

Introduction

How to Use This Guide

This facilitator's guide is a companion for the study of the book and video/DVD *How the Brain Learns*, Third Edition, by David A. Sousa. It provides assistance to group facilitators, such as school leaders, professional development coordinators, peer coaches, team leaders, mentors, and professors. Along with a summary of each chapter in the book, this guide provides supplemental information, chapter discussion questions, activities, and journal writing prompts. For facilitators who conduct workshops, a sample workshop evaluation form is also included.

When using the guide during independent study, focus on the summaries and discussion questions.

For small study groups, the facilitator should guide the group through the chapter work.

For small or large group workshops, the facilitator should create an agenda by selecting activities and discussion starters from the chapter reviews that meet the group's goals, and guide the group through the learning process.

How to Use the Video/DVD

The video/DVD is designed to explain how some of the findings from neuroscience research can apply to classroom practice. These findings not only support some of the successful strategies teachers have been using for years, but also suggest new techniques for increasing the probability that learning will occur.

After a discussion of each chapter topic, the video/DVD shows scenes of teachers applying a related strategy in elementary, middle, and high school classrooms. Additional strategies are found in the book's Practitioner's Corners at the end of each chapter.

Chapter-by-Chapter Study Guide

How the Brain Learns,
Third Edition
by David A. Sousa

Introduction

Summary

- Brain imaging technologies, such as EEG, MEG, PET, fMRI, and fMRS, have enhanced our ability to see how the brain functions when performing specific tasks. Some of the findings from studies using these instruments have implications for educational practice.
- This book discusses brain research that relates to teaching and learning and suggests ways that the research can be translated into what educators do in schools and classrooms.
- The book should be useful to classroom teachers, staff developers, principals, college instructors, and parents as they work to help children learn.
- Action research is a valuable method for determining the effectiveness of new strategies and of those already in use, and for providing teachers with feedback for self-evaluation. Action research can be the work of just one teacher, but its value grows when it is the consistent effort of a teacher team, department, school staff, or an entire district.

Discussion Questions

1. What major advancements in the study of the human brain have led to the explosion of new information on how it works?
2. Why should teachers care about brain research?
3. What teaching strategies do you think would lend themselves well to action research in your school or classroom?

Activities

● *Video/DVD: Introduction*

Time: 4–5 minutes

Show the first section of the video/DVD, "Introduction."

● *What Do You Already Know?*

Time: 20 minutes

Materials: *How the Brain Learns*, Third Edition

Ask the participants to individually complete the 10 true–false questions on page 11. Start a short discussion on why teachers answered the way they did, but avoid agreeing on a correct answer. The answers to these questions are scattered throughout the book at the appropriate places in the text.

● *How Brain Compatible Is My Teaching/School/District?*

Time: 20 minutes

Materials: *How the Brain Learns*, Third Edition

Ask the participants to individually complete the instrument on page 12 by circling their responses. Then ask them to connect the circles from top to bottom to get a visual profile. Organize the participants in pairs and have them discuss their results with their partners.

Journal Writing: What action should I take, if any, to address those items with scores of 1 and 2? What can I do to maintain those items with scores of 4 and 5?

● *Understanding Action Research*

Time: 35 minutes, with reading

Materials: Chart paper, markers, masking tape, *How the Brain Learns*, Third Edition

Ask the participants to read pages 9 to 11 before starting this activity. Organize them in groups of four or five. The group size will depend on the number of participants. Ask them to review at their table the six steps in the Action Research Cycle (Figure I.1). Their

Sample Workshop Agendas

Half-Day Workshop Agenda

This half-day agenda assumes that the participants have been reading *How the Brain Learns*, Third Edition, by David A. Sousa before attending the workshop.

Welcoming Activity (5 minutes)

Purpose of Workshop (5 minutes)

- Explore some major areas where brain research has implications for educational practice.
- Understand how the brain of today's student is different.
- Learn about the brain's memory systems and some of the factors that aid retention of learning.
- Explore how emotions affect learning.
- Learn about transfer and how critical attributes can improve retention.
- Explore how we acquire language and learn to read.
- Understand the importance of the arts in learning.
- Examine ways to encourage students to do higher-order thinking.
- Discuss a model that can help in lesson design.
- Engage in professional interaction.

Introduction (20 minutes)

1. Activity: "How Brain Compatible Is My Teaching/School/District?"

Chapter 1: Basic Brain Facts (35 minutes)

1. Discuss windows of opportunity.
2. Discuss the brain of today's student as a novelty seeker.
3. Activity: Have participants walk across room, find a partner, and discuss the implications of windows of opportunity and the novelty-seeking brain.

**Chapter 2: How the Brain Processes Information, and
Chapter 3: Memory, Retention, and Learning (45 minutes)**

1. Discuss sensory preferences.
2. Discuss the capacity and time limits of working memory.
3. Discuss how emotions affect learning.
4. Discuss the primacy–recency effect.
5. Activity: Have participants walk across room, find a new partner, and discuss implications of working memory limits and the primacy–recency effect.

Break (15 minutes)

**Chapter 4: The Power of Transfer, and
Chapter 5: Brain Specialization and Learning (55 minutes)**

1. Discuss and give example of critical attributes.
2. Discuss how the brain learns language and learns to read.
3. Activity: Ask participants to write down one important thing they learned about these topics. Then have them share what they wrote with a partner.

Chapter 6: The Brain and the Arts (15 minutes)

1. Discuss how music, visual arts, and movement improve learning.

Chapter 7: Thinking Skills and Learning (25 minutes)

1. Discuss the revision of Bloom's taxonomy and the difference between difficulty and complexity.
2. Activity: Have participants walk across the room, meet a new partner, and share their thoughts about the revised taxonomy and what impact it may have on their practice.

Chapter 8: Putting It All Together (15 minutes)

1. Discuss the components of the Hunter model.

Summary and Evaluation (15 minutes)

One-Day Workshop Agenda

Welcoming Activity (5 minutes)

Purpose of Workshop (5 minutes)