what Works in Schools

Facilitator's Guide

What Works in Schools

Facilitator's Guide

ASCD

About the Developers

This guide was prepared by Robert J. Marzano, senior scholar at Mid-continent Research for Education and Learning and adjunct associate professor at Cardinal Stritch University; Jennifer S. Norford, senior consultant at Mid-continent Research for Education and Learning; and Marcia D'Arcangelo, ASCD program manager. Marzano has authored 21 books, among them *What Works in Schools: Translating Research into Action* (ASCD, 2003), *Classroom Instruction That Works* (ASCD, 2001), and *Transforming Classroom Grading* (ASCD, 2000). He has developed programs and practices for K–12 classrooms that translate current research and theory into instructional methods, headed a team of authors who developed Dimensions of Learning (ASCD), and gained international recognition as a trainer and speaker.

Norford's education experience includes classroom teaching, curriculum development, and consultation to K–12 teachers, curriculum coordinators, data and assessment specialists, and technology directors. Her work in research and development focuses on instruction and assessment in a standards-based classroom. She is an author of *A Handbook for Classroom Instruction That Works* (ASCD, 2002) and manager of the Early Literacy Initiative at Mid-continent Research for Education and Learning.

The video program was produced by ASCD and State of the Art, Inc.

We gratefully acknowledge the support and participation of the Consolidated School District 15, Palatine, Illinois (Virginia Lake Elementary School, Carl Sandburg Junior High School, and Willow Bend School); Mount Vernon High School, Alexandria, Virginia; River Hill High School, Clarksville, Maryland; and Wheaton High School, Wheaton, Maryland.

ASCD Staff

Video Production

Marcia D'Arcangelo, *Producer and Program Manager*
Sally Chapman, *Development Team Member*
Gail Clark Dickson, *Development Team Member*
Scott Willis, *Development Team Member*

Manual Production

Nancy Modrak, *Director, Publishing*
Gary Bloom, *Director, Design and Production Services*
Judy Ochse, *Associate Editor*
Tracey A. Smith, *Production Manager*
Karen Monaco, *Senior Graphic Designer*
Cynthia Stock, *Desktop Publisher*
Eric Coyle, *Production Specialist*

ASCD is a diverse, international community of educators, forging covenants in teaching and learning for the success of all learners. Founded in 1943, ASCD is a nonprofit, nonpartisan, international education association with headquarters in Alexandria, Virginia.

ASCD publications present a variety of viewpoints. The views expressed or implied in the video program and manual should not be interpreted as official positions of the Association.

WHAT WORKS IN SCHOOLS

Introduction

Workshops

Handouts and Overheads

Readings and Resources

what works
IN SCHOOLS

Introduction

What Works in Schools

Robert Marzano's most recent book, *What Works in Schools: Translating Research into Action,* is about *possibility*, specifically the possibility that K–12 education is on the brink of the best of times if it so chooses. His basic premise is that if we follow the clear guidance that is provided by research over the past 35 years, we can enter an era of unprecedented effectiveness in the public practice of education—an era in which the vast majority of schools can be highly effective in terms of promoting student achievement and learning.

As the foundation for his case, Marzano presents evidence based on his synthesis of the extant research over the last three and one-half decades, which, he asserts, has provided clear and unprecedented insight into the nature of schooling. Interested participants can read technical and non-technical descriptions of Marzano's work in a number of publications (e.g., Marzano, 1998a, 2000; Marzano, Pickering, & Pollock, 2001). The research provides clear guidance regarding the changes necessary to produce schools that don't just work but work remarkably well. However, to implement those guidelines will require a powerful commitment to change the status quo.

Although it is true that some schools already operate at highly effective levels, as evidenced by Barth and others (1999), their numbers are relatively few. In effect, according to Marzano, we stand at a point of decision: What changes do we need to make in our schools and schooling, and how can we best implement those changes? *What Works in Schools* is fundamentally a discussion that provides guidance for schools interested in making substantive changes. The discussion points out three general categories of factors that influence student academic achievement: school-level factors, teacher-level factors, and student-level factors. School-level factors are those that are primarily a function of school policy and schoolwide decisions and initiatives; examples include a guaranteed and viable curriculum and staff collegiality and professionalism. Teacher-level factors are those that are primarily under the control of individual teachers, such as the use of specific instructional strategies and classroom management techniques. Student-level factors, generally associated with student background, might include home environment and motivation.

Implicit in the three-level categorization is the notion that the school (as opposed to the district) is the proper unit of focus for reform. Indeed, this is a consistent conclusion in the research literature (e.g., Scheerens & Bosker, 1997; Teddlie & Reynolds, 2000; Wang, Haertel, & Walberg, 1993). The recommendations in *What Works in Schools* are based on the

premise that the current structure of public education is malleable enough to accommodate these recommendations. Although the research provides remarkably clear guidance as to the steps schools can take to become highly effective in terms of enhancing student achievement, it remains to be seen whether public education is up to the task of following that guidance. Many schools have begun to show that they are up to the challenge.

Purpose of the Program

The purpose of this videotape program is to concisely document and illustrate the research-based factors that contribute to student achievement as presented in *What Works in Schools: Translating Research into Action*, an ASCD book written by Robert J. Marzano. The program can be used to introduce principals, supervisors, teachers, and others to the school-level, teacher-level, and student-level factors drawn from research conducted over the past 35 years. In addition, the workshops in the program that have a longer format can be used to help schools identify their own particular areas of need and possible next steps for addressing these areas.

Components of the Program

This video-based staff development series consists of three videotapes and a Facilitator's Guide that includes an agenda and activities for each of six workshops (two per videotape), as well as handouts, overheads, and additional readings and resources. Tape 1, *School Factors*, examines factors that are primarily a function of school policy and schoolwide decisions and initiatives, and provides examples of these factors at work in schools. Tape 2, *Teacher Factors*, focuses on factors that are primarily under the control of individual teachers. Interviews and on-site observations offer perspectives on effective instructional strategies, classroom management, and class curriculum design. Tape 3, *Student Factors,* describes factors related to students: home environment, learned intelligence and background knowledge, and motivation. Observations show how the sometimes negative effects of these factors can be overcome.

Two workshop formats are provided for each videotape. In the shorter format, participants view the video in its entirety, reflect on it, and share broad reactions to and perspectives about the issues addressed. During the longer workshop format, agendas may be modified to accommodate the time available and the videos may be viewed in segments. Activities, supplemental readings, and opportunities for discussion deepen

participants' understanding of specific issues and help them apply these understandings to their own situations. The longer workshops are designed to help participants gain a better understanding of what works in schools; the specific school-, teacher-, and student-level factors; and the common problems faced by schools and districts as they begin addressing these factors.

Use of the Facilitator's Guide

As the facilitator of these workshops, you may find it helpful to keep in mind that if participants discuss their different insights, they will often learn more than if they simply view each tape without follow-up activities. Moreover, viewing videotapes can be a passive activity unless careful preparation has been made to turn viewing into an intellectually active experience by providing appropriate previewing and follow-up activities. The follow-up activities can promote further reflection and can support the participants' efforts to plan for the effective application of the ideas presented in the program.

This guide is designed to help you obtain the best possible benefits from this video program. The workshop activities and discussion questions included here can serve as starting points. However, your choices of activities and questions should certainly not be limited to those contained in this guide. Indeed, you should encourage participants to raise their own questions based on the particular needs or concerns of their school, district, or community.

This guide contains four sections:

Introduction. This provides an overview of the research presented in *What Works in Schools*, as well as a description of the video series.

Workshops. These provide agendas, materials, and information needed for the facilitator to plan and conduct two different workshops for each videotape.

Handouts and Overheads. These are the materials to be duplicated and distributed to participants in each workshop. They include camera-ready masters for overhead transparencies that are incorporated within the two workshop formats.

Readings and Resources. This section includes a selection of articles that may be duplicated and distributed to workshop participants. Several of the readings are incorporated within the workshop formats. A bibliography of related resources also is provided.

Role of the Workshop Facilitator

As facilitator of this videotape program, you could be a staff developer, principal, central office administrator, teacher, parent, or community member. As the leader, your preparation for the workshop and discussion will help your group to benefit from this program. Keep in mind that you may be showing these videotapes to groups of participants with varying levels of knowledge and experience with school reform and improvement. Your background, knowledge, and outside reading will provide you with a strong base for discussion. As a facilitator, you have several major responsibilities:

Read and View the Materials.

Your initial preparation should include viewing the videotape you are going to use in your workshop, reading the Introduction to this guide, and studying the workshop format you plan to use.

Prepare the Program Activities.

It will be helpful to read the articles in the Readings and Resources section of this guide to gain background information for discussion. Select the appropriate workshop format for your audience. Make adaptations based on the time available and the needs of the workshop participants. In the Workshops section of this guide, review the specific information, guidelines, and handouts for the workshop you plan to lead. Plan the workshop agenda, duplicate materials, and obtain needed equipment and supplies for the workshop.

Reserve a Room and Plan the Seating Arrangement.

Reserve a room that is large enough, with ample seating for the number of participants you expect to attend; ensure that it is conducive to both large- and small-group activities. Tables that accommodate five to eight participants are recommended to facilitate interaction and collaboration.

Arrange for Necessary Video and Audiovisual Equipment.

Arrange for a VCR and monitor (one 23- to 25-inch monitor will suffice for up to 25 participants); ensure proper electrical fitting. Make sure you have sufficient power cords with adapters for the VCR. Plug in both machines to ensure their working condition and make sure that the electrical outlets in the room are in working order. If the room is large, you may need to arrange for a microphone and speakers. If you plan to use overheads, arrange for an overhead projector and screen; check that they work properly. Bring extra transparencies and markers with you if you will need them. Provide or arrange for a flip chart with a pad of

poster-size paper and markers, chalk and eraser for a chalkboard, or markers and eraser for a whiteboard.

Prepare Materials.

Duplicate enough handouts for all participants, as well as supplementary readings you would like to distribute. Prepare overhead transparencies from the Handouts and Overheads section of this guide. Duplicate any overheads you wish to use as handouts.

Announce the Program.

In your announcements or invitations, give sufficient notice and clearly specify the day of the week, date, time, and location for the program. Remind participants to bring pencils and notepads. If parents, business leaders, or community members are invited, they may need more advance notice than school or district staff members.

Make Other Arrangements.

Prepare an agenda, including times for breaks. Arrange for refreshments, if desired.

what works IN SCHOOLS
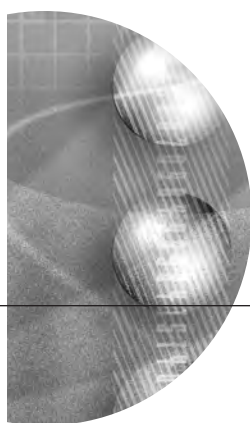
workshops

Workshop 1A

Workshop 1A, approximately 1 and ½ hours in length, uses Tape 1, *School Factors*, to introduce participants to the factors that are primarily a function of school policy and schoolwide decisions and initiatives:

- Guaranteed and viable curriculum

- Challenging goals and effective feedback

- Parental and community involvement

- Safe and orderly environment

- Staff collegiality and professionalism

During the workshop, participants examine 21 specific elements related to the five school-level factors and consider possible interventions a school might take to address the factors.

As the facilitator, you may use the following agenda or vary it to suit your particular needs or the needs of the participants.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	10
Introduction to the Video	10
View Tape 1, *School Factors*	30
Reflection and Discussion	40
Conclusion	5
Total Approximate Workshop Time	95 minutes

Objectives for Workshop 1A

1. Understand the five school-level factors:

- Guaranteed and viable curriculum

- Challenging goals and effective feedback

- Parental and community involvement

- Safe and orderly environment

- Collegiality and professionalism

You may wish to provide copies of some of the readings suggested in the Readings and Resources section of this guide. Select information that is relevant to your participants' needs and concerns. You can distribute it to participants either before the workshop as an introduction to the topic or after the workshop as a review.

Providing folders with all materials inside is an efficient way to distribute handouts and other resources. You may also wish to provide name tags.

2. Identify specific elements related to each of the five factors.

3. Identify possible interventions a school might take to address the school-level factors.

Materials List for Workshop 1A

- Handout 1, School-Level Factors

- Handout 2, Elements of School-Level Factors

- Handout 3, Possible Interventions for School-Level Factors

- Overhead 1, Objectives for Workshop 1A

- Reading 1, "Introducing the Best of Times," by R. Marzano

- Reading 2, "The School-Level Factors," by R. Marzano

Welcome and Introductions (10 minutes)

1. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

2. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually.

3. Summarize key points from the Introduction section of this guide in your own words. Explain to participants that this video is the first part of a three-part program that focuses on research over the past 35 years and provides guidance for schools interested in making substantive change. The video focuses on school-level factors. Subsequent workshops will focus on teacher-level factors and student-level factors.

Introduction to the Video (10 minutes)

1. Display Overhead 1, Objectives for Workshop 1A, and explain the goals of this workshop. Tell participants

   ♦ **By the end of this workshop, you will be able to**

      1. **Understand the five school-level factors:**

         • **Guaranteed and viable curriculum**

- **Challenging goals and effective feedback**

- **Parental and community involvement**

- **Safe and orderly environment**

- **Collegiality and professionalism**

2. **Identify specific elements related to each of the five factors.**

3. **Identify possible interventions a school might take to address the school-level factors.**

2. Distribute copies of Handout 1, School-Level Factors, to participants.

3. Ask participants to consider each of the five school-level factors listed on Handout 1. Pose the following question:

   What do these factors mean to you?

   Allow participants about 5 minutes to write a personal definition for each factor.

View Tape 1, *School Factors* (30 minutes)

1. Suggest that participants use Handout 1 to record notes and questions as they view the video.

2. Show Tape 1, *School Factors*.

Reflection and Discussion (40 minutes)

1. After viewing the video, ask participants to refer to Handout 1, on which they recorded a definition for each of the school-level factors. Suggest they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video.

2. Ask participants to form five small groups, and ask each group to select a reporter. Assign each group one school-level factor. Distribute Handout 2, Elements of School-Level Factors. Ask the small groups to discuss each element listed on Handout 2 that relates to their assigned school-level factor. Ask participants to address the following question:

   If a school were addressing this element, what are possible interventions the school might take?

Suggest that the small-group reporters record the discussion points, so they can report accurately and completely to the total group. Allow about 15 minutes for this activity.

3. Ask each small-group reporter to share what was discussed about each element of the group's assigned school-level factor. As each group representative reports, record important points on a chalkboard or whiteboard, a flip chart, or an overhead transparency. Allow about 15 minutes for this activity.

4. After the discussion, distribute Handout 3, Possible Interventions for School-Level Factors. Explain to participants that Handout 3 provides some ideas that they can add to the list of possible interventions they generated in their small-group discussions. In addition, distribute copies of Reading 2, "The School-Level Factors," from *What Works in Schools.* Suggest that participants read it after the workshop and reflect on how they might implement some of the suggested interventions.

Conclusion (5 minutes)

1. Review the workshop objectives and address any questions the participants may have about the school-level factors and additional workshop options. Thank the participants for attending the workshop.

2. Collect all comments noted on flip chart paper or overhead transparencies.

Workshop 1B

Workshop 1B, approximately 3 and ½ hours in length, introduces participants to the factors that are primarily a function of school policy and schoolwide decisions and initiatives:

- Guaranteed and viable curriculum
- Challenging goals and effective feedback
- Parental and community involvement
- Safe and orderly environment
- Staff collegiality and professionalism

The workshop uses Tape 1, *School Factors*. During the workshop, participants examine 21 specific elements related to the five school-level factors. In addition, participants complete a questionnaire designed to help them examine the school-level factors at work in their own school. They also consider possible interventions and next steps for their own school. The workshop is designed for those who wish to become more deeply involved in examining school-level factors identified from the research that can improve student achievement. Possible audiences for this format of the workshop might include school improvement teams, faculty or staff, task forces, parent-teacher groups, leadership teams, central office administrators, and school board members.

This workshop details activities for 10–100 participants. If the workshop has to be shorter, you may eliminate portions of the activities as appropriate.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	15
Introductory Activities	20
View Tape 1, *School Factors*	30
Clarifying Definitions	20
School-Level Factors in More Detail	35
Break	20
The Survey Instrument	45
Next Steps	15
Conclusion	10
Total Approximate Workshop Time	3 hours, 25 minutes

Objectives for Workshop 1B

1. Understand the five school-level factors:

    - Guaranteed and viable curriculum

    - Challenging goals and effective feedback

    - Parental and community involvement

    - Safe and orderly environment

    - Collegiality and professionalism

2. Understand specific elements related to each of the five factors.

3. Identify possible interventions a school might take to address the school-level factors.

4. Identify the areas in which your school is doing least well.

5. Identify possible next steps for addressing your school's areas of highest need.

Materials List for Workshop 1B

- Handout 1, School-Level Factors

- Handout 2, Elements of School-Level Factors

- Handout 3, Possible Interventions for School-Level Factors

- Handout 4, Questionnaire for School-Level Factors

- Overhead 2, Objectives for Workshop 1B

- Reading 1, "Introducing the Best of Times," by R. Marzano

- Reading 2, "The School-Level Factors," by R. Marzano

- Flip chart or butcher paper

Welcome and Introductions (15 minutes)

1. At the door, have a sign-in sheet for participants to record their names, addresses, phone numbers, and e-mail addresses. This will enable you to notify participants of opportunities to attend future meetings and give you a complete contact list of participants should you wish to send them notes generated during the workshop discussions.

Facilitator's Note

You may wish to provide copies of some of the readings suggested in the Readings and Resources section of this guide. Select information that is relevant to your participants' needs and concerns. You can distribute it to participants either before the workshop as an introduction to the topic or after the workshop as a review.

Providing folders with all materials inside is an efficient way to distribute handouts and other resources. You may also wish to provide name tags.

2. If participants are from different schools, arrange seating so that participants from the same school are sitting together.

3. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

4. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually. You might also ask the participants to state why they are interested in learning about *What Works in Schools* and to describe briefly the extent to which they are familiar with Robert Marzano's work, particularly his research on school effectiveness.

5. Display Overhead 2, Objectives for Workshop 1B, to introduce the workshop objectives. Tell participants

♦ **By the end of this workshop, you will be able to**

1. **Understand the five school-level factors:**

   • **Guaranteed and viable curriculum**

   • **Challenging goals and effective feedback**

   • **Parental and community involvement**

   • **Safe and orderly environment**

   • **Collegiality and professionalism**

2. **Understand specific elements related to each of the five factors.**

3. **Identify possible interventions a school might take to address the school-level factors.**

4. **Identify the areas in which your school is doing least well.**

5. **Identify possible next steps for addressing your school's areas of highest need.**

Reiterate that in this workshop participants will examine how these school-level factors operate in their school. Subsequent workshops will address the teacher-level factors and the student-level factors that most influence student achievement.

Introductory Activities (20 minutes)

Facilitator's Note

You may wish to distribute copies of Reading 1 to participants for reading prior to the workshop.

1. Share with participants a general overview of the research on education over the past 35 years. Include the case for "the worst of times" and Marzano's position for "the best of times." Use the information in the Introduction section of this guide and Reading 1, "Introducing the Best of Times," in the Readings and Resources section to guide your remarks.

2. Distribute Handout 1, School-Level Factors. Ask participants to consider each of the five school-level factors listed on Handout 1. Pose the following question:

   What do these factors mean to you?

   Give participants about 5 minutes to write a personal definition for each factor.

3. When participants have finished writing their personal definitions, ask them to share and discuss their definitions with someone sitting nearby. Invite a few volunteers to share their responses with the whole group. Allow about 10 minutes for this activity.

4. Allow participants a few minutes to record on Handout 1 any questions they may have about the school-level factors.

View Tape 1, *School Factors* (30 minutes)

1. Suggest that participants use Handout 1 to record notes and questions as they view the video.

2. Show Tape 1, *School Factors*.

Clarifying Definitions (20 minutes)

1. Ask participants to refer to Handout 1, on which they recorded a definition for each of the school-level factors. Suggest that they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video.

2. When they have finished refining their definitions, ask participants to discuss their definitions with someone sitting nearby. Allow about 5 minutes for this activity.

3. Invite several volunteers to share their responses with the total group. Record several definitions for each of the school-level factors on an overhead transparency, a flip chart, or a chalkboard or whiteboard. Allow about 10 minutes for this activity.

School-Level Factors in More Detail (35 minutes)

1. Ask participants to form five groups, one for each school-level factor. Ask each group to select a reporter. Distribute Handout 2, Elements of School-Level Factors. Ask the small groups to discuss each element that relates to their assigned factor. Ask participants to address the following question:

   If a school were addressing this element, what are possible interventions the school might take?

   Suggest that the small-group reporters record the discussion points so they can share their information and ideas with the total group. Allow about 20 minutes for this activity.

2. Ask each small-group reporter to share what was discussed about each element of the group's assigned school-level factor. Record important points on a chalkboard or whiteboard, a flip chart, or an overhead transparency. Allow about 15 minutes for this activity.

Break (20 minutes)

The Survey Instrument (45 minutes)

1. Invite participants to group with others attending from their school. Distribute Handout 4, Questionnaire for School-Level Factors. Ask participants to spend the next 15 minutes individually answering the items based on their experience in their own school.

2. Ask each group (made up of people from a single school) to select a recorder, a "counter," and a moderator. Ask the counters to collect Handout 4 from each participant and tally the results. If someone has a calculator and is willing to lend it, the counters might calculate an average score for each item on the survey. If a calculator is not available, the counter can simply tally the number of responses for each choice (i.e., 1, 2, 3, 4) for each item. Ask the recorders to write the results on chart paper. Allow about 10 minutes for this activity.

3. Ask participants to spend 5 minutes studying the results for their school without discussing or commenting on the results out loud.

Facilitator's Note

Please note that in this workshop Handout 4 is used before Handout 3. The survey (Handout 4) can also be found online at www.whatworksinschools.org.

Facilitator's Note

You may wish to make two copies of Handout 4 for each participant so they can record their responses on one sheet and copy them onto the other. This will ensure that participants can anonymously submit their responses to the group member who will tally the results. Place three or four sheets of butcher paper on each table for the next activity.

Ask participants to individually note what they see as the biggest factor their school needs to address, according to these results.

4. After participants have noted their conclusions individually, ask the moderators to lead the small groups in a discussion about the areas of most urgent need in relation to the school-level factors. Once a group reaches consensus, the recorder should write on the chart paper the factor that the group agrees the school most needs to address. Allow about 10 minutes for this activity.

5. Based on each group's identification of what the school most needs to address, ask the moderators to lead a brainstorming session to generate possible interventions. Allow about 5 minutes for this discussion.

Next Steps (15 minutes)

1. Distribute Handout 3, Possible Interventions for School-Level Factors, and ask participants to review it. Explain that Handout 3 provides some ideas that they can add to the list of possible interventions they generated earlier. Give participants 5 minutes to brainstorm, individually, ideas for next steps their school might take to address the factor they have identified as most urgent. Ask them to write their ideas on Handout 3.

2. Ask the moderators to lead their small groups in a discussion of next steps. Ask the small-group recorders to write ideas generated in the discussion on chart paper.

Conclusion (10 minutes)

1. Review the workshop objectives and address any questions the participants may have about the school-level factors. Thank the participants for attending the workshop.

Facilitator's Note

Remind participants that the next two workshops will address the teacher-level factors and the student-level factors, respectively.

2. Distribute copies of Reading 2, "The School-Level Factors." Suggest that participants read it after the workshop and reflect on the ideas generated by the group.

3. If appropriate, offer participants additional opportunities for discussion of this topic or additional workshop options.

Workshop 2A, approximately 1 and ½ hours in length, uses Tape 2, *Teacher Factors*, to introduce participants to the factors that are primarily a function of decisions individual teachers make that affect the students in their classes:

- Instructional strategies

- Classroom management

- Classroom curriculum design

During the workshop, participants examine 37 specific elements related to the three teacher-level factors and consider possible interventions a school might take to address the factors.

As the facilitator, you may use the following agenda or vary it to suit your needs or the needs or your participants.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	10
Introduction to the Video	10
View Tape 2, *Teacher Factors*	30
Reflection and Discussion	40
Conclusion	5
Total Approximate Workshop Time	95 minutes

Objectives for Workshop 2A

1. Understand the three teacher-level factors:

   - Instructional strategies

   - Classroom management

   - Classroom curriculum design

2. Identify specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the teacher-level factors.

You may wish to provide copies of some of the readings suggested in the Readings and Resources section of this guide. Select information that is relevant to your participants' needs and concerns. You can distribute it to participants either before the workshop as an introduction to the topic or after the workshop as a review.

Providing folders with all materials inside is an efficient way to distribute handouts and other resources. You may also wish to provide name tags.

Materials List for Workshop 2A

- Handout 5, Teacher-Level Factors

- Handout 6, Elements of Teacher-Level Factors

- Handout 7, Possible Interventions for Teacher-Level Factors

- Overhead 3, Objectives for Workshop 2A

- Reading 3, "The Teacher-Level Factors," by R. Marzano

Welcome and Introductions (10 minutes)

1. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

2. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually.

3. Summarize key points from the Introduction section of this guide in your own words. Explain to participants that this video is the second part of a three-part program that focuses on research over the past 35 years and provides guidance for schools interested in making substantive change. This second video focuses on teacher-level factors. The other two workshops focus on school-level factors and student-level factors.

Introduction to the Video (10 minutes)

1. Display Overhead 3, Objectives for Workshop 2A, and explain the goals of this workshop. Tell participants

   ♦ **By the end of this workshop, you will be able to**

      1. **Understand the three teacher-level factors:**

         • **Instructional strategies**

         • **Classroom management**

         • **Classroom curriculum design**

      2. **Identify specific elements related to each of the three factors.**

> **3.** **Identify possible interventions a school might take to address the teacher-level factors.**

2. Distribute Handout 5, Teacher-Level Factors.

3. Ask participants to consider each of the three teacher-level factors listed on Handout 5. Pose the following question:

> *What do these factors mean to you?*

Give participants about 5 minutes to write a personal definition for each factor.

View Tape 2, *Teacher Factors* (30 minutes)

1. Suggest that participants use Handout 5 to record notes and questions as they view the video.

2. Show Tape 2, *Teacher Factors*.

Reflection and Discussion (40 minutes)

1. After viewing the video, ask participants to refer to Handout 5, on which they recorded a definition for each of the teacher-level factors. Suggest they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video.

2. Ask participants to form three groups, one for each teacher-level factor. Subdivide the Instructional Strategies group into three groups (see Facilitator's Note) and assign each approximately one-third of the elements related to the Instructional Strategies factor. Ask each group to select a reporter. Distribute Handout 6, Elements of Teacher-Level Factors, and ask the small groups to discuss each element that relates to their assigned factor. Ask participants to address the following question:

> *If a school were addressing this element, what are possible interventions the school might take?*

Suggest that the small-group reporters record the discussion points, so they can report accurately and completely to the large group. Allow about 20 minutes for this activity.

3. Ask each small-group reporter to share what was discussed about each element of the group's assigned teacher-level factor. As each group representative reports, record important points on a chalkboard

Facilitator's Note

You will need to create more than one group to address Instructional Strategies because this factor has so many specific elements. Try to create at least three groups for this factor and split the specific elements among them.

or whiteboard, a flip chart, or an overhead transparency. Allow about 15 minutes for this activity.

4. After the discussion, distribute Handout 7, Possible Interventions for Teacher-Level Factors. Explain to participants that this list provides some ideas that they can add to the list of possible interventions they generated in their small-group discussions. In addition, distribute copies of Reading 3, "The Teacher-Level Factors," from *What Works in Schools*. Suggest that participants read it after the workshop and reflect on how they might implement some of the suggested interventions.

Conclusion (5 minutes)

1. Review the workshop objectives and address any questions the participants may have about the teacher-level factors. Thank the participants for attending the workshop.

2. Collect all comments noted on flip chart paper or overhead transparencies.

Workshop 2B

Workshop 2B, approximately 3 and ½ hours in length, introduces participants to the factors that are primarily a function of decisions individual teachers make that affect students in their classes:

- Instructional strategies

- Classroom management

- Classroom curriculum design

The workshop uses Tape 2, *Teacher Factors*. During the workshop, participants examine 37 specific elements related to the three teacher-level factors. In addition, participants complete a questionnaire that helps them to examine the teacher-level factors at work in their own school. They also consider possible interventions and next steps for their own school. The workshop is designed for those who wish to become more deeply involved in examining teacher-level factors identified from the research that can improve student achievement. Possible audiences for this format might include school improvement teams, faculty or staff, task forces, parent-teacher groups, leadership teams, central office administrators, and school board members.

This workshop details activities for 10–100 participants. If the workshop has to be shorter, you may eliminate portions of the activities as appropriate.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	15
Introductory Activities	20
View Tape 2, *Teacher Factors*	30
Clarifying Definitions	15
Teacher-Level Factors in More Detail	40
Break	20
The Survey Instrument	45
Next Steps	15
Conclusion	10
Total Approximate Workshop Time	3 hours, 30 minutes

Objectives for Workshop 2B

1. Understand the three teacher-level factors:

   - Instructional strategies

   - Classroom management

   - Classroom curriculum design

2. Understand specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the teacher-level factors.

4. Identify the areas in which your school is doing least well.

5. Identify possible next steps for addressing your school's areas of highest need.

Materials List for Workshop 2B

- Handout 5, Teacher-Level Factors

- Handout 6, Elements of Teacher-Level Factors

- Handout 7, Possible Interventions for Teacher-Level Factors

- Handout 8, Questionnaire for Teacher-Level Factors

- Overhead 4, Objectives for Workshop 2B

- Reading 1, "Introducing the Best of Times," by R. Marzano

- Reading 3, "The Teacher-Level Factors," by R. Marzano

- Flip chart or butcher paper

You may also wish to provide copies of some of the readings suggested in the Readings and Resources section of this guide. Select information that is relevant to your participants' needs and concerns. You can distribute it to participants either before the workshop as an introduction to the topic or after the workshop as a review.

Welcome and Introductions (15 minutes)

1. At the door, have a sign-in sheet for participants to record their names, addresses, phone numbers, and e-mail addresses. This will enable you to notify participants of opportunities to attend future

meetings and give you a complete contact list of participants should you wish to send them notes generated during the workshop discussions.

2. If participants are from different schools, arrange seating so that participants from the same school are sitting together.

3. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

4. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually. You might also ask the participants to state why they are interested in learning about *What Works in Schools* and to describe briefly the extent to which they are familiar with Robert Marzano's work, particularly his research on school effectiveness.

5. Display Overhead 4, Objectives for Workshop 2B, to introduce the workshop objectives. Tell participants

♦ **By the end of this workshop, you will be able to**

  1. **Understand the three teacher-level factors:**

    • **Instructional strategies**

    • **Classroom management**

    • **Classroom curriculum design**

  2. **Understand specific elements related to each of the three factors.**

  3. **Identify possible interventions a school might take to address the teacher level factors.**

  4. **Identify the areas in which your school is doing least well.**

  5. **Identify possible next steps for addressing your school's areas of highest need.**

Reiterate that in this workshop participants will examine how these teacher-level factors operate in their school. Other workshops address the school-level factors and the student-level factors that most influence student achievement.

Facilitator's Note

You may wish to copy and distribute Overhead 4, or write the objectives on a flip chart or chalkboard or whiteboard.

Facilitator's Note

Because you are asking participants to reflect upon how the teacher-level factors operate in their own schools, you should ask participants who work in the same school to sit together.

Facilitator's Note

If you know participants have already completed the workshop using Tape 1, School Factors, you might adjust your introductory comments to address their prior knowledge.

Introductory Activities (20 minutes)

1. Share with participants a general overview of the research on education over the past 35 years. Include the case for "the worst of times" and Marzano's position for "the best of times." Use the material in the Introduction section of this guide and Reading 1, "Introducing the Best of Times," in the Readings and Resources section to guide you in these remarks.

2. Distribute Handout 5, Teacher-Level Factors. Ask participants to consider each of the three teacher-level factors listed on Handout 5. Pose the following question:

    What do these factors mean to you?

    Give participants about 5 minutes to write a personal definition for each factor.

3. When participants have finished writing their personal definitions, ask them to share and discuss their definitions with someone sitting nearby. Invite a few volunteers to share their responses with the whole group. Allow about 10 minutes for this activity.

4. Ask participants to record on Handout 5 any questions that they have about the teacher-level factors.

View Tape 2, *Teacher Factors* (30 minutes)

1. Suggest that participants use Handout 5 to record notes and questions as they view the video.

2. Show Tape 2, *Teacher Factors*.

Clarifying Definitions (15 minutes)

1. Ask participants to refer to Handout 5, on which they recorded a definition for each of the teacher-level factors. Suggest that they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video.

2. When they have finished refining their definitions, ask participants to discuss their definitions with someone sitting nearby. Allow about 5 minutes for this activity.

3. Invite several volunteers to share their responses with the total group. Record several definitions for each of the teacher-level factors on an overhead transparency, a flip chart, or a chalkboard or whiteboard. Allow about 5 minutes for this activity.

Teacher-Level Factors in More Detail (40 minutes)

1. Ask participants to form three groups, one for each teacher-level factor. Subdivide the Instructional Strategies group into three groups (see Facilitator's Note) and assign each approximately one-third of the elements related to the Instructional Strategies factor. Ask each group to select a reporter. Distribute Handout 6, Elements of Teacher-Level Factors, and ask the small groups to discuss each element that relates to their assigned factor. Ask participants to address the following question:

> *If a school were addressing this element, what are possible interventions the school might take?*

Ask participants to record their discussion points. Allow about 20 minutes for the small-group discussion.

2. Invite the small groups to record their reactions to each element of their assigned teacher-level factor and create a poster on chart paper to represent their small-group's work. Each poster should relate the following:

- The teacher-level factor considered

- A brief summary of the specific elements related to the factor

- Possible interventions

3. Tape each small-group poster to the wall. Invite the small groups to visit each poster. Ask the small-group reporters to stand by the charts to explain the responses and answer questions. Invite participants to make any additions or suggestions they might have for possible interventions as they visit each poster. Allow about 10 minutes for this activity.

4. Have the small-group reporters share with the large group the additional reactions or intervention suggestions noted on each poster. Allow about 5 minutes for this activity.

Facilitator's Note

You will need to create more than one group to address Instructional Strategies because this factor has so many specific elements. Try to create at least three groups for this factor and split the specific elements among them.

Break (20 minutes)

The Survey Instrument (45 minutes)

1. Distribute Handout 8, Questionnaire for Teacher-Level Factors. Ask participants to spend the next 15 minutes individually answering each of the items based on their experience in their own school.

2. Ask each group (made up of people from a single school) to appoint a recorder, a "counter," and a moderator. Ask the counters to collect Handout 8 from each participant and tally the results. If someone has a calculator and is willing to lend it, the counters might calculate an average score for each item on the survey. If a calculator is not available, the counter can simply tally the number of responses for each choice (i.e., 1, 2, 3, 4) for each item. Ask the recorders to write the results on chart paper. Allow about 10 minutes for this activity.

3. Ask participants to spend 5 minutes looking at the results for their school without discussing or commenting on the results out loud. Ask participants to individually note what they see as the biggest factor their school needs to address, according to these results.

4. After participants have recorded their conclusions individually, ask the moderators to lead the small groups in a conversation about the areas of most urgent need in relation to the teacher-level factors. After a group has reached consensus, the recorder should write on the chart paper the factor that the group agrees the school most needs to address. Allow about 10 minutes for this activity.

Next Steps (15 minutes)

1. Distribute Handout 7, Possible Interventions for Teacher-Level Factors, and ask participants to review it. Explain that Handout 7 provides some ideas that they can add to the list of possible interventions they generated earlier. Give participants 5 minutes to brainstorm, individually, ideas for next steps their school might take to address the factor they have identified as most urgent. Ask them to write their ideas on Handout 7.

2. Ask the moderators to lead their small groups in a discussion of next steps. Ask the small-group recorders to write ideas generated in the discussion on chart paper.

3. Call for volunteers to share one specific action they will take to apply something they have learned today.

Conclusion (10 minutes)

1. Review the workshop objectives and address any questions the participants may have about the teacher-level factors. Thank the participants for attending the workshop.

2. If appropriate, offer participants additional opportunities for discussion of this topic or additional workshop options.

Tape

3

STUDENT FACTORS

Workshop 3A

Workshop 3A, approximately 1 and ½ hours in length, uses Tape 3, *Student Factors*, to introduce participants to the factors that are primarily a function of the background of students:

- Home environment

- Learned intelligence and background knowledge

- Motivation

During the workshop, participants examine eight specific elements related to the three student-level factors and consider possible interventions a school might take to address the factors.

As the facilitator, you may use the following agenda or vary it to suit your particular needs or the needs of the participants.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	10
Introduction to the Video	10
View Tape 3, *Student Factors*	30
Reflection and Discussion	40
Conclusion	5
Total Approximate Workshop Time	95 minutes

Objectives for Workshop 3A

1. Understand the three student-level factors:

    - Home environment

    - Learned intelligence and background knowledge

    - Motivation

2. Identify specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the student-level factors.

Materials List for Workshop 3A

- Handout 9, Student-Level Factors

- Handout 10, Elements of Student-Level Factors

- Handout 11, Possible Interventions for Student-Level Factors

- Overhead 5, Objectives for Workshop 3A

- Reading 4, "The Student-Level Factors," by R. Marzano

Welcome and Introductions (10 minutes)

1. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

2. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually.

3. Summarize key points from the Introduction section of this guide in your own words. Explain to participants that this video is the third part of a three-part program that focuses on research over the past 35 years and provides guidance for schools interested in making substantive change. The video focuses on student-level factors. The other two workshops focus on school-level factors and teacher-level factors.

Introduction to the Video (10 minutes)

1. Display Overhead 5, Objectives for Workshop 3A, and explain the goals of this workshop. Tell participants

   ♦ **By the end of this workshop, you will be able to**

      1. **Understand the three student-level factors:**

         • **Home environment**

         • **Learned intelligence and background knowledge**

         • **Motivation**

      2. **Identify specific elements related to each of the three factors.**

      3. **Identify possible interventions a school might take to address the student-level factors.**

2. Distribute Handout 9, Student-Level Factors.

3. Ask participants to consider each of the three student-level factors listed on Handout 9. Pose the following question:

   What do these factors mean to you?

   Give participants about 5 minutes to write a personal definition for each factor.

4. Ask participants to consider whether they believe a school can do anything to influence student-level factors. Ask them to write a sentence that captures their thinking.

View Tape 3, *Student Factors* (30 minutes)

1. Suggest that participants use Handout 9 to record notes and questions as they view the video.

2. Show Tape 3, *Student Factors*.

Reflection and Discussion (40 minutes)

1. After viewing the video, ask participants to refer to Handout 9, on which they recorded a definition for each of the student-level factors. Suggest they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video. Ask them to think again about the following question in light of what they have just seen and heard in the video:

   Can schools do anything to influence student-level factors?

2. Ask participants to form three groups, and ask each group to select a reporter. Assign each group one student-level factor. Distribute Handout 10, Elements of Student-Level Factors, and ask the small groups to discuss each element that relates to their assigned factor. Ask participants to address the following questions:

   - *Is this element of student-level factors something over which a school might have some control?*

   - *If a school were addressing this element, what are possible interventions the school might take?*

   Suggest that the small-group reporters record the discussion points, so they can report accurately and completely to the total group. Allow about 20 minutes for this activity.

3. Ask each small-group reporter to share what was discussed about each element of the group's assigned student-level factor. As each group representative reports, record important points on a chalkboard or whiteboard, a flip chart, or an overhead transparency. Allow about 15 minutes for this activity.

4. After the discussion, distribute Handout 11, Possible Interventions for Student-Level Factors. Explain to participants that this list provides some ideas that they can add to the list of possible interventions they generated in their small-group discussions. In addition, distribute copies of Reading 4, "The Student-Level Factors," from *What Works in Schools*. Suggest that participants read it after the workshop and reflect on how they might implement some of the suggested interventions.

Conclusion (5 minutes)

1. Review the workshop objectives and address any questions the participants may have about the student-level factors. Thank the participants for attending the workshop.

2. Collect all comments noted on flip chart paper or overhead transparencies.

Workshop 3B, approximately 3 and ½ hours in length, introduces participants to the factors that are primarily a function of the background of students:

- Home environment

- Learned intelligence and background knowledge

- Motivation

The workshop uses Tape 3, *Student Factors*. During the workshop, participants examine eight specific elements related to the three student-level factors. In addition, participants complete a questionnaire that helps them examine the student-level factors at work in their own school. They also consider possible interventions and next steps for their school. The workshop is designed for those who wish to become more deeply involved in examining student-level factors identified from the research that can improve student achievement. Possible audiences for this format might include school improvement teams, faculty or staff, task forces, parent-teacher groups, leadership teams, central office administrators, and school board members.

This workshop details the activities for 10–100 participants. If the workshop has to be shorter, you may eliminate portions of the activities as appropriate.

Agenda and Time Guide

Activity	Time (Minutes)
Welcome and Introductions	15
Introductory Activities	30
View Tape 3, *Student Factors*	30
Clarifying Definitions	15
Student-Level Factors in More Detail	35
Break	20
The Survey Instrument	45
Next Steps	15
Conclusion	10
Total Approximate Workshop Time	3 hours, 35 minutes

Objectives for Workshop 3B

1. Understand the three student-level factors:

    - Home environment

    - Learned intelligence and background knowledge

    - Motivation

2. Understand specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the student-level factors.

4. Identify the areas in which your school is doing least well.

5. Identify possible next steps for addressing your school's areas of highest need.

Materials List for Workshop 3B

- Handout 9, Student-Level Factors

- Handout 10, Elements of Student-Level Factors

- Handout 11, Possible Interventions for Student-Level Factors

- Handout 12, Questionnaire for Student-Level Factors

- Overhead 6, Objectives for Workshop 3B

- Reading 1, "Introducing the Best of Times," by R. Marzano

- Reading 4, "The Student-Level Factors," by R. Marzano

- Flip chart or butcher paper

Welcome and Introductions (15 minutes)

1. At the door, have a sign-in sheet for participants to record their names, addresses, phone numbers, and e-mail addresses. This will enable you to notify participants of opportunities to attend future meetings and give you a complete contact list of participants should you wish to send them notes generated during the workshop discussions.

2. If participants are from different schools, arrange seating so that participants from the same school are sitting together.

3. Welcome all participants. Introduce yourself and explain your role as workshop facilitator. As the facilitator, you will guide participants through the activities to help them meet the workshop objectives.

4. Depending on the size of the group and whether the participants know one another, you may want to set aside time for participants to introduce themselves individually. You might also ask the participants to state why they are interested in learning about *What Works in Schools* and to describe briefly the extent to which they are familiar with Robert Marzano's work, particularly his research on school effectiveness.

5. Display Overhead 6, Objectives for Workshop 3B, to introduce the workshop objectives. Tell participants

   ♦ **By the end of this workshop, you will be able to**

   1. Understand the three student-level factors:

   • **Home environment**

   • **Learned intelligence and background knowledge**

   • **Motivation**

   2. Understand specific elements related to each of the three factors.

   3. Identify possible interventions a school might take to address the student-level factors.

   4. Identify the areas in which your school is doing least well.

   5. Identify possible next steps for addressing your school's areas of highest need.

Reiterate that in this workshop participants will examine how these student-level factors operate in their school. The other two workshops in this three-part program address school-level factors and teacher-level factors.

Facilitator's Note

You may wish to copy and distribute Overhead 6, or write the objectives on a flip chart or chalkboard or whiteboard.

Facilitator's Note

Because you are asking participants to reflect upon the effect of student-level factors in their own schools, you should ask people who work in the same school to sit together.

Facilitator's Note

If you know participants have already completed the workshop using Tape 1, School Factors, and/or the workshop using Tape 2, Teacher Factors, you might adjust your introductory comments to address their prior knowledge.

Introductory Activities (30 minutes)

1. Share with participants a general overview of the research on education over the past 35 years. Include the case for "the worst of times" and Marzano's position for "the best of times." Use the material in the Introduction section of this guide and Reading 1, "Introducing the Best of Times," in the Readings and Resources section to guide your remarks.

2. Distribute Handout 9, Student-Level Factors. Ask participants to consider each of the three student-level factors listed on Handout 9. Pose the following question:

   What do these factors mean to you?

   Give participants about 5 minutes to write a personal definition for each factor.

3. Ask participants to consider whether they believe schools can do anything to influence these student-level factors. Ask them to write three reasons or ways a school *might be able* to influence student-level factors and three reasons why a school *might not be able* to influence student-level factors. Suggest that they write their responses on Handout 9. While participants are writing, post blank sheets of chart paper on the wall. Designate one side of the room for "Yes, schools can influence student-level variables" and one side for "No, schools cannot influence student-level variables." Allow about 10 minutes for this activity.

4. Ask participants to transfer the reasons they have written onto the appropriate posters. Then ask participants to walk around the room with a partner, read the different statements and ideas on all posters, and discuss their thinking on this topic. Allow about 10 minutes for this activity.

5. After participants return to their seats, ask them to write any questions they may have about the student-level factors. Suggest that they record their questions on Handout 9.

View Tape 3, *Student Factors* (30 minutes)

1. Suggest that participants use Handout 9 to record notes and questions as they view the video.

2. Show Tape 3, *Student Factors*.

Clarifying Definitions (15 minutes)

1. Ask participants to refer to Handout 9, on which they recorded a definition for each of the student-level factors. Suggest that they take the next 5 minutes to refine or add to their definitions based on what they saw and heard during the video.

2. Ask participants to think again about the following question in light of what they have just seen in the video:

   Can schools do anything to influence student-level factors?

3. When they have finished refining their definitions, ask participants to discuss their definitions and their thoughts on what a school can do with someone sitting nearby. Allow about 5 minutes for this activity.

4. Invite several volunteers to share their responses with the total group. Record several definitions for each of the student-level factors on an overhead transparency, a flip chart, or a chalkboard or whiteboard.

Student-Level Factors in More Detail (35 minutes)

1. Ask participants to form three groups, one for each student-level factor. Ask each group to select a reporter. Distribute Handout 10, Elements of Student-Level Factors. Ask the small groups to discuss each element that relates to their assigned factor. Ask participants to address the following two questions:

   - *Is this element of student-level factors something over which a school might have some control?*

   - *If a school were addressing this element, what are possible interventions the school might take?*

   Suggest that the small-group reporters record the discussion points, so they can share their information and ideas with the total group. Allow about 20 minutes for this activity.

2. Invite each small-group reporter to share what was discussed about each element of the group's assigned student-level factor. Record important points on a chalkboard or whiteboard, a flip chart, or an overhead transparency. Allow about 15 minutes for this activity.

Break (20 minutes)

The Survey Instrument (45 minutes)

1. Invite participants to group with others attending from their school. Distribute Handout 12, Questionnaire for Student-Level Factors. Ask participants to spend the next 15 minutes individually answering each of the items based on their experience in their own school.

2. Ask each group (made up of people from a single school) to select a recorder, a "counter," and a moderator. Ask the counters to collect Handout 12 from each participant and tally the results. If someone has a calculator and is willing to lend it, the counters might calculate an average score for each item on the survey. If a calculator is not available, the counter can simply tally the number of responses for each choice (i.e., 1, 2, 3, 4) for each item. Ask the recorders to write the results on chart paper. Allow about 10 minutes for this activity.

3. Ask participants to spend 5 minutes looking at the results for their school without discussing or commenting on the results out loud. Ask participants to individually note what they see as the biggest factor their school needs to address, according to these results.

4. After participants have recorded their conclusions individually, ask the moderators to lead their small groups in a conversation about the areas of most urgent need in relation to the student-level factors. After a group has reached consensus, the recorder should write on the chart paper the factor that the group agrees the school most needs to address. Allow about 10 minutes for this activity.

5. Based on each group's identification of what the school most needs to address, ask the moderators to lead a brainstorming session to generate possible interventions. Allow about 5 minutes for this discussion.

Next Steps (15 minutes)

1. Distribute Handout 11, Possible Interventions for Student-Level Factors, and ask participants to review it. Explain that Handout 11 provides some ideas that they can add to the list of possible interventions they generated earlier. Give participants 5 minutes to brainstorm, individually, ideas for next steps their school might take to address the factor they have identified. Ask them to write their ideas on Handout 11.

2. Ask the moderators to lead their small groups in a discussion of next steps. Ask the small-group recorders to write ideas generated in the discussion on chart paper.

Conclusion (10 minutes)

1. Review the workshop objectives and address any questions the participants may have about the student-level factors. Thank the participants for attending the workshop.

2. Distribute copies of Reading 4, "The Student-Level Factors." Suggest that participants read it after the workshop and reflect on the ideas generated by the group.

3. If appropriate, offer participants additional opportunities for discussion of this topic or additional workshop options.

what works
IN SCHOOLS
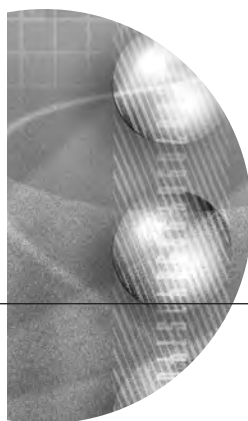
Handouts and Overheads

HANDOUT 1

Write your own definition for each school-level factor:

School-Level Factors

1. Guaranteed and Viable Curriculum

2. Challenging Goals and Effective Feedback

3. Parental and Community Involvement

4. Safe and Orderly Environment

5. Collegiality and Professionalism

Elements of School-Level Factors

School-Level Factors	Possible Interventions
Guaranteed and Viable Curriculum	
1. The content considered essential for all students to learn versus the content considered supplemental has been identified and communicated to teachers. 2. The amount of essential content that has been identified can be addressed in the instructional time available to teachers. 3. The essential content is organized and sequenced in a way that students have ample opportunity to learn it. 4. Someone checks to ensure that teachers address the essential content. 5. The instructional time available to teachers is protected by minimizing interruptions and scheduled noninstructional activities.	
Challenging Goals and Effective Feedback	
6. An assessment system is used that provides for timely feedback (e.g., at least every nine weeks) on specific knowledge and skills for individual students. 7. Specific achievement goals are set for the school as a whole. 8. Specific achievement goals are set for individual students. 9. Performance on schoolwide and individual student goals is used to plan for future actions.	
Parental and Community Involvement	
10. Effective vehicles are in place to communicate to parents and community. 11. Effective vehicles are in place for parents and community to communicate to the school. 12. Opportunities are provided for parents and community to be involved in the day-to-day operations of the school. 13. Vehicles are in place for parents and community to be involved in the governance of the school.	

School-Level Factors	Possible Interventions
Safe and Orderly Environment	
14. The physical environment and school routines have been structured in such a way as to avoid chaos and promote good behavior. 15. Clear rules and procedures pertaining to schoolwide behavior have been established. 16. Appropriate consequences for violations of schoolwide rules and procedures have been established and implemented. 17. A program that teaches and reinforces student self-discipline and responsibility has been implemented. 18. A system for early detection of students who are prone to violence and extreme behavior has been implemented.	
Collegiality and Professionalism	
19. Norms for conduct that foster collegiality and professionalism among professional staff and administrators have been established. 20. Governance structures that allow for teacher involvement in schoolwide decisions and policies have been established. 21. Teachers are engaged in staff development activities that address specific content area issues and allow for "hands-on" trial and evaluation of specific techniques.	

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

Possible Interventions for School-Level Factors

School-Level Factors	Possible Interventions
Guaranteed and Viable Curriculum	
1. The content considered essential for all students to learn versus the content considered supplemental has been identified and communicated to teachers. 2. The amount of essential content that has been identified can be addressed in the instructional time available to teachers. 3. The essential content is organized and sequenced in a way that students have ample opportunity to learn it. 4. Someone checks to ensure that teachers address the essential content. 5. The instructional time available to teachers is protected by minimizing interruptions and scheduled noninstructional activities.	• Cut standards. • Cut benchmarks. • Rewrite benchmarks as topics. • Analyze state tests. • Develop a supervisory model. • Do a time audit and set policies as needed.
Challenging Goals and Effective Feedback	
6. An assessment system is used that provides for timely feedback (e.g., at least every nine weeks) on specific knowledge and skills for individual students. 7. Specific achievement goals are set for the school as a whole. 8. Specific achievement goals are set for individual students. 9. Performance on schoolwide and individual student goals is used to plan for future actions.	• Develop end-of-quarter assessments. • Use standards- or topics-based report cards. • Procure computer programs. • Set school-level goals. • Set student-level goals. • Develop a school-level correction plan. • Develop a student-level correction plan.
Parental and Community Involvement	
10. Effective vehicles are in place to communicate to parents and community. 11. Effective vehicles are in place for parents and community to communicate to the school. 12. Opportunities are provided for parents and community to be involved in the day-to-day operations of the school. 13. Vehicles are in place for parents and community to be involved in the governance of the school.	• Institute parent and community newsletters. • Institute parent and community briefings. • Institute governance structures involving parents and community. • Institute programs for parent and community involvement in the operation of the school.

School-Level Factors	Possible Interventions
Safe and Orderly Environment	
14. The physical environment and school routines have been structured in such a way as to avoid chaos and promote good behavior. 15. Clear rules and procedures pertaining to schoolwide behavior have been established. 16. Appropriate consequences for violations of schoolwide rules and procedures have been established and implemented. 17. A program that teaches and reinforces student self-discipline and responsibility has been implemented. 18. A system for early detection of students who are prone to violence and extreme behavior has been implemented.	• Articulate the school conduct code. • Articulate the school disciplinary code. • Articulate the absenteeism policy. • Articulate the tardiness policy.
Collegiality and Professionalism	
19. Norms for conduct that foster collegiality and professionalism among professional staff and administrators have been established. 20. Governance structures that allow for teacher involvement in schoolwide decisions and policies have been established. 21. Teachers are engaged in staff development activities that address specific content area issues and allow for "hands-on" trial and evaluation of specific techniques.	• Schedule regular administrator-teacher meetings. • Design governance structures to include teachers. • Articulate norms for collegiality. • Implement a staff development program. • Engage in action research. • Engage in lesson study.

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

Questionnaire for School-Level Factors

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
Guaranteed and Viable Curriculum:												
1. The content considered essential for all students to learn versus the content considered supplemental has been identified and communicated to teachers.												
2. The amount of essential content that has been identified can be addressed in the instructional time available to teachers.												
3. The essential content is organized and sequenced in a way that students have ample opportunity to learn it.												
4. Someone checks to ensure that teachers address the essential content.												
5. The instructional time available to teachers is protected by minimizing interruptions and scheduled noninstructional activities.												

	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
In my school . . .	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Challenging Goals and Effective Feedback:												
6. An assessment system is used that provides for timely feedback (e.g., at least every nine weeks) on specific knowledge and skills for individual students.												
7. Specific achievement goals are set for the school as a whole.												
8. Specific achievement goals are set for individual students.												
9. Performance on schoolwide and individual student goals is used to plan for future actions.												
Parental and Community Involvement:												
10. Effective vehicles are in place to communicate to parents and community.												
11. Effective vehicles are in place for parents and community to communicate to the school.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
12. Opportunities are provided for parents and community to be involved in the day-to-day operation of the school.												
13. Vehicles are in place for parents and community to be involved in the governance of the school.												
Safe and Orderly Environment:												
14. The physical environment and school routines have been structured in such a way as to avoid chaos and promote good behavior.												
15. Clear rules and procedures pertaining to schoolwide behavior have been established.												
16. Appropriate consequences for violations of schoolwide rules and procedures have been established and implemented.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
17. A program that teaches and reinforces student self-discipline and responsibility has been implemented.												
18. A system for early detection of students who are prone to violence and extreme behavior has been implemented.												
Collegiality and Professionalism:												
19. Norms for conduct among professional staff and administrators that foster collegiality and professionalism have been established.												
20. Governance structures that allow for teacher involvement in schoolwide decisions and policies have been established.												
21. Teachers are engaged in staff development activities that address specific content area issues and allow for "hands-on" trial and evaluation of specific techniques.												

This survey is also available online at www.whatworksinschools.org.

W rite your own definition for each teacher-level factor:

Teacher-Level Factors

1. Instructional Strategies

2. Classroom Management

3. Classroom Curriculum Design

Elements of Teacher-Level Factors

Teacher-Level Factors	Possible Interventions
Instruction	
1. Begin their instructional units by presenting students with clear learning goals.	
2. Begin their instructional units by asking students to identify personal learning goals that fit within the learning goals presented by the teacher.	
3. Systematically provide students with specific feedback on the extent to which they are accomplishing the learning goals.	
4. Systematically ask students to keep track of their own performance on the learning goals.	
5. Systematically recognize students who are making observable progress toward the learning goals.	
6. Systematically emphasize the importance of effort.	
7. Organize students into groups based on their understanding of the content when appropriate.	
8. Organize students into cooperative groups when appropriate.	
9. Systematically provide specific feedback on the homework assigned to students.	
10. End their instructional units by providing students with clear feedback on the learning goals.	
11. End their instructional units by asking students to assess themselves relative to the learning goals.	
12. End their instructional units by recognizing and celebrating progress on the learning goals.	
13. Prior to presenting new content, ask students questions that help them recall what they might already know about the content.	
14. Prior to presenting new content, provide students with direct links with previous knowledge or studies.	

Teacher-Level Factors	Possible Interventions
Instruction	
15. Prior to presenting new content, provide ways for students to organize or think about the content (e.g., use advance organizers).	
16. Ask students to construct verbal or written summaries of new content.	
17. Ask students to take notes on new content.	
18. Ask students to represent new content in nonlinguistic ways (e.g., mental image, picture, pictograph, graphic organizer, physical model, enactment).	
19. Assign in-class and homework tasks that require students to practice important skills and procedures.	
20. Ask students to revise and correct errors in their notes as a way of reviewing and revising content.	
21. Ask students to revise and correct errors in their nonlinguistic representations as a way of reviewing and revising content.	
22. Prescribe in-class and homework assignments that require students to compare and classify content.	
23. Prescribe in-class and homework assignments that require students to construct metaphors and analogies.	
24. Prescribe in-class activities and homework assignments that require students to generate and test hypotheses regarding content.	
Classroom Management	
25. Have comprehensive and well-articulated rules and procedures for general classroom behavior, beginning and ending the period or day, transitions and interruptions, use of materials and equipment, group work, and seatwork.	
26. Use specific disciplinary strategies that reinforce appropriate behavior and provide consequences for inappropriate behavior.	
27. Use specific strategies that instill a sense of confidence in students that they are receiving proper guidance and direction.	

Teacher-Level Factors	Possible Interventions
Classroom Management	
28. Use specific strategies that instill a sense of confidence in students that their concerns and wishes are being considered.	
29. Use different strategies with different types of students to provide them with a sense of acceptance by the teacher.	
30. Use specific techniques to keep aware of problems or potential problems in their classrooms.	
31. Respond to inappropriate behaviors quickly and assertively.	
32. Use specific techniques to maintain a healthy emotional objectivity when dealing with student misbehavior.	
Classroom Curriculum Design	
33. When planning units of instruction, identify specific types of knowledge that are important for students to learn (e.g., important categories of knowledge, examples, sequences, comparisons, cause-and-effect relationships, correlational relationships, facts, incidents, episodes, terms, skills, processes).	
34. When planning units of instruction, ensure that students will have multiple exposures to new content presented in a variety of forms (e.g., stories, descriptions) using a variety of media (e.g., read about the content, watch a demonstration, listen to a presentation).	
35. When planning units of instruction, make a clear distinction between skills and processes that are to be mastered versus skills and processes that are to be experienced but not mastered.	
36. When planning units of instruction, organize examples into categories or groups that demonstrate the essential features of the content.	
37. When planning units of instruction, ensure that students will be involved in complex projects that require them to address content in unique ways.	

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003,
Alexandria, VA: Association for Supervision and Curriculum Development.

Possible Interventions for Teacher-Level Factors

Teacher-Level Factors	Possible Interventions
Instruction	
1. Begin their instructional units by presenting students with clear learning goals.	• Develop schoolwide instructional policies.
2. Begin their instructional units by asking students to identify personal learning goals that fit within the learning goals presented by the teacher.	• Develop a unit design template. • Develop a lesson design template. • Engage in action research on effectiveness of strategies.
3. Systematically provide students with specific feedback on the extent to which they are accomplishing the learning goals.	
4. Systematically ask students to keep track of their own performance on the learning goals.	
5. Systematically recognize students who are making observable progress toward the learning goals.	
6. Systematically emphasize the importance of effort with students.	
7. Organize students into groups based on their understanding of the content when appropriate.	
8. Organize students into cooperative groups when appropriate.	
9. Systematically provide specific feedback on the homework assigned to students.	
10. End their instructional units by providing students with clear feedback on the learning goals.	
11. End their instructional units by asking students to assess themselves relative to the learning goals.	
12. End their instructional units by recognizing and celebrating progress on the learning goals.	
13. Prior to presenting new content, ask students questions that help them recall what they might already know about the content.	
14. Prior to presenting new content, provide students with direct links with previous knowledge or studies.	

Teacher-Level Factors	Possible Interventions
Instruction	
15. Prior to presenting new content, provide ways for students to organize or think about the content (e.g., use advance organizers).	
16. Ask students to construct verbal or written summaries of new content.	
17. Ask students to take notes on new content.	
18. Ask students to represent new content in nonlinguistic ways (e.g., mental image, picture, pictograph, graphic organizer, physical model, enactment).	
19. Assign in-class and homework tasks that require students to practice important skills and procedures.	
20. Ask students to revise and correct errors in their notes as a way of reviewing and revising content.	
21. Ask students to revise and correct errors in their nonlinguistic representations as a way of reviewing and revising content.	
22. Prescribe in-class and homework assignments that require students to compare and classify content.	
23. Prescribe in-class and homework assignments that require students to construct metaphors and analogies.	
24. Prescribe in-class activities and homework assignments that require students to generate and test hypotheses regarding content.	
Classroom Management	
25. Have comprehensive and well-articulated rules and procedures for general classroom behavior, beginning and ending the period or day, transitions and interruptions, use of materials and equipment, group work, and seatwork.	• Establish a schoolwide approach to rules and procedures. • Establish a schoolwide approach to discipline. • Offer schoolwide training on teacher-student relationships. • Offer schoolwide training on a mental set for management.
26. Use specific disciplinary strategies that reinforce appropriate behavior and provide consequences for inappropriate behavior.	
27. Use specific strategies that instill a sense of confidence in students that they are receiving proper guidance and direction.	

Teacher-Level Factors	Possible Interventions
Classroom Management	
28. Use specific strategies that instill a sense of confidence in students that their concerns and wishes are being considered.	
29. Use different strategies with different types of students to provide them with a sense of acceptance by the teacher.	
30. Use specific techniques to keep aware of problems or potential problems in their classrooms.	
31. Respond to inappropriate behaviors quickly and assertively.	
32. Use specific techniques to maintain a healthy emotional objectivity when dealing with student misbehavior.	
Classroom Curriculum Design	
33. When planning units of instruction, identify specific types of knowledge that are important for students to learn (e.g., important categories of knowledge, examples, sequences, comparisons, cause-and-effect relationships, correlational relationships, facts, incidents, episodes, terms, skills, processes).	• Develop grade-level or course-level plans. • Develop a planning template.
34. When planning units of instruction, ensure that students will have multiple exposures to new content presented in a variety of forms (e.g., stories, descriptions) using a variety of media (e.g., read about the content, watch a demonstration, listen to a presentation).	
35. When planning units of instruction, make a clear distinction between skills and processes that are to be mastered versus skills and processes that are to be experienced but not mastered.	
36. When planning units of instruction, organize examples into categories or groups that demonstrate the essential features of the content.	
37. When planning units of instruction, ensure that students will be involved in complex projects that require them to address content in unique ways.	

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

Questionnaire for Teacher-Level Factors

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
Instruction:												
1. Begin instructional units by presenting students with clear learning goals.												
2. Begin instructional units by asking students to identify personal learning goals that fit within the established learning goals.												
3. Systematically provide students with specific feedback on the extent to which they are accomplishing the learning goals.												
4. Systematically ask students to keep track of their own performance on the learning goals.												
5. Systematically recognize students who are making observable progress toward the learning goals.												
6. Systematically emphasize the importance of effort with students.												

ASCD®

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
7. When appropriate, organize students into groups based on their understanding of the content.												
8. When appropriate, organize students into cooperative groups.												
9. Systematically provide specific feedback on the homework assigned to students.												
10. End instructional units by providing students with clear feedback on the learning goals.												
11. End instructional units by asking students to assess themselves relative to the learning goals.												
12. End instructional units by recognizing and celebrating progress on the learning goals.												
13. Prior to presenting new content, ask questions of students that help them recall what they might already know about the content.												
14. Prior to presenting new content, provide students with direct links with what they have studied before.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
15. Prior to presenting new content, provide ways for students to organize or think about the content (e.g., use advance organizers).												
16. Ask students to construct verbal or written summaries of new content.												
17. Ask students to take notes on new content.												
18. Ask students to represent new content in nonlinguistic ways (e.g., mental image, picture, pictograph, graphic organizer, physical model, enactment).												
19. Assign in-class and homework tasks that require students to practice important skills and procedures.												
20. Ask students to revise and correct errors in their notes as a way of reviewing and revising content.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
21. Ask students to revise and correct errors in their nonlinguistic representations as a way of reviewing and revising content.												
22. Prescribe in-class and homework assignments that require students to compare and classify content.												
23. Prescribe in-class and homework assignments that require students to construct metaphors and analogies.												
24. Prescribe in-class activities and homework assignments that require students to generate and test hypotheses regarding content.												
Classroom Management:												
25. Have comprehensive and well-articulated rules and procedures for general classroom behavior, beginning and ending the period or day, transitions and interruptions, use of materials and equipment, group work, and seatwork.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
26. Use specific disciplinary strategies that reinforce appropriate behavior and provide consequences for inappropriate behavior.												
27. Use specific strategies that instill a sense of confidence in students that they are receiving proper guidance and direction.												
28. Use specific strategies that instill a sense of confidence in students that their concerns and wishes are being considered.												
29. Use different strategies with different types of students to provide them with a sense of acceptance.												
30. Use specific techniques to keep aware of problems or potential problems in the classroom.												
31. Respond to inappropriate behaviors quickly and assertively.												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
32. Use specific techniques to maintain a healthy emotional objectivity when dealing with student misbehavior.												
Classroom Curriculum Design:												
33. When planning units of instruction, identify specific types of knowledge that are important for students to learn (e.g., important categories of knowledge, examples, sequences, comparisons, cause-effect relationships, correlational relationships, facts, incidents, episodes, terms, skills, processes).												
34. When planning units of instruction, ensure that students will have multiple exposures to new content presented in a variety of forms (e.g., stories, descriptions) using a variety of media (e.g., read about the content, watch a demonstration, listen to a presentation).												

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
35. When planning units of instruction, make a clear distinction between skills and processes that are to be mastered versus skills and processes that are to be experienced but not mastered.												
36. When planning units of instruction, organize examples into categories or groups that demonstrate the essential features of the content.												
37. When planning units of instruction, ensure that students will be involved in complex projects that require them to address content in unique ways.												

This survey is also available online at www.whatworksinschools.org.

HANDOUT 9

Write your own definition for each student-level factor:

<div style="text-align: right">

Student-Level Factors

</div>

1. Home Environment

2. Learned Intelligence and Background Knowledge

3. Motivation

Consider this question: Do you think a school can affect these student-level factors? Why or why not?

Elements of Student-Level Factors

Student-Level Factors	Possible Interventions
Home Environment	
1. Training and support are provided to parents to enhance their communication with their children, their supervision of their children, and their parenting style.	
Learned Intelligence and Background Knowledge	
2. Students are involved in schoolwide programs that directly increase the number and quality of life experiences they have.	
3. Students are involved in a schoolwide program of wide reading that emphasizes vocabulary development.	
4. Students are involved in a schoolwide program of direct instruction in vocabulary terms and phrases that are important to specific subject content.	
Student Motivation	
5. Students are provided with feedback on their knowledge gain.	
6. Students are involved in simulation games and activities that are inherently engaging.	
7. Students are provided with opportunities to construct and work on long-term projects of their own design.	
8. Students are provided with training regarding the dynamics of motivation and how those dynamics affect them.	

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

ASCD®

Association for Supervision
and Curriculum Development

Possible Interventions for Student-Level Factors

Student-Level Factors	Possible Interventions
Home Environment	
1. Training and support are provided to parents to enhance their communication with their children, their supervision of their children, and their parenting style.	• Develop parent programs regarding home support for schoolwork, communicating expectations, encouragement, and positive parenting style.
Learned Intelligence and Background Knowledge	
2. Students are involved in schoolwide programs that directly increase the number and quality of life experiences they have. 3. Students are involved in a schoolwide program of wide reading that emphasizes vocabulary development. 4. Students are involved in a schoolwide program of direct instruction in vocabulary terms and phrases that are important to specific subject content.	• Institute a mentoring program. • Institute a schoolwide vocabulary development program. • Institute a wide reading program.
Student Motivation	
5. Students are provided with feedback on their knowledge gain. 6. Students are involved in simulation games and activities that are inherently engaging. 7. Students are provided with opportunities to construct and work on long-term projects of their own design. 8. Students are provided with training regarding the dynamics of motivation and how those dynamics affect them.	• Institute schoolwide student projects. • Institute a record-keeping program that tracks student progress. • Teach self-regulation knowledge and skills. • Procure simulation games and activities.

Adapted from *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

Questionnaire for Student-Level Factors

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
Home Environment:												
1. Training and support are provided to parents to enhance their communication with their children, their supervision of their children, and their parenting style.												
Learned Intelligence and Background Knowledge:												
2. Students are involved in schoolwide programs that directly increase the number and quality of life experiences they have.												
3. Students are involved in a schoolwide program of wide reading that emphasizes vocabulary development.												
4. Students are involved in a schoolwide program of direct instruction in vocabulary terms and phrases that are important to specific subject content.												

ASCD®

Association for Supervision
and Curriculum Development

In my school . . .	To what extent do we engage in this behavior or address this issue?				How much will a change in our current practices on this item increase the academic achievement of our students?				How much effort will it take to significantly change our current practices regarding this issue?			
	Not at all			To a great extent	Not at all			To a great extent	Not much		A lot, but possible to do	Too much to do
	1	2	3	4	1	2	3	4	1	2	3	4
Student Motivation:												
5. Students are provided with feedback on their knowledge gain.												
6. Students are involved in simulation games and activities that are inherently engaging.												
7. Students are provided with opportunities to construct and work on long-term projects of their own design.												
8. Students are provided with training regarding the dynamics of motivation and how those dynamics affect them.												

Source: From *What Works in Schools: Translating Research into Action*, by R. J. Marzano, 2003, Alexandria, VA: Association for Supervision and Curriculum Development.

This survey is also available online at www.whatworksinschools.org.

Objectives for Workshop 1A

By the end of this workshop, you will be able to

1. Understand the five school-level factors:

    - Guaranteed and viable curriculum

    - Challenging goals and effective feedback

    - Parental and community involvement

    - Safe and orderly environment

    - Collegiality and professionalism

2. Identify specific elements related to each of the five factors.

3. Identify possible interventions a school might take to address the school-level factors.

Objectives for Workshop 1B

By the end of this workshop, you will be able to

1. **Understand the five school-level factors:**

    - **Guaranteed and viable curriculum**

    - **Challenging goals and effective feedback**

    - **Parental and community involvement**

    - **Safe and orderly environment**

    - **Collegiality and professionalism**

2. **Understand specific elements related to each of the five factors.**

3. **Identify possible interventions a school might take to address the school-level factors.**

4. **Identify the areas in which your school is doing least well.**

5. **Identify possible next steps for addressing your school's areas of highest need.**

ASCD®

Association for Supervision
and Curriculum Development

Objectives for Workshop 2A

By the end of this workshop, you will be able to

1. Understand the three teacher-level factors:

    - Instructional strategies

    - Classroom management

    - Classroom curriculum design

2. Identify specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the teacher-level factors.

Objectives for Workshop 2B

By the end of this workshop, you will be able to

1. Understand the three teacher-level factors:

   - Instructional strategies

   - Classroom management

   - Classroom curriculum design

2. Understand specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the teacher-level factors.

4. Identify the areas in which your school is doing least well.

5. Identify possible next steps for addressing your school's areas of highest need.

Objectives for Workshop 3A

By the end of this workshop, you will be able to

1. Understand the three student-level factors:

    - Home environment

    - Learned intelligence and background knowledge

    - Motivation

2. Identify specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the student-level factors.

Objectives for Workshop 3B

By the end of this workshop, you will be able to

1. Understand the three student-level factors:

    - Home environment

    - Learned intelligence and background knowledge
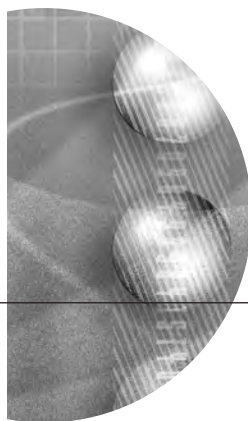
    - Motivation

2. Understand specific elements related to each of the three factors.

3. Identify possible interventions a school might take to address the student-level factors.

4. Identify the areas in which your school is doing least well.

5. Identify possible next steps for addressing your school's areas of highest need.

what
works
IN SCHOOLS

Readings and Resources

References

Barth, P., Haycock, K., Jackson, H., Mora, K., Ruiz, P., Robinson, S., et al. (1999). *Dispelling the myth: High poverty schools exceeding expectations*. Washington, DC: The Education Trust.

Marzano, R. J. (1998a). *A theory-based meta-analysis of research on instruction*. Aurora, CO: Mid-continent Research for Education and Learning. (ERIC Document Reproduction No. ED 427087)

Marzano, R. J. (2000). *A new era of school reform: Going where the research takes us*. Aurora, CO: Mid-continent Research for Education and Learning. (ERIC Document Reproduction Service No. ED454255)

Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

Scheerens, J., & Bosker, R. (1997). *The foundations of educational effectiveness*. New York: Elsevier.

Teddlie, C., & Reynolds, D. (Eds.). (2000). *The international handbook of school effectiveness research*. New York: The Falmer Press.

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993). Toward a knowledge base for school learning. *Review of Educational Research, 63*(3), 249-294.

Reading 1

1

INTRODUCING THE BEST OF TIMES

Perhaps now more than ever the quotation from Charles Dickens's *A Tale of Two Cities* describes the position of public education: "It was the best of times, it was the worst of times." Actually, given the criticisms of public education, some of those directly involved in K through 12 education might argue that the only relevant part is "it was the worst of times." This book, however, is about *possibility*, specifically the possibility that K–12 education is on the brink of the best of times if we so choose. My premise is that if we follow the guidance offered from 35 years of research, we can enter an era of unprecedented effectiveness for the public practice of education—one in which the vast majority of schools can be highly effective in promoting student learning. As subsequent chapters detail, any school in the United States can operate at advanced levels of effectiveness—if it is willing to implement what is known about effective schooling. Before examining this possibility, let us consider the

criticisms of U.S. education—the argument for the worst of times.

The Case for the Worst of Times

The history of public education, particularly during the 20th century, is rife with criticisms (Tyack, 1974; Tyack & Tobin, 1994). Indeed, the century began with a massive effort to improve K–12 schooling, which was spearheaded by the Carnegie Foundation for the Advancement of Teaching. One significant aspect of that reform effort was the establishment of the "Carnegie unit" as the uniform standard for defining academic achievement.

Criticisms of public education and their accompanying reform efforts flourished for the first five decades of the century. However, it is the criticisms and reform efforts of the second half of the century that most profoundly affect us today. The first of these was spawned by the launching of

1

Sputnik in 1957. Shocked by this event, the U.S. public began to question the rigor and viability of our schools. Indeed, influential figures such as Admiral Hyman Rickover (1959) forwarded the position that public education was weakening the intellectual capacity of our students. Rickover's book, *Education and Freedom*, made direct links between the security of the nation and the quality of education.

In the 1960s there was no hiatus from the harsh criticisms of public education. In fact, the study that arguably produced the most concrete evidence of the failures or inadequacies of public education was conducted in that decade. It was in the context of President Johnson's "war on poverty" that the Civil Rights Act of 1964, a cornerstone of Johnson's initiative, specified that the Commissioner of Education should conduct a nationwide survey of the availability of educational opportunity. The effort mounted was impressive even by today's standards. More than 640,000 students in grades 1, 3, 6, 9, and 12 took achievement and aptitude tests and were categorized into six ethnic and cultural groups. Sixty thousand teachers in 4,000 schools completed questionnaires about their background and training. The resulting report, *Equality in Educational Opportunity*, was published in July 1966. Although the work of a team of researchers (Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, & York, 1966), it has become known as the "Coleman report" in deference to its senior author, James Coleman. To say the least, the findings did not paint a flattering picture of public education:

> Taking all of these results together, one implication stands above all: that schools bring little to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront life at the end of school. (p. 325)

The report had a profound impact on public perceptions of schooling in the United States (Madaus, Airasian, & Kellaghan, 1980; Madaus, Kellaghan, Rakow, & King, 1979). Specifically, it dealt a veritable deathblow to the belief that schools could overcome students' backgrounds. Perhaps the most publicized finding from the report was that schools account for only about 10 percent of the variance in student achievement—the other 90 percent is accounted for by student background characteristics.

The findings in the Coleman report were corroborated when Christopher Jencks and his colleagues published *Inequality: A Reassessment of the Effects of Family and Schooling in America*, which was based on a reanalysis of Coleman's data (Jencks et al., 1972). Among the findings articulated in the Jencks study were the following:

- Schools do little to lessen the gap between rich students and poor students.
- Schools do little to lessen the gap between more and less able students.
- Student achievement is primarily a function of one factor—the background of the student.
- Little evidence exists that education reform can improve a school's influence on student achievement.

The conclusions stated and implied in the Coleman and Jencks studies painted a sobering picture of U.S. education. If schools have little chance of overcoming the influence of students' background characteristics, why put any energy into school reform?

Although the nation viewed public education poorly in the 1960s and 1970s, the 1980s were even darker times. As Peter Dow (1991) explains in his book *Schoolhouse Politics: Lessons from the Sputnik Era*:

> In 1983 educators and the general public were treated to the largest outpouring of criticism of the nation's schools in history, eclipsing even the complaints of the early 1950s. Nearly fifty reports totaling more than six thousand pages voiced a new wave of national concern about the troubled state of American education. They spoke of the fragmented state of the school curriculum, the failure to define any coherent, accepted body of learning, the excessive emphasis on teaching isolated facts, and the lack of attention to higher order skills and concepts. They called for more individualism of instruction, the development of a closer relationship between teachers and students, and methods that encourage the active participation of the student in the learning process. (p. 243)

Again, a single report laid the foundation for the outpouring of criticism. Without a doubt, *A Nation at Risk: The Imperative for Educational Reform*, issued by the National Commission on Excellence in Education, was considered by some as proof that K–12 education had indeed devolved to a state of irreversible disrepair. The report noted that "the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people" (National Commission on Excellence in Education, 1983, p. 5). To punctuate the importance of the message about public education, the report claimed that "we have, in effect, been committing an act of unthinking, unilateral disarmament" (p. 5).

The effects of the report were profound, due in no small part to the fact that it was perceived as the sanctioned opinion of the White House. As David Berliner and Bruce Biddle note in their book *The Manufactured Crisis: Myths, Frauds, and the Attack on America's Public Schools* (Berliner & Biddle, 1995):

> . . . in 1983, amid much fanfare, the White House released an incendiary document highly critical of American education. Entitled *A Nation at Risk*, this work was prepared by a prestigious committee under the direction of then Secretary of Education Terrell Bell and was endorsed in a speech by President Ronald Reagan. (p. 3)

The effects of *A Nation at Risk* persisted through the 1990s. Indeed, some authors (Bennett, 1992; Finn, 1991) cite the report as one of the primary sources of evidence for public education's decline.

Although *A Nation at Risk* was sufficient to cast a negative shadow on education throughout the 1990s, a newer study, the Third International Mathematics and Science Study (TIMSS), was interpreted as evidence of the ineffectiveness of U.S. education. It involved a large-scale, cross-national comparison of the education systems in 41 countries. TIMSS researchers examined mathematics and science curricula, instructional practices, and school and social factors. In general, U.S. 4th grade students performed moderately well

when compared to students of similar ages in other countries; 8th grade students less so; and 12th grade students performed quite poorly. Both technical reports of TIMSS (Schmidt, McKnight, & Raizen, 1996; U.S. Department of Education, National Center for Educational Statistics, 1998) and commentaries on TIMSS (Stevenson & Stigler, 1992; Stigler & Hiebert, 1999) interpret the results as evidence of a dire need for public education reform. Perhaps at the extreme, Chester Finn (1998), in a provocative article in the *Wall Street Journal* entitled "Why America Has the World's Dimmest Bright Kids," described the findings in the following way:

> Today the U.S. Department of Education officially releases the damning data, which come from the Third International Mathematics and Science Study, a set of tests administered to half a million youngsters in 41 countries in 1995. But the results have trickled out. We learned that our fourth-graders do pretty well compared with the rest of the world, and our eighth-graders' performance is middling to poor. Today we learn that our 12th-graders occupy the international cellar. And that's not even counting Asian lands like Singapore, Korea and Japan that trounced our kids in younger grades. They chose not to participate in this study. (p. A22)

Given the criticisms of public education that have flourished over the last half of the last century, it is clear that those who believe that it is the worst of times for public education have plenty of evidence for their position. Indeed, it is hard to imagine an argument for the position that it can be the best of times for public education.

The Case for the Best of Times

My case for the position that public education is at the dawn of the best of times is not necessarily based on refuting the reports mentioned. Such arguments have been made for *A Nation at Risk* and, to some degree, TIMSS. Perhaps the most noteworthy of these arguments are found in David Berliner and Bruce Biddle's (1995) *The Manufactured Crisis: Myths, Frauds, and the Attack on America's Public Schools* and Gerald Bracey's (1997) *Setting the Record Straight: Responses to Misconceptions about Public Education in the United States*. These works take a rather aggressive stance that past research has been either misleading or misinterpreted to paint an unwarranted negative perspective of U.S. education. Although I do not share this view entirely, both works present compelling arguments and provide perspectives with which all educators should be familiar.

My basic position is quite simple: Schools can have a tremendous impact on student achievement if they follow the direction provided by the research. As evidence for this position, I will not use examples of specific schools mainly because other writers have already done so (see Darling-Hammond, 1997a; Reeves, 2002; Schmoker, 1999, 2001). Indeed, perhaps the most compelling evidence for this conclusion is the impressive list of schools that have "beat the odds" compiled by Education Trust (Barth et al., 1999). These high-poverty schools are referred to as "beat the odds" schools because they sport impressive academic achievement from students whose background characteristics would

logically preclude it. Rather than present specific examples, I present evidence based on my attempts to synthesize the extant research over the last 35 years, which I assert has provided clear and unprecedented insight into the nature of schooling. I have presented technical and nontechnical descriptions of these efforts in several publications (Marzano, 1998a, 2000a; Marzano, Pickering, & Pollock, 2001). Although my case is made in detail in the chapters to come, it begins with three basic assertions.

Assertion 1: Even those studies that have been interpreted as evidence that schools do not significantly affect student achievement do, in fact, support the potential impact of schools when interpreted properly.

The Coleman report was arguably the first high-visibility study of the second half of the 20th century to advance the position that schools have little impact on student achievement. Recall that its fundamental finding was that schools account for only about 10 percent of the variance in student achievement—a finding that was corroborated later by Jencks and colleagues (1972). Understanding the problems with using percentage of variance as the measure of a school's impact is the key to understanding how these findings could actually support the position that schools do make a difference. (For a technical discussion of issues regarding percentage of variance, see Technical Note 1, pp. 187–188.)

In nonstatistical terms, findings like those from the Coleman report are frequently interpreted in the following way: Assume you are examining the academic achievement of a group of 1,000 8th grade students who attend five different middle schools—200 in each school. Also assume that these students vary in their achievement scores—some have very high scores, some have very low scores, many have scores near the average. Taken at face value, the findings from the Coleman report imply that only about 10 percent of the differences in scores from student to student (more accurately, the squared differences) are a function of the quality of the schools these students attend. In other words, going to the best of the five schools as opposed to the worst of the five schools generates only about 10 percent of the differences in students' scores. What accounts for the other 90 percent of the differences in scores? Coleman and others (1966) concluded it is the background of the students.

How can these findings possibly be interpreted as evidence that schools can have a positive and significant influence on student achievement? Since the Coleman report was published, statisticians have found that using percentage of variance as an indication of a factor's importance is not the most useful way of interpreting research findings on academic achievement. In fact, as is the case with the Coleman report, this technique can paint an unnecessarily gloomy picture of a school's possible effects on student achievement.

Researchers Robert Rosenthal and Donald Rubin (1982) devised a more practical way to interpret research findings reported in terms of percentage of explained variance. Their approach is referred to as the Binomial Effect Size Display or BESD. (For a technical and more detailed explanation of the BESD, see Technical Note 2, pp. 189–190.) To illustrate Rosenthal and Rubin's BESD, consider Figure

FIGURE 1.1		
Reinterpretation of Coleman's Findings Using the BESD		
Group	Outcome	
	Percentage of Students Who Pass the Test	Percentage of Students Who Fail the Test
Effective Schools	65.8%	34.2%
Ineffective Schools	34.2%	65.8%
BESD = Binomial Effect Size Display		

1.1, which is based on Coleman's findings that schools account for only 10 percent of the variance in student achievement.

Although schools would be better described as representing many gradations of effectiveness from highly ineffective to highly effective, Rosenthal and Rubin's approach requires placing schools into one of those two broad categories. That is, a school is classified as being either effective or ineffective. Rosenthal and Rubin's approach also requires assuming that the students in the effective and the ineffective schools are given a test on which you would normally expect half of the students to pass and half to fail. Given these assumptions, we can now interpret Figure 1.1. The columns in Figure 1.1 are labeled "percentage of students who pass the test" and "percentage of students who fail the test." In general, in the effective schools, 65.8 percent of students would pass the test, and only 34.2 percent would fail the test. Conversely, in general, in the ineffective schools only 34.2 percent of the students would pass the test, and 65.8 percent would fail it.

This perspective paints a far different picture of the findings from the Coleman report. In effective schools almost twice the percentage of students would pass the test (on which half are expected to fail and half to pass) than in the ineffective schools. The logical conclusion to draw from the Coleman report, then, is that effective schools **do** make a difference in student achievement.

Assertion 2: The research on the effectiveness of schools _considered as a whole_ paints a very positive image of their impact on student achievement.

The Coleman report and the Jencks follow-up study were the first in a series of studies to explore the impact of schools. Scores of similar studies have been conducted since. In a review of some of this research, Charles Teddlie, David Reynolds, and Pam Sammons (2000) indicate that many studies report that schools account for more variance in student achievement than Coleman's meager 10 percent. I have also synthesized much of that research (Marzano, 2000a). I analyzed the findings from 10 high-visibility studies (Bosker, 1992; Byrk & Raudenbush, 1992; Coleman et al., 1966; Creemers, 1994; Jencks et al., 1972; Luyten, 1994; Madaus et al., 1979; Rowe & Hill, 1994; Scheerens & Bosker, 1997; Stringfield & Teddlie, 1989)

and discovered that the average finding was that schools account for 20 percent of the variance in student achievement—twice as much as that reported by Coleman. Why were the Coleman findings so low? George Madaus and his colleagues (1979) and Berliner and Biddle (1995) discussed this in detail. In brief, although Coleman and colleagues had access to student scores on standardized academic achievement tests, they chose to use a general measure of verbal ability (focused on vocabulary knowledge) as the primary outcome measure. This created a situation in which student background variables almost by definition were highly correlated with student achievement. Madaus and colleagues (1979) explain

> . . . the construct "verbal ability" in the Coleman study has become equated with "school achievement" and the results have been generalized to the now popular myth that school facilities, resources, personnel, and curricula do not have a strong independent effect on achievement. Coleman's findings have been interpreted in the widest and most damaging sense. . . . To assert that schools bring little influence to bear on a child's general verbal ability that is independent of his background and general social context is not the same as asserting that schools bring little influence to bear on pupils' achievement in a specific college preparatory physics course. . . . The fact that home background variables seem to be vastly more influential in explaining verbal ability should not preclude or cloud any expectations we have that schools should have some independent effect on traditional curriculum areas which are systematically and explicitly treated as part of the instructional process. (p. 210)

The Coleman researchers' use of verbal ability as the primary dependent measure resulted in an underestimate of the effect of schools on student achievement.

How does the picture change if we use the updated estimate of 20 percent? To answer this question, we turn again to Rosenthal and Rubin's BESD approach in Figure 1.2 (p. 8).

As Figure 1.2 illustrates, the updated research indicates that effective schools generally have a fairly substantial impact on student achievement. Specifically, if a test on which you would normally expect half the students to pass and half the students to fail were given to students in effective schools, 72.4 percent of those students would pass the test and the remainder would fail. In the ineffective schools, however, only 27.6 percent of the students would pass the test. In the aggregate, then, the research indicates that schools, when run effectively, make a big difference in student achievement. Again, to quote Madaus and others (1979), the findings from studies that use appropriate student achievement measures "provide strong evidence for the differential effectiveness of schools; differences in school characteristics do contribute to differences in achievement." (p. 223)

Assertion 3: The schools that are highly effective produce results that almost entirely overcome the effects of student background.

Assertions 1 & 2 are based on the convention of classifying schools into two broad and contrived categories—effective schools and ineffective schools. Given that there are about 92,000 public schools in the United

FIGURE 1.2

Effective Versus Ineffective Schools, Assuming 20 Percent of Variance

Group	Outcome	
	Percentage of Students Who Pass the Test	Percentage of Students Who Fail the Test
Effective Schools	72.4%	27.6%
Ineffective Schools	27.6%	72.4%

States (National Center for Educational Statistics, 2002), we can assume that they approximate a normal distribution in terms of effectiveness, as depicted in Figure 1.3.

Let's consider those schools to the far right of the distribution in Figure 1.3—those schools at the 99th percentile in terms of their effectiveness. What effect do these schools have on students' achievement? Using the BESD approach, we find that 84.7 percent of the students in those schools would pass a test on which we would normally expect half the students to pass and half the students to fail. (The explanation for this is presented in Technical Note 3, p. 190). This would be true *regardless of the background of the students who attend the school.* Specifically, these schools provide interventions that are designed to overcome student background characteristics that might impede learning. These interventions are detailed in Section III of this book. For now, it is sufficient to say that this is a remarkable possibility—one that provides great hope for public education.

Research in the last 35 years demonstrates that effective schools can have a profound impact on student achievement. The remaining chapters articulate the guidelines provided by that research. Before articulating and discussing those guidelines, however, we must consider another perspective: Although the research provides clear guidance regarding effective schooling, is the U.S. public education system up to the challenge of following it?

Are Public Schools Up to the Challenge of Research-Based Reform?

In 1990 John Chubb and Terry Moe authored an influential book entitled *Politics, Markets and America's Schools* (Chubb & Moe, 1990). After conducting a study that involved more than 400 high schools and 10,000 high school teachers, Chubb and Moe reached some of the same conclusions that I have:

> All things being equal, a student in an effectively organized school achieves at least a half-year more than a student in an ineffectively organized school over the last two years of high school. If this difference can be extrapolated to the normal four-year high school experience, an effectively organized school may increase the achievement of its students by more than one full year. That is a substantial school effect indeed. (p. 140)

Although this book asserts that public educators are up to the challenge of implementing

FIGURE 1.3

Continuum of School Effectiveness

| 2.14 | 13.59 | 34.13 | 34.13 | 13.59 | 2.14 |

99th Percentile

Totally
Ineffective

Totally
Effective
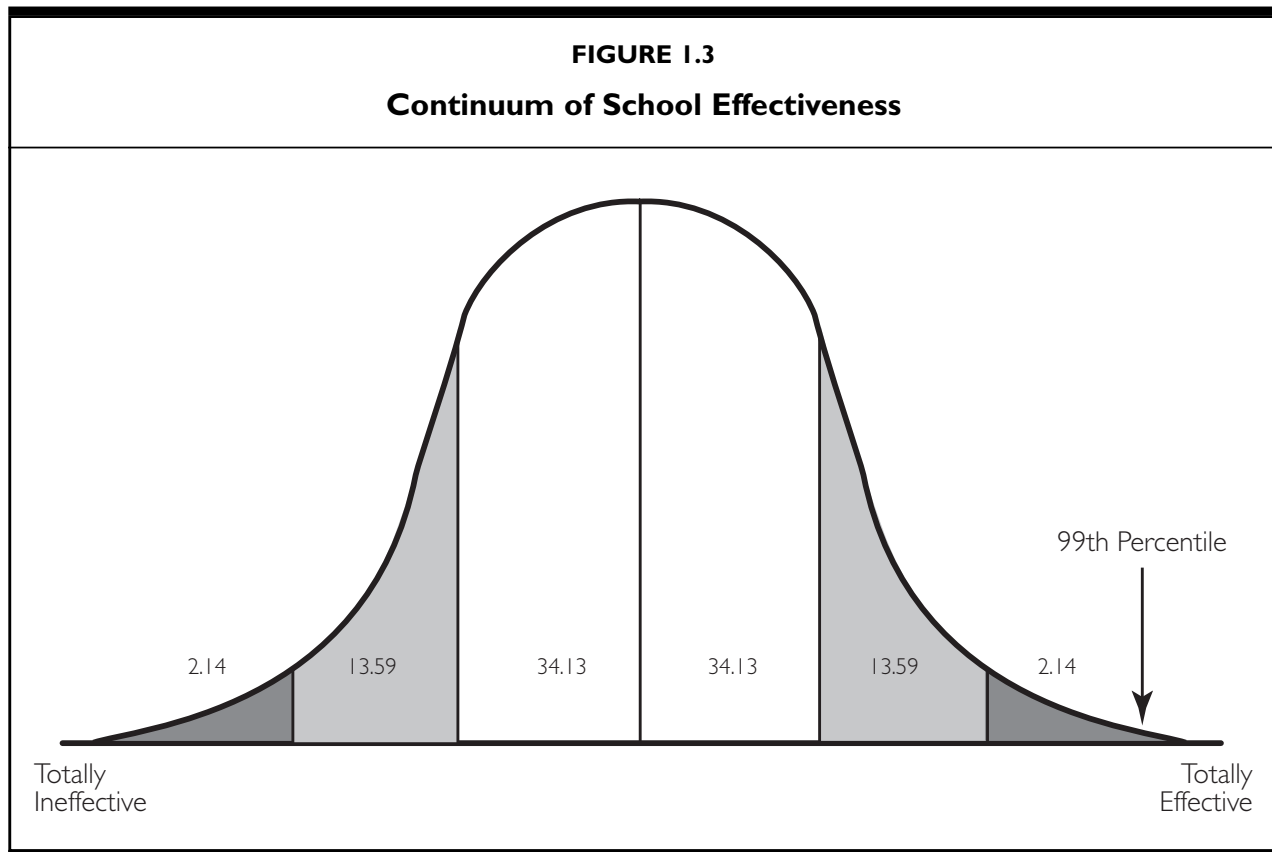
what we know about effective schooling, Chubb and Moe assert that bureaucratic underpinnings of public schools doom to failure any attempts at school reform:

> . . . we can only believe that the current "revolution" in American public education will prove a disappointment. It might have succeeded had it actually been a revolution, but it was not and was never intended to be, despite the lofty rhetoric. (p. 228)

They ultimately conclude that school choice (presumably in the form of vouchers) is the only viable way to implement the findings from the research.

Chubb and Moe offer compelling evidence. In brief, they demonstrate that the more district-level control or constraints put on a school, the lower the chances of the school being organized in an effective manner. According to Chubb and Moe, centralized control over personnel can be particularly debilitating to a school's effectiveness:

> Among the reasons why direct external control may interfere with the development of an effective school, perhaps the most important is the potentially debilitating influence of external control over personnel. If principals have little or no control over who teaches in their schools, they are likely to be saddled with a number of teachers, perhaps even many teachers, whom they regard as bad fits. In an organization that works best through shared decisionmaking [sic] and delegated authority, a staff that is in conflict with the leader and with itself is a serious problem. . . . Personnel policies

that promote such conflict may be a school's greatest external burden. (p. 152)

It is a small step from here to the necessity of vouchers and charter schools. Much of Chubb and Moe's argument has been criticized as "ideologically driven" (Berliner & Biddle, 1995, p. 75) as opposed to objectively driven by research results, but I believe their point is well taken. In effect, we stand at a crossroads—will we implement the research-based guidelines to produce schools that don't just work but that work remarkably well? To do so requires a powerful commitment to change the status quo.

How This Book Is Organized

Following the categorization scheme used by many researchers (Carroll, 1963; Cotton, 1995; Creemers, 1994; Elberts & Stone, 1988; Goldstein, 1997; Raudenbush & Byrk, 1988; Raudenbush & Willms, 1995; Rowe, Hill & Holmes-Smith, 1995; Scheerens, 1992; Scheerens & Bosker, 1997; van der Werf, 1997; Walberg, 1984; Wright, Horn, & Sanders, 1997), I've organized the results of 35 years of research into three general factors that influence student academic achievement: (1) school-level factors, (2) teacher-level factors, and (3) student-level factors.

School-level factors are primarily a function of school policy and schoolwide decisions and initiatives (a guaranteed and viable curriculum, challenging goals and effective feedback, parent and community involvement, a safe and orderly environment, and collegiality and professionalism).

Teacher-level factors are primarily under the control of individual teachers (specific instructional strategies, classroom management techniques, and classroom curriculum design). **Student-level factors** are generally associated with student background (home environment, learned intelligence and background knowledge, and motivation). Figure 1.4 depicts this model.

FIGURE 1.4

Factors Affecting Student Achievement

Factor	Example
School	• Guaranteed and viable curriculum • Challenging goals and effective feedback • Parent and community involvement • Safe and orderly environment • Collegiality and professionalism
Teacher	• Instructional strategies • Classroom management • Classroom curriculum design
Student	• Home atmosphere • Learned intelligence and background knowledge • Motivation

Implicit in Figure 1.4 is the notion that the school (as opposed to the district) is the proper focus for reform. Indeed, this is a consistent conclusion in the research literature (Scheerens & Bosker, 1997; Reynolds & Teddlie, 2000; Wang, Haertel & Walberg, 1993). While I share Chubb and Moe's concern that district-level central administration can sometimes impede school reform, I believe that the current structure of public

education is malleable enough to benefit from the changes recommended in this book.

In keeping with the organization depicted in Figure 1.4, this book is divided into the following major sections. Section I deals with the five school-level factors, Section II deals with the three teacher-level factors, and Section III deals with the three student-level factors. Finally, Section IV addresses how a school might use the information in the three previous sections to engage in substantive change.

Summary

Thirty-five years of research provides remarkably clear guidance as to the steps schools can take to be highly effective in enhancing student achievement. Although the guidance from the research is clear, researchers and the public continue to debate whether public education is up to the task of following it. Following the lead of other studies, I have organized the research into three broad categories: school-level factors, teacher-level factors, and student-level factors.

Reading 2

2

THE SCHOOL-LEVEL FACTORS

We begin our discussion with an exploration of the five school-level factors introduced in Figure 1.4 (p. 10). I refer to them as school-level factors because, for the most part, they are under the jurisdiction of the school as a whole. That is, changes in these factors are usually a result of formal or informal policy decisions.

Anyone familiar with the last 35 years of research on school effectiveness is aware that there have been many proposed lists of school-level factors. In this chapter, I collapse those previous lists into these five factors:

1. Guaranteed and viable curriculum
2. Challenging goals and effective feedback
3. Parent and community involvement
4. Safe and orderly environment
5. Collegiality and professionalism

These categories represent the most current thinking on school-level factors, and the order in which I list them represents their order of

impact on student achievement. That is, a guaranteed and viable curriculum is the school-level factor with the most impact on student achievement, followed by challenging goals and effective feedback, and so on down the list. In making my case for this order, I use the results of five previous attempts to synthesize the research on school-level factors (although more proposed lists could have been included with the same results). For more extensive discussions on these syntheses, see Good & Brophy, 1986; Marzano, 2000a; Scheerens & Bosker, 1997; Reynolds & Teddlie, 2000. In constructing my five school-level factors, I have considered only those that can be addressed without a drastic addition of resources. By definition, then, interventions that would require a drastic increase in the time spent in school (e.g., lengthening the school year or implementing after-school programs) or additional personnel (e.g., lower teacher-to-student ratios or tutoring for every student) or equipment not readily available at the present time (e.g., personal computers for

15

every student) are not addressed in this book. Although these would probably have a significant impact on student achievement, my emphasis is on school reform efforts that can be implemented within the general boundaries of the resources available.

School-Level Factors: A Comparison Across Researchers

The most famous list of school-level factors came out of the school effectiveness research from the 1970s. (For a review see Good & Brophy, 1986; Marzano, 2000a.) Some of the well-known researchers of that era were Ron Edmonds (Edmonds, 1979a, 1979b, 1979c, 1981a, 1981b), Michael Rutter (Rutter, Maughan, Mortimore, Ouston & Smith, 1979), and Wilbur Brookover (Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978; Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979). Of this list, Edmonds is the figurehead of the school effectiveness movement. As Good and Brophy (1986) note

> Until his untimely death in 1983 [Edmonds] had been one of the key figures in the school effectiveness movement ... Edmonds, more than anyone, had been responsible for communication of the belief that *schools* can and do make a difference. (p. 582)

These school-level factors were associated with the school effectiveness movement of the 1970s:

- strong administrative leadership,
- an emphasis on basic skill acquisition,

- high expectations for student achievement,
- a safe and orderly atmosphere conducive to learning, and
- frequent monitoring of student progress.

Although there is some variation from researcher to researcher (see Purkey & Smith, 1982, for a discussion), these five "correlates" of effective schools (so named because of their strong correlation with student achievement) became the focal point of reform in the 1970s and early 1980s. Although it is probably more accurate to credit these correlates to the entire school effectiveness movement, for ease of discussion, I attribute them to Edmonds in this and subsequent chapters.

Another list of school-level factors that has been widely used is one developed by Daniel Levine and Lawrence Lezotte (1990). In their review of the research literature, they relied heavily on case studies using what might be thought of as an "outlier design," for example, focusing on the characteristics of the top 25 percent of schools as opposed to the bottom 25 percent. Their analysis produced the following factors:

- productive climate and culture,
- focus on central learning skills,
- appropriate monitoring,
- practice-oriented staff development,
- strong leadership,
- salient parent involvement, and
- high expectations and requirements.

I should note that the list by Levine and Lezotte included effective instructional arrangement and implementation. In this discussion, it is classified as a teacher-level factor.

Pam Sammons and her colleagues (Sammons, 1999; Sammons, Hillman, & Mortimore, 1995) performed an analysis similar to that by Levine and Lezotte (1990). However, they relied less on case study evidence and included more quantitative studies such as the British Junior School Project (Mortimore et al., 1988). Their review produced the following school-level factors:

- professional leadership,
- concentration on teaching and learning,
- shared vision and goals,
- a learning environment,
- high expectations,
- positive reinforcement,
- monitoring progress,
- pupil rights and expectations,
- home-school partnership, and
- a learning organization.

Again, the complete list contains purposeful teaching as a factor, but I've classified that among the teacher-level factors.

From a quantitative perspective, one of the most rigorous reviews of the research on school-level factors was conducted by Jaap Scheerens and Roel Bosker (Scheerens & Bosker, 1997; Scheerens, 1992; Bosker, 1992; Bosker & Witziers, 1995, 1996). They identified eight school-level factors. Perhaps their major contribution to the previous work was that they were able to rank order these factors in terms of their impact on student achievement. (See Figure 2.1.)

The Scheerens and Bosker ranking was the first of its kind and significantly increased our understanding of the school-level factors associated with enhanced academic achievement.

FIGURE 2.1

Ranking of School-Level Factors Based on Scheerens and Bosker

Rank	Factor
1	Time
2	Monitoring
3	Pressure to Achieve
4	Parental Involvement
5	School Climate
6	Content Coverage
7	School Leadership
8	Cooperation

Note: Scheerens and Bosker included a ninth factor in their list—homework. In the context of the present discussion, however, it is more of a teacher-level factor than a school-level factor. For a discussion, see Marzano, 2000a.

Source: Scheerens, J., & Bosker, R. (1997). *The foundations of educational effectiveness.* New York: Elsevier.

The final review of the research that forms the basis of the five school-level factors presented in this book is one I conducted (Marzano, 2000a). My review was basically a reanalysis and updating of the review by Scheerens and Bosker. The findings from this review are reported in Figure 2.2 (p. 18).

FIGURE 2.2

Ranking of School-Level Factors Based on Marzano, 2000a

Rank	Factor
1	Opportunity to learn
2	Time
3	Monitoring
4	Pressure to Achieve
5	Parental Involvement
6	School Climate
7	Leadership
8	Cooperation

Source: Marzano, R. J. (2000a). *A new era of school reform: Going where the research takes us.* Aurora, CO: Mid-continent Research for Education and Learning. (ERIC Document Reproduction Service No. ED454255)

The basic difference between the lists in Figures 2.1 and 2.2 is that content coverage from the Scheerens and Bosker study has been renamed "opportunity to learn" and its rank elevated from sixth to first. This is not a trivial change. As I explain in Chapter 3, the research on opportunity to learn demonstrates its primacy in terms of impact on student achievement.

Although the five lists of school-level factors might seem somewhat disparate at first glance, careful examination reveals that,

except for wording differences, they address the same basic factors. Figure 2.3 depicts the commonality in these different lists and demonstrates how I have collapsed them into the five school-level factors that are the subject of the next five chapters.

An examination of Figure 2.3 illustrates how different researchers use slightly different terms to describe the same factors. For example, consider the following for "challenging goals and effective feedback":

- "High expectation for student achievement" and "frequent monitoring of student progress" from Edmonds
- "Appropriate monitoring" and "high expectations and requirements" from Levine and Lezotte
- "High expectations" and "monitoring progress" from Sammons
- "Monitoring" and "pressure to achieve" from Scheerens and Bosker
- "Monitoring" and "pressure to achieve" from Marzano

All these examples address setting academic goals for all students that do not underestimate their potential and that provide feedback as to progress. Therefore, I have organized them into the single category "challenging goals and effective feedback." As a result, Figure 2.3 does not convey the depth or complexity of the factors identified by other researchers. For example, in Figure 2.3, I have classified Sammons's "positive reinforcement" as an aspect of a safe and orderly environment, which of course is one of my five school-level factors. In fact, Sammons defines this factor as involving clear and fair discipline as well as feedback. Part of Sammons's factor

FIGURE 2.3						
Comparing School-Level Factors Across Researchers						
The School-Level Factors	Rank*	Marzano	Scheerens and Bosker	Sammons	Levine and Lezotte	Edmonds
Guaranteed and Viable Curriculum	1	Opportunity to Learn	Content Coverage	Concentration on Teaching and Learning	Focus on Central Learning Skills	Emphasis on Basic Skill Acquisition
		Time	Time			
Challenging Goals and Effective Feedback	2	Monitoring	Monitoring	High Expectations	High Expectations and Requirements	High Expectations for Student Success
		Pressure to Achieve	Pressure to Achieve	Monitoring Progress	Appropriate Monitoring	Frequent Monitoring of Student Progress
Parental and Community Involvement	3	Parental Involvement	Parental Involvement	Home-School Partnership	Salient Parental Involvement	
Safe and Orderly Environment	4	School Climate	School Climate	A Learning Environment	Productive Climate and Culture	Safe and Orderly Atmosphere Conducive to Learning
				Positive Reinforcement		
				Pupil Rights and Expectations		
Collegiality and Professionalism	5	Leadership	Leadership	Professional Leadership	Strong Leadership	Strong Administrative Leadership
				Shared Vision and Goals		
		Cooperation	Cooperation	A Learning Organization	Practice-Oriented Staff Development	

*Author has ranked these factors by order of impact on student achievement

of positive reinforcement, then, would fall under my school-level factor of challenging goals and effective feedback. In short, Figure 2.3 is not a perfectly accurate correlation of the work of others with my five school-level factors. It does, however, convey the basic message—that school-level factors identified by several researchers generally fall into five basic categories.

My five school-level factors are listed in rank order in terms of their impact on student achievement, which is derived from the

ranking in *A New Era of School Reform: Going Where the Research Takes Us* (Marzano, 2000a). Specifically, the first school-level factor—a guaranteed and viable curriculum—is a composite of "opportunity to learn" and "time," which hold the ranks of first and second respectively. The second factor—challenging goals and effective feedback—is a composite of "monitoring" and "pressure to achieve," which hold the ranks of third and fourth respectively.

Although I stand firmly behind this rank ordering, I do not mean to imply that those factors with lower rank are not critical to the effective running of a school. Those factors with weaker statistical relationships with student achievement positively impact achievement up to a certain point only. Such relationships are typically referred to as nonlinear. As Good and Brophy (1986) explain: "Many of the school effects variables probably have a nonlinear relationship with outcomes" (p. 588). For example, consider collegiality and professionalism, which is ranked last of the five school-level factors. Taken at face value, you might conclude that establishing an atmosphere of collegiality and professionalism is not critically important to student achievement. However, if it has a nonlinear relationship with achievement, it could mean that it is highly important to student achievement up to a point where the relationship tapers off. This hypothesis not only makes good statistical sense, but it also makes good common sense. An atmosphere of collegiality and professionalism among teachers and administrators in a school might be a necessary condition for student achievement. But after a certain level of collegiality

and professionalism has been attained, an increase in this factor has no further effect on achievement.

The absence of the factor "leadership" from my list of school-level factors is not an oversight, although it was mentioned explicitly in the other five lists. Virtually all descriptions of leadership were either very narrow or so broad as to encompass virtually all other categories. For example, in the Scheerens and Bosker (1997) review, leadership was rather narrowly focused on what might be referred to as quality control. This narrow definition probably accounts for the fact that it is rated next to last in their analysis. In contrast, Levine and Lezotte (1990) define leadership as encompassing the following elements: high expenditure of time and energy for school improvement; superior instructional leadership; frequent, personal monitoring of school activities and "sense-making"; and acquisition of resources. Such broad descriptions of leadership were also characteristic of the interpretations by Sammons and Edmonds. I have chosen to exclude leadership from the list of school-level factors. Its proper place is as an overarching variable that impacts the effective implementation of the school-level factors, the teacher-level factors, and the student-level factors. See Chapter 18 for information on the critical role of leadership in school reform.

Each of the next five chapters in this section addresses one school-level factor. In each chapter, the research pertaining to the factor is first reviewed and discussed. Then, a set of recommended "action steps" is described and exemplified.

Summary

This chapter has introduced the five school-level factors. In addition to showing how they encompass the findings from five previous research synthesis efforts, I have provided a rationale for my rank ordering of their impact on student achievement.

Reading 3

8
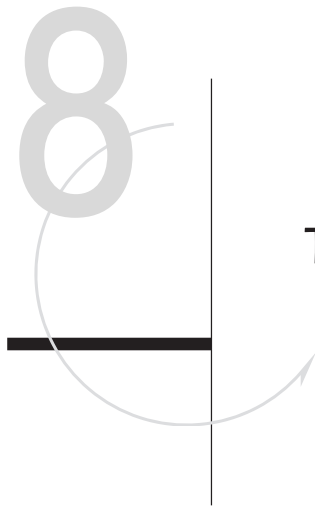
THE TEACHER-LEVEL FACTORS

Now we turn our attention to those factors that affect individual students in the classroom—the independent impact that a teacher can have on student achievement. Naturally, an individual teacher is influenced by decisions the school makes (decisions that include a guaranteed and viable curriculum, challenging goals, and feedback). However, the teacher-level factors addressed here are primarily a function of decisions made by individual teachers, including instructional strategies, classroom management, and classroom curriculum design.

Before the mid-1980s, studies of effective schooling tended to look at school-level factors only, that is, the school as having a unitary and consistent impact on student achievement. Good and Brophy (1986) warned of the consequences of this perspective:

> Studies of large samples of schools yield important profiles of more and less successful schools, but these are *group averages* [original emphasis] that may or may not

describe how a single effective teacher actually behaves in a particular effective school. Persons who use research to guide practice sometimes expect all teachers' behavior to reflect the group average. Such simplistic thinking is apt to lead the literature to be too broadly and inappropriately applied. (p. 588)

A useful question, then, for anyone wishing to understand those factors that enhance student achievement is this: What influence does an individual teacher have apart from what the school does?

The Effect of Individual Teachers

Although most attempts to answer this question arrive at slightly different quantitative estimates, all researchers agree that the impact of decisions made by individual teachers is far greater than the impact of decisions made at the school level. Reporting on their analysis of achievement scores from

71

five subject areas (mathematics, reading, language arts, social studies, and science) for some 60,000 students across grades 3 through 5, S. Paul Wright, Sandra Horn, and William Sanders (1997) note

> The results of this study will document that the most important factor affecting student learning is the teacher. In addition, the results show wide variation in effectiveness among teachers. The immediate and clear implication of this finding is that seemingly more can be done to improve education by improving the effectiveness of teachers than by any other single factor. *Effective teachers appear to be effective with students of all achievement levels regardless of the levels of heterogeneity in their classes* [emphasis in original]. If the teacher is ineffective, students under that teacher's tutelage will achieve inadequate progress academically, regardless of how similar or different they are regarding their academic achievement. (p. 63)

This study and others conducted by William Sanders and his colleagues (Sanders & Horn, 1994; Wright, Horn, & Sanders, 1997) rather dramatically illustrate the profound impact an individual teacher can have on student achievement. For example, Kati Haycock (1998) notes that Sanders' results are most revealing in determining the achievement differences between students who spend a year with a highly effective teacher as opposed to a less effective teacher. This difference is depicted in Figure 8.1. On the average, the most effective teachers produced gains of about 53 percentage points in student achievement over one year, whereas the least effective teachers produced achievement gains of about 14 percentage points over one year. To understand these results, consider the fact that researchers estimate that students typically gain about 34 percentile points in achievement during one academic year (see

---

FIGURE 8.1

Student Achievement Differences Affected by Teachers

Teacher	Student achievement gain in 1 year
Least effective	14 percentage points
Most effective	53 percentage points

Note: Sanders identified "most effective" versus "least effective" teachers by ranking them in terms of gains in student achievement and then organizing that rank order into five categories or quintiles. "Most effective" teachers were defined as those in the highest category (quintile 1); "least effective" teachers were defined as those in the lowest category (quintile 5).
For a technical discussion, see Haycock, 1998.

Adapted from
Sanders, W. L., & Horn, S. P. (1994). The Tennessee value-added assessment system (TVAAS): Mixed-model methodology in educational assessment. *Journal of Personnel Evaluation in Education, 8,* 299–311

Wright, S. P., Horn, S. P., & Sanders, W. L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education, 11,* 57–67.

Glass, McGaw, & Smith, 1981). That is, a student who scores at the 50th percentile in mathematics in September will score at the 84th percentile on the same test given in May. The findings reported in Figure 8.1 indicate that over a year, students in classes of the most effective teachers will gain much more in achievement than is expected (i.e., 53 percentile points as opposed to 34 percentile points). However, students in the classes of the least effective teachers will gain much less in achievement than is expected (i.e., 14 percentile points as opposed to 34). These findings are even more startling when we consider that some researchers have estimated that students gain about 6 percentage points simply from growing one year older and gleaning new knowledge and information through everyday life (Hattie, 1992; Cahen & Davis, 1977). From this perspective, we might say the least effective teachers add little to students' knowledge over what would be expected from one year of maturation.

If the effect of attending the class of one of the least effective teachers for a year is not debilitating enough, the cumulative effect can be devastating. To illustrate, consider Figure 8.2, which is again based on data from the work of Sanders and his colleagues (as reported by Haycock, 1998).

Figure 8.2 shows a 54-percentile point discrepancy in achievement gains between students with least effective teachers versus those with most effective teachers—29 percentage points versus 83 percentage points respectively over three years. Commenting on this discrepancy, Haycock (1998) notes

> Differences of this magnitude—50 percentile points—are stunning. As all of us know only too well, they can represent the differences between a "remedial" label and placement in the "accelerated" or even "gifted" track. And the difference between entry into a selective college and a lifetime at McDonald's. (p. 4)

Sanders and his colleagues gathered their data from elementary students in Tennessee, yet they are not the only ones to find these differences in achievement. Haycock (1998) reports similar findings from studies conducted in Dallas and Boston.

I have taken a slightly different approach and come to the same conclusions. The studies conducted in Tennessee, Dallas, and Boston were based on data acquired from students over time; I started my calculations with the assumption gathered from my review of research—that schooling accounts for about 20 percent of the variance in student achievement (see the discussion in

FIGURE 8.2	
Cumulative Effects Over Three Years Between Students with Least Effective Versus Most Effective Teachers	
Most effective teacher	83 percentile point gain
Least effective teacher	29 percentile point gain

Chapter 1). However, in my synthesis of the research, I also found that about 67 percent of this effect is due to the effect of individual teachers. That is, about 13 percent of the variance in student achievement in a given subject area is due to what the teacher does and about 7 percent is due to what the school does (Bosker, 1992; Luyten, 1994; Madaus et al., 1979; Marzano, 2000a; Stringfield & Teddlie, 1989). The implications of my analysis are reported in Figure 8.3. For a detailed discussion of how Figure 8.3 was derived, see Technical Note 6, pp. 191–192.

The six scenarios in Figure 8.3 show effects on student achievement of various combinations of school and teacher effectiveness under the assumption that the student enters school achieving at the 50th percentile. If a student begins at the 50th per-

centile in mathematics, for example, and attends an average school and has an average teacher, her achievement will still be at the 50th percentile at the end of about two years (as depicted in the first scenario in Figure 8.3). Now let's consider the second scenario where this student attends a school that is one of the least effective and has a teacher that is classified as one of the least effective. After two years the student has dropped from the 50th percentile to the 3rd percentile. In the third scenario, the student is in a school classified as one of the most effective but has a teacher classified as one of the least effective. Although she enters the class at the 50th percentile, she leaves it two years later at the 37th percentile. In the fourth scenario, the student is in a school that is considered one of the least effective, but she is with

---

FIGURE 8.3

Effects on Student Achievement of School and Teacher Effectiveness with Student Entering School at the 50th Percentile

School and Teacher Scenario	Achievement Percentile After Two Years
Average School and Average Teacher	50th
Least Effective School and Least Effective Teacher	3rd
Most Effective School and Least Effective Teacher	37th
Least Effective School and Most Effective Teacher	63rd
Most Effective School and Most Effective Teacher	96th
Most Effective School and Average Teacher	78th

See Technical Note 6, pp. 191–192, to determine how average, least effective, and most effective schools and teachers were defined.

Adapted from Marzano, R. J. (2000a). A new era of school reform: Going where the research takes us. Aurora, CO: Mid-continent Research for Education and Learning (ERIC Document Reproduction Service No. ED 454255)

a teacher classified as one of the most effective. The student now leaves the class at the 63rd percentile—13 percentile points higher than she entered. The fifth scenario is the most optimistic of all. The student is not only in a school classified as one of the most effective but is with a teacher classified as one of the most effective. She enters the class at the 50th percentile but leaves at the 96th percentile. In the sixth scenario, the student is in a school that is one of the most effective and is with a teacher considered average. After two years the student has risen from the 50th percentile to the 78th percentile.

Regardless of the research basis, it is clear that effective teachers have a profound influence on student achievement and ineffective teachers do not. In fact, ineffective teachers might actually impede the learning of their students. What then are the characteristics of an effective teacher?

Characteristics of an Effective Teacher

I have concluded that the nearly 3,000,000 teachers in this country (National Center for Educational Statistics, 2002) are probably distributed normally in terms of their effectiveness as defined in terms of their impact on student achievement. Consistent with characteristics of the normal or bell curve, most of the teachers are in the middle of the effectiveness distribution or not too far away from the average. There are a few at the extreme positive end and a few at the extreme negative end. This means that most teachers are a little below or a little above average in terms of their impact on student achievement. I

would put teachers at the extreme positive end in the most effective category and teachers at the extreme negative end in the least effective category. A teacher who masters the three factors I have identified would not necessarily be reassigned to the most effective category. Rather, I believe that mastery of the three teacher-level factors will certainly render a teacher at least average (and probably well above average). Yet, teachers who are average in terms of their effectiveness can still have a powerful impact on student achievement as illustrated in the sixth scenario in Figure 8.3.

Specifically, this scenario illustrates that if teachers exhibit average performance and a school is willing to do all that it can to be most effective, then students in that school will demonstrate remarkable gains. Many principals have reported to me that they don't have the freedom or resources to hire the most experienced or most talented teachers. This discussion indicates that such talent and experience are not a prerequisite to effectiveness. If a school is willing to do all that it can at the school level and if all teachers in the school are at least competent in their profession, the school can have a tremendous impact on student achievement.

Teacher-Level Factors: A Comparison Across Researchers

My three teacher-level factors are not the only ways to organize the research on teacher effectiveness. In fact, researchers have identified many variables that correlate with teacher effectiveness. Kathleen Cotton

(1995) has identified more than 150 variables that are components of teacher effectiveness; Barry Fraser and his colleagues (Fraser, Walberg, Welch, & Hattie, 1987) list some 30 variables. These long lists of variables have been organized in a variety of ways. For example, Jere Brophy (1996) uses the following categories:

- instruction,
- classroom management,
- disciplinary interactions, and
- student socialization.

Bert Creemers (1994) uses three categories: curriculum, grouping procedures, and teacher behaviors. Finally, Cotton (1995) uses the following categories to organize the 150 variables she has identified:

- planning,
- setting goals,

- classroom management and organization,
- instruction,
- teacher-student interactions,
- equity, and
- assessment.

As was the case with the school-level factors, my three teacher-level factors are, in most cases, simply a reorganization of the work of other researchers. See Figure 8.4 for a more explicit explanation.

To derive my three factors, I have collapsed two or more categories from another researcher into a single category or placed elements of another researcher's single category into two of my categories. For example, I collapsed three of Cotton's categories into the single category of "classroom management" because Cotton's description of these elements is nearly synonymous with my description of classroom management. For

---

FIGURE 8.4

Comparing Teacher-Level Factors Across Researchers

Marzano (2000a)	Brophy (1996)	Creemers (1994)	Cotton (1995)
Instructional strategies	Instruction	Grouping procedures/teacher behaviors	Planning Setting goals Instruction
Classroom management	Classroom management Disciplinary interventions Student socialization	Teacher behavior	Classroom management and organization Teacher-student interactions Equity
Classroom curriculum design		Curriculum	Assessment

similar reasons, I placed Creemer's category of "teacher behaviors" into my categories "instructional strategies" and "classroom management."

The following three chapters address each of the three teacher-level factors. Chapter 9 explores instructional strategies, Chapter 10 explores classroom management, and Chapter 11 explores classroom curriculum design.

Despite discussing the teacher-level factors in isolation, they are not practiced in isolation. In fact, studies that have attempted to identify the unique or independent effects of instruction versus management versus classroom curricular design have not met with much success (Levy, Wubbels, Brekelmans, & Morganfield, 1997). The act of teaching is a holistic endeavor. Effective teachers employ effective instructional strategies, classroom management techniques, and classroom curricular design in a fluent, seamless fashion. A variety of researchers support this conclusion (Leinhardt & Greens, 1986; Brooks & Hawke, 1985). In his article "In Pursuit of the Expert Pedagogue," David Berliner (1986) likens an expert teacher to a chess master, capable of seeing many things simultaneously and making judgments with seeming ease and fluency.

The interdependence of the three teacher-level factors underscores their difference from the five school-level factors. The school-level factors are ranked in the order of their impact on student achievement, but the teacher-level factors are not. Although there might be research available or in process that allows for this delineation, I have not yet found it.

Summary

This chapter introduces the three teacher-level factors: instructional strategies, classroom management, and classroom curriculum design. Although discussed separately, they cannot be isolated in terms of their classroom application or their impact on student achievement. Additionally, the impact of the individual classroom teacher could have a greater impact on student achievement than the five school-level factors.

Reading 4

12

THE STUDENT-LEVEL FACTORS

One of the perceived truisms in education has been that student background characteristics are the most important determinants of student achievement. Indeed, as discussed in Chapter 1, this was one of the primary conclusions of the studies by Coleman and colleagues (1966) and by Jencks and colleagues (1972). It has also been assumed that, implicitly or explicitly, these background characteristics are largely impervious to change. Popular books such as *Bias in Mental Testing* by Arthur Jensen (1980) and *The Bell Curve* by Richard Heurnstein and Charles Murray (1994) have made elaborate statistical cases that background characteristics, particularly intelligence, are genetically based and can be changed little by schooling. In contrast, I believe that the research clearly shows that even some of most negative aspects of a student's background can be mediated by school-based interventions.

In Chapter 1, I supplied evidence that schools generally account for only 20 percent of the variance in student achievement and that student background characteristics account for the other 80 percent. But what if a school could do something about those background characteristics? In the next three chapters, we explore which student background factors schools can address and what they might do about them. What, then, are the student background characteristics that influence academic achievement?

Student-Level Factors: A Comparison Across Researchers

Many different lists of student-level factors exist. For example, in *Human Characteristics and School Learning,* Benjamin Bloom (1976) identifies two basic student background characteristics: (1) cognitive characteristics and (2) affective characteristics. In *A Psychological Theory of Educational Productivity,* Herbert Walberg (1980) identifies three

123

salient background characteristics: (1) ability or prior achievement, (2) development as indexed by age or stage of maturation, and (3) motivation or self-concept. Barry Fraser, Herbert Walberg, Wayne Welch and John Hattie (1987) identify three factors: (1) ability, (2) motivation, and (3) home environment. In my own synthesis of the research in *A New Era of School Reform: Going Where the Research Takes Us* (Marzano, 2000a), I identify four factors: (1) home atmosphere, (2) prior knowledge, (3) aptitude, and (4) interest.

I have combined my previous work with that of others to construct the model presented in this book. Three student-level factors are addressed in this section:

1. Home environment
2. Learned intelligence and background knowledge
3. Motivation

How these relate to my previous work and the work of others is depicted in Figure 12.1.

The figure shows that I have collapsed my previous terms "aptitude" and "prior knowledge" into a single category called "learned intelligence/background knowledge." The "learned intelligence" aspect of this category title might sound like an oxymoron, but it is not. Also, I have renamed "interest" as the more robust "motivation."

Although they use different names, previous researchers generally identify the same student-level factors as those used in this book. The lack of reference by Bloom (1976) and Walberg (1980) to home environment is simply an artifact of their categorization schemes. Both, in fact, note that home environment plays a critical role in student achievement.

The next three chapters in this section address each of the student-level factors. Chapter 13 addresses home environment, Chapter 14 addresses learned intelligence and background knowledge, and Chapter 15 addresses motivation.

FIGURE 12.1

Comparing Student-Level Factors Across Researchers

Student-Level Factors	Bloom (1976)	Walberg (1980)	Fraser et al. (1987)	Marzano (2000a)
Home environment			Home environment	Home environment
Learned intelligence or Background knowledge	Cognitive characteristics	Ability or prior achievement, or Development	Ability	Aptitude Prior knowledge
Motivation	Affective characteristics	Motivation or self-concept	Motivation	Interest

Summary

Both research and theory indicate that student-level factors account for the lion's share of variance in student achievement. However, the negative effects of these factors can be overcome. Three student-level factors were identified: home environment, learned intelligence and background knowledge, and motivation.

Other Video Programs Available from ASCD

Action Research: Inquiry, Reflection, and Decision Making
  (4-tape series)
Adult Conflict Resolution
Alternative Scheduling *(3-tape series)*
Another Set of Eyes *(5-tape series)*
    Techniques for Classroom Observation
    Conferencing Skills
Assessment in Elementary Science *(3-tape series)*
At Work in the Differentiated Classroom *(3-tape series)*
Books in Action
Becoming a Multiple Intelligences School
Guiding School Improvement with Action Research
The Brain and Early Childhood *(2-tape series)*
The Brain and Learning *(4-tape series)*
The Brain and Mathematics *(2-tape series)*
The Brain and Reading *(3-tape series)*
Building Support for Public Schools *(2-tape series)*
Catch Them Being Good: Reinforcement in the Classroom
  (3-tape series)
Challenging the Gifted in the Regular Classroom
Classroom Management: A Proactive Approach to Creating an Effective
  Learning Environment
Constructivism *(2-tape series)*
Cooperative Learning *(5-tape series)*
Curriculum Mapping: Charting the Course for Content *(2-tape series)*
Developing Performance Assessments
Differentiating Instruction *(2-tape series)*
Dimensions of Learning Training Program and Video Package
Early Childhood Education: Classroom Management—Curriculum
  Organization
Educating Everybody's Children *(6-tape series)*
Effective Schools for Children at Risk
Examining Student Work *(4-tape series)*
Helping Students Acquire and Integrate Knowledge *(5-tape series)*
How to *(multitape series)*
Implementing a Reading Program in Secondary Schools
Implementing Performance-Based Education
Improving Instruction Through Observation and Feedback
  (3-tape series)
Inclusion *(3-tape series)*
Integrating the Curriculum *(2-tape series)*
Involving Parents in Education
Learning About Learning

The Lesson Collection *(multitape series)*
Making Meaning: Integrated Language Arts Series *(5-tape series)*
Managing Today's Classroom *(3-tape series)*
Mentoring the New Teacher *(9-tape series)*
Mentoring to Improve Schools *(2-tape series)*
Motivation to Learn *(2-tape series)*
Multiage Classrooms (*2-tape series*)
Multicultural Education
Multiple Intelligences *(3-tape series)*
Opening Doors: An Introduction to Peer Coaching *(2-tape series)*
Planning Integrated Units: A Concept-Based Approach
Principal Series *(7-tape series)*
Problem-Based Learning *(2-tape series)*
Raising Achievement Through Standards *(3-tape series)*
Reading in the Content Areas *(3-tape series)*
Redesigning Assessment *(3-tape series)*
Reporting Student Progress
Restructuring America's Schools
Restructuring the High School: A Case Study
The Results Video Series *(2-tape series)*
A Safe Place to Learn: Crisis Response & School Safety Planning
Schools as Communities *(2-tape series)*
Science Standards: Making Them Work for You *(3-tape series)*
Shared Decision Making *(2-tape series)*
The Teacher Series *(6-tape series)*
Teacher Portfolios *(2-tape series)*
Teaching and Learning with Technology
Teaching and Learning with the Internet *(2-tape series)*
Teaching Strategies Library *(9-tape series)*
Teaching Students with Learning Disabilities in the Regular Classroom
    (2-tape series)
Teaching to Learning Styles
Technology Planning *(2-tape series)*
Understanding by Design *(3-tape series)*
Using Classroom Assessment to Guide Instruction *(3-tape series)*
Using Standards to Improve Teaching and Learning *(3-tape series)*
Video Library of Teaching Episodes *(30 tapes)*
A Visit to a Differentiated Classroom
What's New in School—Parts I and II *(7 tapes)*

For information on these programs, call ASCD's Service Center at
1-800-933-2723, or 1-703-578-9600.

About ASCD

Founded in 1943, the Association for Supervision and Curriculum Development is a nonpartisan, non-profit education association, with international headquarters in Alexandria, Virginia. ASCD's mission statement: *ASCD, a diverse, international community of educators, forging covenants in teaching and learning for the success of all learners.*

Membership in ASCD includes a subscription to the award-winning journal *Educational Leadership*; two newsletters, *Education Update* and *Curriculum Update*; and other products and services. ASCD sponsors affiliate organizations in many states and international locations; participates in collaborations and networks; holds conferences, institutes, and training programs; produces publications in a variety of media; sponsors recognition and awards programs; and provides research information on education issues.

ASCD provides many services to educators—prekindergarten through grade 12—as well as to others in the education community, including parents, school board members, administrators, and university professors and students. For further information, contact ASCD via telephone: 1-800-933-2723 or 1-703-578-9600; fax: 1-703-575-5400; or e-mail: member@ascd.org. Or write to ASCD, Information Services, 1703 N. Beauregard St., Alexandria, VA 22311-1714 USA. You can find ASCD on the World Wide Web at http://www.ascd.org.

ASCD's Executive Director is Gene R. Carter.

2002–03 Executive Council

Peyton Williams Jr. (*President*), Raymond J. McNulty (*President-Elect*), Kay A. Musgrove (*Immediate Past President*), Pat Ashcraft, Martha Bruckner, Mary Ellen Freeley, Richard L. Hanzelka, Douglas E. Harris, Mildred Huey, Susan Kerns, Robert Nicely Jr., James Tayler, Andrew Tolbert, Sandra K. Wegner, Jill Dorler Wilson.

Belief Statements

Fundamental to ASCD is our concern for people, both individually and collectively.

- We believe that the individual has intrinsic worth.
- We believe that all people have the ability and the need to learn.
- We believe that all children have a right to safety, love, and learning.
- We believe that a high-quality, public system of education open to all is imperative for society to flourish.
- We believe that diversity strengthens society and should be honored and protected.
- We believe that broad, informed participation committed to a common good is critical to democracy.
- We believe that humanity prospers when people work together.

ASCD also recognizes the potential and power of a healthy organization.

- We believe that healthy organizations purposefully provide for self-renewal.
- We believe that the culture of an organization is a major factor shaping individual attitudes and behaviors.
- We believe that shared values and common goals shape and change the culture of healthy organizations.

Does Your
Professional Development
Program Have
Impact?

The next time you need professional development resources that will make a positive difference for your organization, turn to ASCD. We have proven tools that are helping schools, districts, and regional service agencies around the world:

Self-Help Resources—We have books, audiotapes, subscriptions, and other self-help publications on an array of topics important to today's educators.

Materials for Study Groups and Improvement Teams—Choose from a variety of our multimedia tools and kits to keep teams supplied with learning activities, discussion questions, research readings, exemplars, and video demonstrations.

Video Resources for Workshops and Other Meetings—These are the ideal tools to reach groups in your school community in the most effective and cost-efficient way.

Tools for Curriculum and Assessment Design—Many ASCD professional development resources have built-in components to help you guide staff members through each step of the curriculum and assessment design process.

Online Distance-Learning Courses—Our acclaimed Professional Development Online courses at our Web site offer your staff members interactive, in-depth learning experiences on a broad range of educational topics. Each course equals 15–20 clock hours toward CEU credit.

On-Site Consulting and Staff Development—Whether you need focused training on a particular topic or a long-term plan for improvement, ASCD can help you find the right consultant for virtually any issue.

We have the resources to support ongoing professional development on virtually any topic in education!

Where to Start!

Not sure how to begin planning a professional development program for your school or district?

Take our quick and easy professional development planning survey at:

http://www.ascd.org/ planyourpd

How to
Contact Us ◄

Talk to an ASCD representative about planning comprehensive professional development; please call 1-703-575-5634.

ASCD®

Association for Supervision and Curriculum Development

1703 North Beauregard Street • Alexandra, Virginia, 22311-1714
1-800-933-ASCD (2723) • 1-703-578-9600 • Fax: 1-703-575-5400 • http://www.ascd.org