



4MAT[®] Research Process Guide

About
Learning
bringing learning to life

Theoretical Assumptions About 4MAT

Learning Types

Individuals learn in different yet identifiable ways

These individual learning preferences, although clearly not related to aptitude, are significantly related to personal motivation and performance

Motivation and academic performance improve as individuals identify and use their natural learning style as well as practice and accommodate less preferred strategies.

Hemisphericity

Individuals have at their disposal two complementary methods for approaching and representing information and experience.

Adequate engagement of both methods, described in the literature as right and left hemispheric processing, results in deepened levels of personal understanding.

Engagement across the two-hemisphere continuum usually defined as “whole brain” learning has serious implications for designing instruction and understanding human learning.

Teaching

A demonstrable relationship exists between specific teacher behaviors and student performance.

Learning and transfer are more appropriately encouraged when classroom events systematically incorporate attention to personal experience, reflection, conceptualization, practice, extension, refinement and integration using right and left hemispheric representations.

Multiple methods of instruction connected to personal meaning, including striving and self-discovery, are related to higher levels of student performance.

4MAT is a practical pedagogy for teaching to “wholeness”, encouraging creativity and accounting for human diversity.

4MAT Research Process Guide

Leadership is about learning that leads to constructive change

–Lambert, 1998

As with most aspects of education, accountability is a key word in a 4MAT Implementation Project. Providing documentation and evaluation of a 4MAT Project returns to a school community, district, or grantor important information about the progress and the effectiveness of the program and suggests directions for future planning.

Many people perceive the research process as more difficult than it needs to be. Each implementation is unique and each study will reflect the specific goals, issues, and applications of those involved in the project. However, there is a common context to educational research that sets the stage:

- for identifying useful questions;
- for generating effective information gathering, analysis, and dissemination; and
- for ensuring greater validity and reliability to the process and to its results.

The first step is to gather together those planning the 4MAT Implementation. Your discussions begin with these four questions from around the wheel.

1. Why is this research necessary?

2. What do we believe we can demonstrate about the impact of our project?

3. How is the research design organized?

4. If we are successful, who will benefit from our study?

Building a Framework for a Research Study

1. Why is this research necessary?

The initial discussion establishes a common vision to solidify **reasons** for the research study and to determine its **purposes**. This is an authentic discussion about what you believe and why you think 4MAT will help you reach your goals.

Remember that good evaluation is:

- designed as a collaboration
- aligned with goals and missions
- focused on short- and long-term targets
- measured with a variety of evidence over time
- used to determine processes, relationships, and outcomes

To help identify your specific purposes for the research study, you might begin the discussion with these sentence starters:

Excellence is...

4MAT can help us...

A good classroom is...

A good learner is...

We can further meet our mission by...

2. What do we believe we can demonstrate about the impact of our 4MAT project?

Once you have clarified the reasons for and the purposes of the 4MAT implementation study, it is time to determine the specific **questions** that will demonstrate the impact of your program.

Will the questions target the teacher's:

- Sense of professional efficacy?
- Attitude toward particular learner groups?
- Attitude toward the process of teaching?
- Knowledge of the process of teaching?
- Planning and instructional delivery?
- Application of the 4MAT model?
- Other?

Will the questions target the students':

- Sense of personal efficacy?
- Attitude toward school?
- Attitude toward learning?
- Attitude toward peers?
- Attendance?
- Retention rate?
- Classroom behavior?
- Cooperation with peers and instructors?
- Creativity?
- Achievement on specific content measures?
- Other?

Will the questions target the school's or program's:

- Achievement on standardized measures?
- Reduction in discipline referrals?
- Reduction in Special Education referrals?
- Reduction in numbers of Limited English Proficient speakers?
- School climate?
- Expectations for students?
- Curriculum and instruction?
- Induction and professional development projects?
- Assessment?
- Parent and community relationships?
- Other?

Each question should help you to track the needs identified in your answers to Question 1. They should be framed with specificity to:

- Document the effectiveness of a particular process
- Show relationships of an intervention to a result
- Chart trends and outcomes

Questions should be meaningful, with a specific focus, and be answerable!
Choosing appropriate questions is the key step to successful research design.

3. How is the research design organized?

In its initial discussion, the planning group examined the reasons for the study and the purposes of the study. Your conversation provided the “why” of the project. As a group, you generated the research questions tied to your purposes. These questions determine the kinds of **data**, or information, you wish to gather. Are you looking to explore the effectiveness of a process? To show the relationships of process to particular outcomes? Or to chart change?

The **research design** creates a systematic inquiry to answer the particular questions you have posed to determine the effectiveness of your 4MAT Implementation. Surveys, interview protocols, standardized test scores and observation records are some of the many instruments available to document the information you are gathering.

Your instrumentation choices will be the sources used to collect the data to show evidence of progress in answering the original questions. These choices lead to the “what” and “how” of the research design.

4. If we are successful, who will benefit from our study?

This answer should lead right back to the responses generated in Question 1. The most critical communication of the findings and conclusions is to that of the participants and the school or program's natural audiences: administration, faculty and staff members, students, parents, grant funders, and broader community members. Planning should begin early on how regular progress reports and summative documentation will be shared.

In addition, contribute to the growing 4MAT network of practitioners. Consider the following venues for dissemination of the results of the 4MAT Implementation Study:

Educational Community

- Regional, national, and international conferences

- Site-based seminars

- Lectures for local organizations

- Features in local media

- Biennial 4MAT Renewal Conference

4MAT Research Process Guide

Professional Journals

Educational Leadership

Kappan

Teacher

Discipline based journals

Electronic Journals and Data Bases

Education and Research Information Clearinghouse,
www.ed.gov/EdRes/EdRed/ERIC.html

About Learning, www.aboutlearning.com

Practical Assessment, Research & Evaluation, www.ericae.net/pare/

4MATION® LiveText

Referred Journals

Teachers College Record

Educational Evaluation and Policy Analysis

American Educational Research Journal

Education and Urban Society

Educational Researcher

Educational Administration Quarterly

The Elementary School Journal

The 4MAT Research Guide--Available as Synopsis, Book, or CD

4MAT The Original Comprehensive School Reform Model

About Learning, Inc. website for theoretical overview, products, services, and bibliography: www.aboutlearning.com

Statistical Analyses: Service references upon request

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Instrumentation

The sample instruments provided in the full 4MAT Research Process Guide may be reproduced as customized research instruments.

Theoretical Assumptions About 4MAT®,
p. 22-23

SAMPLE A
Evaluation Designs, p.24-26

SAMPLE B
Developing a Needs Assessment, p. 28
Pre-Assessment Data Survey, p. 29
Needs Assessment Worksheet, p. 31

SAMPLE C
Teacher Participant Survey, p. 33-34

SAMPLE C
Qualitative Exit Instrument
Level 1: Foundations, Day One, p. 35

SAMPLE D
Principles of 4MAT Questionnaire
Level 1: Foundations, Day Three, p. 37-38
Principles of 4MAT Questionnaire Answer
Key, p. 39

SAMPLE E
4MAT Level 2: Applications
1 The Concept of Concepts, p. 41-42
2 The Natural Cycle, p. 43-44
3 The Brain: Direct Classroom
Applications, p. 45-46
4 Infusing Standards: Managing
Content Coverage, p. 47-48
5 4MAT and Assessment, p. 49-50
6 The Final Unit: Pulling It All
Together, p. 51-52
Level 2 Answer Key, p. 53-54

SAMPLE F
Field Test Reaction Sheets
Unit Reaction Sheet, p. 55-56
Teacher Survey, p. 57-58
Teacher Reflections, p. 59-60
4MAT and Teacher Standards, p. 61
Final Teacher Reflections, p. 63
Parent Survey, p. 65-66
Student Survey, p. 67-68
Student Reaction Sheet, p. 69

SAMPLE G
Data Analysis Chart, p. 71
Student Impact Survey, p. 73

4MAT® Research Process Guide
Pre-Assessment Data Survey

Name: _____ Date: _____

What is your current assessment strategy for the research process?

1. I use a variety of assessment strategies to assess my students' understanding of the research process.
2. I use a variety of assessment strategies to assess my students' understanding of the research process.
3. I use a variety of assessment strategies to assess my students' understanding of the research process.
4. I use a variety of assessment strategies to assess my students' understanding of the research process.
5. I use a variety of assessment strategies to assess my students' understanding of the research process.

29

p 29 Pre-Assessment Data Survey

4MAT® Research Process Guide
Rank Assessment Worksheet

Name: _____ Date: _____

1. Question 2. Measure 3. Responsibility 4. Details

31

p 31 Needs Assessment Worksheet

4MAT® Research Process Guide
4MAT Implementation Study Teacher Development Survey

Name: _____ Date: _____

Thank you for participating in this project.

1. How do you feel about the 4MAT process?
2. How do you feel about the 4MAT process?
3. How do you feel about the 4MAT process?
4. How do you feel about the 4MAT process?
5. How do you feel about the 4MAT process?

33

p 33 Teacher Participant Survey

4MAT® Research Process Guide
Qualitative Exit Survey Level 1 Evaluation

Name: _____ Date: _____

How is what I feel was important to me being?

1. I have been very understanding and open.
2. I have been very understanding and open.
3. I have been very understanding and open.
4. I have been very understanding and open.
5. I have been very understanding and open.

35

p 35 Exit Survey, Level 1, Day 1

4MAT® Research Process Guide
Principles of 4MAT Assessment

Name: _____ Date: _____

What is the purpose of the 4MAT assessment?

1. To assess the student's understanding of the research process.
2. To assess the student's understanding of the research process.
3. To assess the student's understanding of the research process.
4. To assess the student's understanding of the research process.
5. To assess the student's understanding of the research process.

37

p 37 Principles of 4MAT

4MAT® Research Process Guide
Implementation Reflection: The Concept of Concepts

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

41

p 41 Level 2: Concept of Concepts

4MAT® Research Process Guide
Implementation Reflection: The Natural Cycle

Name: _____ Date: _____

1. Question 2. Measure 3. Responsibility 4. Details

43

p 43 Level 2 Natural Cycle

4MAT® Research Process Guide
Implementation Reflection: The Brain

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

45

p 45 Level 2: The Brain

4MAT® Research Process Guide
Implementation Reflection: Learning Standards

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

47

p 47 Level 2: Infusing Standards

4MAT® Research Process Guide
Implementation Reflection: 4MAT & Assessment

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

49

p 49 Level 2: 4MAT & Assessment

4MAT® Research Process Guide
Implementation Reflection: The Final Unit

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

51

p 51 Level 2: Final Unit

4MAT® Research Process Guide
4MAT Key for Implementation Reflections

Name: _____ Date: _____

1. Question 2. Measure 3. Responsibility 4. Details

53

p 53 Level 2 Answer Key

4MAT® Research Process Guide
4MAT Implementation Study: Final Unit Reaction Sheet

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

55

p 55 Unit Reaction Sheet

4MAT® Research Process Guide
Final Unit Teacher Survey

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

57

p 57 Unit Teacher Survey

4MAT® Research Process Guide
4MAT Project Teacher Reflections

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

59

p 59 4MAT Project Teacher Reflections

4MAT® Research Process Guide
4MAT and Teacher Standards

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

61

p 61 4MAT & Teacher Standards

4MAT® Research Process Guide
4MAT Implementation Study: Teacher Reflections

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

63

p 63 Teacher Reflections

4MAT® Research Process Guide
4MAT Implementation Study: Parent Survey

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

65

p 65 Parent Survey

4MAT® Research Process Guide
4MAT Implementation Study: Student Survey

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

67

p 67 Student Survey

4MAT® Research Process Guide
4MAT Implementation Study: Student Reaction Sheet

Name: _____ Date: _____

1. Question 2. Measure 3. Responsibility 4. Details

69

p 69 Student Reaction Sheet

4MAT® Research Process Guide
4MAT Implementation Study: Data Analysis Chart

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

71

p 71 Data Analysis Chart

4MAT® Research Process Guide
4MAT Implementation Study: Student Impact Survey

Name: _____ Date: _____

How did you feel about the 4MAT process?

1. I was very understanding and open.
2. I was very understanding and open.
3. I was very understanding and open.
4. I was very understanding and open.
5. I was very understanding and open.

73

p 73 Student Impact Survey