaluation objectives to make sure your plans address each one. For example, if your evaluation objective was to improve the delivery of PD activities (implementation level), be sure to share findings with training providers and work with them to consider the implications of the results on future events. If your objective was to secure new sources of funding for PD efforts, highlight the most successful outcomes of your PD events (e.g., learning, behaviors, and impacts) in grant applications and briefs to share with potential funders.



Tips for Sharing Results

- › **Use active voice and plain language that is conversational and speaks directly to the reader**
- › **Avoid jargon that might leave readers feeling like an outsider**
- › **Use appealing graphics to illustrate results visually.**

ADDITIONAL TOOLS AND RESOURCES

A Short Primer on Innovative Evaluation Reporting

Community Solutions

<https://communitysolutions.ca/web/evaluation-reporting-guide/>

Using Graphs and Charts to Illustrate Quantitative Data

Centers for Disease Control and Prevention

<https://www.cdc.gov/healthyyouth/evaluation/pdf/brief12.pdf>

Appendix A

Professional Development Evaluation Worksheets

Step 1: Engage Key Stakeholders

Brainstorm

What groups and organizations have a stake in the success of your professional development activities?

List stakeholder groups with name and contact	How will you engage or gather input from each stakeholder representative?

Step 2: Describe Professional Development Activities and Goals

What is the purpose or topic of the professional development activity/activities you are evaluating?

What are the learning objectives of the PD event?

What is the format and duration of the PD event(s)?

What materials will be provided to participants and in what format?

List additional behavioral or long term goals of the PD event (if any).

Step 3: Define Your Evaluation Objectives and Questions

Brainstorm

Record a comprehensive list of possible evaluation objectives discussed here.

Who provided input on the evaluation objectives?

List up to three final evaluation objectives	Map each evaluation objective to one or more levels of PD evaluation	Articulate one to three evaluation questions per objective
		1. 2. 3
		1. 2. 3
		1. 2. 3

Step 6: Analyze and Interpret the Results

Step 3 (carried over)	Step 4 (carried over)	Step 6	
List evaluation questions from previous page	List indicators from previous page	How will you analyze the data to answer this question?	List the results for each question.

Step 7: Share and Use the Findings

List the key findings that you will communicate with your audiences.

Identify the audiences that should know about the evaluation findings.

List three to five products and activities that you will use to share the findings.

Which audience(s) will receive this product/activity?

How will you encourage each audience to use the findings?

List three to five products and activities that you will use to share the findings.	Which audience(s) will receive this product/activity?	How will you encourage each audience to use the findings?

Appendix B

Instruments for Evaluating Professional Development

Instruments for Evaluating Professional Development

The table below contains a sample of nine data collection instruments that can be used or adapted to assess one or more levels of Professional Development (PD) evaluation spanning **implementation, reaction, learning, behavior, and impact**. Each tool in the table lists the level(s) of PD that can be assessed along with sample items from the tool aligned with commonly used indicators. While most of the tools are broadly applicable to PD addressing a variety of topics, several tools focused on school health are included to illustrate assessment of behavior and impact. For evaluating impact of PD in other topic areas, consider similar tools that cover those topics.



Look for this icon to locate indicators and sample items that pertain to skill development.

See Exhibit 6 in the guide for more information on measuring skill development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>1. Evaluating Professional Development Resources: Selection and Development Criteria</p> <p>A PD curriculum assessment tool to support the design and implementation of comprehensive PD systems developed by the American Institutes for Research®</p> <p><u>Targeted respondents:</u> subject matter experts or instructional facilitators</p> <p>Get the tool: CLICK HERE</p>	Implementation	
	Appropriateness of instructional materials	Is the content of the PD and supporting materials based on findings of a needs assessment? Does the content of the PD and supporting materials reflect the program goals? Does the content of the PD and supporting materials reflect Federal or State mandates?
	Appropriateness of instruction	Are the activities appropriate and relevant to adult learners' activities and experiences? Do the activities incorporate principles of adult learning? Are the instructional materials appropriate for target audiences?
	Appropriateness of PD offering	Are objectives explicit and clearly stated? Do goals foster higher order thinking skills/problem solving? Do the learning activities support the goals and objectives?

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>2. A Professional Development Evaluation Framework-Ohio ABLE System</p> <p>Standardized satisfaction and implementation survey instruments created by the Ohio State University Adult Basic and Literacy Education (ABLE) Evaluation and Design Project.</p> <p><u>Targeted respondents:</u> PD participants</p> <p>Get the tool: CLICK HERE</p>	<p>Reaction</p>	
	<p>Relevance and utility of instructional content</p>	<p>The content presented</p> <ul style="list-style-type: none"> > is useful to me. <i>[Significantly, generally, somewhat, very little, or don't know]</i> > is applicable to my job. > has changed my thinking <p>Concerning the content of the session you attended, how much have each of the following increased?</p> <ul style="list-style-type: none"> > Knowledge of the content presented <i>[Significantly, generally, somewhat, very little, or don't know]</i> > Confidence that you can apply the knowledge to your job > Motivation to implement the content/techniques presented
	<p>Participants awareness</p>	<p>Were the goals of the session clearly presented?</p> <p>Was the training what you expected?</p> <p>Were your goals for attending this session met?</p>
	<p>Learning</p>	
	<p> Participant knowledge, skills, and attitudes</p>	<p>List at least one thing you learned today that you will use in your setting/program.</p> <p>Explain one “take away” from the training that has stuck with you.</p>

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>2. A Professional Development Evaluation Framework-Ohio ABLE System (Continued...)</p> <p>Standardized satisfaction and implementation survey instruments created by the Ohio State University Adult Basic and Literacy Education (ABLE) Evaluation and Design Project.</p> <p><u>Targeted respondents:</u> PD participants</p> <p>Get the tool: CLICK HERE</p>	<p>Individual Behavior</p>	
	 <p>Changes in individual behaviors</p>	<p>List at least one thing you have implemented in your practice from the training.</p> <p>Since the training, how have you used the strategies in your practice?</p> <p>How has your practice improved because of the training?</p> <p>How regularly are you using the techniques presented in the training in your program?</p> <p>To what extent have you integrated the strategies from the training into your work?</p>
	<p>Organizational Behavior</p>	
	<p>Policy changes</p>	<p>What program policies are directly or indirectly affected by the professional development?</p> <p>How did the professional development alter the program procedures?</p>
	<p>Organizational practices</p>	<p>Were you encouraged by colleagues to try new practices or strategies?</p> <p>Do colleagues observe your program and discuss ideas and strategies with you?</p> <p>Do you facilitate regular follow-up sessions and activities with staff?</p>

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>3. National Center for Education Statistics (NCES) Schools and Staffing Survey (SASS)</p> <p>An integrated set of questionnaires developed by the National Centers for Educational Statistics to provide descriptive data on the context of the national elementary and secondary education workforce.</p> <p><u>Targeted respondents:</u> PD participants, educators, administrators</p> <p>Get the tool: CLICK HERE</p>	<p>Implementation</p>	
	<p>Participant engagement</p>	<p>In the past 12 months, have you participated in any professional development activities related to your role as _____?</p> <p>In the past 12 months, have you participated in any professional development activities that focused on _____?</p> <p>In the past 12 months, how many hours did you spend on these activities?</p>
	<p>Access to PD offerings</p>	<p>Does this school provide teachers with time for professional development during regular contract hours?</p> <p>For the professional development in which you participated in the past 12 months, did you receive the following types of support?</p> <ul style="list-style-type: none"> > Release time > Scheduled time in the contract year for professional development > Stipend for professional development activities that took place outside regular work hours > Full or partial reimbursement of college tuition > Reimbursement for conference or workshop fees > Reimbursement for travel and/or daily expenses
	<p>Reaction</p>	
<p>PD quality</p>	<p>How often is professional development at this school...</p> <ul style="list-style-type: none"> > designed or chosen to support the school's improvement goals? [<i>Never, rarely, sometimes, frequently, always</i>] > designed or chosen to support the implementation of state or local standards? > evaluated for evidence of improvement in student achievement? > considered part of teachers' regular work? > planned by teachers in this school or district? > presented by teachers in this school or district? > accompanied by the resources that teachers need (e.g., time and materials) to make changes in the classroom? <p>Overall, how useful were these activities to you? [<i>Not useful, somewhat useful, useful, or very useful</i>]</p>	

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>4. Professional Development Feedback Survey</p> <p>Standard questionnaire for professional development participants to evaluate a single training event.</p> <p><u>Targeted respondents:</u> PD participants</p> <p>Get the tool: CLICK HERE</p>	<p>Implementation</p>	
	Types of PD participants	Please identify your position.
	Relevance of PD content and participant needs	My attendance at this professional development was determined by local needs. <i>[Strongly agree, agree, disagree, strongly disagree, not applicable]</i>
	<p>Reaction</p>	
	PD quality	<p>The presenter was knowledgeable and effective. <i>[Strongly agree, agree, disagree, strongly disagree, not applicable]</i></p> <p>The strategies used by the presenter were appropriate in helping me attain the goal(s) and/or outcomes of this professional development experience.</p> <p>This professional development offered sufficient and appropriate opportunity for networking.</p> <p>My local administration will support me in the use of this information and training.</p> <p>The handouts and materials were adequate and useful.</p> <p>The level of difficulty of the content was appropriate.</p>
	<p>Learning</p>	
	 <p>Participant' knowledge, skills, and attitudes (KSAs)</p>	<p>I gained knowledge and skills to implement the PD strategies into my job.</p> <p>This PD provided me with research-based instructional strategies to assist students in meeting rigorous academic standards.</p> <p>As a result of this PD experience, I will use my new knowledge and skills in my setting/job.</p>

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>5. Critical Skills Inventory An inventory of performance indicators from skill standard areas identified as essential elements of quality instruction for learning outcomes crafted by the Vocational/Technical Council (VTC) of the Washington State Board for Community and Technical Colleges.</p> <p><u>Targeted respondents:</u> subject matter experts, instructional facilitators, administrators</p> <p>Get the tool: CLICK HERE</p>	<p>Behavior</p> <p> Skill proficiency</p>	<p>Demonstrated level of skill:</p> <ul style="list-style-type: none"> › Learning is supported and facilitated by the appropriate use of instructional media and equipment [Not evident or observed, novice, skilled, master] › Learner performance is assessed in relation to published outcomes › Instructional materials and strategies appeal to multiple learning styles and diverse learners › Learners are effectively oriented to the learning task, including outcomes, assessments, and prior and related skills and abilities › Learning is facilitated with clear and effective presentations, demonstrations, and active learner involvement › Regular opportunities are provided for learners to practice, perform, and receive feedback on all required knowledge, skills and abilities › Instruction promotes the application, transfer and retention of learning › Learner behavior standards are consistently and constructively reinforced › Learner questions and discussions are effectively acknowledged, guided, and integrated in the learning process in a positive way
<p>6. Comprehensive Skill Standards Inventory An inventory of ten critical functions and key activities developed by the Vocational/ Technical Council (VTC) of the Washington State Board for Community and Technical Colleges.</p> <p><u>Targeted respondents:</u> subject matter experts, instructional facilitators, administrators</p> <p>Get the tool: CLICK HERE</p>	<p>Behavior</p> <p> Skill proficiency</p>	<p>For each of the following items, how well am I performing this activity for my job?</p> <ul style="list-style-type: none"> › Maintain instructional systems, equipment and/or tools [Not evident or observed, novice, skilled, master] › Evaluate and monitor the safety of the instructional areas and practices. › Create, evaluate, and modify curriculum. › Implement curriculum, outcomes, and assessments. › Integrate curriculum with other faculty in the department and in other instructional areas/institutions. › Develop, review, and update program course plan. › Recruit and work with advisory committee and employers to meet changing needs of the program. › Identify, evaluate, and modify program outcomes and assessments. › Maintain (or obtain) program accreditation. › Coordinate program development with other programs and institutions. › Provide individual and group instruction. › Provide information or referrals to meet student needs

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>7. Rubric for Evaluating North Carolina's School Nurses</p> <p>An assessment created by the North Carolina Department of Public Instruction on the professional practices of school nurses with respect to achieving the state's standards of performance and to contextualize anticipated levels of performance.</p> <p><u>Targeted respondents:</u> subject matter experts, instructional facilitators, administrators</p> <p>Get the tool: CLICK HERE</p>	<p>Behavior</p> <p> Use of knowledge and skills</p>	<p>Types of PD Participants</p> <ul style="list-style-type: none"> › Advocates for safe and effective school nursing services that address student needs and support learning. [Not demonstrated, developing, proficient, accomplished, distinguished] › Participates in the implementation of initiatives designed to improve educational and support services to promote positive student outcomes. › Demonstrates leadership within the profession and practice setting and collaborate with the student, family, school staff, and community providers. › Demonstrated leadership by serving as a health expert and managing school health services. › Aligns practice with the requirements of the Board of Nursing, recognized standards of nursing practice and education goals. › Fosters an environment that supports success of all students. › Communicates effectively in a variety of formats in all areas of nursing practice. › Uses environmentally safe and healthy practices. › Attains knowledge and competence that reflect current nursing practice. › Integrates evidence and research findings into nursing practice. › Collects comprehensive data pertinent to the student's health and analyze the data to determine nursing diagnoses. › Based on the assessment, identifies expected student outcomes and develop a plan with strategies to attain those outcomes. › Implements the plan of care, coordinate care delivery, and evaluate the effectiveness of the plan. › Utilizes appropriate resources to plan and provide school health services that are safe, effective, and financially responsible

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>8. School Health Profiles</p> <p>A system of surveys administered by education and health agencies to assess school health policies and practices in states, large urban school districts, territories, and tribal governments.</p> <p><u>Targeted respondents:</u> middle and high school principals and lead health education teachers</p> <p>Get the tool: CLICK HERE</p>	<p>Behavior</p>	
	<p>Policy changes</p>	<p>During the past year, has anyone at your school done any of the following activities?</p> <ul style="list-style-type: none"> > Reviewed your district's local wellness policy (Yes or no) > Helped revise your district's local wellness policy > Communicated to school staff about your district's local wellness policy > Communicated to parents and families about your district's local wellness policy > Communicated to students about your district's local wellness policy > Measured your school's compliance with your district's local wellness policy > Developed an action plan that describes steps to meet requirements of your district's local wellness policy <p>Has your school adopted a policy prohibiting tobacco use? (Yes or no)</p>
	<p>Organizational practices</p>	<p>Has your school ever used the School Health Index or other self-assessment tool to assess your school's policies, activities, and programs in the following areas?</p> <ul style="list-style-type: none"> > Physical education and physical activity (Yes or no) > Nutrition > Tobacco-use prevention > Alcohol- and other drug-use prevention > Chronic health conditions (e.g., asthma, food allergies) > Unintentional injury and violence prevention (safety) > Sexual health, including HIV, other STD, and pregnancy prevention <p>During the past year, did your school review health and safety data such as Youth Risk Behavior Survey data or fitness data as part of your school's improvement planning process?</p> <ul style="list-style-type: none"> > Yes > No > Our school did not engage in an improvement planning process during the past year

Instruments for Evaluating Professional Development

Tool Name and Description Targeted Respondents Link to Tool	Levels of PD Evaluation and Sample Indicators	Sample Data Collection Instrument Items
<p>9. National Youth Risk Behavior Survey</p> <p>A national school-based survey administered by the CDC that monitors health-related behaviors that contribute to the leading causes of death and disability among youth and adults.</p> <p><u>Targeted respondents:</u> public health program beneficiaries</p> <p>Get the tool: CLICK HERE</p>	Impact	
	<p>Student self-reported physical activity</p>	<p>During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?</p> <p>On an average school day, how many hours do you watch TV?</p> <p>In an average week when you are in school, on how many days do you go to physical education (PE) classes?</p>
	<p>Student self-reported eating habits</p>	<p>During the past 7 days, how many times did you drink 100% fruit juices such as orange juice, apple juice, or grape juice? (Do not count punch, Kool-Aid, sports drinks, or other fruit-flavored drinks)</p> <p>During the past 7 days, how many times did you eat fruit? (Do not count fruit juice.)</p> <p>During the past 7 days, how many times did you eat green salad?</p>
	<p>Body mass index</p>	<p>How do you describe your weight? [<i>Very underweight, slightly underweight, about the right weight, slightly overweight, very overweight</i>]</p>
	<p>Incidence of asthma</p>	<p>Has a doctor or nurse ever told you that you have asthma?</p>

US Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion
www.cdc.gov/healthyschools/trainingtools.htm