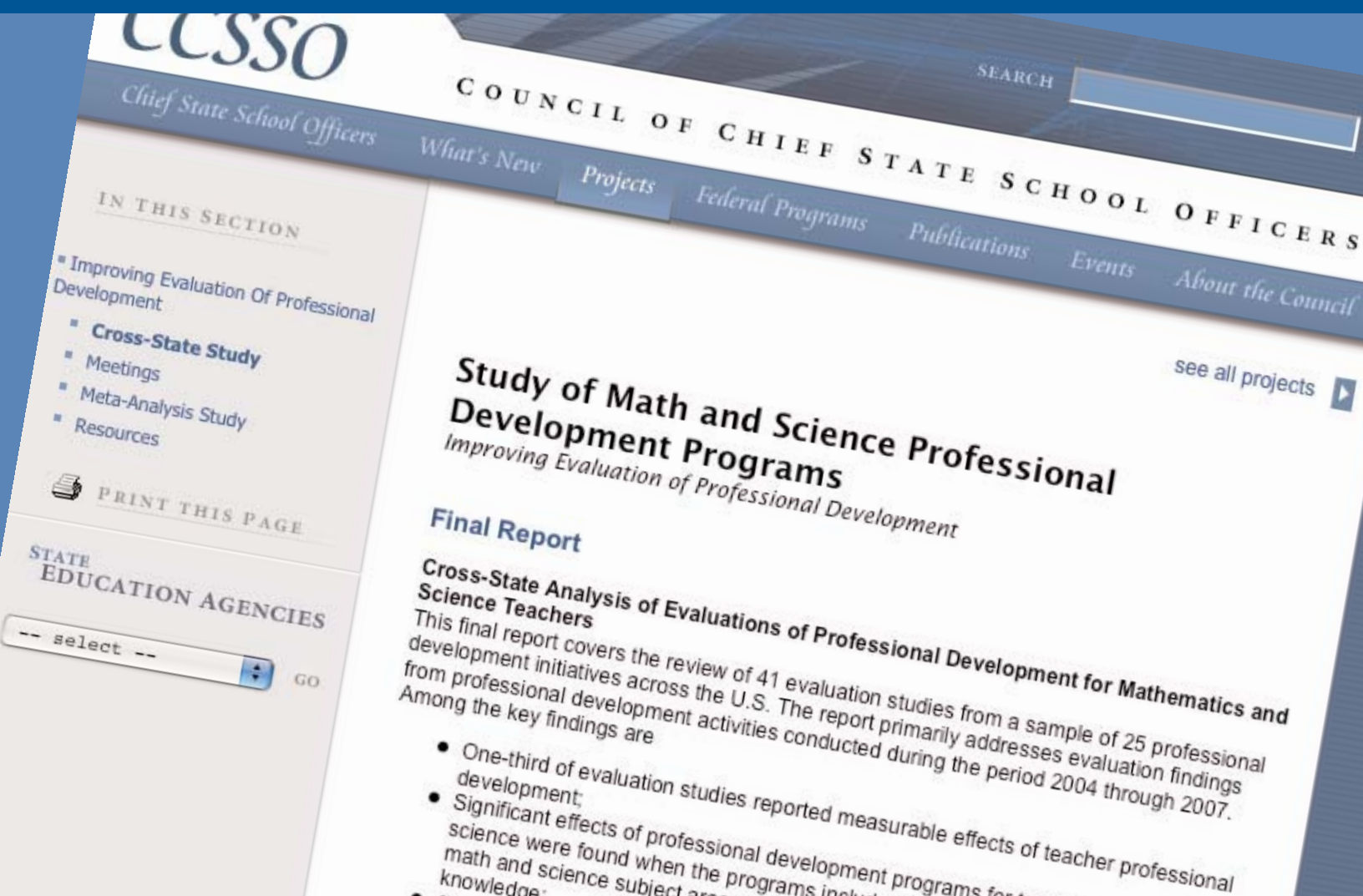# CCSSO PROFESSIONAL DEVELOPMENT MATERIALS

A Navigation Guide

CENTER ON INSTRUCTION

CCSSO PROFESSIONAL DEVELOPMENT MATERIALS

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CENTER ON
INSTRUCTION

CONTENTS

INTRODUCTION

This brief guide will assist representatives of Regional Comprehensive Centers (RCCs) and State Education Agencies (SEAS) as they explore the large collection of professional development materials and resources available from the Council of Chief State School Officers (CCSSO). Of particular note is CCSSO's *Study of Math and Science Professional Development Programs: Improving Evaluation of Professional Development,* which is available at (http://www.ccsso.org/projects/improving_evaluation_of_professional_ development/Cross_State_Study/).

This guide includes a statement of the purpose of the CCSSO materials, a description of the types of materials available, an explanation of how to use the materials, summaries of their major strengths and limitations, and points to consider before using the materials.

PURPOSE OF THE CCSSO PROFESSIONAL DEVELOPMENT MATERIALS

In general, the CCSSO documents provide guidance, evaluation tools, and recommendations for designing or selecting professional development programs that represent best practices in mathematics and science. Large organizations, such as districts or state departments of education, may find all components of the CCSSO website relevant and useful. These agencies may engage in their own review of professional development programs and/or select programs to implement. Smaller districts or states with limited resources to conduct their own review may use the results from the cross state study to select effective professional development programs.

MATERIALS

CCSSO provides various materials on its website.

- **Reports.** CCSSO has published *A Cross-State Analysis of Evaluations of Professional Development for Mathematics and Science Teachers* to evaluate math and science professional development programs. The

analysis used research-based criteria established for high quality professional development. Results from this cross-state study are reported for specified programs in the final report available here: http://www.ccsso.org/content/pdfs/cross-state_study_rpt_final.pdf .

- **Tools.** CCSSO has published a list of *Evaluation Tools for Professional Development* that examines the effects of professional development programs. The site provides links or contact information for obtaining the evaluation tools. It also includes measures that track types of activities and describe teachers' involvement in, and perceptions of, professional development activities. Other tools described on the site evaluate the effect of the professional development on teacher content knowledge, instructional change, and student achievement. Additional tools are designed to evaluate existing professional development.

- **Rubrics.** The CCSSO site provides a *PD Program Quality Rubric* that helps users evaluate the quality of proposed or enacted professional development programs. The "fill-in-the-blank" worksheets helps users explore different dimensions when evaluating a professional development program. The worksheets provide Likert scales for rating the materials on each dimension. A users' guide explains the terminology in the rubric and gives examples for activities that might fit with each dimension. In addition, the user's guide details the steps in an evaluation plan and explains how to critique the outcomes.

HOW TO USE THE WEBSITE

The CCSSO professional development materials can be accessed from the Study of Math and Science Professional Development Programs: Improving Evaluation of Professional Development page of the site: http://www.ccsso.org/projects/improving_evaluation_of_professional_ development/Cross_State_Study/. The materials are easy to download and the file formats are readily accessible on most computer platforms.

Cross-State Study

This section of the site includes three reports that document cross-state evaluation studies of math and science professional development initiatives conducted between 2004 and 2007. The *Final Report* describes the findings from 41 evaluations of 25 professional development programs. The selected programs were nominated for evaluation by participating states. *Year 2 Study Results* describes the characteristics of the 25 professional development initiatives and ongoing efforts to evaluate their effectiveness. *Initial Study Results* describes the procedures used in the cross-state study.

- Select *Final Report* to download a PDF file of the 41-page document *Does Teacher Professional Development Have Effects on Teaching and Learning?* Here, readers will learn about the methods, learning objectives, and activities and duration of the 25 professional development initiatives included in the study. Lists of the professional development providers are also provided. The programs are categorized, by objective, as either showing or not showing measurable effects. The findings of this study can guide staff members of Regional Comprehensive Centers and State Education Agencies on how to design, select, and implement professional development efforts. Additionally, the studies' research methods can be used as models for evaluations of state and local professional development initiatives.

- Select Year 2 Study Results to download a PDF document titled *Analysis of the Quality of Professional Development Programs for Mathematics and Science Teachers: Findings from a Cross-State Study.* This document describes the process used for the cross-state study to analyze the evaluation studies of the 25 professional development initiatives. It includes detailed information about methods and measures and descriptions of the the professional development programs.

- Select the "Initial Study Results" link to download a PDF document that briefly summarizes the results from implementation of the Interactive Quality Rubric with the professional development programs. Descriptive information about the characteristics of the professional development programs is provided.

Professional Development Evaluation Tools

From the Study of Math and Science Professional Development Programs web page, the evaluation tools are available under the heading *Evaluation Tools for Professional Development.* The materials are organized into five categories:

- professional development activities,
- teacher knowledge and skills,
- change in instruction,
- analyzing effects on student achievement, and
- evaluation design assistance.

Each link automatically downloads the associated materials.

- Select the *Professional Development Activities* link to download a Microsoft Excel document titled Eval_Tools_Chart-PD_Activities_rev.xls. This document contains worksheets describing measurement tools that evaluate professional development materials. Each description includes the instrument title, the type of tool, a description of the instrument, information about the developer, technical adequacy information, and other information needed to access the instrument. Links to additional information are provided for some of the instruments.

- Click on the link to *Teacher Knowledge and Skills* to download a Microsoft Excel document titled Eval_Tools_Chart-Teacher_Knowledge_rev.xls. Four instruments that measure teachers' knowledge in mathematics and/or science are described. Information about each instrument includes the title, type of tool, general description, contact information for the developer, and technical adequacy information. Links to the developers are provided for each instrument.

- The document linked to *Change in Instruction* is titled Eval_Tools_Chart-Change_Instruction_rev.xls. Nineteen worksheets describe instruments that measure changes in instructional practices from the perspectives of teachers, principals, and students perspectives. Observation forms, surveys, interview protocols, and direct assessments of change are included. As with the Professional Development Activities and Teacher Knowledge and Skills documents, general information about each measure is provided along with contact information for the developer(s), as are links

to additional information. Select the link for *Analyzing Effects of Student Achievement* from the Evaluation Tools for Professional Development web page to download a Microsoft Excel document titled Eval_Tools_Chart-Analyzing_Stu_Effects.xls. Four worksheets describe materials for conducting data analysis techniques to quantitatively evaluate the effects of teacher actions on student achievement using value-added modeling, as well as instruments for measuring the effects of instruction on students' affect such as motivation. Of the four worksheets presented in this document, only two *(Educational Value-Added Assessment System [EVAAS] and Student Motivation)* are applicable to mathematics.

- Click on the link titled *Evaluation Design Assistance* to access the Excel spreadsheet titled Eval_Tools_Chart-Eval_Design_Assist.xls. The materials described in this document include checklists for evaluating educational programs such as large-scale assessment programs, models and standards for designing program evaluations of existing programs, surveys that capture principals' perspectives on the effectiveness of instruction, and surveys for collecting information about student and school characteristics. In addition, a link is provided to an online evaluation resource library (OERL) with additional materials and reports of evaluation activities.

Interactive Quality Rubric

From the Study of Math and Science Professional Development Programs web page, click on the heading *PD Program Quality Rubric* to download a rubric that guides state and local education agencies in selecting and evaluating professional development programs. Guidelines for implementing the rubric are available by clicking on the heading *Guide to PD Program Quality Rubric*. These materials can be used by a review panel to evaluate potential or existing professional development programs. The rubric also provides a means to track program evaluation, the dimensions being addressed in the evaluation, and the assessment instruments being used.

To begin using these documents, download both the rubric (Revised Rubric-rev022406.xls) and the guide (RubricGuide_rev032906.doc). Review the Guide to the PD Program Quality Rubric, noticing that there are four dimensions on which the professional development materials will be evaluated: (1) Research-based Criteria of PD Quality, (2) Evaluation, (3) Development, and

(4) Documentation. The guide describes each of these dimensions and details the sub-criteria that support the dimensions. The guide lists questions about the dimension, measurement tools for answering these questions, and a description of how the information can be used.

The dimensions and sub-criteria described in the guide correspond to the rating scale provided in the Interactive Rubric. The rubric begins with a cover page that documents aspects of the program (purpose,, grade levels, subject areas, and primary components). The rubric captures information about each sub-criterion in the program and the sufficiency of the information that is provided by the developers to evaluate the program. There is also room for comments and open-ended responses to be entered by the evaluation team.

Contacts for Programs Cited in Final Report

As a resource for contacting organizations about the professional development programs investigated in the Cross-State Study, the *Contacts for Programs Cited in Cross-State Study Report* provides the program name as well as contact names and information for the local coordinator(s) and the local evaluator(s).

Research on High-Quality Professional Development and Effective Evaluation—Annotated Bibliography (updated April 2008)

Click on the link for the *Research on High-Quality Professional Development and Effective Evaluation—Annotated Bibliography (updated April 2008)* to access a Microsoft Word document. Citations are provided for research-based articles, technical documents, and other documents along with brief descriptions of the purpose or outcomes of the document. When possible, links are provided to Internet-based resources. Information is organized alphabetically by author into six topics: evaluation tools and designs, research of particular approaches to professional development, evaluations of programs, scientific research design in education, related general references, and other online resources.

STRENGTHS OF THE MATERIALS

The CCSSO materials have numerous strengths. Overall, the information is easy to access and obtain. Downloading materials is automatic and the file formats are readily available on most computers. The website is easy to navigate. There are also strengths associated with each of the three main components.

- The *Cross-State Study* provides research-based evaluations about the effectiveness of existing professional development programs that states and/or districts can reference without conducting their own studies. This information may be directly beneficial for education agencies as they make implementation decisions about professional development programs.

- The *Professional Development Evaluation Tools* provide direct links or contact information for obtaining the evaluation materials. By including this information, the website provides access to resources that might otherwise be difficult to find. In addition, these resources emphasize the need for evaluation of the effects of professional development programs on teacher content knowledge, instructional change, and student achievement.

- The *Interactive Quality Rubric* is an easy-to-use template for evaluating professional development programs. Key evaluation are provided, which may help focus the user's attention on the program's important features. This rubric can be used when education agencies are evaluating which professional development program to select or evaluating enacted programs.

SPECIAL CONSIDERATIONS

When using the materials on the CCSSO website, readers should consider some limitations that affect the website's utility. Users of the website may find that they need more information to clarify the material presented and/or justify its use.

- *The Cross-State Study.* As noted by the authors of the Final Report, many of the evaluation studies reported were not designed to establish a causal link among teachers' content knowledge, changes in instructional practices, or students' achievement gains and teachers' participation in the professional development activities. Twenty-four of the 41 reports evaluated the effects of the professional development program on teacher knowledge. Ten reports documented measurable effects on increasing teachers' knowledge. Thirteen studies collected and reported data evaluating changes in teachers' instructional practices as a result of the professional development; however, only four studies demonstrated measurable effects. Twenty studies reported effects on student achievement for one or more years of implementation of the professional development program; however, only 11 studies were conducted with a treatment and comparison group design. Of these 11, seven studies using quasi-experimental research designs reported measurable effects on student outcomes in that the outcome was supported by (a) statistical significance or change linked to treatment teachers, (b) substantively important finding, and (c) technically adequate measurement tools for evaluation purposes. Fourteen of the 41 studies reported data on fidelity of implementation.

- *Professional Development Evaluation Tools.* Some of the resources in this section have limited technical adequacy. Measures are listed for evaluating the effects of professional development on teacher content knowledge, instructional change, and student achievement, but minimal information is provided about the reliability of the results and validity of these measures for making decisions about the quality of professional development programs. Additional information about the technical adequacy of the measures might be available directly from the test developers. Before using the measures to make decisions, potential users should confirm

their reliability and validity. In addition, some of the materials are copyright protected, which may require the purchase of the measures, or asking for special permission to use the measures.

- *Interactive Quality Rubric.* Many of the assumptions made about characteristics of effective professional development in this rubric are based on research from the Eisenhower study. The list of characteristics of effective professional development is not exhaustive. Rating the quality of evidence provided by professional development programs is currently a difficult task because there is a gap in the research base available to support this type of assessment.

TENETS TO REMEMBER WHEN SELECTING AND USING EVALUATION MATERIALS FOR PROFESSIONAL DEVELOPMENT PROGRAMS

- Make sure to assess the technical adequacy of the tools before making decisions to use them in your settings.

- Check to make sure that the materials you are considering don't require copyright or special permission for use.

- Understand that not all of the materials and resources mentioned on the CCSSSO website are free or inexpensive. Be careful to examine all costs before making decisions about purchases.

- Be aware that some additional training may be required to use rubrics or some of the other tools recommended on the CCSSO website.

- It is important to examine all aspects of the research on professional development and recognize that the list of key features on this website may not be inclusive of best practices in professional development.

SUMMARY

The following table describes each CCSSO component addressed in this document, lists additional materials provided in each component, and considers the strengths and limitations of the information in each component.

The CCSSO Materials

	Cross-State Study	**Professional Development Evaluation Tools**	**Interactive Quality Rubric**
Purpose	Document findings from professional development programs that have been implemented	Provide contact information for existing evaluation tools available for critiquing professional development programs	Worksheet for evaluating potential professional development programs on important dimensions
Supporting Materials	• Final Report, Year 2 Study Results, Initial Study Results • Project Contacts List • Research on High-Quality Professional Development and Effective Evaluation—Annotated Bibliography (updated April 2008)	• Professional development activities • Teacher knowledge and skills • Change in instruction • Analyzing effects on student achievement • Evaluation design assistance	• PD Program Quality Rubric • Guide to PD Program Quality Rubric
Strengths	• Evaluates existing programs to provide some guidance	• Direct links or contact information for obtaining the materials	• Template for evaluating professional development program • Can be used to evaluate potential or enacted programs
Limitations	• Some programs were not systematically evaluated • Causal inferences are not possible • Fidelity of implementation was not evaluated	• Limited information about the technical adequacy of the measures • Some of the measures are copyright protected	• Dimensions may not include all features of effective professional development programs • No information about training that is required